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ON THE COVER

The Army’s focus on multidomain capabilities embraces technology and builds upon processes and ideas. This issue tackles how new capabilities and concepts can efficiently and effectively support the warfighter.

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From the Editor-in-Chief

The mission of the assistant secretary of the Army for acquisition, logistics and technology is to “continuously modernize the U.S. Army through the timely development and delivery of overmatch capability to deter adversaries and win our nation’s wars.” Along the path to success, there are several objectives critical to accomplishing this mission, through efforts intended to capture distinct areas of focus that are critical to achieving each of the four strategic objectives. This issue focuses on one of those: New Capabilities and Concepts.

I figure that if new capabilities are good for warfare, then they should also be good for writing. So I turned to the latest in writing technology to assist with this column and determine how it might alter the future of writing. I looked to Chatsonic and asked it to write a paragraph about this issue’s theme: “How is the U.S. Army using new capabilities and concepts to revolutionize how warfare is conducted?”

Chatsonic responded, complete with sourcing: “The U.S. Army is embracing the future of warfare by utilizing several new capabilities and concepts to revolutionize how warfare is conducted. These include the development of artificial intelligence (AI) and machine learning, the integration of cyber and electronic warfare, and use of robotic systems and autonomous vehicles. (Source: The Army’s Vision and Strategy.) Additionally, the Army is leveraging emerging technologies to revolutionize the way it operates in and through cyberspace and the electromagnetic spectrum. (Source: The U.S. Army Concept for Cyberspace and Electronic Warfare Operations.) As military capabilities become increasingly interconnected, the future of warfare is likely to focus less on firepower and more on the power of information and the way it connects a military’s forces. (Source: The Future of the Battlefield.) The use of advanced technology will make it easier to identify, target and disrupt enemy capabilities, allowing for more efficient and effective operations.”

Not my usual great, insightful column, but not bad for five seconds worth of work. It lays out how capabilities are slowly changing concepts of how to fight future wars.

If you think about it, “new capabilities and concepts” is almost like the chicken-and-egg scenario: Which came first? The answer

is probably neither. One drives the other in an endless cycle of development, testing and implementation—a cycle the Army Acquisition Workforce uses expertly to ensure our Soldiers have the best equipment and strategies to fight and win our nation’s wars.

In this issue, we explore a multitude of exciting capabilities and concepts the Army Acquisition Workforce is developing to change warfare as we now know it. Take for example “Generation Generation,” Page 28, about how using generative AI, in both operations and for enterprise use, has clear benefits for transforming the Army. Then, remember me talking about cycles? Well, a good example of that is “SATCOM Streamline,” Page 66, where technology advancements such as distributed mission command, edge cloud capabilities, advanced sensors, AI, machine learning and robotics continue to require fast, secure and resilient transmission of large amounts of data. Which will, of course, lead to new concepts to employ ... and the cycle continues. Finally, the Army’s idea for a future unified network to handle large-scale ground combat operations, near-peer adversaries, a complex globally distributed and electronic warfare-contested battlefield is shaping up now. Learn all about it in “Capability, Set,” on Page 74.

There are plenty more stories to pique your interest in this issue, including features on the hurdles facing military spouses in the federal hiring process, preparing future acquisition leaders for success and Army winners of the 2022 Defense Acquisition Workforce awards.

Will Chatsonic change the way I write or AI influence future battles? Most likely. Stay tuned and watch the process unfold in Army AL&T. And, as always, if you have comments, questions or even articles, please contact us at armyalt@army.com. We look forward to hearing from you.



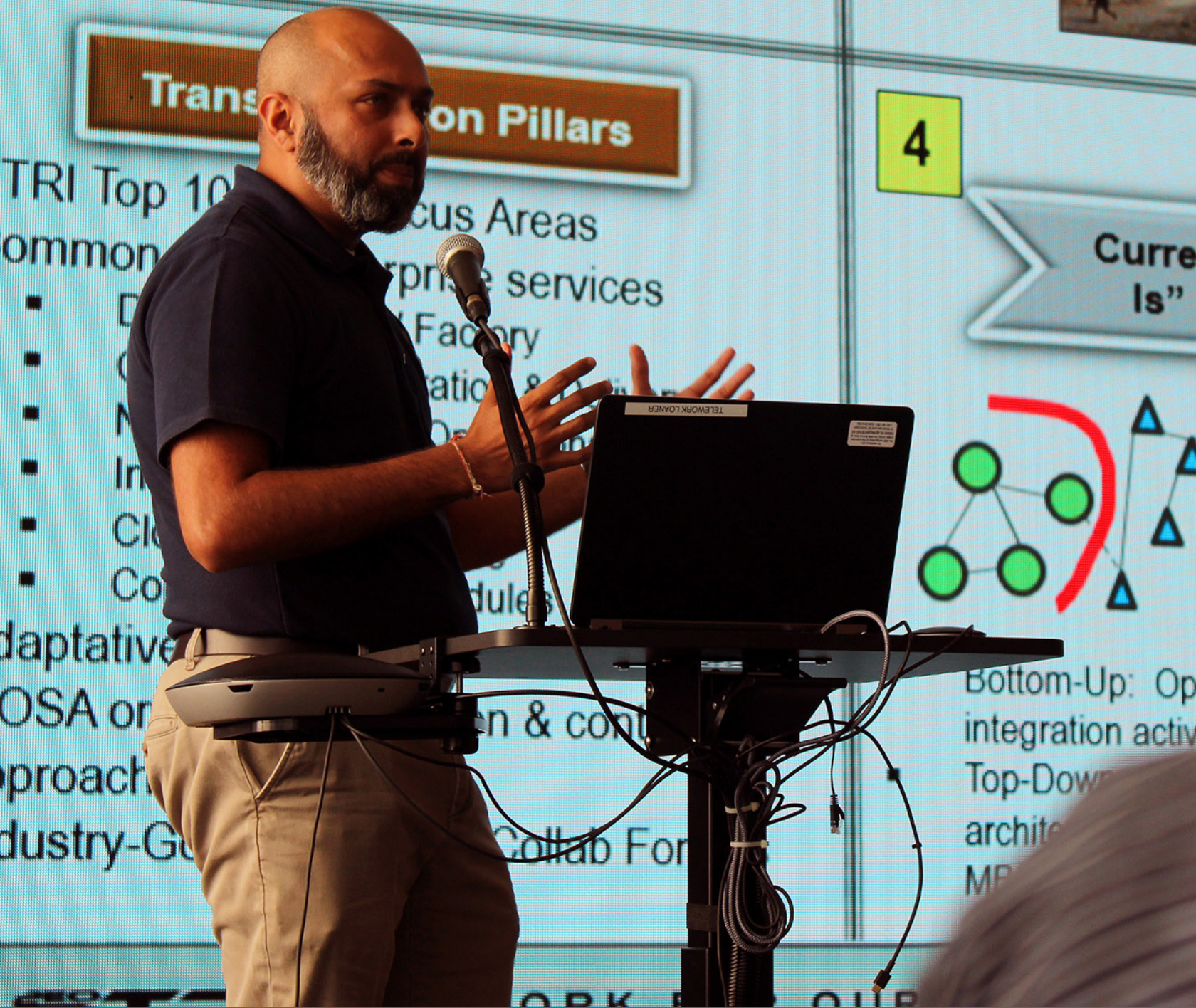
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Domain Operations

OUTSIDE THE LINES

Amit Kapadia, the chief engineer for Product Manager Synthetic Environment at the Program Executive Office for Simulation, Training and Instrumentation (PEO STRI), speaks to local chief engineers and systems architects during PEO STRI Modernization Industry Day on Sept. 14, 2022, at the Tech Grove campus in Orlando, Florida. To advance technologically, the Army needs to engage a far wider circle of the science and technology community. (Photo by Donnie Ryan, PEO STRI)





INNOVATION IS *OUR SUPERPOWER*

“It’s never a good bet to bet against America.”

—President Joe Biden, State of the Union Address

Feb. 7, 2023

Military superiority has always been about innovation. America’s ability to innovate—public and private—is one of our “superpowers” that helped us win the Cold War and will help us outcompete our adversaries today, as long as we take the right approach. Our system of free people, free enterprise and the rule of law will, over time, vastly outperform any centralized system, like China’s. As a result, I’m confident that as long as we maintain our focus and work closely with our amazingly innovative private companies, researchers, academia and technology entrepreneurs, we will discover and mature the technologies we need to stay ahead of our adversaries.

Innovation today is more important than ever, because the U.S. Army is in the middle of its largest modernization effort in 40 years. To enable this historic effort, we are counting on technology innovation that provides truly revolutionary new capabilities, not just marginal improvements on old technology.

As we build this future force, we are keenly focused on the pacing threat of China, the acute threat posed by Russia, as well as persistent threats from North Korea, Iran and violent extremist organizations. China continues to make great investments in artificial intelligence, robotics and cyber research and development. In its invasion of Ukraine, Russia has brought a level of brutality and destruction to the continent of Europe tragically on a scale not seen since World War II.

MODERNIZATION GUIDANCE

The secretary of the Army recently provided guidance that distills and refines our priorities in order to prepare the Army for the threats we see in Ukraine, but at a far higher

level of sophistication and scale in the future. Each of the six imperatives identified below has complex technical problems embedded in it. This is where collaboration among public and private organizations is vitally important in finding solutions.

- Sense farther and more persistently.
- Concentrate highly lethal low-signature combat forces.
- Deliver precise, longer-range fires.
- Protect our forces against air, missile and drone attacks.
- Communicate and share data with ourselves and joint and coalition partners.
- Sustain the fight across contested terrain.

TECHNICAL CHALLENGES

While the Army has outstanding scientists working in its research centers, I believe we need to harness a far wider circle of the science and technology community, both in government and the

private sector, to achieve the Army's goals. It's vital that we, in the Army, work to cast a wider net to find solutions to our challenges.

Let me outline in more detail some specific challenges we are facing and where we need help.

Autonomous systems. One area is autonomous systems, both in the air and on the ground. I want to differentiate between autonomous systems and simply unmanned systems, which we have in great numbers today. Most of our current unmanned systems require data links for control and operation, links that are both vulnerable to a sophisticated enemy and extremely burdensome on our communications networks to maintain, especially at large scale. As a result, the smarter our unmanned systems are, the more they can do on their own without direct human control, the less vulnerable they will be to the enemy and the less demand they will put on our networks.

There is, of course, a huge amount of research in the private sector in this area that we certainly want to leverage.

Tactical energy. A second area where we need help is dramatically reducing the energy demand of our weapon systems and our platforms and, concurrently, dramatically increasing our ability to generate energy in the field. We've gone to war in the past with extremely large and vulnerable supply lines. The American way of war is war through logistics. It's one of our greatest strengths. In doing so, however, we create a vulnerability that a sophisticated enemy could interdict. We need less energy demand in the front, and we need more energy capacity produced at the front to dramatically shrink those supply lines.

We have near-term technology efforts underway today in areas like hybrid electric vehicles. The Army's climate strategy requires aggressive action, to which we are firmly committed. However, in the longer term, we need significant advances in areas like new battery chemistry, much longer lasting materials, and ruggedized solar and wind power generation to move the dial dramatically in making Army forces in the field require less energy.

Affordable directed energy. Another area to highlight is affordable directed energy. Here we are finally seeing, through a lot of research and many years of development, the long-discussed promise of lasers and high-powered microwave systems that can provide meaningful military capability. That's the good news. The challenge now is moving to directed-energy systems that have the promise to be affordable at scale to deal with new threats, such as swarms of drones, that are otherwise very costly



POINTING THE WAY

Mauricio Martinez, assistant product manager for Laser Target Locator Module at the Program Executive Office (PEO) for Soldier, conducts a demonstration of the Laser Target Locator Module for Lt. Gen. Robert Marion, principal military deputy to the assistant secretary of the Army for acquisition, logistics and technology, Oct. 6, 2022, at Fort Belvoir, Virginia. (Photo by Jason Amadi, PEO Soldier Public Affairs)

The American way of war is war through logistics.

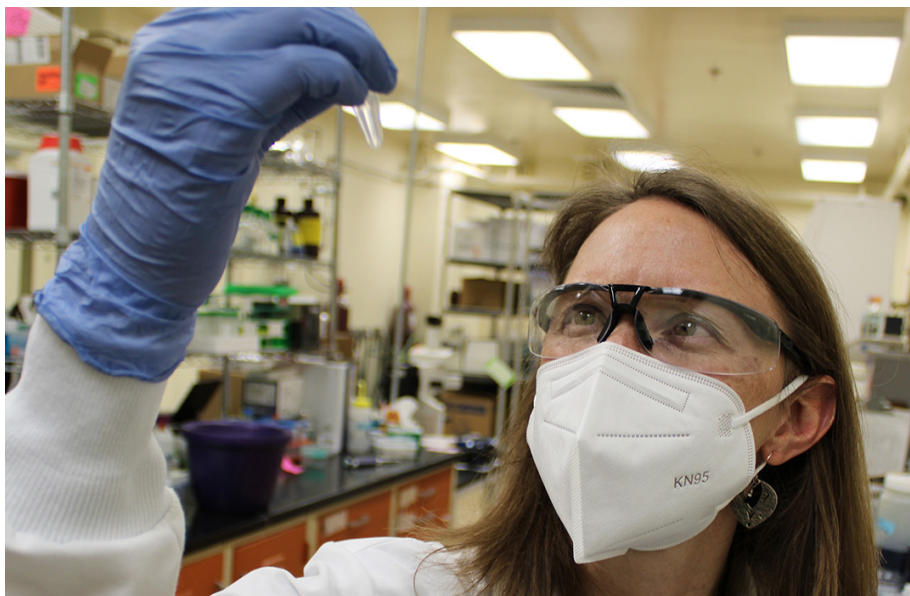
to handle with more traditional missile- and air-defense systems.

Having done all this research, we are now confronting the high cost of producing these directed-energy systems. That's a significant barrier to overcome as we want to field directed-energy systems across the Army at scale. So, in this case, it's a question of technology refinement versus perhaps pure invention. We've overcome great technical hurdles in directed energy, but we now need innovative technical solutions to refining these technologies so we can affordably produce them at scale.

Counterhypersonics. A fourth area is counterhypersonic technologies. Much has been made of advances in the area of offensive hypersonic weapons. The Army is one of the leading services in DOD, developing its own offensive hypersonic weapon systems. However, matching an enemy missile for missile in this area could prove very costly and still leave our forces vulnerable to enemy systems. So, we need help in finding innovative ways to counter hypersonic weapons in an affordable way. Innovation that offsets an opponent's technology in a way that imposes costs on them is the kind of thing that DOD has excelled at in the past, and we need that kind of innovation now in the area of counterhypersonics.

SECURING CAPABILITY

Another important issue I'm working on is not only finding innovative technologies, but also moving them from research



HELP WANTED

While the Army has many outstanding scientists, a far wider circle of the science and technology community, both in government and the private sector, is required to achieve its goals. (Photo by Richard M. Arndt, U.S. Army Combat Capabilities Development Command Chemical Biological Center)

to production across the so-called "valley of death."

First, we are formalizing new strategies to improve transition from science and technology labs to program executive offices, to ensure that innovative technology has a landing spot and, more importantly, funding in place when ready to take it into production. Making sure that government funding is in place at the right time is something we have long struggled with, so progress in this area is very important. Successful transition ultimately comes down to invested personnel and managers in our laboratories and our program offices being held accountable to successfully manage transition within the labs and product line teams.

Second, we are trying to make sure we do a better job of communicating with innovators both inside and outside the

government on what the Army needs. The Army is a big place with a lot of people with great ideas doing great work, so I can see how it's difficult to find the right spots to find out what's really a priority and what's likely to get funded if we develop the technology. We need to do a better job of coordinating our needs and communicating them through trusted sources of information, so innovation communities can find the answers and know exactly who in the Army to work with on a given issue. Also, and this is critical, there has to be an actual need for the system to do a useful function in the military, and then the technical research side of how to fund the research and get it into acquisition.

Overall, our focus must remain on collaboration, cooperation and unity of effort to ensure our joint warfighters are ready to deter adversaries and, if necessary, fight and win in combat. 🇺🇸

STRANGE REQUIREMENTS

Bradley Fighting Vehicles are good examples of systems with key performance parameters that ran wild. (Photo by Sgt. Tara Fajardo Arteaga, 113th Mobile Public Affairs Detachment)





THE P(i)LOT TO KILL JCIDS

The Joint Capabilities Integration and Development System, DOD's time-consuming requirements development, faces 'earth-shattering' change.

by Steve Stark

Later this year, DOD will begin a pilot program that may prove more consequential for speeding acquisition than the revision of the DOD 5000 series of instructions and the implementation of the Adaptive Acquisition Framework.

"This is huge," said Don Schlomer, one of the authors of a new report from which the pilot grows. "How do I say doing something to the benefit of all DOD? It's earth-shattering."

Schlomer is policy manager for Special Operations Forces Acquisition, Technology and Logistics acquisition operations at U.S. Special Operations Command (SOCOM) and earned his doctor of business administration in 2017. There may be no one in DOD who knows more about the Joint Capabilities Integration and Development System (JCIDS). That's because Schlomer, in addition to working in acquisition and having an active-duty military career, did his doctoral dissertation on JCIDS. (See sidebar, "Put Me In, Coach," on Page 14.)

The report that Schlomer co-wrote with four others from the Acquisition Innovation Research Center (AIRC) at Stevens Institute of Technology, "Report on Joint Capabilities Integration and Development System," was released in September. While DOD set up AIRC, it's an independent organization.

SLOWER THIRD

JCIDS is one-third of "big A" acquisition. The other two parts are the Defense Acquisition System—generally the 5000 series of DOD instructions that describe how to do acquisition—and the planning, programming, budgeting and execution system, which is also undergoing study for improvement.

Before JCIDS began in 2003, the big services developed and validated their own requirements. But then-Secretary of Defense Donald Rumsfeld had begun looking for a more comprehensive way of developing capabilities jointly. The original documentation for JCIDS, Schlomer said, “was 83 pages back in 2003. Now it’s 396 pages. Why?” Not only that, AIRC found that the average system takes 852 days to get through JCIDS, enough time that the technology would be obsolete. That 852 number represents the time it takes to validate an initial capabilities document, then send the ensuing capabilities document through JCIDS and have the Joint Requirements Oversight Council sign off on it.

Today, the vast majority of acquisition programs have to go through the JCIDS process because every program has to be based on an actual need: the requirement. For most acquisition professionals, JCIDS is the way they know how to do it.

SENTIMENTS ALIGNING

Congress and DOD agree that JCIDS needs to change, but neither has said exactly how it envisions the capability requirements-development process getting sensible speed, rigor, flexibility and efficiency. That is changing. In the National Defense Authorization Act (NDAA) for Fiscal Year 2019, Congress directed DOD that the secretary of defense would establish extramural (independent) “acquisition innovation and research activities.”

Thus was AIRC born.

In turn, the AIRC report on JCIDS itself was born of the NDAA for the 2021 fiscal year, which directed DOD to “conduct an assessment of the processes for developing and approving capability requirements for the acquisition programs of the [DOD]

KILLER KPPS

Now and again scandals over alleged fraud, waste and abuse at DOD streak across the headlines. Sometimes, they really are scandals. Others, maybe not. In 2018, Sen. Charles Grassley, a Republican from Iowa, wrote an op-ed in the New York Times, “These Toilet Seats Lids Aren’t Gold-Plated, But They Cost \$14,000: The Pentagon has to clean up its confusing and wasteful budget,” which decried DOD “paying \$14,000 for individual 3D printed toilet seat lids and purchasing cups for \$1,280 each.”

To people who know nothing about how acquisition works, that is scandalous. For those who understand acquisition, the real scandal is key performance parameters (KPPs). They’d ask, “What was the requirement?” Requirements often describe the needed capability in terms of KPPs, which dictate detailed specifications for the system under development. With Grassley’s \$14,000 toilet seat, there may simply have been no other way to stay within the KPPs.

That doesn’t mean that Grassley was wrong to be outraged. But he just might have been outraged by the wrong thing.

KPPs, which may or may not have anything to do with interoperability, can force bad decisions, limit tradeoffs and seriously hamper innovation. Schlomer gave the example of the Personal Defense Weapon, which SOCOM was looking to develop. Starting in 2017, it undertook extensive market research. Finally last May, SOCOM found the weapon it wanted—one it had tried out four years earlier.

According to Schlomer, if the requirement for the Personal Defense Weapon had a KPP of being 10 pounds 2 ounces, for example, that would stifle innovation. “Well, if it’s 10.4 pounds, yet it still allows the Soldier to maneuver over obstacles, to be able to carry it in the holster and all that other good stuff, why would you want to discard that weapon just because it’s two ounces more than the KPP? That’s

why you don’t want to say [the requirement] that way. You want to say that the weapon needs to be able to be transported, needs to be able to allow the Soldier to maneuver these obstacles, needs to be able to fire at this speed with this accuracy and things like that.”

Conceptualizing prospective systems with KPPs can rule out something radically new. Schlomer said he’d heard that automobile pioneer Henry Ford said, if he’d asked his customers, they’d have said that they wanted a faster horse, not a car. If the best replacement for a system is something wildly different from its predecessor as a car from a horse, it will be hard to predict. Said Schlomer, “You can’t really have a new weapon system that is radically different, that could do everything but was completely new” with KPPs.



NOT ALL TALK

The AIRC report affects the solutions that it recommends. (Photo by Anna Nekrashevich, Pexels)

and each military department,” and figure out how to make those processes faster and more timely.

The Office of the Undersecretary of Defense for Acquisition and Sustainment (USD A&S) is the party responsible, and the one that will establish the pilot project. William A. LaPlante, Ph.D., whose doctorate is in mechanical engineering, is the current USD A&S, and responsible for the AIRC report and its findings.

EXISTING VALIDATION MECHANISMS

When programs go around JCIDS, there’s rarely if ever a failure of jointness. That’s because the services, in developing systems, understand the importance of systems being joint. They understand the user and by extension the dependencies that the system will have, Schlomer said.

But while the services are looking to middle-tier acquisition more, JCIDS doesn’t work well with it, and that’s a disincentive.

In its analysis of JCIDS, the AIRC team created a model using value-stream mapping to measure the speed of transit through JCIDS. Because documentation of important new capability

requirements is classified, the authors could not analyze that directly. They also used the model to look at process alternatives to analyze their speed by comparison to JCIDS.

The report looks at two process alternatives to JCIDS. Both showed significant improvement in speed over JCIDS. Both align with the Adaptive Acquisition Framework’s pathways.

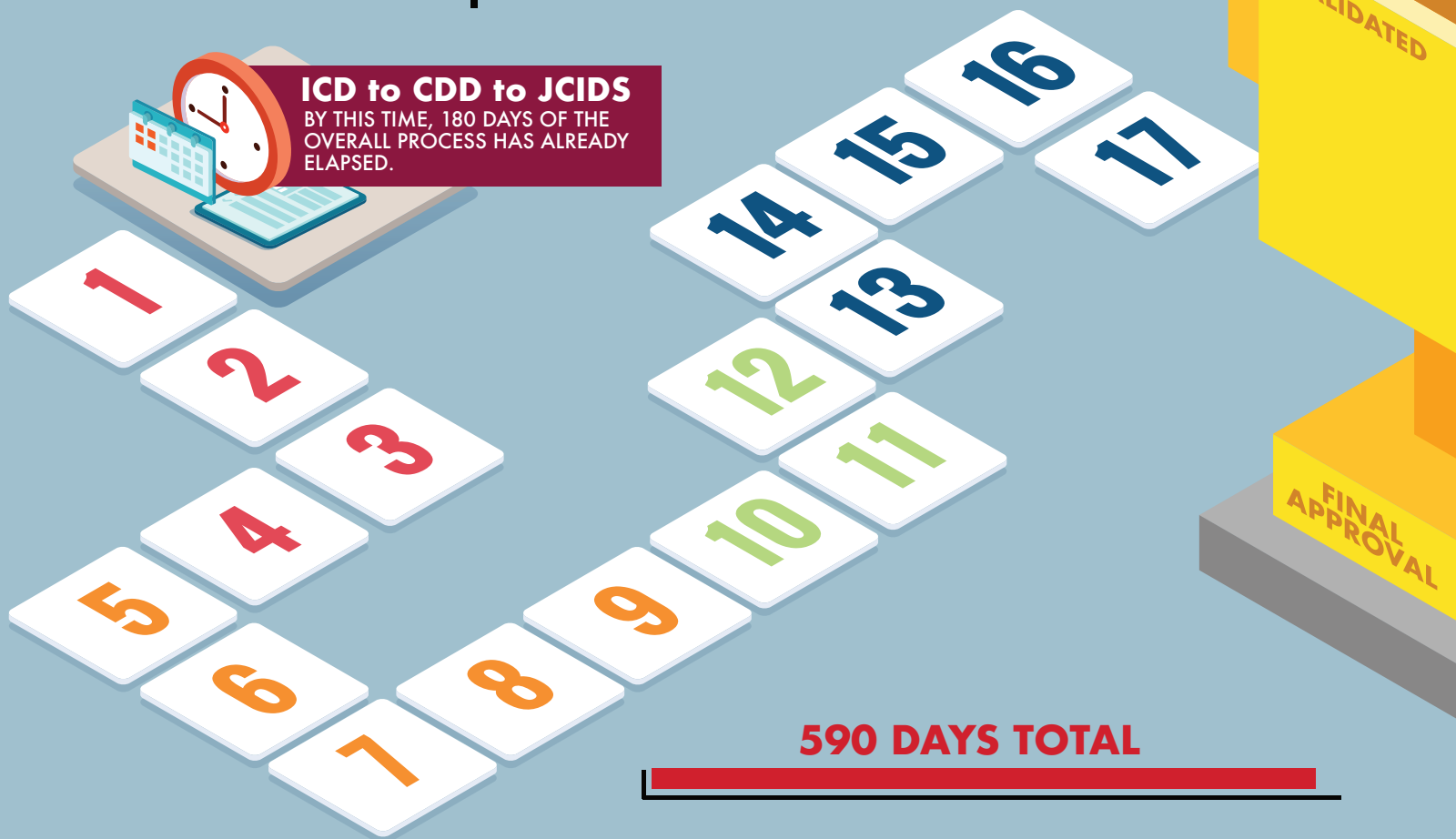
THE MIGHTY SORRD

As it happens, SOCOM and Army Futures Command (AFC) both use simplified and expedited mechanisms that not only eliminate the necessity to use the JCIDS process but are also compliant with the Federal Acquisition Regulation (FAR) and DOD guidance. These are just as legitimate for validating requirements as JCIDS.

**“This is huge.
It’s earth-shattering.”**

JCIDS

Joint Capabilities Integration and Development System



ICD to CDD to JCIDS 180 Days

When JCIDS starts, at least 180 days of the overall process have already passed as the detailed capability-development document (CDD) emerges from its predecessor, the initial capabilities document (ICD).

STAKEHOLDER COMMENT AND REVIEW PHASE 70 Days

1. Army gatekeeper review.
2. Army Futures Command stakeholder review.
3. Comment and review.
4. HQDA stakeholder review.

SERVICE BOARD AND GROUP REVIEW 155 Days

5. Army capabilities board evaluation.
6. Army requirements board evaluation.
7. Army working group evaluation.
8. Setup for Army requirements evaluation process.
9. Army Requirements Oversight Council evaluation and decision.

JOINT PHASE 85 Days

10. Joint gatekeeper review.
11. Initial joint stakeholder review.
12. Joint staff comment and Army comment resolution.

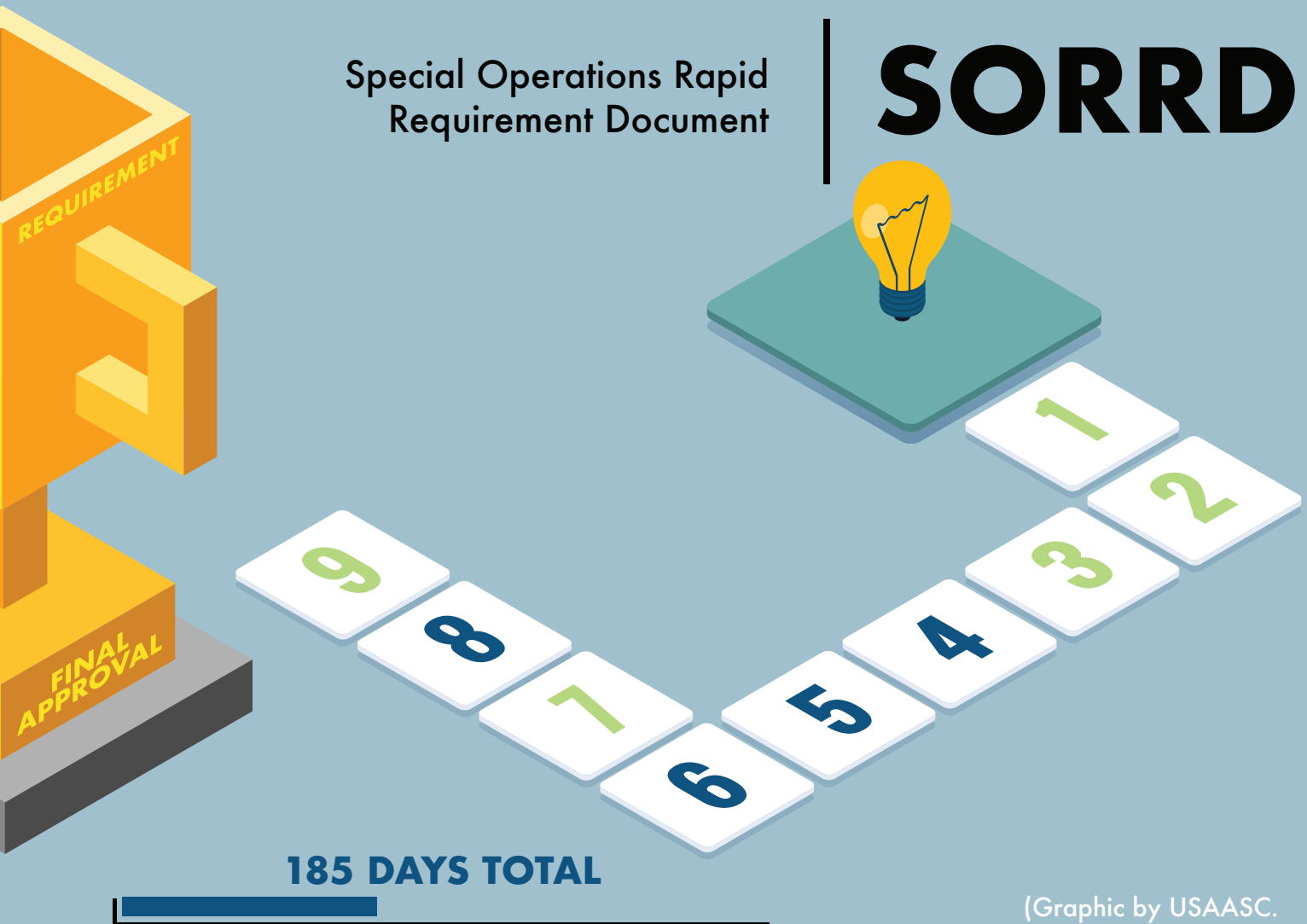
JOINT BOARD AND GROUP REVIEW 100 Days

13. Functional capabilities board evaluation.
14. Functional capabilities board decision.
15. Joint capabilities board evaluation.
16. Joint Requirements Oversight Council evaluation and decision.
17. Vice chair of the Joint Chiefs and JROC approval.

That final approval, after 590 days, is the trophy at the end of this particular path: a validated requirement. However, JCIDS isn't the only way to get there.

Special Operations Rapid Requirement Document

SORRD



(Graphic by USAASC.
Source: Don Schlomer, DBA)

The special operations rapid requirement document (SORRD) process is an existing path that leads to a validated requirement much more quickly.

20 Days

1. Capability sponsor develops a SORRD, which takes place of CDD.
2. J-8R (function within Joint Chiefs of Staff (JCS) that handles requirements) in transit visibility acceptance.
3. Special Operations Command (SOCOM) stakeholder staffing and review.

15 Days

4. J-8R review.

20 Days

5. Capability sponsor adjudicates reviews.

15 Days

6. J-8R review.

20 Days

7. SOCOM final staffing and J-8R establishes validation briefs.

30 Days

8. J-8 pre-brief, vice commander pre-brief and SOCOM requirements board evaluation.

(185 Days Total)

9. Vice commander decision document.

PUT ME IN, COACH

When Don Schlomer read Section 809 of the fiscal year 2021 NDAA and learned that Congress had ordered a report on JCIDS, he wanted to be involved. “I was in touch with the congressional personnel, trying to figure out, ‘Who are you assigning this to, so I can get with them to help them go down that path?’ Because the items that were listed in 809 were the same concerns I listed in my dissertation. So Congress is seeing the same thing I saw when I was doing the research.” Then, he said, “I finally tracked down a commander ... from J-8R, who was the gatekeeper, the responsible party.” J-8 is the Joint Chiefs’ force structure, resources and assessment directorate, and J-8R is the requirements part of that. That commander was also the liaison with AIRC at the Stevens Institute of Technology, and it turned out that there was a small group that was developing a model that showed how slow JCIDS was and that, “Yes, in fact, this takes years to get through, and it doesn’t meet the need of the current pathways. It’s just bad,” Schlomer said.

Schlomer was introduced to co-authors Mo Mansouri, a teaching associate professor and program lead for the systems engineering program at Stevens, and Dinesh Verma, the executive director of Stevens’ Systems Engineering Research Center. They were eager to have his participation in the project. “So I became a research scientist under the Stevens Institute of Technology,” Schlomer said. “I got an agreement from the legal here [at SOCOM] that it’s a not conflict of interest.” When the report was finished, Schlomer said, he “also briefed it to the different levels in Congress to explain that, yes, this is important. And I got everybody to agree that we need to, first of all, streamline the process, and then eventually redesign it. And that’s where we are today.”

Instead of the capability development document (CDD) used by JCIDS, SOCOM uses a mechanism called the “special operations rapid requirement document” (SORRD), pronounced “sword.” AFC developed the “abbreviated capability-development document” (A-CDD) for validating prototype requirements. Programs can swap the 45-page CDD for the 10-page SORRD and A-CDD. In these more streamlined documents, document creators do not lay out key performance parameters. (See sidebar, “Killer KPPs,” Page 10.) Schlomer said that, unlike the 852-day average for JCIDS, a SORRD approval takes approximately 200 days. (See the graphic on pages 12 to 13, which details the best case scenario for SORRD at 185 days, which is five days shy of what JCIDS takes just to get started.)

The SORRD, according to the AIRC report, is intended “for expedient approval that aligns with the middle-tier acquisition (one of the six Adaptive Acquisition Framework pathways). The SORRD has a 96-hour limit to be submitted for approval via the Special Operations Command Requirements Evaluation Board, which takes 30 days to validate the requirement.”



EXPONENTIAL GROWTH

JCIDS was born in 2003, and the original documentation was only 83 pages. Now, it’s 396 pages. (Photo by Pixabay, Pexels)

In the JCIDS process, the initial capability document (ICD), which precedes the CDD in the overall timeline, “quantifies needed capability requirements and gaps” and “proposes materiel and/or non-materiel approaches to closing or mitigating some or all of those identified capability gaps,” according to Defense Acquisition University.

“The ICD supports the analysis of alternatives and the Milestone A decision of the defense acquisition process. *Once approved, the ICD is not updated.*” (Emphasis added.) Not only that, it’s not in the same format as the CDD, despite being its basis. The analysis-of-alternatives effort intends to limit wheel-reinvention and make sure that DOD actually needs the capability—i.e., doesn’t actually have something like it already. After that, the CDD—itself a single-purpose document—goes through the JCIDS process.

The coming pilot will use the SORRD mechanism as one half of a two-pronged approach. The other will use what Schlomer said will be an initial capabilities development document (I-CDD) that will combine the ICD with the CDD but simplify them both. The I-CDD won’t be discarded but updated. Both thrusts will comport with the pathways of the Adaptive Acquisition Framework, and the pilot will be adaptable for use with major defense acquisition programs in the top acquisition category (ACAT I) as well as mid-tier programs—acquisition categories two and three (ACAT II and below). The pilot will begin with SOCOM, which is an inherently joint environment.

THIS TIME IS DIFFERENT

In a little more than two years, there have been three noteworthy reports on JCIDS, including the AIRC report. The first was from MITRE in April 2020, “Modernizing DOD Requirements: Enabling

Speed, Agility and Innovation,” which was cited in House conference committee notes on the 2021 NDAA. Second was the one from the Government Accountability Office (GAO), “Weapon System Requirement: Joint Staff Lacks Reliable Data on the Effectiveness of its Revised Joint Approval Process,” from October 2021. That report faulted the Joint Chiefs’ information system, saying, “The Joint Staff cannot assess the JCIDS process because it lacks reliable data and a baseline to measure timeliness. Joint Staff guidance provides a notional length of time of 103 days to review documents in the JCIDS process, but this is not evidence-based.”

All three provide considerable insight into what’s wrong with JCIDS, but the AIRC report is different. Rather than just present its analysis and make recommendations that will never see the light of day, it is intended to effect the real-world solutions it recommends. That’s at least in part because of Schlomer and his experience in the trenches of acquisition, particularly rapid acquisition the way SOCOM does it—not to mention his doctorate and his own military experience (he’s a retired Army lieutenant colonel). Another thing it has going for it is the oversight and participation of the same office (USD A&S) that was responsible for the revision of the DOD 5000 series of instructions and that created the Adaptive Acquisition Framework.

HOW THE PILOT WILL FLY

At the heart of the pilot is the ground truth that “by definition, you have to have a validated requirement,” Schlomer said. “Somebody’s got to agree that, ‘This is what I’m buying.’ Now, there’s no true definition of what that process should be.”

What he means is that there is more than one way to get to a validated requirement. Whatever the process, one that ends in a

validated requirement is fine. In the Adaptive Acquisition Framework, the pathways “bypass the JCIDS process,” according to DOD Instruction 5000.80, “Operation of the Middle Tier of Acquisition.” Joint Chiefs’ Instruction 5123.01H also acknowledges that the programs following the middle tier are not subject to JCIDS. That’s in part because mid-tier acquisition, as well as acquisition via other-transaction authority, is intended to end in a rapid, or at least rapid, prototype. In many cases, especially with ACAT II and below, DOD might acquire a prototype capability and then work with the contractor to tailor it to better fit the service’s needs, Schlomer said. That is ideal because with that model, the government is putting current technology into warfighters’ hands, not vaporware that might be possible in the future—or outdated by the time it gets through JCIDS.

The AIRC team used its model to look at alternative processes to analyze their speed by comparison to JCIDS. The report looks at two process alternatives to JCIDS, both of which AIRC modeled using the same framework it used with JCIDS. In a sense, the two process alternatives are prototypes for requirements pathways that work and play well together with the Adaptive Acquisition Framework’s pathways.

Both process alternatives showed significant improvement over JCIDS. Both the coming pilot’s two pathways will mirror process alternatives that AIRC featured in its report. “The new processes promise to reduce JCIDS latencies while maintaining the core functions of the process, such as validation of a requirement and consideration for joint interoperability. In general, these new processes eliminate redundant reviews and streamline documentation requirements.” “Latency” is tech jargon for “slowness.” The first process alternative, I-CDD, is for ACAT I programs. The

other will be for ACAT II and below, is based on the second AIRC alternative process and uses the SORRD model.

The I-CDD model will merge and shrink the ICD and CDD with an “initial CDD” (I-CDD), the equivalent of the A-CDD that AFC uses. Also at the heart of the pilot is a mindset that one size doesn’t fit all. The AIRC report says, “The current process does not distinguish between the different sizes of the requirements or priority of efforts. For example, the process for approving a new Air Force fighter jet is the same as approving a jungle boot. Senior military commanders might consider that each size requirement document (Acquisition Category, or ACAT, I-IV) should not have the same approval process.” (See related article, “The Jungle Boot” in the April-June 2017 issue of Army AL&T magazine.)

The new pilot documents, SORRD or I-CDD, would exist in a portal, and those who need to comment can do so, but the time has to be limited. “You’ve got some set number of days,” Schlomer said. Reviews would happen concurrently, not consecutively. “If you’re the J-2, you get to see the document the same time the J-3 does, that J-5 does, all that, but you’ve got four days to check it out and make decisions, or check it, [or] make any write-ups that you think you need. Four days, that’s it. Absence of concurrence is concurrence.”

There would still be the standard JCIDS process, he said. “If you want to go through a lengthy process to get an aircraft carrier or a huge multi-fighter-type deal? Fine. All right. There’s approximately 81 of them [ACAT I programs] that exist in the country. But for the smaller programs like sensors and radios and all the other stuff like boots, all that?” There is no need for that kind of complexity or high-level approval. “Streamline the approval process down to a one-star or somebody equivalent,” he continued. “Just keep the documents simple. Keep the validation process at an appropriate level and let the services be joint. If they’re developing something, they should be responsible for making it joint.”

CONCLUSION

The JCIDS process came about because of critical interoperability issues that arose in Operations Enduring and Iraqi Freedom. “DOD established JCIDS in 2003 to provide an integrated process to identify new capabilities from a joint perspective based on the national military strategy,” according to the GAO report. But if JCIDS was intended primarily to assure interoperability from that joint perspective, it has become too much more, accumulating layers upon layers of process barnacles over nearly

two decades—requirements for requirements for requirements. That’s not only because accumulating layers of process barnacles is what government programs tend to do, but also because of one of the more fascinating conundrums of DOD: People in the Pentagon who are trained for combat can also be astonishingly risk-averse and seem to prefer getting shot at than having to explain to DOD’s 538-member board of directors (Congress) why a program, in fulfilling a requirement, procured a \$14,000 toilet seat or went over budget or didn’t interoperate with other programs. Being a good steward of taxpayer money is stressful.

Key to today’s modernization efforts is speed. JCIDS makes that very difficult to accomplish. The one-size-fits-all JCIDS process is onerous. Speed, however, is also associated with risk. Speeding capability-requirements generation in DOD may increase programmatic risk, but that’s not the only dimension for risk and maybe not even the most important one. The risk inherent in going slow when peer threats blaze along could very well outweigh programmatic risk.

For years, Schlomer has been trying to point out to anyone who would listen that the JCIDS is a very real problem. He is set to retire in September, he said. If, between now and then, he can help DOD halve or quarter the time it takes to get through the requirement-validation process, he will have had an outsized impact on DOD’s modernization efforts.

For more information on the AIRC report, go to <https://lacqirc.org>.

For more information about how a program could be part of the pilot, contact Don Schlomer at donald.schlomer@socom.mil.

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RUN LIKE THE (TRADE)WIND

The DOD Tradewind initiative for artificial intelligence and machine learning is shaking things up with a new solutions marketplace and innovative approaches to acquisition.

by Ellen Summey

WHAT'S IN A NAME

Trade winds, the prevailing easterly winds near the equator, are so named because they provided a reliable means for merchant sailing ships to transport their goods to the west. (Photo by Matheus Bertelli, Pexels)

The DOD Tradewind initiative for artificial intelligence solutions made headlines when it first launched in 2021, and now it is turning heads again with its newest offering—a video-based marketplace for AI solutions to government problems.

“We have to make buying solutions as easy as adding something to your cart online,” said Bonnie Evangelista, the Tradewind execution lead within the DOD Chief Digital and Artificial Intelligence Office. The Tradewind Solutions Marketplace, introduced in October 2022, is a platform that invites partners in industry and academia to upload short videos to pitch their tech solutions to DOD. But that’s not the most exciting part. The submissions are assessed by a team of technical and acquisition experts, and then either approved as “awardable” to government clients who can log in and browse solutions, or marked “not awardable” and given ample feedback and the opportunity to try again.

“The submitters have an unlimited number of opportunities to continue to refine their submission and resubmit,” said the project’s submission assessment lead, Gene Del Coco. “If not immediately awardable, they get a do-over and they can do over as many times as they want, to focus or adjust their video so it meets the government’s requirement.” That’s unheard of in federal acquisition.

THE BASICS

What’s this all about? According to the DOD Tradewind website, Tradewind is “a suite of tools and services designed to accelerate the procurement and adoption of artificial intelligence and machine learning, digital and data analytics solutions across DOD.” It was formed through an other-transaction agreement with Indiana Innovation Institute (IN3), now known as the Applied Research Institute (ARI), in early 2021 to “set up and manage a prototype business process that streamlines rapid procurement and agile delivery of AI capabilities for the

Department of Defense,” according to a Joint Artificial Intelligence Center press release.

“Tradewind was meant to accelerate the delivery of artificial intelligence to the DOD, as everyone acknowledged that the current way of doing business was not giving us the results we were looking for, in terms of delivering capabilities,” Evangelista said in an interview with Army AL&T. “So, Tradewind was an intentional effort to do something different.” In short, it’s an attempt to unlock the full potential of the other-transaction authority and alternative acquisition pathways.

Evangelista said the initiative also involves cultivating a community of interest around AI solutions. “We can’t do this alone, so we wanted to create a community or, we often refer to it, an ecosystem, where people can not only plug in and connect, but can also find resources and a support system to help them in this journey,” Evangelista said. She believes that many of the efforts at Tradewind may be unfamiliar to members of the defense acquisition workforce, but she hopes to change that. “This may be foreign to them—and I say that with love—because they’ve not been exposed to these new contracting pathways that we’re implementing under Tradewind.”

IN THE MARKET FOR AI

Of all the interesting tools and services that Tradewind offers, Evangelista said she believes the new Tradewind Solutions Marketplace shows the most promise in terms of acquisition innovation. It is “the newest and most promising contracting pathway that we are providing, and I believe it can be a game changer,” she said. “The marketplace is a concept we believe will have a strong demand signal, and our focus is to create a thriving marketplace.”

The Tradewind team is asking industry, academia and individual innovators to submit five-minute videos about their solutions and how they will solve a DOD problem—whether a product,

“If we’re right, and it’s readily accepted by the acquisition authorities, then I think we have a winner on our hands.”

a service or something else they can offer. For example, two current offerings include a real-time object detection tool for safe airfield management and an AI-based solution that detects anomalies in satellite videos. “Those videos are then assessed for technical merit, and when we determine that they meet our standards, we publish those videos to our marketplace and label them ‘awardable,’ ” she said. “For industry, that means we created a platform for you to showcase your offerings, and that can be anything from mature solutions to early research and development, and for

the government, this is the part where we have to prove out the concept of ‘click and buy.’ ”

Del Coco explained that the assessment phase includes a team of experts from academia, industry and government who use a product called Valid Eval (See “Confidence Boost” in the Fall 2021 issue of Army AL&T magazine) to complete a very thorough evaluation of the video submission over the course of three to four days. The team holds a consensus meeting at the end of the evaluation process

and will provide constructive feedback to a vendor not deemed “awardable,” which has been a huge hit so far. “The comments we’ve gotten back from all of the vendors are that they’ve never had anything like this,” Del Coco said. “They’ve never had the government take this much interest in the company as we have taken with them, to ensure that they’re successful.”

Evangelista said the marketplace is a “post-competitive environment.” She likens it to a competitive playground that uses both FAR (Federal Acquisition Regulation)

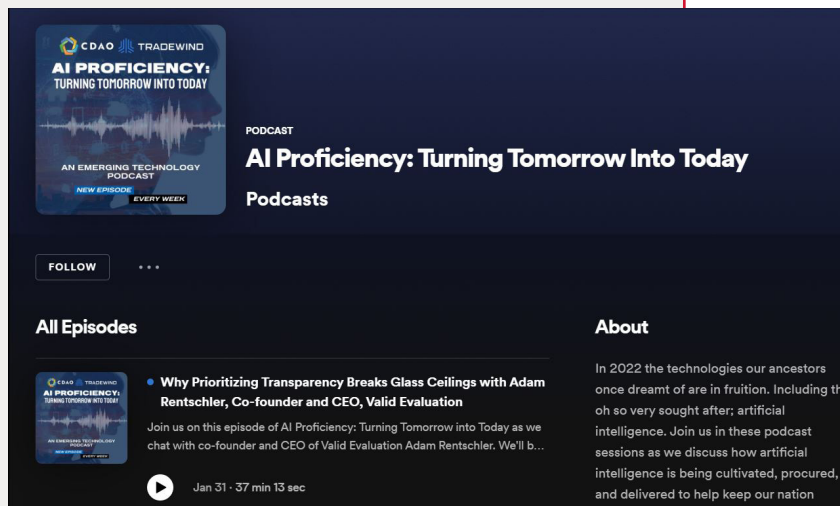
PODCAST PEOPLE

One of the Tradewind pilots involves an AI-focused podcast called “AI Proficiency: Turning Tomorrow Into Today,” for which Evangelista serves as de facto host. “One of our goals was to create digital content to increase acquisition workforce competencies related to AI, and that’s where the podcast comes in,” she said. One of Tradewind’s nonprofit innovation partners, the Advanced Technology Academic Research Center, manages the production of the podcast, and Evangelista has been leveraging her own personal network to find guests since the November 2022 launch.

“I’m trying to bring interesting content and conversation around AI for the government workforce, but it could really apply to everyone,” she said. She aims to find guests representing a broad range of perspectives, and she said the team has planned a lot of interesting content related to non-FAR-based contracting strategies and pathways. “In general, it’s about improving AI literacy. The goal of this podcast pilot is to understand if it is a good idea to message this digital content through a podcast medium. It’s truly an experiment.”

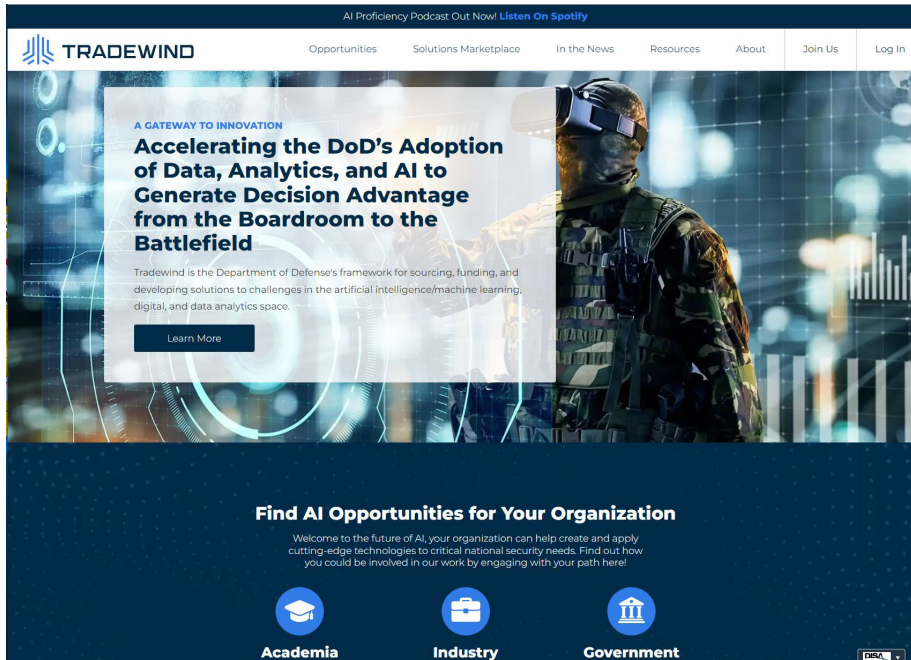
The team released three episodes in December, and based on the feedback that they received, the most engaging content was about novel approaches to contracting. On that episode, “we talked a lot about OTA [other-transaction authority] and some of the reasons it is still underutilized, why people get scared about

using it and what are some of the challenges we see for adoption across the workforce,” she said. “We’ve gotten a lot of feedback on that type of content. We have data about the number of downloads, and there was a clear demand, based on my conversation with our nonprofit partner, that the non-FAR-based contracting topic seemed to be very engaging for people.”



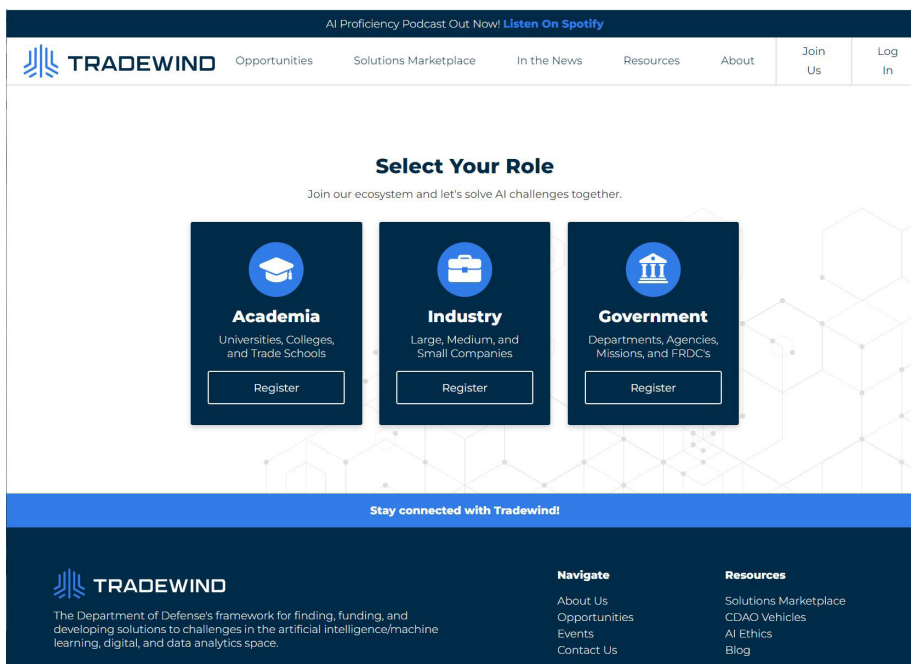
CASTING A WIDE NET

Evangelista aims to create audio content on a wide array of AI-related topics for the Tradewind podcast. (Image by Tradewind)



WHY TRADEWIND?

Tradewind was formed in early 2021 to set up and manage a prototype business process that streamlines rapid procurement and agile delivery of AI capabilities for DOD. (Image from tradewindai.com)



TO MARKET WE GO

The Tradewind Solutions Marketplace has distinct interfaces for partners in industry, academia and government. (Image from tradewindai.com)

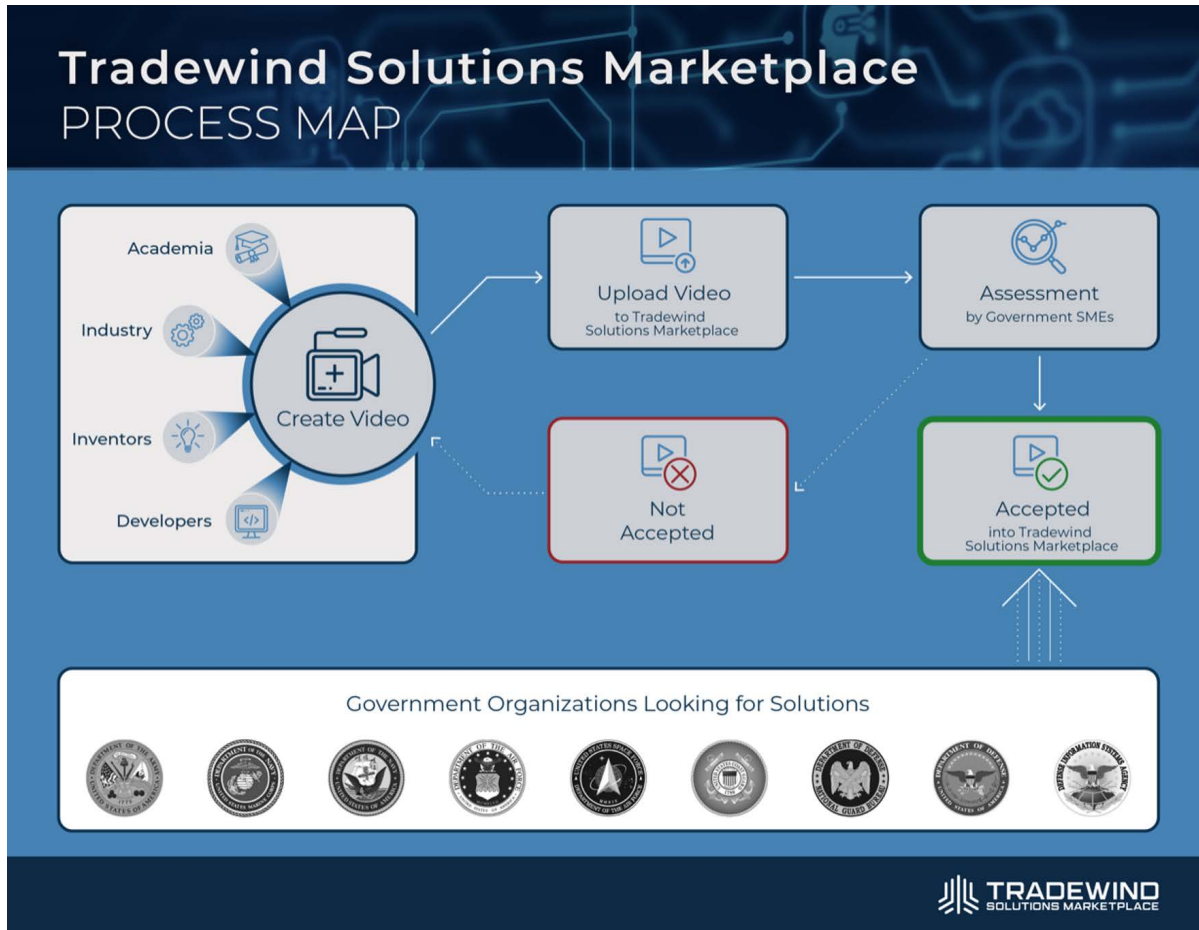
and non-FAR-based authorities, allowing government customers to go directly to the vendor that may be able to solve your problem. “You don’t have to do a sole source J&A [justification and approval] to buy. We’ve essentially obviated the need for the lengthy source selection activity,” she said. “I’m not saying the marketplace will solve everyone’s problems, but in terms of innovation, emerging technology or rapid acquisition, a marketplace like this is probably what you need because it allows you to go directly to the solution that has a mission application and run a pilot or whatever you need to do.”

“We have to make buying solutions as easy as adding something to your cart online.”

DEFINITELY DIFFERENT

Beyond the actual marketplace, where interested vendors upload short videos about their proposed solutions, Evangelista sees a larger challenge related to culture change within DOD. “This is where we are challenging cultural barriers and trying to change hearts and minds out there,” she said. “Rather than pushing requirements out to industry, we are trying to pull solutions into the Department of Defense through this marketplace.”

According to Del Coco, the marketplace is the latest in a long line of acquisition-related innovations he has witnessed, and



WIN AN AWARD OR TRY AGAIN

Submissions to the Tradewind Solutions Marketplace are assessed by a team of experts and then either approved as “awardable” to government clients who can log in and browse solutions, or marked “not awardable” and given feedback and the opportunity to try again. (Graphic by Tradewind)

he still finds is astonishing that these solutions are being submitted entirely online via short-form video. “In my government career, I was the technical team manager for a major combat vehicle development program. That submission and evaluation lasted for one full year. The amount of paper we had was astounding—proposals were delivered by trailer truck,” he recalled. “Of course, we’re not doing major system development programs with the marketplace, but we are getting to novel and highly advanced technology in a very streamlined, efficient way.”

More recently, he worked as a consortium manager for SOSSEC Inc., the consortium administrator for the Program Executive Office for Enterprise Information Systems (PEO EIS) Cyber Operations Broad Responsive Agreement (COBRA)

other-transaction agreement (OTA). “We made a pact in the early days of the COBRA OTA that we were going to throw the rulebook away and look at new ways of doing things,” he said. “I’ve worked about 12 or 13 OTAs for a variety of different agencies, and the COBRA OTA is probably the most agile one that I’ve worked on, and we did things within that OTA that I consider to be revolutionary. We brought a lot of those same concepts into the Tradewind Solutions Marketplace. I think the marketplace is the ultimate manifestation of that goal we had, in terms of making things simple.”

Evangelista, who is now a DOD leader on novel contracting approaches and the OTA, was also at PEO EIS during the early days of the COBRA OTA, having moved to that role from

her prior position at Army Contracting Command – Rock Island. She said the Tradewind team is now investigating whether AI tools can improve business processes for acquisition professionals. “We’re actually prototyping a couple of software tools. One is going to be an AI-powered contract writing system,” she said. “There is no contract writing system today that helps us write non-FAR-based contracts and agreements, so can we leverage AI—specifically natural language processing and other AI-like technologies, such as generative AI—to make the process faster?”

FEEDBACK FROM THE FIELD

What kind of feedback is the marketplace team receiving from partners in industry and government? “I get two types of feedback,” Evangelista said. “I mostly get

feedback like, ‘This is a really cool and novel approach to the authorities we have. How do I use it?’ They already understand the value proposition. I’ve already got people asking me, ‘How do I scale this marketplace to SBIR?’”—the Small Business Innovation Research program.

On the other hand, she said she also gets people asking how to do price competition on the marketplace. “There is a lack of understanding that price competition is not required on the marketplace,” she said. “You can still do reasonable price determinations without a price competition. There’s a lot of education and unlearning that has to take place, as we can tell by some of the questions that we get.”

Evangelista said that’s her greatest fear with this marketplace, that the

acquisition workforce may not readily take to something this novel. “We’re so used to competing all of the things in this one solicitation, and it applies to apples in a very compliance-oriented source-selection process, so if you’re given an environment where you just pick a solution and you have to create a business deal, I don’t know if everyone is ready for that. I hope they are, because it’s a really exciting opportunity,” she said.

Del Coco echoed Evangelista’s concerns and said he feels the sky is the limit for this new style of marketplace if government acquisition workers are eager to participate. “We’re very confident in the marketplace, and if we’re right, and it’s readily accepted by the acquisition authorities, then I think we have a winner on our



LOW BARRIERS TO ENTRY

“If you have a cellphone and a good idea,” then you have everything you need to submit a solution video to the Tradewind Solutions Marketplace, according to the solution evaluation team lead Gene Del Coco. There is no need for expensive equipment or sleek production, as long as the solution stands on its technical merits and the video is clear and understandable. (Photo by George Melton, Pexels)

“We are getting to novel and highly advanced technology in a very streamlined, efficient way.”

hands. It enables the DOD to quickly acquire critical technologies in a way no other platform can.”

“We officially went live with the MVP [minimum viable product] Nov. 1, and that month we received 20 video submissions,” Evangelista said. “We started the first assessments in December, and 10 out of those 20 have made it into the marketplace. The other 10 did not meet our standards, and that’s OK. We’re going to work with those vendors and figure out how they can refine their submissions, depending on the feedback they received from their assessments.”

The marketplace received another 14 videos during December, and those were assessed in January. “It’s still super early, but I feel like we’ll start to see a lot of activity once people start to make contract awards,” she said. All in all, the team feels great about the progress it’s seen so far.

“We weren’t sure what to expect when we first launched the marketplace,” said Fianna Litvok, who supports the Tradewind initiative as director of federal contract communications for ARI. “We were ecstatic to get 20 videos in the first month. To have 10 that are viable is really exciting. We’ve been marketing heavily to industry, academics and innovators to encourage them to submit their solutions to the marketplace, and we’re working equally as hard to communicate our value propositions to government acquisition folks, that the demand is just as strong as the supply.”

“Of the videos we’ve received so far, probably 96 percent are from small companies—small, often veteran-owned or disadvantaged small businesses,” Del Coco said. “We’ve seen some submissions from the big guys, but they are few and far between.” He said it is very exciting to see so many submissions from small businesses, since they may sometimes struggle to compete for government contracts against bigger companies. “It’s so interesting because

many of those smaller operations have some pretty superior types of technologies to offer.”

Litvock agreed and said this platform is a game changer for smaller businesses hoping to compete in the AI space. “It completely levels the playing field.”

CONCLUSION

Though the Tradewind Solutions Marketplace is nominally focused on AI solutions, it is also receiving submissions in related fields like cybersecurity. Del Coco sees this as a logical step. “The cyber domain is a very demanding one,” he said. “It changes rapidly and needs new technology very quickly, so we’ve seen a number of cyber-related videos come in, though most are tied in some way to some AI application.”

Evangelista agreed that similar technologies may be a good fit for the Tradewind Solutions Marketplace, and she thinks it may expand in the future. “Because we’re with the DOD Chief of Digital and Artificial Intelligence Office, we are AI, digital and data oriented, but I see this marketplace being so cross-cutting,” Evangelista said. “I imagine we will add technical focus areas as hopefully program executive offices and others in government start adopting a similar methodology and asking to have their portfolio represented on the marketplace.”

For more information, go to www.tradewindai.com or email support@tradewindmarketplace.com.

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WEAPON PRACTICE

A U.S. Marine holds two M781 cartridge 40 mm practice rounds and two M433 high-explosive dual-purpose rounds. The U.S. has sent more than 1 million 40 mm rounds consisting of both the higher penetrating high-velocity M430A1 HEDP and the low-velocity M433 HEDP to Ukraine. (Photo by Lance Cpl. Colby J. Cooper, Combat Camera, Marine Corps Installations Pacific)





SMARTER RESUPPLY

JPEO A&A leverages Ukraine funding to deliver a bigger punch with an improved, more lethal, accurate and safe 40 mm grenade.

*by Maj. Daniel Oesterheld, Anthony Cortese,
Jason Wasserman and James Grassi*

The United States continues to arm Ukraine with billions of dollars of equipment, armaments and ammunition—including 40 mm high-explosive grenade cartridges—to combat Russian forces as their illegal invasion rages on. As modernization remains a top priority for the Army, leaders directed to replenish U.S. ammunition stockpiles with newer, modernized rounds that add capability, rather than “new, old rounds” that use antiquated and older technology.

The Joint Program Executive Office for Armaments and Ammunition (JPEO A&A) Project Manager Maneuver Ammunition Systems (PM MAS) medium caliber team on Picatinny Arsenal, New Jersey, is seizing the opportunity to accelerate the development of new and more lethal cartridges—like the 40 mm low-velocity M433E1 high-explosive, dual-purpose (HEDP) cartridge for the M320 grenade launcher—to provide overmatch ammunition to the warfighter in the near term. The HEDP warhead combines penetration ability with a fragmentation effect that lethally reaches a wider area of targets.

To date, the Army has provided Ukraine a combined 77 million rounds of ammunition. That equates to more than \$210 million, and includes more than 1 million 40 mm rounds consisting of both the higher penetrating, high-velocity M430A1 HEDP, fired from the MK19 grenade machine gun, and the low-velocity M433 HEDP, fired from M320 and M203 grenade launchers, to accompany the weapons platforms the U.S. supplied Ukraine.

THE 40 MM LOW-VELOCITY M433E1 HEDP CARTRIDGE

PM MAS will rapidly field the modernized M433E1 HEDP cartridge. The 40 mm M433E1 cartridge is a point detonating munition that will be used with the Army's M320 grenade launcher or legacy M203 grenade launcher attached to the M4 carbine or M16 rifle. It can also be fired from a standalone M320 grenade launcher. Point detonating munitions use a mechanical fuze that arms after launch and functions upon contact, initiating the high-explosive charge.

The new modernized M433E1 HEDP focuses on improving and optimizing three areas: lethality, accuracy and safety. The M433E1 was redesigned to increase lethality within a five-meter radius of detonation against exposed enemy personnel, as well as to improve shot-to-shot dispersion (accuracy and consistency in the landing area) through an optimized aerodynamic shape of the projectile. The major components of the M433E1 HEDP cartridge are the improved fuze, warhead, and cartridge case loading assembly.

Lethality

The most impressive and important improvement is the optimization of the warhead to increase lethality and thereby the safety of the warfighter. The new warhead contains significantly more tungsten alloy fragments across the entire warhead—increasing effectiveness and lethality by up to 75 percent, compared with the legacy M433 cartridge—a game changer for grenadiers in close contact with enemy troops in the future.

Accuracy

The M433E1 HEDP also incorporates a newly designed propulsion system and a more aerodynamic projectile designed to optimize the ballistic performance of the munition. The propulsion system leverages

an improved cartridge case designed to accommodate the additional propellant load required to fire the heavier M433E1 projectile. M433E1 is 25 percent heavier than the legacy M433. The improved aeroballistics design of the M433E1 projectile reduces drag on the munition as it flies to target and provides more consistent shot-to-shot dispersion, compared with the legacy M433. The improved propulsion system and aeroballistics shape of the M433E1 projectile will provide grenadiers with increased confidence that they will be able to put rounds on target with improved accuracy and consistency.

Safety

The M433E1 uses the improved M550E1 fuze, an upgrade to the M550 fuze on the legacy M433 cartridge. Fuze assembly includes a safety feature that has been proven to prevent early, accidental arming, which dramatically improves safe handling of the rounds during transport, and combat conditions.

SOLDIER FEEDBACK

Product Manager Medium Caliber has also been working hand in hand with the Program Executive Office for Soldier's Project Manager for Soldier Lethality, which is responsible for the M320 and M203 grenade launchers that will fire the M433E1. As part of qualification, thousands of rounds will be fired through several M320 grenade launchers, the primary low-velocity 40 mm weapon system used by grenadiers, to ensure weapon compatibility.

With increased lethality comes increased user-felt recoil, so the medium caliber team is working with Soldiers to ensure all risks are identified and mitigated as the effort moves toward final development milestones in the third quarter of fiscal year 2023. The M433E1 packs a bigger punch when firing (more recoil), it also punches

harder at the point of impact (more lethal), and with added safety improvements, it gives Soldiers enhanced capability.

HISTORY AND CURRENT STATUS

The 40 mm low-velocity M433E1 HEDP grenade began as an improvement resupply effort to upgrade the 1960s technology used in the legacy low-velocity 40 mm M433 with modern materials, fabrication processes and analysis. The aim was to develop a new cartridge from the ground up, improving all aspects of the ammunition, including warhead lethal effectiveness and aeroballistics. While the government worked closely with industry partners throughout the development of the M433E1, the technical data package is 100 percent U.S. government owned.

In addition to developing the design for the M433E1 HEDP, the government team also leveraged the competency areas and subject matter expertise at Picatinny Arsenal to develop a warhead-fabrication process that ensured that the increased lethality from the M433E1 warhead was producible and affordable. Prototype warheads were fabricated using the government-developed process and were tested and evaluated using several test methods to ensure performance was optimal.

Once the M433E1 design was complete and government prototypes were fabricated and tested, the M433E1 development effort transitioned to industry partners to establish production-level fabrication processes for the M433E1 before entering qualification testing. It is critical to ensure that the DOD industrial base can manufacture the cartridge in a high-volume production environment to reduce production costs and increase production output. As such, the M433E1 HEDP design was provided to industry for a producibility analysis and subsequent fabrication of

cartridges being used for qualification on production-representative equipment. This analysis will ensure the cartridges being qualified are the most representative of cartridges that would be produced and fielded.

Qualification testing of M433E1 cartridges began in January. The cartridges will be evaluated against requirements developed by the Maneuver Center of Excellence at Fort Benning, Georgia, and upon successful qualification, PM MAS will procure the new M433E1. The first lots of M433E1 cartridges are expected to be delivered into inventory and available for the warfighter at the end of the 2024 fiscal year, with full materiel release planned for fiscal year 2025.

CONCLUSION

JPEO A&A PM MAS is eager to replace legacy cartridges and field the new, modernized 40 mm low-velocity M433E1 HEDP cartridge to the warfighter and to Ukraine. The M433E1 gives the warfighter a new low-velocity 40 mm tactical cartridge that's safer, more accurate and more lethal than the legacy cartridge when fired out of both the M320 and M203 grenade launchers.

As the war between Ukraine and Russia continues, JPEO A&A will continue to look for additional opportunities to replenish inventory with new, modernized cartridges to ensure the Army has the most lethal armaments and ammunition in the world.

For more information, go to the Product Manager Medium Caliber webpage: <https://jpeoaa.army.mil/Project-Offices/PM-MAS/Teams/PdM-Medium-Caliber>.

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ANTHONY CORTESE is the Soldier munitions branch chief for Product Manager Medium Caliber with Project Manager Maneuver Ammunition Systems, assigned to JPEO A&A at Picatinny Arsenal. He earned an M.S. in mechanical engineering from Stevens Institute of Technology and a B.S. in mechanical engineering from Villanova University.



LOAD 'EM UP

A Soldier loads an M320 grenade launcher during a familiarization range hosted by U.S. special operations forces in Syria on July 19, 2020. (Photo by Spc. Chris Estrada, U.S. Army 126th Theater Public Affairs Support Element)

JASON WASSERMAN is the team lead for Soldier Munitions Special Projects at the U.S. Army Combat Capabilities Development Command (DEVCOM) Armaments Center at Picatinny Arsenal and the technical lead for 40 mm low-velocity M433E1 HEDP. He is one of the designers of the M433E1 warhead technology and cartridge design. He earned a Master of Engineering in mechanical engineering from Stevens Institute of Technology and a B.S. in mechanical engineering from New Jersey Institute of Technology.

JAMES GRASSI is the subject matter expert for the Soldier Munitions Branch at DEVCOM Armaments Center and one of the designers of the M433E1 warhead technology and cartridge design. He earned a Master of Engineering in integrated product development from Stevens Institute of Technology and a B.S. in mechanical engineering from Rochester Institute of Technology.



EXPERIMENTAL DESIGN 2.0

Advances in simulation that allow digital engineering models to be assessed without building physical components, and computers rapidly generating and assessing models, have allowed experimental design to consider far more predictor variables and factors than previously possible. (Image by Pixabay)



GENERATION GENERATION

How new artificial intelligence tools
are transforming the Army.

by Thom Hawkins

Prompt:

Write the introduction to an article about how the Army is using generative artificial intelligence for military applications such as creating synthetic data for model training.

ChatGPT: “Generative artificial intelligence (AI) is a type of machine learning that involves creating new data or content using algorithms. It has the ability to generate synthetic data, images, text and even music, making it a powerful tool for a variety of industries and applications. In the military, generative AI is being used to create synthetic data for model training, simulations and other purposes. The use of generative AI in the military is an exciting development that has the potential to revolutionize the way that military operations are planned and executed. In this article, we will explore how the Army is using generative AI for military applications, and the benefits and challenges of this technology. So, let’s dive in and see how the Army is leveraging the power of generative AI to improve military operations.”

(ChatGPT (Generative Pre-trained Transformer) is a chatbot launched by OpenAI last November.)

BUILDING ROBUST MODELS

At a Massachusetts Institute of Technology laboratory, scientists are using generative AI to replicate what a potato feels like to touch. It’s not important that the subject is a potato. The point is the ability to simulate multimodal sensory information in a virtual environment. Understanding how an anti-tank mine looks and feels allows our Soldiers to recognize or manipulate it, even under low-visibility conditions.

The variation of individual organisms is key to the process of natural selection—if all things were the same, there would be no evolution—but these differences can be hard to distill into a single model that represents all objects in a particular class—i.e., all potatoes, or all anti-tank mines. Generative AI can be used to simulate variation, broadening the perspective on what a potato can be—in terms of how it looks or, in this case, how it feels.

One of the challenges in training image recognition models is that there can be infinite ways an object looks in the context of its environment. It might be seen from various angles, or partially hidden behind other objects. Anticipating all of these variations is impossible and finding representative images laborious. Generative AI, however, allows us to expand on a smaller data set, introducing further variation to make the resulting model more robust—more accurate at identifying the target under varied circumstances—because it can better identify which features are significant in determining whether or not an object belongs in a particular class of objects. In other words, if we know what an anti-tank mine looks like partially buried, we (or our sensors) can identify them more accurately.

GENERATIVE DESIGN

For more than a century, we’ve used a process called “design of experiments” or “experimental design” to determine the factors that contribute to performance of a process or design. Experimental design varies certain features in a design, the predictor variables, to gauge their impact on one or more response variables—for example, how the length and width of a plane’s wings affect fuel usage. However, because there may be several predictor variables (length, width, etc.), and each of those may have many potential settings (12 meters, 13 meters, etc.), running a design of experiments can be complex and costly.

However, two factors have changed this paradigm in recent years. The first is that advances in simulation allow digital engineering models to be assessed without building physical components. The second, more recent, factor is that computers can be used to rapidly generate and assess models, allowing a design of experiments to consider far more predictor variables and factors than previously possible. For the Army, we can apply this process to things like developing hardware chassis that optimize heat dispersion, or a program that identifies command post configurations that reduce concentration of the radio frequency signature.

Generative design can be used for more than hardware—for example, course of action development, which Maj. Patrick Beaudry, a science and technology analyst for the Mission



SNAKE IN THE GRASS

Generative AI expands on smaller data sets, introducing further variation to make the resulting model more robust and accurate—such as different angles of a P1ZAM munition obscured by grass. (Image generated by DALL-E 2)



ADDITIONAL TRAINING

Generative pre-trained models are surprisingly accurate, but Army operations may need post-training of the models for more accurate responses. (Image generated by DALL-E 2)

Prompt:**Outline a project plan for a capability that detects cyber anomalies.**

ChatGPT: Sure! Here is an outline for a project plan to develop a capability to detect cyber anomalies:

1. Define the scope and objectives of the project:

The first step is to clearly define the scope and objectives of the project. This may include identifying the types of cyber anomalies that the capability should be able to detect, the systems and networks it should cover, and the desired outcomes of the project (e.g., increased security, improved incident response times).

2. Conduct a needs assessment: The next step is to conduct a needs assessment to determine the current state of the organization's cybersecurity posture and identify any gaps or weaknesses that the anomaly detection capability could address. This may involve reviewing existing security controls, conducting risk assessments, and gathering input from stakeholders.

3. Develop a requirements specification: Based on the needs assessment, the next step is to develop a detailed requirements specification for the anomaly detection capability. This should include functional and nonfunctional requirements, such as performance and scalability requirements, as well as any specific requirements for integration with existing systems and processes.

4. Select a technology solution: Once the requirements specification has been developed, the next step is to select a technology solution that meets the requirements of the project. This may involve evaluating various vendor offerings, conducting proof-of-concepts, and comparing the cost and benefits of different options.

5. Implement the solution: Once a technology solution has been selected, the next step is to implement it. This may involve installing and configuring the anomaly detection software, integrating it with other systems and processes, and conducting testing and validation to ensure that it is working as expected.

6. Train and educate users: It is important to ensure that all relevant users are trained on how to use the anomaly detection capability and understand how it works. This may involve providing documentation, conducting training sessions, and establishing procedures for using and maintaining the capability.

7. Monitor and maintain the capability: The final step is to establish ongoing monitoring and maintenance processes to ensure that the anomaly detection capability is functioning correctly and is updated with the latest threats and vulnerabilities. This may involve regular testing, software updates, and incident response procedures.

I hope this outline is helpful! Let me know if you have any questions or need further information.



REPLACED BY ROBOTS

Prompt: Army scientists writing an article. ChatGPT: a generative pre-trained transformer, is a chatbot launched by OpenAI last November. (Image generated by DALL-E 2)



TELL US HOW YOU FEEL

Generative AI's ability to simulate multimodal sensory information in a virtual environment can help teach Soldiers how to identify objects, like how a potato feels or how half-buried anti-tank mines look, without a hazardous learning environment. (Image generated by DALL-E 2)

Command Battle Lab, notes that his organization is looking into. The design can move beyond the planning phase and into problem solving during operations, which allows autonomous action in pursuit of a delegated objective.

OFFLOADING BUREAUCRACY

While applications like DALL-E 2 and Stable Diffusion have popularized AI-generated images on social media, OpenAI's generative pre-trained models, based on massive amounts of text from public documents and the internet, have both impressed and horrified users with their capability.

Much of the focus for generative AI has been focused on the negative impacts—the end of the student essay, the loss of jobs for professional illustrators—but there are also positive impacts.

Generative AI can be used to develop document outlines (**see “Prompt” box**), draft sections of documents (such as a concept of operations) or correspondence, write abstracts or summarize documents, and even write code, reducing the amount of time and effort involved. While the AI works best on requests where

the output has a defined form, the more data provided in the request, the more specific the result. The output is generally not to the point where it can be deployed unsupervised, but the models can provide a useful first draft for a human to review and revise.

One of the most impressive capabilities of generative pre-trained models is their ability to respond accurately to prompts. However, domain-specific applications, like Army operations, may require post-training of these models for more accurate responses. Beaudry explains that “even within the green-suit Army, we speak different languages. If I, as an artilleryman, were to say that our objective was to ‘destroy the target,’ that creates a different impression in the minds of an infantryman or armor Soldier than it does to artillery, where artillery destruction is defined as one-third destroyed versus destroying everything using the infantry and armor mindset.”

OpenAI has at least mitigated one of the early problems with generative text models. When a model is trained on such massive amounts of data, it becomes difficult to control the data for quality. Early models betrayed the ignorance of trolls in the data they consumed, producing, at times, horrifying output. Since that time, content guardrails (ChatGPT will refuse to write an ode to your armpit, but an earlobe is fine) as well as “charm school” training, with evaluators rating the model's responses, have made these tools viable for general use.

CONCLUSION

Looking forward, the potential for generative AI to be used by the Army, in both operations and for enterprise use, has clear benefits for transformation—in the hands of those with the experience, expertise and willingness to embrace new ways of working. That will make the potatoes feel great.

For more information, contact Thom Hawkins at jeffrey.t.hawkins10.civ@army.mil.

THOM HAWKINS is a project officer for artificial intelligence and data strategy with Project Manager Mission Command, assigned to the Program Executive Office for Command, Control and Communications – Tactical, at Aberdeen Proving Ground, Maryland. He holds an M.S. in library and information science from Drexel University and a B.A. in English from Washington College. He won an ALTie award for his article, “Outside the Lines” in 2014.

INNOVATION IN ACTION

Guests enter one of the exhibit halls at the Association of the United States Army 2022 Annual Meeting and Exposition in October at the Walter E. Washington Convention Center in Washington. (Photo by Staff Sgt. Ashley M. Morris, AFN Wiesbaden)

INNOVATION CATALYST

ASA(ALT) launches SBIR CATALYST, xTechPrime and the Army R&D Marketplace to join the Army Applied SBIR and xTech programs as catalysts and drivers of the Army's modernization efforts.

by Anna Volkwine and Daniel Smoot

The U.S. Army xTech and Army Applied Small Business and Innovation Research (SBIR) programs inject small businesses and nontraditional innovators into the Army ecosystem with capabilities that will serve as catalysts of innovation for the future force.

The xTech Program connects the Army with innovative businesses through prize competitions. Meanwhile, the congressionally funded SBIR program is a competitive, contract awards-based program that enables small businesses to interact with Soldiers and Army experts to solve various technological challenges. Both are sponsored by the assistant secretary of the Army for acquisition, logistics and technology (ASA(ALT)).

“The strength of our nation relies on a robust commercial economy comprised of small businesses and nontraditionalists that are

ready, willing and able to help us build an enduring advantage,” said Matthew Willis, Ph.D., director of Army Prize Competitions and the Army Applied SBIR Program, within the Office of ASA(ALT).

The programs will help build the future Army through three new efforts: the SBIR CATALYST Program, the xTechPrime Competition and the Army Research and Development (R&D) Marketplace.

The Army of 2030, with leadership from ASA(ALT) initiatives, will ignite transitional speed behind solutions from critical drivers that can close complex capability gaps for Soldiers and bolster national security.

These cooperative endeavors will align solutions from innovators with the most complex Army challenges. They also will drive higher funding and streamlined partnerships with prime contractors and greater transparency among Army stakeholders.

The SBIR CATALYST Program, xTechPrime Competition and R&D Marketplace will play key roles in helping build the Army of 2030. While using different mechanisms for innovation, the initiatives will be synchronized to capitalize on existing focus and funding in the discovery and delivery of critical, next-generation technologies.

ARMY SBIR CATALYST PROGRAM

ASA(ALT) will launch a pilot of the Army SBIR CATALYST Program this spring to drive and incentivize collaboration and to spur investment in science and technology-based small businesses. Through the program, the Army will direct 15 percent of Army SBIR's \$300 million annual budget to offer up to five awards and, in 2023, to enhance technological exploration, development and Army priorities.

The SBIR CATALYST Program also intends to tackle existing transition risks for SBIR prototypes by focusing on technology solicitations in key Army areas including sensors; climate and clean technology; artificial intelligence and machine learning; and immersive and wearables.

The SBIR CATALYST Program will increase potential funding by requiring matching funds from the Army SBIR Program, Army customers and defense contractors. Meanwhile, the standard Army SBIR Program will continue to release R&D solicitations on an ad-hoc basis.

This effort could drive scientific and technical growth by enabling the Army to increase its appeal as a partner to small businesses—the SBIR CATALYST Program may lift contract award funding up to eight times larger than the standard SBIR contract, with awards as high as \$15 million to \$20 million, to support more scalable R&D acquisitions.

“To facilitate scientific advancement, the SBIR CATALYST Program will strengthen the alignment of technology exploration and development, synergize Army investments with integrators, and drive down transition risk,” Willis said.

XTechPRIME COMPETITION

The ASA(ALT)-led Army xTech Program offers several science and technology prize competitions throughout the year to attract



DOUBLE THE FUN

Douglas Bush, assistant secretary of the Army for acquisition, logistics and technology, left, talks with Shannon Sentell, Ph.D., chief operating officer of Stealth Power. The business was announced as a two-time xTech winner in 2022, in both the xTechSearch 6 and xTechSBIR Clean Tech competitions. (Photo by U.S. Army xTech Program)

innovators such as small businesses, academia and international industry leaders with dual-use solutions. Since its start in 2018, the program has awarded over \$17.6 million in cash prizes and \$89.4 million in follow-on contracts to those with novel technologies that solve the Army's most critical modernization needs.

Launching in 2023, the xTechPrime competition will continue this trend and build on xTech's competition and cash prizes with a new program structure. It will require prime contractors to partner with small businesses to improve inclusivity, and link businesses directly with the Army innovation and acquisition enterprise.

This will foster collaboration between these two critical sources of innovation, while also increasing the likelihood of contract awards. Prime defense contractors bring multiple benefits to the table that help smaller companies with less funding and fewer

connections. These advantages range from experience in early-stage business development, prototyping, marketing, Army relations and navigating the Army acquisition process.

In addition to cash prizes, both small businesses and large integrators will be eligible for follow-on SBIR contract awards—with the large integrators serving as subcontractors to their small-business partners on SBIR contracts.

Continuing this prime integrator and small-business partnership will help guide small businesses to where solutions fit into the Army landscape and clear a pathway for potential SBIR Phase III sole-source awards, which means a proposal no longer needs to compete with other companies to receive funding. As subcontractors, large integrators can continue serving in a mentorship role, while allowing the small businesses to spearhead their technology transition to the Army.

“Major weapons system prime contractors are essential partners in technology transitions,” Willis said. “We simply cannot succeed as an Army without them, which is why it is imperative that we deploy mechanisms that incentivize collaboration with small businesses.”

While the xTech prize competition offers a steady and dynamic rhythm of prize competitions throughout the year, xTechPrime’s unique formulation will ignite a new wave of collaboration in support of the nation’s Soldier.

THE ARMY R&D MARKETPLACE

Over the course of 2023, the Army will develop an on-demand portal—the R&D Marketplace—that will connect the dots between multiple resources such as small businesses, prime contractors, Army programs and technology developers.

Connections made through the digital marketplace will give these businesses insight into existing companies and technologies, as well as potential collaboration opportunities with minimized transition risk and speedier innovation within the Army’s major weapon systems platforms.

Many moving pieces lead to a full-scale Army acquisition from a nontraditional vendor, whether it may be a small business or prime contractor. The R&D Marketplace will create greater awareness and transparency among key players that make acquisitions and technology transitions to the Soldier possible. This includes small- and large-scale technology innovators, Army leaders, program managers, program executive offices and laboratories.

ARMY PROGRAMS IGNITE QUICK-TURN CLEAN TECH

The U.S. Army’s race toward the future of innovation runs alongside another sustainment challenge: The Army must identify energy-efficient technologies to curb the impacts of climate change.

Several efforts establish the Army as a champion of clean tech while still equipping Soldiers with peak-performance solutions. In addition to the SBIR CATALYST Program’s clean-tech focus, the U.S. Army xTech Program also mitigates the Army’s environmental footprint in alignment with the Army Climate Strategy, which was released last year.

“The Army has an operational footprint and a carbon trail,” said Matthew Willis, Ph.D., director of Army Prize Competitions and the Army Applied SBIR Program. “As a result, we need to invest in technologies that recognize this reality and reduce greenhouse gas emissions.”

The xTechSBIR Clean Tech competition launched in April 2022 to support the Army Climate Strategy. It began with a call for small and nontraditional businesses to submit concept white papers on their novel, disruptive clean tech solutions. xTech received nearly 200 submissions for several Soldier-operative technologies that support the Army’s objectives to reduce greenhouse gas emissions.

In July 2022—only three months after the launch of the competition—the program announced 24 winners, who each received \$10,000 in cash prizes and the opportunity to submit for either a Phase I SBIR contract award of \$250,000 or a Direct to Phase II SBIR contract award of \$1.8 million. This combination of a quick-turn award and transition potential proves that Army mechanisms, such as xTech and SBIR, are responsive and proactive at the point of need.

“The competition evaluated hundreds of clean technologies against their application to the Army Climate Strategy,” Willis said. “Not only were we able to identify the top 24 solutions, but the SBIR awards allow us to actually bring them on contract—and quickly—so the Army can deliver and deploy these technologies to Soldiers.”



FIRSTHAND KNOWLEDGE

Willie Nelson, right, deputy assistant secretary of the Army for research and technology, sees firsthand how the Army xTech and Army Applied Small Business Innovation Research Program are serving as catalysts for Army innovation as he talks with Jonathan Besquin of Somewear Labs, a winner and SBIR awardee from xTechSearch 6. (Photo by U.S. Army xTech Program)

“The Army R&D Marketplace is not just another customer relationship management tool,” Willis said. “The Army R&D Marketplace is unique among all existing DOD technology platforms, as it will rely on artificial intelligence and data fusion to assess technologies, identify trends and maximize the value of business intelligence data to support agile Army decision-making.”

CONCLUSION

The Army SBIR and xTech Programs have a track record of sparking innovation, with ASA(ALT) serving as a catalyst and driver of the Army’s modernization efforts.

“These actions link to the National Defense Strategy to build a resilient joint

force and defense ecosystem, so the industrial base is capable of both innovation and surge production,” Willis said. “They operationalize the secretary of the Army’s primary objective to put the Army on a sustainable strategic path to operate in contested environments and become more resilient in the face of climate change.”

The SBIR CATALYST Program, xTechPrime competition and R&D Marketplace will further evolve ASA(ALT)’s Army SBIR and xTech programs to be more adaptive and responsive to the needs of nontraditional companies and Army acquisition programs. This will not only strengthen the U.S. industrial base but also help to build the Army of 2030.

For more information on the Army Applied SBIR Program, go to <https://www.armysbir.army.mil/>. To learn more about xTech competitions, go to <https://www.xtech.army.mil/>.

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ARMY SUSTAINMENT

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YEARS OF MILITARY SERVICE: 15

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EDUCATION: MBA in systems acquisition management, Naval Postgraduate School; B.S. in biology, King's College, Pennsylvania

AWARDS: Defense Meritorious Service Medal, the Army Meritorious Service Medal, Bronze Star Medal, the Army Commendation Medal with two oak leaf clusters, the Army Achievement Medal with one oak leaf cluster and the Combat Action Badge

THE SECRET SAUCE IS LEADERSHIP

Maj. Christopher Noll and his team bring “game changing technology” to the battlefield. From his own deployment experience, he knows firsthand how this kind of technology is vital to the warfighter. He serves as the assistant product manager for the Cannon Delivered Area Effects Munition (C-DAEM) Armor Program.

“When fielded, C-DAEM Armor will give the warfighter a significant tactical advantage, allowing engagement of armor targets at never seen before distances from cannon artillery,” Noll said. These cannon-fired missiles use artificial intelligence to hunt targets beyond what the human eye can see.

Noll’s team works with industry and the Fires Center of Excellence to ensure the development effort of this kind of technology remains focused on cost, schedule and performance so the Army can get what it needs at the best value for money spent, he explained. “My greatest satisfaction is in knowing that our workforce continues to provide our men and women with an unfair advantage on the battlefield,” Noll said.

He applied to join the (now eliminated) Army Acquisition Corps after his second deployment in Al Kut, Iraq, from 2010 to 2011. In Iraq, Noll served as the executive officer for the howitzer battery, as well as the squadron logistics officer (S-4) with the 2nd Squadron, 3rd Armored Cavalry Regiment. “I was impressed by the weapons and technology my unit was fielded and how quickly it made a difference on the battlefield,” Noll said. “Immediately, I knew this was an organization I wanted to be a part of.” So, Noll submitted an application through the Voluntary Transfer Incentive Program (VTIP) process where Army officers can request to transfer into a different functional area within the Army after they completed their key developmental position. The functional area he chose was acquisition. Officers are selected based upon performance, experience and skills and typically must work in the field they choose to transfer into for 36 months.

After transferring into the Army Acquisition Workforce, he served as a contingency contracting team leader at Fort Bragg, North Carolina. In this role he learned and supported contract administration activities in various capacities. For example, when on deployment Noll enjoyed directly supporting the 82nd Airborne Division during Operation Inherent Resolve and the fight against the Islamic State group. Then, back stateside, he also enjoyed supporting organizational construction projects on Fort Bragg and nearby Camp Mackall.

“[People] are typically amazed at the knowledge and professionalism of our organization’s workforce,” he said. “That’s what really amazes me. Our workforce is motivated by the warfighter and world renown in their depth of knowledge.”

Noll received his Master of Business Administration in systems acquisition management from the Naval Postgraduate School in 2018. The degree program provided him a holistic view of the Defense Acquisition System and insight on how other services operate. “I would unequivocally recommend this opportunity to others,” he said. “The

partnership between the defense industrial base and the Army Acquisition Workforce is a formidable foe that brings the fight to the enemy in their own special way.” In his current organization, for example, Noll said the defense partner and the U.S. government are truly a team. “We operate as one unit, which makes developing products for the warfighter that much more efficient,” Noll explained. “Our partners understand what we are trying to accomplish and for what reasons, and we understand they have a business to operate and report to their shareholders.”

Throughout his time in the acquisition field, Noll said he has been extremely fortunate to serve under great leaders and mentors. “This is our strength as a workforce,” he continued. “[Army acquisition leaders and mentors] have inspired others to be the best version of themselves and provided stellar examples of what I aspire to be. I would not be where I am today without their personal investment.” Noll said he continues to grow each day under the extraordinary leadership the workforce provides—not just professionally, but personally, too. In his professional career, he strives to be a subject matter expert in all things related to the Defense Acquisition System and how to work in the system to ultimately deliver a quality product to the warfighter. On a personal level, he works every day to be a better husband, father and friend. “I’ve been very fortunate to have leaders that value what I do and set the example in these areas,” he added.

“Several personal mentors have taken the time to guide me on my path and see things in me I did not see myself,” Noll said. “The most impactful mentor I’ve had reminded me to be myself and that leadership was the secret sauce of the acquisition team,” he said. “From the Soldier to the engineer, everyone deserves exceptional leadership capable of uniting, motivating and building teams that support the mission.”

Noll generally gives two pieces of advice to newly assessed military officers entering the Army Acquisition Workforce; Don’t be afraid to fail, and lead when you can. For officers and noncommissioned officers entering this career field, the learning curve is high. “You will never be the smartest person in your organization and at times that can be intimidating,” he said. “Despite this, the workforce wants to teach you, and for you to succeed—don’t be afraid to fail.” Noll advises others to leverage their leadership experiences in the Army to make their organization better. “Whether it’s volunteering for something outside of your purview or setting up monthly professional development events, your leadership experiences will bring value,” he said. In recent years, Noll has volunteered to run the Combined Federal Campaign, a large annual workplace charity campaign, for his installation, and he



COMMUNITY COACH

Noll, center, coaching a little league team in 2021. Noll coaches and volunteers in the community when he has the opportunity. (Photo courtesy of Maj. Christopher Noll)

also planned a ceremony for the Army’s birthday—a community event also held on each Army installation annually.

“If you were to talk to [my] family and friends, I hope they would say [I am known for] my involvement in the community—after being a good husband and father,” Noll said. He enjoys spending time giving back when he can through coaching sports and planning local events that bring the community closer. “Both place an importance on team building,” he said. Noll coaches little league baseball when he has the opportunity and enjoys planning informal military family events on his installation. “At least monthly my family invites the military community over to our house for an outdoor movie night,” he said. The most important lesson he has learned throughout his career and personal life is the importance of caring for others.

“My goal is to truly know each member of my team to find out what their motivations and aspirations are and how I can best help them in accomplishing their goals,” Noll said. “Taking care of people has a direct correlation to mission accomplishment.”

—**HOLLY DECARLO-WHITE**

THE ASSESSMENT

The Integrated Battle Command System Engagement Operations Center undergoes assessment in the prototype integration facility in Huntsville, Alabama. (Images courtesy of the IFMC Project Office)





Agile Application in **MATERIEL ACQUISITION**

The IFMC Project Office implements Agile methodology throughout the acquisition process.

by Jessica Wilkerson and Nathaniel “Nate” Pierce

Recognizing the need to quickly develop, deliver and evolve DOD’s software-intensive combat capabilities and supporting systems, the Integrated Fires Mission Command (IFMC) Project Office within the Program Executive Office for Missiles and Space (PEO MS) was among the first to be included in prototyping an Agile software development process. The Agile process was necessary to handle the rapid changes in software development because of integrating and adapting multiple systems to both existing and emerging air and missile defense technologies into the Integrated Battle Command System (IBCS).

Flexibility and collaboration, highlighted in the iterative Agile process, have proven vital to the development of a highly complex system of systems like IBCS. Through Agile methods, capabilities can be quickly developed by implementing warfighter feedback into this collaborative process. Time is reduced from requirements realization to final product testing and deployment, resulting in critical capabilities being delivered more rapidly.

The Agile software development approach ensures development activities continue by synchronizing future capabilities and requirements, while concurrently fielding software. The stakeholder teams and test community embedded in the Agile development team informs and prioritizes Agile planning conducted at the start of each quarterly program increment. After IFMC began employing the Agile framework in its software

FOUR VALUES OF AGILE

How to personally apply Agile in the workplace.



AGILE MANIFESTO

Individuals can use Agile methodology in their daily work by applying the four values of Agile.

release process, it was clear that the hardware component must also adapt its processes to maintain alignment.

AGILE HARDWARE

The hardware Agile release team was formed to match the cadence of the Agile framework implemented by the IBCS team. The use of Agile prioritization in hardware development has enabled faster adaptation to new capabilities and threats. Hardware has identified five metrics that define prioritization in program planning alongside software development: planned delivery time, engineering complexity, software impact, production blockers and business value. These variables are weighed to define the priority of each hardware change. This iterative process allows for continuous improvement and integration of hardware and software, ensuring consistency across all aspects of production. This model allows the development of IBCS hardware and software to adapt more quickly and respond to the warfighter's needs by leveraging Agile's continuous development pipeline.

INTEGRATED FIRES TEST CAMPAIGN

As IBCS progressed in its Agile development, realigning other acquisition processes within PEO MS quickly followed, shifting from a product-focused program management office to capability-focused. This realignment enabled coordinated component development in an overarching integrated system architecture that aligns materiel solutions with warfighter needs for a more flexible, responsive and adaptable force. The Integrated Fires Test Campaign was born from this realignment. This campaign will demonstrate the delivery of system-of-systems capabilities instead of merely the components and will now grow and develop through Agile improvements on an annual basis.

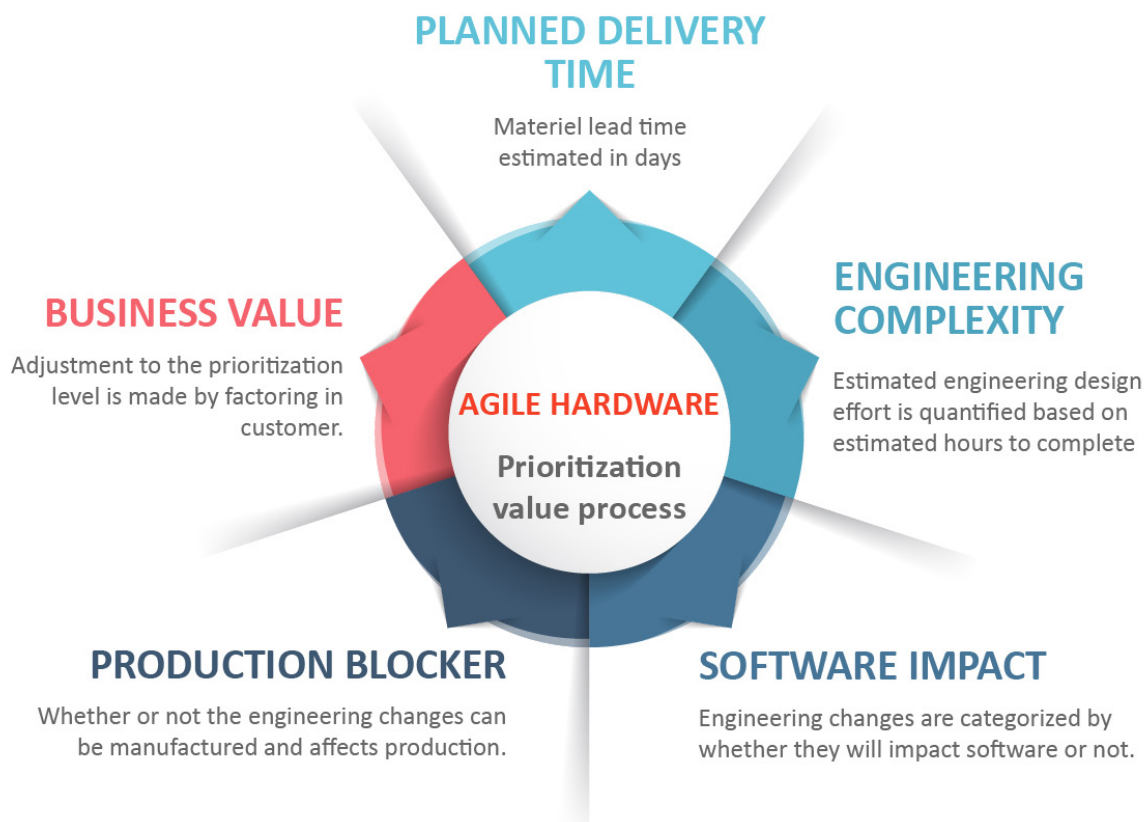
To effectively incorporate these Agile processes and component deliveries into Army test and evaluation processes, stakeholders needed to be aligned and integrated with the Agile cadence. Test and evaluation system teams, test officers and Army capability managers are now integrated into the continual planning

The Army Modernization Strategy demands that we prioritize materiel development to ensure that warfighters are best equipped to defend our nation.

and decision processes for annual integrated fires test campaigns. This begins with identifying developmental priorities based on time, complexity and impact. Configuration development is then used to plan the development of capability for the year. These annual test campaigns will become the standard testing procedure for the future as the Army continues to add and improve upon Army integrated air and missile defense architecture. This represents a dynamic shift in the way we test and qualify equipment provided to the warfighter. This capability constructs better scales and adapts materiel acquisition solutions to keep the pace with rapidly evolving technology and achieve enduring overmatch with near-peer threats.

INTEROPERABILITY CERTIFICATION

To deliver a meaningful capability, systems need the ability to effectively communicate on the battlefield, which is achieved



HARDWARE PRIORITIZATION

Integrated Fires Mission Command's Hardware project office defined metrics to determine prioritization when addressing changes to equipment.

through Army and joint interoperability certification. Interoperability certification is the process of confirming that the system can successfully exchange critical information while interfacing on a network. IFMC is part of the working group currently evolving the modernization efforts for Army interoperability certification. The Digital Transformation Technologies Directorate for the deputy assistant secretary of the Army for data, engineering and software is leading the undertaking and including stakeholders in the process. This partnership ensures the modernized interoperability certification aligns with the Army's transformation.

An Agile approach is needed to adapt testing methodologies and standard operating procedures to accommodate the swift pace of continuous verification and validation of capabilities, compliance and security. The flexibility of using an Agile framework eliminates bottlenecks and optimizes the value stream of delivery to facilitate shorter feedback cycles. This will result in even quicker delivery in a continuously improving cycle.

AGILE MATERIEL RELEASE

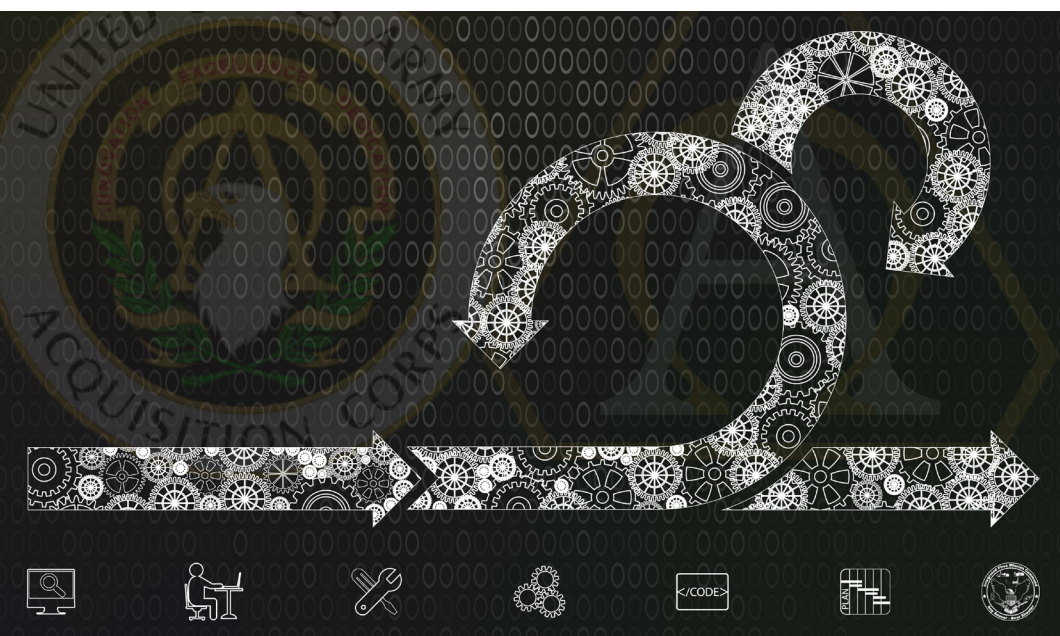
The Army materiel release process is a critical stage in the development of new equipment. The purpose of this process is to ensure that Army equipment is safe, meets operational requirements and is logistically supportable before it is released to warfighters. This process provides Army leadership with the control and visibility necessary to ensure that items intended for issue have been thoroughly evaluated and approved for use. Currently, materiel release is a sequential development process that requires completion of each phase before the next one begins. This approach depends on the deliverables of the previous phase and corresponds to a rigid set of requirements. Regulatory guidelines governing current materiel-release processes do not align with the pace of fielding and delivering capabilities.

In fiscal year 2022, IFMC identified the need to adapt the materiel release process to enable system-of-systems capability releases in line with Agile development. An Agile approach would allow for more frequent adaptation of requirements as

new capabilities are fielded, delivered and integrated. The intent is to have a more flexible materiel release that can be incrementally improved as more information about system utilization becomes available post-deployment.

IFMC launched the Agile materiel release working group in coordination with the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology to adapt the existing materiel release process to keep up with the rapid software capabilities deliveries needed in the field. The goal is to develop a new system-of-systems Agile materiel release process that will enable annual delivery of capability to critical systems. The challenge is to define a process that will provide the flexibility to enable a solution that is tailorable and scalable for a task force commander, while ensuring materiel provides a safe, suitable and sustainable capability.

IBCS hardware and software are being produced more quickly and efficiently by involving stakeholders in the development



AGILE IN EVERYTHING

The Integrated Fires Mission Command Project Office implements Agile methodology throughout the acquisition process.

This represents a dynamic shift in the way we test and qualify equipment provided to the warfighter.

process, from planning through testing. Despite the acceleration of development, fielding is subject to operational evaluation reporting timelines and materiel release processes that can only occur in a linear, sequential and lengthy development. The goal is to develop and implement a process to deliver capabilities annually that ensure safe, suitable and supportable systems.

STRATEGIC READINESS

We must be intelligent in not just what we know, but how we adapt to the modern challenges within materiel acquisition. Strategic readiness is critical to our national security. The ability to rapidly deploy capabilities anywhere in the world and sustain them over extended periods of time is a key element of our military's power. The Army must adapt to meet the challenges we face and must increase its strategic readiness to be prepared for the challenges of the 21st century. This will require defense organizations to adapt to a significant change in the way we do business. However, the benefits of a more ready and capable Army will be well worth the cost. The Army Modernization Strategy demands that we prioritize materiel development to ensure that warfighters are best equipped to defend our nation.

CONCLUSION

The United States Army must maintain its relevancy in a constantly changing world. To do this, it must be willing to adapt its methods and procedures. One way the Army is doing this is by implementing Agile methodology. Early prototyping and testing are essential to ensuring that the solutions generated are the right ones. As a component of a persistently modernizing Army, other programmatic approaches will adjust as technology advances and our competitors adapt. By being willing to change and adapt, the Army can maintain its relevancy in a constantly changing world.

As we move forward with Army modernization, we will continue to uncover processes that must be challenged, updated or replaced, whether that is how the acquisition community measures itself through tailored reporting, how to best estimate

costs for responsive materiel solutions and Agile development, or how to evaluate performance and provide capability to the warfighter with the flexibility they require. We have the tools and innovation to respond—let's use them to deliver.

For more information, contact PEO Missiles and Space at (256) 313-3576 or go to www.msl.army.mil.

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SAVANNA SHILT

COMMAND/ORGANIZATION: U.S. Army Information Systems Engineering Command (USAISEC)

TITLE: Computer scientist

YEARS OF SERVICE IN WORKFORCE: 6

DAWIA CERTIFICATIONS: Practitioner in engineering and technical management

EDUCATION: Master of Engineering in systems engineering, Naval Postgraduate School; B.S. in computer science, University of Arizona

AWARDS: Army Civilian Service Achievement Medal – Fort Huachuca Civilian of the Quarter (April-June 2022), Civilian Service Achievement Medal – USAISEC Employee of the Quarter (Jan.-March 2022), CECOM Commanders Coin of Excellence (2021), USAISEC Certificate of Achievement – Employee of the Month (Nov. 2021)

AHEAD OF THE CURVE

From a young age, Savanna Shilt knew she wanted to serve her country as an Army civilian in cybersecurity protecting networks from cyber criminals. Today, she's doing just that.

As a computer scientist for the U.S. Army Information Systems Engineering Command (USAISEC), Shilt performs security control assessment validations (SCA-Vs) for numerous Army networks and systems including large enterprise networks, tactical aviation systems and small closed network systems. All Army systems go through an accreditation process that evaluates the security posture to ensure the system is secure enough to be in use. Shilt performs security validations using the Risk Management Framework (RMF) policies and processes by assessing the Army information systems configuration settings, technical documentation and personnel knowledge of security policies.

"I am proud to keep the Army safe from adversarial cyberattacks and insider threats. Beyond that, the satisfaction that I get every day is helping Army information system program managers and their teams improve their system security and better their understanding of Army cybersecurity policies and cyber risks and severity," she said. "It's satisfying to see a program grow. Over the years I have seen systems transform and greatly improve their security posture and just knowing this was accomplished because of my support gives me a great intrinsic reward."

Shilt's first exposure to the civilian workforce was as a college student when she was selected for two summer internships with the U.S. Army Intelligence Center of Excellence. Upon completion of her computer science degree at the University of Arizona, she began her career as a computer scientist recent graduate intern within the cybersecurity group of USAISEC.

As an intern, Shilt completed all required engineering training for her position within the Army Acquisition Workforce (AAW) and continued her work with USAISEC as a cybersecurity professional performing security control assessment validations for Army enterprise and tactical networks.

"I am grateful for the opportunities that are provided to the Army Acquisition Workforce including leader development programs and education opportunities above and beyond the knowledge provided from required training," she said. "Thanks to the AAW programs, I was afforded the opportunity to attend the Inspiring and Developing Excellence in Acquisition Leaders (IDEAL) program as well as earn my master's degree through the Naval Postgraduate School Systems Engineering (MSSE) educational program."

"Our world is constantly changing... you want to be ahead of the curve."



WELL-DESERVED AWARD

Jeffrey Jennings, deputy to the Intelligence Center of Excellence, center right, presents Savanna Shilt the Fort Huachuca Civilian of the Quarter, 2nd Quarter Fiscal Year 2022, in April. USAISEC Col. Daniel Wood, left, and Command Sgt. Maj. Michael Runk were co-presenters. (Photo courtesy of Savanna Shilt)

So far, she said the most important part of her career has been creating a process and a checklist for performing security control assessment validations and a training program for the RMF validation process.

“I am a very processes-oriented person and I love a checklist to ensure I stay on track,” she said. “I noticed there was no real process in place for conducting SCA-Vs within my organization. Even though all the deliverables required were the same, each team performed validations differently and nothing was documented. I took the time to analyze the National Institute of Standards and Technology documentation on RMF as well as the processes used by different teams within my organization. From my analysis I created a step-by-step process, a checklist of deliverables required and included helpful resources provided in a formal memo that was disseminated to my command.”

Along with the memo, Shilt created some related training and slides to explain the process, which she presented to the cybersecurity group. “This process helped cybersecurity and provided guidance to new hires that was not in place when I started.”

Shilt is a firm advocate of learning new skills to better one’s self beyond the required training. “Our world is constantly changing and you want to be ahead of the curve,” she said. “You never know when an opportunity will come about where your knowledge and skills will make a huge difference.”

In addition to staying ahead of the curve, Shilt stressed the importance of having good people skills. “Being in the tech field, these skills are often put on the backburner. I work with so many different customers and administrators on a daily basis, and building relationships and being able to communicate is very important. This has helped me to prosper in my career field.”

Shilt said those outside of work don’t realize the lengths the Army goes to secure its systems and prevent cyberattacks and insider threats, ensuring our nation and our warfighters are kept safe. “They often underestimate how resourceful cyber criminals are and the great lengths they will go to gain access to our nation’s information.”

What people also might be surprised to learn is that outside of work, Shilt is a dance instructor, coach and entertainer. “I teach dance two nights a week to girls ages 9 through 18, as well as additional lessons for dance solos,” she said. “I also enjoy singing for performances in my community when opportunities arise. Dance and entertaining don’t have much correlation to my work, but they are my creative outlet. I am a nerd in my day job and a creative at night.”

Shilt’s observation both in and outside of work is to “expect change and adapt,” especially in the cybersecurity field. “The technology is always changing and improving, and adversary threats continue to grow,” she said. “We must expect change, welcome it and adapt to it. I am a firm believer in lifetime learning, consistently bettering myself and trying to stay a step ahead of our enemies. The more willing you are to adapt to change, the more prosperous you’ll be.”

—**CHERYL MARINO**



DRIVEN BY DATA

Army HR Command aims to improve the Soldier experience, treating users more like customers and tracking time to resolution for various HR services and requests. (Image by Monstera, Pexels)

A NEW VISION FOR ARMY HUMAN RESOURCES

HRC is undergoing an ambitious reform to bring best practices and technologies to bear in managing the Army's most important resource—its people.

by Brig. Gen. Gregory Johnson and Col. Kris Saling

It's almost impossible to name an area where digital technology and data aren't changing the way the Army does business. Even with large enterprise programs like the Integrated Personnel and Pay System – Army (IPPS-A) and business programs under the Army's talent management effort coming online, human resources (HR) processes have remained largely reactive and transactional. As the way people work fundamentally changes, incorporating new technology and business practices is not only essential for keeping up digitally, but a critical part of providing essential support to recruiting, retention and readiness, all necessary parts of supporting and upholding our all-volunteer force.

Maj. Gen. Tom Drew, commanding general for U.S. Army Human Resources Command (HRC), and his leadership team are working to change how HR does business by kicking off the largest organizational and digital transformation HRC has seen since its inception in 2003. Under the HRC 2030 transformation plan, the command is changing the nature of the services it provides to the Army. Instead of a reactive system that waits until a customer submits a document, request or trouble ticket to adjust records, HRC will leverage customer service data to become a proactive, engaged and predictive organization that can identify trends and surges in customer service needs. To achieve that goal, HRC will position documents, authorities and tools to provide the fastest, smoothest possible solution to the customer.

While industry HR predicts customer demand and works to position services and products ahead of demand surges, the Army's demands are unique, as HRC needs to support large amounts of HR actions during permanent change of station move periods. A lot

of people move at the same time because of assignment schedules, which also means a lot of awards and closeout evaluations, changes to pay and allowances based on locality, and other necessary services.

FOCUSING ON CUSTOMER EXPERIENCE

When people think of Soldiers, the term “customer” is not one that immediately comes to mind, nor do people think of organizations like HRC having or needing a business model or value proposition. HRC has simply been the function that hosts promotion boards, publishes orders and matches Soldiers to organizational requirements. All those processes are transactional and fairly impersonal, at least on the side of the Army.

From the Soldier’s perspective, sending documents to a group email address where they seem to disappear into a void, and following up with multiple telephone calls trying to find the right person to talk to, is deeply frustrating. The lack of a personal connection, when the Soldier may be dealing with a personnel action that results in not being paid or losing access to benefits, is extremely stressful, and impersonal service only exacerbates the situation. A more personal approach is a must-have for a service

organization that impacts the lives of current and former Soldiers, civilians and their families.

Putting the customer first is at the heart of HRC’s transformation and reorganization. The command reorganization will flatten decision-making processes to better enable communication by merging branches with similar functions. Leaders will streamline authority by ensuring that decisions and actions are at the right level. To help determine what “right” looks like, the command is implementing a suite of tools to map and measure workflows, collect data and set standards for service.

HRC’s services feel fragmented and disjointed, with inconsistent outcomes and performance, largely because the command does not have a means to see interactions or to measure and compare performance. Service interactions have a tremendous impact on retention and recruiting because of the trust they create or destroy—this inconsistency erodes trust.

Currently there are no set service standards that govern the length of time it takes to process specific personnel actions, like a retirement, for example. This process is largely opaque to the service member and to offices within the command. Implementing service standards will reduce uncertainty for the customer and alert the command when problems require intervention.

HRC is working with teams of experts, both internally and through industry partners, to equip its teams with a framework that provides defined expectations and standards. By adding workflow automation that is low-code or no-code, the command can create dashboards and process maps to expedite processes.

Early stage automations might be as simple as auto-filling portions of staffing forms—for example, when the command receives a request, existing data are pulled from the appropriate sources, and internal hierarchies notify appropriate decision-makers for digital signatures—or as complex as improving website capability over legacy call centers. Examples include self-service chat functions, bots and disseminating directions to personnel through Microsoft Teams. Automation also allows for easy data collection on the time-to-response and time-to-resolution of cases that enter HRC’s system and provide methods to make the process visible to customers and the command.

BUILDING ON IPPS-A

Transforming into a more analytic, predictive and customer-focused organization requires tools, technology, large amounts of data and skilled analytic teams. HRC is building on IPPS-A



READY, SET, GO

U.S. Army Adjutant General Brig. Gen. Gregory Johnson meets with key leaders of the IPPS-A program to discuss upcoming release events and issues on Dec. 1, 2022, in Arlington, Virginia. IPPS-A is a foundational part of the command’s planned modernization. (Photo by Ashley Hayes, IPPS-A)

as the base transactional data system in its hierarchy and will modernize its remaining 19 legacy systems to bring on new tools for improved customer relationship and task management. The command is also exploring new ways to bring cases into a central management platform that draws from email, chat, social media engagements, calls and multiple other media that people use to engage with the command. New platforms have the capability to monitor sentiment, flag comments for action and send to a customer relationship management system to assign as a case. All of this comes together in the form of an integrated human resources tech stack.

An HR tech stack is a group of integrated digital tools that supports the human resources business function. These tools typically handle traditional and manual tasks, freeing up HR professionals to focus on more strategic efforts. IPPS-A supports the overarching HR information system and management functions for HRC. The Army has recently brought on low-code and no-code tools for task and workflow management, such as Microsoft Power Platform and ServiceNow. These tools can integrate with core databases, such as IPPS-A's data warehouse, and create applications outside the system with minimal new data entry.

As the team builds out the task management layer, technical teams in HRC's Enterprise Modernization Directorate, Knowledge Management Division and innovation cell are working to identify technology shortfalls and planned capability integration to identify and, through the acquisition and procurement cell, acquire the best solutions for solving Soldier problems.

Social media is one of HRC's major areas of focus. While the command is working on an enhanced strategic communication



BUILDING THE STACK

HRC's innovation overhaul will rely heavily on technology that spans a variety of purposes, from communication and identity management to onboarding, performance management and even social media monitoring. (Graphic by HRC)

strategy, HRC also will employ social media technology as a means for customer service case intake and response.

Army public affairs offices (PAOs) have tools for monitoring sentiment on social media. However, those tools require active engagement by PAO staff and often, if a case needs to be escalated, command notification through email. The new systems HRC wants to adopt use natural language

processing and machine learning to flag comments for review and allow PAOs to escalate with a click. HRC will share lessons learned with all fellow engagement and social media teams, though time will tell whether the Army chooses to adopt this as a PAO solution.

DATA IN USE

HRC currently stores all personnel data on every Soldier and retiree. The command



An HR tech stack is a **group of integrated digital tools** that supports the human resources business function.



These tools handle traditional, manual tasks, allowing HR professionals to focus on **more strategic efforts**.



Building a stack requires analysis of **organizational size, business processes and HR technologies on the market**.



HR tech stacks are among the **top ten priorities** for most HR teams, but because they aren't built appropriately, **only 1/4 of teams are typically satisfied with their solutions**.

TECH DEFINED

Take a closer look at how an HR tech stack supports the human resources business function. (Graphic by HRC)

uses this data to better inform individual and command decisions on hiring, targeted retention initiatives and predictive attrition modeling, and is experimenting with applications for machine learning. One of HRC's largest language processing projects evaluates, scores and ranks files using an algorithm. The command intends for this algorithm, when finished, to assist with selection boards and targeted recruiting for nominative assignments. These programs use just a small part of HRC's data. The command is consolidating additional data from the remaining systems not incorporated into IPPS-A, in preparation to engineer this data into model-ready data objects, to make these models more robust.

The Army has advanced its use of artificial intelligence and machine learning applications significantly over the last five years. Project Convergence is one example, and other long-term AI projects like Army STARRS (Study to Assess Risk and Resilience in Servicemembers), which is a highly accurate harmful behavior prediction engine, but this advancement has not yet happened in Army HR.

However, as HRC's customer service framework allows the command to collect data on customer experience and service, the command expects to be able to better model and anticipate services needed for individuals and use those analytics to position services, documents, approvals and authorities where possible. Additional tools will allow workflow automation in the HR tech

stack to minimize difficulty in submitting queries, forms or packets, and provide transparency to supported service members and families by allowing them to better track the progress of their personnel action.

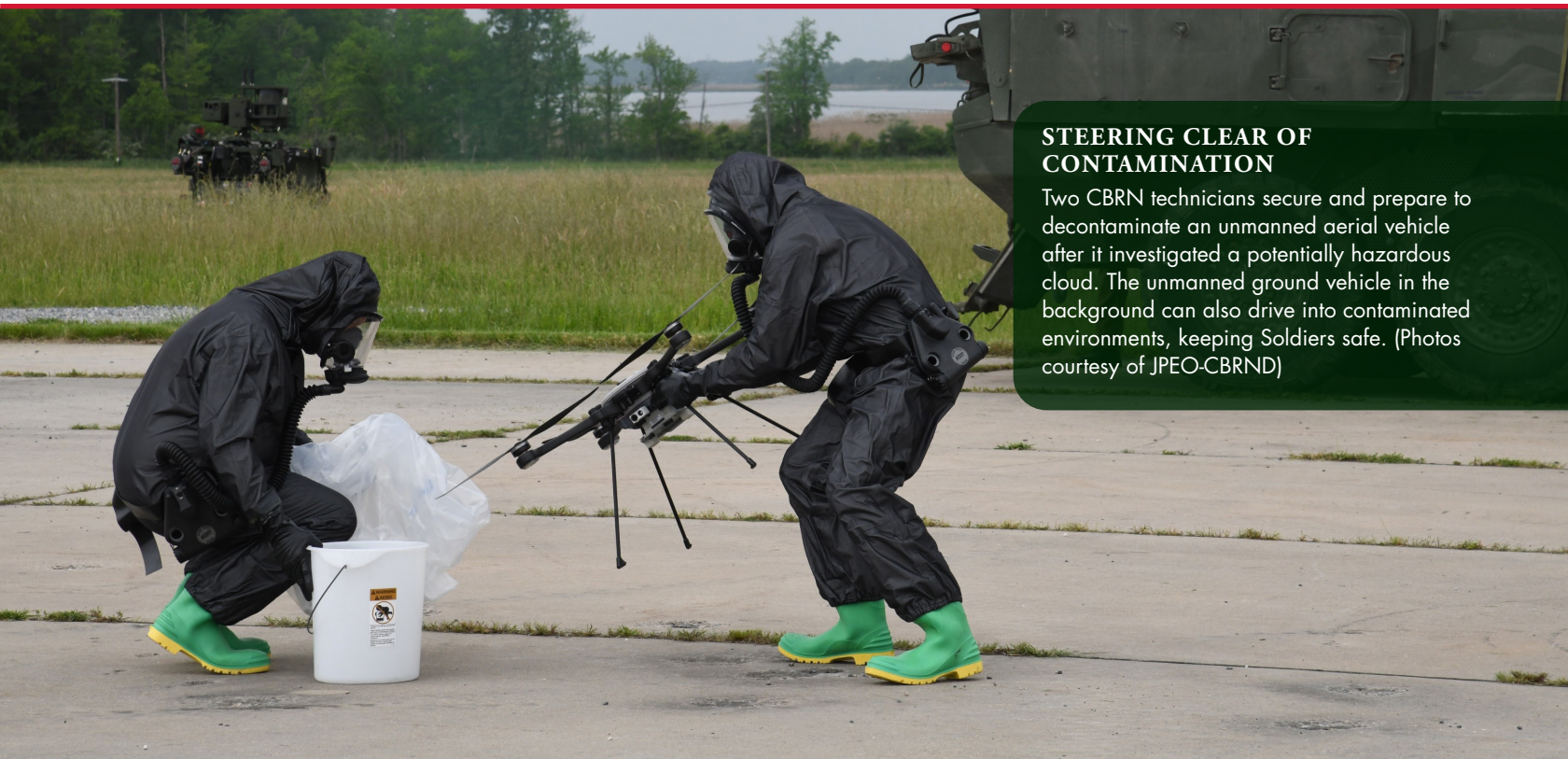
CONCLUSION

To create the force the Army needs to win our nation's wars and to continue the all-volunteer force model, the Army must execute this transformation of its HR programs and business models at HRC. The command's modernization efforts impact not only HRC, but also the Army's business model, with a critical impact on recruiting, retention, readiness and talent management. The Army has fielded an ambitious vision for the future of talent management to create the Army of 2030, and that vision must include the modernized Army HR processes to execute it.

For more information, go to hrc.army.mil or contact Col. Kris Saling at 808-783-3279, kristin.c.saling.mil@army.mil.

BRIG. GEN. GREGORY JOHNSON is the adjutant general of the United States Army, responsible for the Army HR business model impacting all Army personnel records, military awards and decorations, casualty operations and transition services. He is also commanding general of the U.S. Army Physical Disability Agency and executive director of the Military Postal Service agency. He has an M.S. in policy management from Georgetown, an M.S. in education from the University of Oklahoma and a B.A. in United States history from the University of San Francisco.

COL. KRIS SALING is the director of Army Human Resource Command's innovation cell and serves as the adviser to the commanding general on leading technologies and business practices. She previously served as the acting director of Army People Analytics for the assistant secretary of the Army for manpower and reserve affairs. She holds an M.S. in systems engineering from the University of Virginia and a B.S. in operations research and systems analysis and an active-duty commission from the United States Military Academy at West Point.



STEERING CLEAR OF CONTAMINATION

Two CBRN technicians secure and prepare to decontaminate an unmanned aerial vehicle after it investigated a potentially hazardous cloud. The unmanned ground vehicle in the background can also drive into contaminated environments, keeping Soldiers safe. (Photos courtesy of JPEO-CBRND)

SENSOR SUITE—UPGRADED

New CBRN technologies keep Soldiers out of harm's way in the field.

by Adam Lowe

As threats evolve, so must defensive capabilities. Older threats, such as gas attacks—not encountered by American warfighters on the battlespace since World War I—can be delivered by enemies in new and unique ways against the joint force. As the hazardous agents and the means of deploying them grow more complex, so, too, does the U.S. Army's methods of identifying and defeating them. Recently, a team of acquisition professionals from across the chemical, biological, radiological and nuclear (CBRN) defense community demonstrated the latest capability set for the Stryker Nuclear Biological Chemical Reconnaissance Vehicle's (NBCRV) Sensor Suite Upgrade (SSU).

On a cloudy day at the Aberdeen Proving Ground – Edgewood demonstration site in Maryland, the reconnaissance and platform

integration team from the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND) showed senior leaders, government officials and Soldiers what is possible when new technology is used in new ways: keeping warfighters away from dangerous environments. By using unmanned aerial vehicles (UAVs), unmanned ground vehicles (UGVs), CBRN sensors and manned and unmanned teaming, these components working together can allow warfighters and commanders to gain situational awareness of the battlespace and decide to maneuver around it or through it to accomplish the mission.

KEEPING SOLDIERS SAFE

Historically, warfighters responding to hazardous CBRN conditions would be required to either walk directly up to a potential

hazard and then collect a sample by hand or drive their NBCRV over it to collect a sample from the back of the vehicle. Because both methods required being dangerously close to a hazardous area, they resulted in a lot of time and effort spent decontaminating Soldiers, vehicles, and any equipment used, and conducting reconnaissance.

“We are fundamentally increasing the [U.S. Army’s] Chemical Corps’ ability to do this detection capability off-platform, standoff, without having a Soldier enter harm’s way. That is a significant improvement,” said Lt. Col. Alan Stephens, joint product manager for reconnaissance and platform integration. This refers to the distance between the operator and the

sensor; as opposed to the Soldier holding the detector, it’s “standing” at a different location, farther away from the platform where the Soldiers might be.

The reconnaissance and platform integration team’s demonstrations focused on CBRN reconnaissance tasks of detecting and collecting biological agents; detecting environmental anomalies such as chemical or biological aerosols; detecting, identifying and locating radiological threats, and identifying on-site presumptive CBRN hazards. Key stakeholders and partners from the U.S. Army Combat Capabilities Development Command’s Chemical and Biological Center (DEVCOM CBC), the U.S. Army 20th Chemical, Biological, Radiological, Nuclear and Explosives

(CBRNE) Command, the U.S. Army CBRN School, Army Futures Command, U.S. Army Test and Evaluation Command, the Office of the Deputy Assistant Secretary of Defense for Chemical and Biological Defense, and the Environmental Protection Agency attended the demonstration.

“This system really highlights where the JPEO is going,” said Nicole Kilgore, deputy joint program executive officer for CBRN Defense. “When we talk about integration, it’s not just integration of the systems working together, it’s an integration of the partners and players across the board. What we see today truly demonstrates that partnership.”



TESTING THE LIMITS

Maj. Gen. Antonio V. Munera, then-commanding general of the 20th CBRNE Command, points to the UAVs at the rear of the NBCRV. His Soldiers will be among those using the upgraded capability.

“That’s pretty amazing, that progress that was made in three years to go from basically a sketch to seeing the NBCRV SSU perform.”

HELP FROM ROBOTIC FRIENDS

For the radiological source mission demonstration, instead of having a warfighter don protective equipment, carry multiple sensors and try to get near a potential radiological threat (in this case, a simulated threat), operators from within an NBCRV used an Xbox controller to drive a Grizzly UGV with a mounted enhanced RADIAC (Radiation Detection, Indication and Computation) long-range imaging network applique (MERLIN-A) and a MERLIN imager (MERLIN-I) to get closer to the reported radiological threat. The MERLIN-A is used for standoff detection and provides directionality and relative source location, while the MERLIN-I is used to detect, identify, locate and image radiological hazards. Using a Grizzly UGV instead of a warfighter to get a sensor dangerously closer to a hazard benefits the warfighter’s health and also improves the fidelity of information gathered, further increasing mission success.

“For the MERLIN-I, the speed at which the image builds is dependent on the size and strength of the source, so the closer you are to it and the stronger the source, the better the image and the faster it comes,” said Nicole Goetze, the lead systems engineer for the NBCRV.

Once the potential radiological source was detected, the surveyor submitted a report to the joint battle command platform, generating a geo-marker for the suspected source location. After capturing the area of highest concentration, the MERLIN-A sensor demonstrated how it notified the MERLIN-I of a more precise location where it should focus. The MERLIN-I scanned the area and captured an image of the “hottest spot,” and the surveyor submitted a follow-on report with confirmed radiological source information that was also disseminated to higher command via the joint battle command platform.



TALENTS OF THE TALON

The TALON is strapped with several different CBRN detectors and can be driven into contaminated environments without putting Soldiers in harm’s way. The claw can pick up objects and even open doors.

To drive home the point that these threats are not abstract, and to reinforce the need for the capability set, the planners showed footage from just two months earlier of a Ukrainian nuclear plant under attack by Russian forces, as well as video from recent U.N. Security Council meetings about biological weapons in between the day’s demonstrations.

THE BIRD SAVES LIVES

The biological mission demonstration began with an aerosolized, simulated biological agent being sprayed as an anomaly cloud far from a compact standoff detection system. The system detects, tracks and maps aerosol clouds and provides waypoint location. After the system demonstrated that it detected and cloud-mapped the biological threat, the surveyor within the NBCRV launched



READY FOR TAKEOFF

An unmanned aerial vehicle sits in the back of the NBCRV, ready to take off and fly into a potentially hazardous cloud.

the UAV, which was docked on the back of the NBCRV, and cued it via semiautonomous and waypoint navigation to go to the edge of the anomaly cloud.

As the UAV, often referred to as “the bird,” reached the front side of the cloud and descended to detection height, it let the cloud pass over it several times over a period of time to collect the sample, allowing the bio-sensing payload on the UAV to rapidly detect if a biological agent existed within the cloud, and notify a commander who could immediately make an informed decision, save lives and carry out the mission. The surveyor within the NBCRV then created and submitted a report with additional information, confirming the

presence of an unknown (simulated) bioagent.

The reconnaissance and platform integration team told attendees that if this were happening in a real battlespace, an improved mobile chemical agent detector would also scan for the presence of a chemical agent and alert the surveyor within the NBCRV. After the negative confirmation of a chemical threat, the hazard response team established a decontamination site. The UAV landed far enough away from other military assets and its launch location so as not to contaminate the area where Soldiers might process this potential biological sample at what was called the “H2” (processing site) or “dirty home.”

Making this demonstration feel even more like something out of “The Jetsons,” a man-transportable robotic system was substituted for a warfighter to execute reconnaissance of the decontamination site. Once the robotic system cleared the decontamination site, personnel from the dismounted reconnaissance suits kits and outfits (DR SKO) team prepared a decontamination line, and remained staged to execute UAV decontamination, bio sample collection and presumptive identification upon their team’s retrieval of the bird and sample. Donning “level A” chemical and biological protective gear, two men approached the UAV, retrieved the dry filter unit for identification of the bioagent, performed a quick decontamination

Using a Grizzly UGV instead of a warfighter to get a sensor dangerously closer to a hazard benefits the warfighter's health and also improves the fidelity of information gathered, further increasing mission success.

of “the bird” and took it away to process the sample collected. “The birds [UAVs] are relatively cheap and are line replaceable units. If there is a live bioagent on it, commanders can determine [if they need to decontaminate] or replace [the unit],” said Stephens.

To further display the wide array of sensing capabilities that could be used to carry out the mission, handheld lateral-flow immunoassays were available in the DR SKO for presumptive screening of biological hazards, along with the Joint Handheld Biological Identifier. The identifier uses polymerase chain reaction for higher fidelity identification of biological samples, while the lateral flow assays can screen for bioagents of concern.

CONCLUSION

Maj. Gen. Antonio V. Munera, then-commanding general of the 20th CBRNE Command, said the NBCRV SSU capability provides maneuver commanders with the ability to make decisions much quicker. “We enable their lethality,” said Munera, who commanded the U.S. military’s premier all-hazards command from June 2020 until September 2022. “Launching these autonomous and semiautonomous systems will, at standoff distance, allow commanders to understand there’s something ‘bad’ out there early, giving commanders the freedom to maneuver and the opportunity to make proactive decisions. All while safeguarding the force by detecting hazards in the environment without standing in it.”

Several leaders who had witnessed the evolution of the capability set noted how far it had come since its inception. “I think it’s worth noting that it was only in 2019 that the chief of staff of the Army decided to accelerate the development of this prototype,” said Scott Kimmell, deputy commandant of the U.S. Army CBRN School. “With work beginning in 2019, we are only three years later. That’s pretty amazing, that progress that was made in three years to go from basically a sketch to seeing the NBCRV

SSU perform—not with all of its bells and whistles, but a lot of them. I’m not saying this to be less critical; we need to be as critical as possible because this is going in the hands of a Soldier. But it’s good to smell the rose once and go, ‘Wow, this is pretty impressive.’” Eric Moore, Ph.D., then the director at DEVCOM CBC, said of the capability set, “I think this is really impressive and I think we need to get it out to Project Convergence.”

This demonstration allowed key decision-makers to see the status of the program, ask questions and provide feedback afterward, and gave end users an opportunity to familiarize themselves with the capability set. Integrated within the demonstration were the DR SKO, CBRN sensors integration on robotics platforms and the screening obscuration module.

Once fielded, these innovative capabilities will help keep CBRN Soldiers safe, ultimately minimizing the need for them to enter potential CBRN threat environments.

For more information, go to <https://www.jpocbrnd.osd.mil>.

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HELLO HOWITZER

Soldiers from the Arkansas National Guard's 206th Field Artillery Regiment conduct training in June 2022 with the M777 howitzer on Fort Chaffee in western Arkansas. The U.S. government has supplied artillery—including the M777 lightweight 155 mm towed howitzer—to the armed forces of Ukraine since 2022. (Photo by Pfc. Savannah Smith, 119th Mobile Public Affairs Detachment)



CHAIN REACTION

Ramped-up efforts to support Ukraine are driving U.S. Army modernization of manufacturing technologies and projectiles.

by Cheryl Marino

United States Army leaders have long acknowledged the need to upgrade the nation's World War II-era government-owned, contractor-operated (GOCO) ammunition production facilities. Ukraine's needs in the face of invasion by Russia have just jump-started the modernization process.

As a result of the rapid escalation of U.S. efforts to support Ukraine, the Joint Program Executive Office for Armaments and Ammunition (JPEO A&A) will need to modernize its 155 mm ammunition GOCO facilities to meet the increased demands of the U.S. Army and to continue its support mission to Ukraine. This push to produce more sophisticated artillery systems not only assists Ukraine, it also drives the U.S. Army industrial base to boost its own manufacturing capabilities.

GOCO facilities, used for manufacturing operations, are at the crux of the nation's organic industrial base. Their modernization will be essential for "rebuilding the arsenal of democracy," according to Brig. Gen. John T. Reim, joint program executive officer for A&A and commanding general of Picatinny Arsenal in New Jersey. These facilities enabled the war effort during World War II and today play a vital role in the nation's defense. U.S. Army aid to Ukraine is an opportunity to use stockpiles of old inventory and provide for the addition of new artillery shells, which is an Army chief of staff priority.

"These modernization efforts are related to Ukraine and will yield benefits to the U.S. Army and other military services for many years into the future," said Greg O'Connor, production base manager for Project Director Joint Services (PD JS), within JPEO A&A. "GOCO modernization

efforts are required, regardless of the Ukraine war. Aging infrastructure and facilities require modernization and maintenance to continue to meet production requirements for the U.S. joint force.”

The modernization work that is directly related to Ukraine is the 155 mm ammunition production expansion, which supports the M777 howitzers sent to theater and howitzers donated by allied nations. PD JS maintains the U.S. 155 mm ammunition GOCO production facilities where the ammunition supporting Ukraine is produced, and the office has been instrumental in using lessons learned to modernize these facilities to meet the increased demands of the U.S. Army.

“The emerging need for 155 mm ammunition has driven efforts not just to

modernize related manufacturing facilities, but to dramatically expand 155 mm production capacity. To meet these near-term increased capacity requirements, while improving the long-term sustainability of the manufacturing capabilities, existing equipment and facilities are being modernized and new production lines are being constructed using cutting-edge manufacturing technologies,” O’Connor said.

Additional funding above the base budget, recently approved by Congress (See graphic “Operating at the Speed of War”) will enable JPEO A&A to operate at the “speed of war” to expand capacity for 155 mm artillery metal parts, the loading, assembly and packing and the modernization of industrial facilities. In January, Congress approved \$1.7 billion

for ammunition procurement, leveraging industry for second sources to replenish conventional munitions in support of Ukraine, and \$1.3 billion to procure foreign-produced munitions, including the 155 mm high-explosive artillery ammunition to support Ukraine efforts. By leveraging international suppliers, every round pulled from an international partner is one less coming out of U.S. stocks.

GOCO AT THE READY

GOCOs, which are responsible for the production of ammunition and ammunition components—including energetic materials like explosives and propellants—represent the organic, or government-owned, capabilities for ammunition production that are complemented by numerous commercial production facilities, referred to as contractor-owned, contractor-operated.

The majority of ammunition used by the military services is produced across five Army ammunition plants operated by commercial companies and managed as acquisition programs by Project Manager Combat Ammunition Systems (PM CAS), also within JPEO A&A. PM CAS is the life cycle manager responsible for the development, production and fielding of indirect-fire munitions, mortar and fire-control systems. These GOCO ammunition production facilities are ready and fully capable of producing ammunition at the rates necessary to meet requirements set by DOD.

Project Director Joint Services has modernization responsibilities at seven GOCO ammunition production facilities within the organic industrial base: Holston Army Ammunition Plant in Kingsport, Tennessee; Iowa Army Ammunition Plant in Middletown, Iowa; Lake City Army Ammunition Plant in Independence, Missouri; Milan Army Ammunition Plant



JPEO Armaments and Ammunition



Congressional support for JPEO A&A to operate at the speed of war

- Additional funding above the base budget to expand capacity for 155 mm artillery metal parts and load, assemble and pack (LAP), and to modernize industrial facilities.
- Temporary authorizations for covered agreements related to Ukraine.
 - Use of VOCO (verbal orders of commanding officer) policy was leveraged for PM CAS program, M795 Metal Parts Second Source.
 - Waiver of limitations associated with undefinitized contract actions (UCAs).
 - Exemption from certified cost and pricing requirements.

Army ammunition replenishment in support of readiness

Line of Effort #1: Modernization/expansion of existing facilities (government-owned, contractor-operated)

- Recent conflict in Ukraine resulted in \$1.2 billion supplemental funding.
- 15-year Army Ammunition Plant Modernization Plan (March 2022) enabled JPEO A&A to quickly shift projects to the left.
- Modernization plan objectives:
 - Increase manufacturing safety and readiness to meet current and future requirements.
 - Isolate energetic mass from people.
 - Ensure graceful degradation and resilient operations.
 - Improve flexibility, maintainability and sustainability.
 - Reduce cost of operations and secure supply chains.

Line of Effort #2: Ammunition procurement - leveraging industry for second sources

- Focus on awarding contracts to second sources to strengthen the industrial base.
- \$1.7 billion to replenish conventional munitions in support of Ukraine.
- Small, medium and large caliber ammunition.
- Mortars, Claymore mines, mine-clearing charges.

Line of Effort #3: International partners - foreign procurement to mitigate risk

- \$1.3 billion procurement of foreign-produced munitions for shipment to Poland to support Ukraine efforts, including 155 mm high-explosive (HE) artillery ammunition.
- Additional munitions include: 122 mm rocket, 120 mm mortars, 125 mm tank ammunition, 122 mm & 152 mm HE artillery ammunition.

OPERATING AT THE SPEED OF WAR

This strategic plan outlines congressional support for the JPEO A&A mission. Army ammunition replenishment includes modernization and expansion of existing GOCO facilities, ammunition procurement, leveraging industry for second sources and procurement with international partners to mitigate risk. (Graphic by JPEO A&A)

in Milan, Tennessee; Quad City Cartridge Case Facility at Rock Island Arsenal, Illinois; Radford Army Ammunition Plant in Radford, Virginia; and Scranton Army Ammunition Plant in Scranton, Pennsylvania.

“GOCO modernization efforts are required, regardless of the Ukraine war.”

The ongoing work at four of the GOCOs directly supports the Ukrainian war efforts, O'Connor said. Holston Army Ammunition Plant is producing explosives used to fill artillery shells; Radford is producing propellant for various ammunition systems; Scranton is producing metal parts for artillery shells, and Iowa Army Ammunition Plant is performing the loading, assembly and packing of large ammunition systems. Those activities include filling the ammunition projectiles with explosives, assembling propulsion systems and other components like fuzes and fins, and then packaging the complete ammunition systems so they are safe to transport and store.

PD JS's most significant efforts in supporting the U.S. efforts to assist Ukraine are the production capacity expansion activities that will take place at Scranton, Iowa and Holston to support 155 mm artillery ammunition production requirements.

At Scranton Army Ammunition Plant, the Army is making an “unprecedented investment” into increased capacity and capability to produce 155 mm artillery projectile metal parts. Currently, the facility in Scranton consists of a single operational production line, producing only M795 projectiles—the U.S. Army and Marine Corps standard 155 mm high-explosive projectile. In the future, however, four to five modern production lines will be collectively capable of producing the current M795 projectile at much higher rates. Additionally, Scranton will also be capable of producing the new longer-range M1128, XM1113 and XM1210 projectiles for 155 mm howitzers. “Flexibility and automation are being emphasized to ensure ability to meet current requirements as well as those that emerge in the future,” O'Connor said.

Other investments at Scranton to increase capacity for artillery metal parts include the procurement of new press systems,

ASSURED MUNITIONS

The COVID pandemic and current world events have made it clear that a secure and resilient supply chain with sufficient capacity is essential to being able to respond to a surge in production demand under difficult circumstances. The JPEO A&A Directorate of Integration leads the charge for managing supply chain risk under the aegis of an effort called Assured Munitions. Depending on the complexity of the item, dozens to hundreds of components and precursor materials are required to produce munitions. These items are sourced from a global supply chain. Working in concert with all of the program offices within JPEO A&A, the Directorate of Integration is mapping the supply chains for the items in the JPEO A&A portfolio. Assessments of risk have been made and particular materials have been identified for mitigation.

The Defense Production Act Title III is a key tool for reshoring critical materials production when they are not available within the continental United States. In concert with the Critical Energetics Working Group—led by the Office of the Assistant Secretary of Defense for Industrial Base Policy—and our service partners, JPEO A&A has identified critical materials for reshoring. Subsequently, agreements with U.S. industry partners have been and are being pursued to establish production capacity in the U.S. where it does not presently exist.

—JPEO A&A

furnaces, foundation repairs, fire suppression and electrical system upgrades, process line robots, coating systems and material handling systems, as well as removal or relocation of legacy equipment.

“The Army is making significant investments at GOCO facilities to increase production capacity and reduce equipment obsolescence,” O'Connor said. “The new machinery, which includes automation and improved control systems, will not only improve product quality, but also reduce risk to employees and increase throughput.”



PROJECTILE PRODUCTION

A worker inspects a 155 mm projectile at Iowa Army Ammunition Plant in May 2022. Iowa Army Ammunition Plant produces and delivers component assembly and medium- and large-caliber ammunition items for DOD, using modern production methods in support of worldwide operations. (Photo by Dori Whipple, Joint Munitions Command)

WHAT PROMPTED THIS

Since April 2022, the U.S. government has provided Ukraine with artillery—like the M777 lightweight 155 mm towed howitzer—specialized ammunition and training through PM CAS and a joint service program between the U.S. Army and U.S. Marine Corps, which is managed by Program Manager Towed Artillery Systems (PM TAS), with BAE Systems as the prime contractor.

In addition to PD JS, two other program offices within JPEO A&A provide life cycle support to the U.S. 155 mm artillery mission. PM TAS manages the production, fielding and support of the M777 howitzer, while Project Manager Combat Ammunition Systems (PM CAS) has the responsibility for managing the production of the 155 mm ammunition.

PM TAS was one of the first U.S. government organizations required to provide a weapon system capability to the Ukrainian

armed forces. As a result, according to Christopher Ayoub, acting deputy program manager at PM TAS, the M777 howitzer has been at the forefront of every major milestone, from initial training, fielding and remote maintenance, to its transition to sustainment.

Because the M777 was the first to go, PM TAS has been able to provide senior leaders with recommended direction as the Russia-Ukraine war transitions from the initial equipping phase to the enduring sustainment and logistics support that will shape the war going forward.

In January, DOD announced a significant new package of security assistance for Ukraine, including the authorization of a presidential drawdown of security assistance valued at up to \$425 million, as well as \$1.75 billion in Ukraine security assistance initiative funds. U.S. commitment includes critical air-defense



PREPARED FOR PALLETES

An ammunition handler at Blue Grass Army Depot in Lexington, Kentucky, prepares a number of 155 mm projectile rounds to be repalletized in September 2022. The U.S. Army is updating its GOCO ammunition production facilities to keep pace with increased demand. (Photo by Dori Whipple, Joint Munitions Command)

capabilities, as well as armored infantry vehicles and more equipment that Ukraine is using effectively, like Javelin anti-tank missiles, conventional and long-range rockets for the U.S.-provided M142 High Mobility Artillery Rocket System, 155 mm artillery ammunition and training.

The PM TAS office carries out the executive orders as stated in various presidential drawdowns for 105 mm and 155 mm towed artillery support of the M119 and M777 howitzers, respectively.

The team has been responsible for providing a full towed artillery capability to the Ukrainian armed forces, including specific

configuration technical manuals, training, spares, engineering support and full maintenance support via 24-hour remote maintenance. “PM TAS has been critical to the strategic development and execution of activities that provide a superior level of support to the Ukrainian warfighter,” Ayoub said. “Our team supporting the remote maintenance meetings and chats have ingrained themselves with our Ukrainian partners by providing trusted subject matter expertise that can be replicated for U.S. forces.”

PM TAS is providing lessons learned from the various program milestones to allow the Project Manager Self-Propelled

Howitzer Systems team to seamlessly provide a full capability to the Ukrainian armed forces for immediate battlefield effects. The PM TAS team is also providing tactical guidance to various senior leaders who are developing the sustainment strategy for all weapon systems.

THE NEED FOR SPEED

After Ukraine’s initial request for M777 howitzer components, the need for specialized ammunition followed closely behind.

This time, PM CAS stepped up to the challenge, providing 155 mm high-explosive artillery munitions like projectiles, propellant, fuzes and the Excalibur projectile—a

GPS-guided projectile with impeccable accuracy at extended ranges—in support of Ukraine and U.S. Army demands.

“We knew we couldn’t just send ammunition to Ukraine without also providing ammunition training,” said Keith Gooding, JPEO A&A director of talent management and Senior Service College Fellowship. “With this support to Ukraine, Picatinny has felt the increased importance on the U.S. 155 mm ammunition supply chain in order to meet requests and to continue to support U.S. requirements.”

Project Manager Combat Ammunition Systems taps into the complex supply chain across the industrial base, including organic and commercial suppliers for 155 mm ammunition. After production is complete, rounds of ammunition are shipped to government depots in the U.S. and worldwide, where Joint Munitions Command can issue and distribute as needed.

The program office develops, produces and equips U.S. Soldiers and Marines with conventional artillery and mortar ammunition, precision ammunition, mortar weapons and mortar fire control systems. Under the Single Manager for Conventional Ammunition (SMCA) responsibilities, PM CAS also procures ammunition for the U.S. Marine Corps, U.S. Air Force, U.S. Special Operations Command and our allies.

“PM CAS is the life cycle program manager of artillery and mortar products in the categories of precision-guided munitions [including Excalibur and the Precision Guidance Kit], conventional munitions for mortars and artillery, artillery propellant and primers, fuzes and fuze setters, mortar weapon systems and mortar fire control systems,” said Peter Burke, deputy project manager for PM CAS.

“Through its support to Ukraine, the U.S. has looked deeply into the current state of the industrial base that needs to operate at a scale not seen since the 1980s,” Burke said. “The result was the decision to accelerate and expand the supply chain to meet unprecedented wartime demand, greatly strengthening the industrial base.”

“We deliver lethal conventional and leap-ahead munitions and weapons to the warfighter, giving them a materiel edge over adversaries,” said Col. Leon Rogers, who is responsible for the PM CAS portfolio.

According to Ayoub, the M777 howitzer is significantly “more modern and accurate than the 152 mm towed artillery fleet that

both Russia and Ukraine employ, and has a precision guidance munition capability out to significant ranges, providing overmatch capabilities on the battlefield,” which has given Ukrainian soldiers a vital boost in firepower on the battlefield.

Shortages of Soviet-standard 152 mm ammunition—supplied by Russia and China—have reduced the value of Soviet-era artillery and have driven Ukraine to request support from the U.S. and its allies. The request has given the U.S. the opportunity to reengage with the ammunition industrial base, modernizing processes and facilities and increasing capacities where needed.

CONCLUSION

Modernization of the nation’s GOCO armaments production facilities was already an ongoing effort, and it is now even more critical for continued support to Ukraine and replenishing U.S. stockpiles.

“The recent events in Ukraine have clearly demonstrated the strategic importance of the U.S. Army organic industrial base. Strong congressional support for additional funding, combined with new acquisition authorities, creates a once-in-a-generation opportunity to invest in the future of ammunition production,” said Col. Jason Bohannon, PD JS project director.

Going forward, he said, cutting-edge manufacturing technologies will be leveraged to create a more reliable and sustainable source of ammunition, and to create efficiencies that lead to lower operating costs for years to come. “The modernized GOCOs will provide the critical manufacturing capability necessary to ensure the joint force and our international partners have the ammunition required to deploy, fight and win our nation’s wars.”

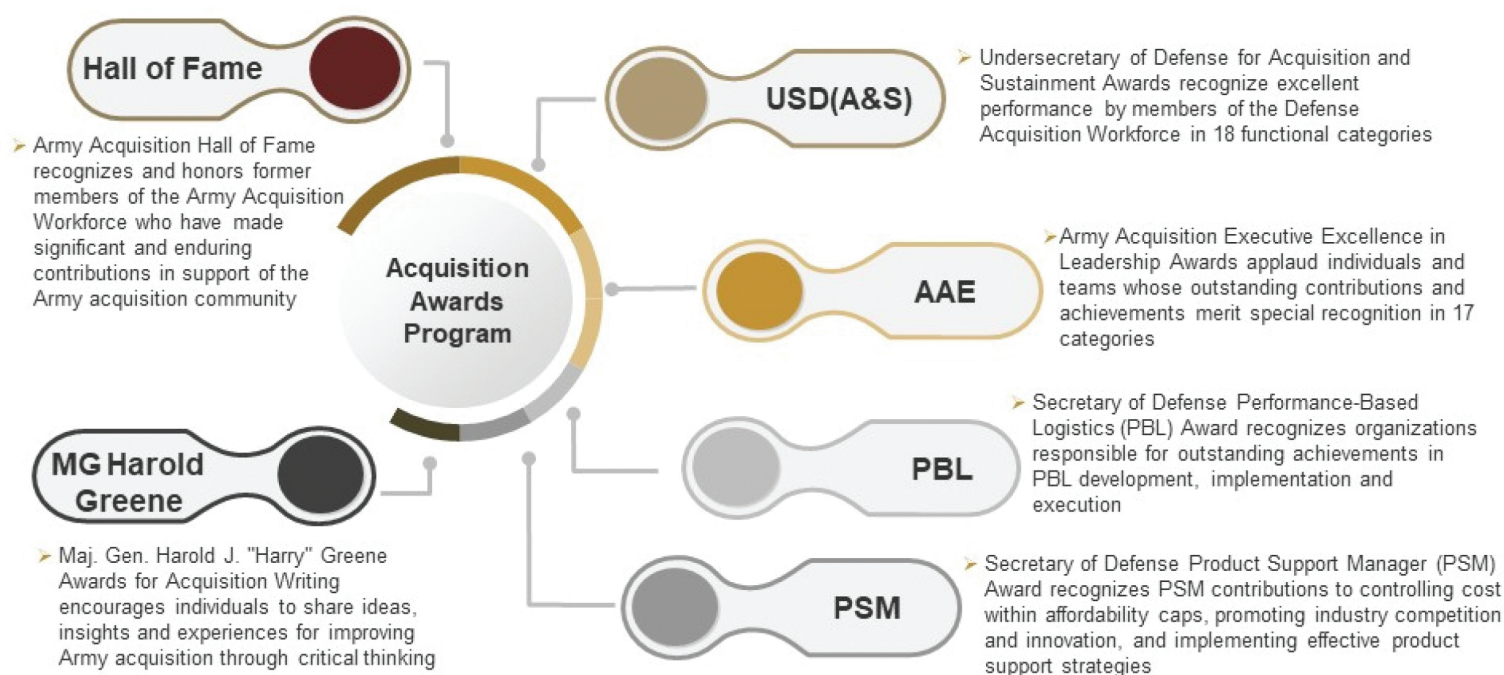
For more information, go to <https://jpeoaa.army.mil>.

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SETTING UP

A Soldier from the 50th Expeditionary Signal Battalion – Enhanced Corps Signal Brigade sets up equipment during a field training exercise in October 2022 at Fort Bragg, North Carolina. (Photo by Sgt. Maxine Baen, 35th Corps Signal Brigade)

SATCOM STREAMLINE

The Army is shaping its satellite communications portfolio to support multidomain operations more efficiently while enabling technology advancements.

by Col. Shane Taylor, John Anglin and Amy Walker



The Army is working to consolidate the variety of ground satellite equipment in its portfolio, using a more versatile family of systems approach, while retaining the acquisition flexibility to insert new technologies as they evolve. In this new approach, fewer system variants will provide more capability and be able to support a broader range of mission sets.

During past conflicts in Iraq and Afghanistan, the Army designed each of its ground satellite terminals to support specific missions and phases of operations—from early entry to network buildup, to more mature operations with huge static command posts. Each system had to go through laborious and antiquated testing and acquisition processes that took years to get new capabilities into the hands of Soldiers.

Currently, there are over a dozen and a half different ground satellite terminal variants in the Army's satellite communications (SATCOM) fleet, with well over 10,000 terminals fielded globally, which doesn't include thousands of combat service support logistics network terminals. Army investment dollars used to sustain this large SATCOM fleet have been eating into the service's limited resources.

A CATALYST FOR CHANGE

In early 2022, Gabe Camarillo, the undersecretary of the Army, initiated the network capability portfolio review to accelerate digital transformation and the modernization of the Army's network. The capability portfolio review process evaluates and aligns system requirements and resources with Army priorities and creates a sustainable coherent and flexible strategic path for transformation, leveraging feedback from network stakeholders Armywide.

As part of capability portfolio review outcomes, Project Manager Tactical Network (PM TN), at the Program Executive Office for Command, Control and Communications – Tactical (PEO C3T), is looking to reduce the number of SATCOM terminal variants and equipment through multiple approaches:

- Going after solutions that can meet more than one mission set.
- Separating the baseband solution from the terminal solutions.
- Changing business models.

The program office is working with Army stakeholders to address several challenges and opportunities along the way, such as how to consolidate similarly sized platforms; how to identify the optimal baseline requirements where potential trade-offs can be made to enable variant reduction; how to insert new technology from the network modernization road map; and how to align the acquisition and contract strategy across PM TN while providing flexibility for technical insertions of new technologies.

KEEPING IT IN THE FAMILY

One of PM TN's ways to streamline the Army's SATCOM portfolio is to implement a Family of Terminals strategy, which PM TN anticipates will reduce the current number of terminals by more than half by fiscal year 2025.

This SATCOM Family of Terminals would be operationally flexible, modular, scalable and tailorable, providing a variety of expeditionary terminals to units worldwide to best support different formations, echelons, mission phases, requirements and locations. There would be fewer terminal variants that would come in different sizes: extra small, small, medium, large and extra large. The strategy is expected to realize substantial cost savings and avoidance, while delivering the right array of solutions to enable the needed operational flexibility, signal path diversity and enhanced capability to support multidomain operations while easing sustainability and training burdens.

Industry has significantly expanded the options available in today's commercial market, offering DOD new and more scalable and tailorable solutions without specific operational phase limitations. For example, terminals that once would have only been used for early entry are now more generically considered "light" terminals. They can be tailored to different missions at all stages of operations and scaled up or down to support different-sized units. Today's expeditionary light SATCOM terminals are easy to deploy and can be set up or torn down in under 30 minutes, for rapid mobility and survivability in a near-peer fight.

One of the critical linchpins to making a "family of" approach is the normalization of requirements. The Common Transport Layer Capabilities Development Document—which specifies the operational requirements of current and emerging integrated, unified network components—is a critical enabler to do that. In the past, requirements traditionally would lead to a program of record solution that the Army would field across the force and sustain for decades. Now, the service is normalizing the requirements between all of the disparate requirement's documents, which could lead the Army to an optimal range in terms of the



EQUIPMENT CHECK

Sgt. Matthew Rainwater, a Soldier in the 101st Airborne Division (Air Assault) Signal and Intelligence Support Company, configures equipment and devices for use on the network while establishing communications inside a bunker on Mihail Kogalniceanu air base in Romania. (Photo by Pfc. Matthew Wantroba, 101st Airborne Division)

number of different satellite terminals and corresponding baseband equipment used to transmit data in the field.

PM TN will ensure that the Family of Terminals is continually updated as new commercial solutions become available and that units don't have technology that is over 5 years old. As technology advances, the Army would have the flexibility to modernize current systems through technical insertions at any point in time. Every two years, as part of capability set reviews, industry would be able to compete to become one of the newest members of the Family of Terminals, replacing outdated capability.

BREAKING UP THE BASEBAND

Following the adoption of the Family of Terminals approach, the Army is also looking to introduce a Family of Baseband equipment. As in the Family of Terminals approach, the service would normalize requirements to reduce the amount of baseband equipment, while delivering enough capability to ensure network resiliency and network transport diversity to support congested and contested environments. The biggest differences in baseband will be in how many users each system can support, including constraints such as port density. Like Lego blocks, terminals and baseband can be scaled up or

down as needed to meet different mission requirements.

To keep up with baseband technology advancements as they evolve, the continued virtualization of hardware—which turns hardware into software—will provide needed network capacity and make it easier for the Army to insert new capabilities, while reducing size, weight and power-cost. When systems are virtualized, simple modernization and security software upgrades can be rapidly implemented across the fleet, versus potentially having to add more hardware, as the service would have done in the past.

One example aiding in the Army's reduction of equipment is the innovative Unified Unclassified Enclave (U2E), which PM TN developed and continues to field. U2E consolidates numerous unclassified hardware enclaves—each formerly requiring their own hardware—onto a single multipurpose unclassified hardware platform. U2E enables secure and flexible long-haul transport and tactical access for a variety of unclassified, classified, coalition and commercial networks, with the appropriate levels of security separation between each. It also uses encryption standards that exceed National Security Agency requirements. The enclave reduces size, weight, and power and cost; software and inherent licensing costs; and overall cognitive burden on Soldiers. It also enables the quick integration of other unclassified enclaves.

ONE TERMINAL—MANY ORBITS, MANY BANDS

To combat electronic warfare and cyber threats posed by more advanced adversaries, the Army is enhancing network resiliency through automated agnostic transport diversity, significantly increasing the number of network communication pathways available to units. The more pathway options that exist for data to travel through, the more resilient the network becomes. This includes emerging commercial high-throughput, low latency (HT/LL) network transport, such as low Earth orbit, medium Earth orbit and advanced geosynchronous Earth orbit satellite communications.

Underpinning the Army's efforts to increase network capability, capacity and resiliency is the need to increase simplicity at the edge of the battlefield, since more and more Soldiers fighting there will be general purpose users.

So how does the service add all of these disruptive new capabilities without significantly increasing its SATCOM portfolio and complexity at the edge?

When fielded, one solution, the Next Generation Tactical Terminal (NGTT), will simultaneously leverage emerging HT/LL low Earth orbit and medium Earth orbit constellation providers, current and future geosynchronous Earth orbit constellations, as well as multiple frequency bands, with a single terminal. With NGTT, if one link goes down, Soldiers won't have to change bands or change out any hardware; the switch to different data transport options is automatic and seamless to the user. Instead of having a separate terminal to support each different constellation, as is the case currently, NGTT combines all of these capabilities into one system, significantly reducing the size, weight and power burden, whether an NGTT at-the-halt or on-the-move platform.

The Army's science and technology community has been developing the on-the-move NGTT solution, while Project Manager Tactical Network is working the at-the-halt NGTT as part of the large solution for the Family of Terminals. Both will use similar technologies with normalized requirements working in



NEWEST MODEL

Project Manager Tactical Network completed Phoenix E-Model satellite terminal new-equipment training for Bravo Company, 50th Expeditionary Signal Battalion – Enhanced, at Fort Bragg, North Carolina, in November 2022. These versatile transportable, quad-band satellite terminals enable operational flexibility and multipath diversity. They provide large division and corps headquarters with agile high-bandwidth network communications. (Photo courtesy of PEO C3T)

partnership with the Cyber Center of Excellence. The on-the-move NGTT solution will eventually transition from the science and technology community to PM TN, and both solutions are targeted to support the Army's network modernization Capability Set 27.

NEW BIZ MODELS

As part of the Army's endeavors to reduce its SATCOM portfolio and ancillary network equipment, in addition to the "family of" approach and the introduction of new multiorbit, multiband terminals such as NGTT, PM TN is also pursuing a potential new commercial "leasing" business model. A SATCOM as a managed service model could enable the Army to keep up with the accelerating speed of technology advancement more affordably, while reducing resource and budget burdens, equipment obsolescence and other sustainment challenges.

The Army is currently preparing for a SATCOM as a managed service pilot, which is slated to begin this summer in several regional coverage areas worldwide. The intent of the pilot is to inform decisions on the Army's potential use of commercially leased equipment and services that would be flexible and tailorable to changing mission needs, versus procuring, fielding, sustaining and modernizing the equipment in-house. By leveraging commercial research and development, SATCOM as a managed service also could enable the Army to integrate new commercial capabilities into the fleet at a much quicker pace and at less cost compared with traditional procurement methods.

CONCLUSION

One of the key objectives of the Army's two-year iterative network modernization capability set process is to be able to keep up with the pace of commercial technologies and retain technological overmatch against near-peer adversaries. As part of the process, technology advancements such as distributed mission command, edge cloud capabilities, advanced sensors, artificial intelligence, machine learning and robotics will continue to require fast, secure and resilient transmission of large amounts of data—and that requires continued advancements in an HT/LL network transport.

To better support network modernization efforts, the service is changing its mindset, learning how to employ some of these new capabilities by letting the technology shape and drive the requirements, instead of letting requirements drive technology, like it has in the past. As future technology trends come into view, the Army must continue to be forward-thinking in shaping its SATCOM portfolio and other network equipment sets,

keeping them streamlined and ahead of the technology curve, without adding more kit.

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>.

COL. SHANE TAYLOR is the project manager for Tactical Network at PEO C3T. He provides the direction, management and leadership for the Army's current and future tactical communications network consisting of high-throughput line-of-sight, beyond-line-of-sight and satellite communications, which enable mission command and secure reliable voice, video and data communications to Soldiers worldwide. He holds an M.S. in industrial engineering and operations management from Clemson University, an MBA from Penn State University, an M.S. in national security and resource strategy from the Eisenhower School for National Security and Resource Strategy and a B.S. in business administration from Oklahoma State University. He holds the DAWIA Advanced certification in program management, the Foundational certification in engineering and technical management, and is a DOD contracting professional.

JOHN ANGLIN is the technical management division chief for Project Manager Tactical Network, assigned to PEO C3T. He has over 20 years of experience, as both a civilian and a Soldier, in Army tactical network communications. He has an M.S. in systems engineering and a B.S. in information technology with a concentration in security, both from Johns Hopkins University. He holds the DAWIA Practitioner certification in engineering and technical management.

AMY WALKER has been the public affairs lead at Project Manager Tactical Network for almost 15 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.



DEWAYNE ANTHONY GRANT

COMMAND/ORGANIZATION: Mission and Installation Contracting Command

TITLE: Procurement analyst

YEARS OF SERVICE IN WORKFORCE: 7

YEARS OF MILITARY SERVICE: 23

DAWIA CERTIFICATIONS: DOD contracting professional

EDUCATION: M.S. in logistics and supply chain management, B.S. in professional aeronautics from Embry-Riddle Aeronautical University

AWARDS: Civilian Service Achievement Medal (2021)

LEARN AND LEAD

Dewayne Anthony Grant is a retired Army helicopter mechanic turned procurement analyst for the Mission and Installation Contracting Command. In this role, he uses business intelligence tools—automated software that will collect, organize, visualize and analyze data—and other automated reporting systems to look at trend and spend analysis to promote strategic sourcing in order to obtain the best services and supplies in the industry to meet the warfighter’s needs.

“It’s important to understand what industry has to offer the Army to leverage the taxpayers’ dollars so that our warfighters have the best and most reliable services and supplies needed to complete any mission,” Grant said.

He chose the acquisition field because he was interested to understand the process of how Soldiers were receiving and acquiring supplies and services—something he was never privy to during his military service.

“The greatest satisfaction in being part of the Army Acquisition Workforce is that I get to continue to serve like I did when I was on active duty, ensuring that Soldiers receive their needed services and supplies during peacetime to maintain their wartime capabilities that will allow them to fight and win on the battlefield,” he said. Grant retired in 2008 as a platoon sergeant with the 82nd Combat Aviation Brigade, 82nd Airborne Division.

He joined the Army Acquisition Workforce through the U.S. Department of State’s Recent Graduates Program, which provides developmental experiences in the federal government. He was hired through the federal government’s Internship Program as a contract specialist, which involved pre-award, post-award and closeouts of contracting actions. He said the most appealing thing about this role was the amount of research on regulations and policies—such as Defense and Army Federal Acquisition Regulations and supplements—the work entailed. Being informed about these regulations helped him to identify the best applicable contract vehicles for the resources he was responsible to procure.

Known by others for being a persistent learner, when Grant was a mechanic on the UH-60 Black Hawk, for example, he loved researching to make sure his helicopter was performing to meet mission needs. “Acquisition affords me the same opportunity [to continuously learn],” he said.

“Once I graduated the intern program, I really knew this career field was for me,” Grant said. He completed the 24-month Internship Program in 2017 and said there is satisfaction in knowing that through his and his coworkers’ efforts, Soldiers and taxpayers are getting the best and most reliable supplies and services.

The most important thing to Grant about the acquisition workforce is the ability to serve in numerous career field positions like cost and price, procurement analyst, contract

specialist or contracting officer. “This allows me to broaden my capabilities and keep learning my craft at the highest level and at the right time for whatever position I might find myself wanting to pursue,” he said.

Grant completed the Defense Civilian Emerging Leaders Program (DCELP) in May 2022, and he now recommends it to everyone. He explained that DCELP focuses on leadership traits and builds on what he learned from the Inspiring and Developing Excellence in Acquisition Leaders (IDEAL) program that he completed in August 2020.

“[DCELP] helped me to further enhance my leadership style and capabilities,” he said. With COVID-19 restrictions in place at the time, he learned especially that the workforce can still operate through unconventional settings, for example, within Microsoft Teams. “This course really brought that leadership trait out in all who attended,” he said, adding that current, real-world scenarios that keep you abreast of what challenges are being faced in the workforce are also taught. One slide from the course, “Our Purpose in the ‘New Normal,’ ” specifically sticks with Grant. He quoted author and retired Army Gen. Stanley A. McChrystal, “ ‘Digital leadership’ was not in the job description for our generation, but it became a critical skill for all of us to learn in the fast-moving and constantly changing fight.”

Grant’s top three takeaways from the course were, first, understanding that the challenges posed by the COVID-19 pandemic do not stop a team from working collaboratively virtually to get the mission done. Second, it is OK to disagree or to be challenged by team members and faculty, as this allows you to grow as a person and to better understand and see your authentic self. Lastly, it is important to understand how or when it’s OK to show vulnerability, as this action can have an overwhelming effect on team members as well as employees under your leadership.

Grant advises junior acquisition personnel to keep striving to perfect their craft through courses like DCELP and IDEAL to be prepared to lead in any role. “Leadership does not have to be in the form of an appointed supervisor, it can be just mentoring a new employee or a coworker,” he said. “Just keep learning.”

He enjoys mentoring newly assigned contracting officers as well as just helping coworkers, he said. “The acquisition field will not slow down with all the challenges from new policies, regulations and smaller congressional budgets,” Grant continued. “We must be prepared to find new ways of acquiring the best cost advantage supplies and services for our country and warfighters.”



ARCTIC WARRIOR

Grant, then serving with the 4th Battalion, 123rd Aviation Regiment (Arctic Warriors), stands in front of a helicopter in 1996 at Fort Wainwright, Alaska. (Photo courtesy of Dewayne Grant)

Continuous learning has allowed Grant to adjust his leadership style to what is currently happening in the workforce. “One can’t become stagnant and expect old leadership styles and traits to apply to the workforce as it is today,” he said. The most important lesson Grant has learned on the job is to listen. He has had to adapt to team members’ ideas and learn to really digest what others were conveying before speaking, understanding that some of his solutions or recommendations may not be the most viable or cost effective for the situation. He said of all the skills, knowledge and experience he has, the one he applies now the most is truly listening to people before weighing in. “I have found out that talking just to talk provides no value to the situation or topic at hand,” he said. “There are so many new challenges within the current workforce that require leaders and subordinates to fully understand the diverse workforce and the continued challenges being presented in our ever-changing global world.”

Outside of work, Grant applies similar learning and adapting techniques to master his cooking (grilling) skills to serve his friends and family the best meal when they gather. “This attitude is the same approach I apply on my job daily,” he said. The same way he strives to procure quality products and services for the warfighter, Grant said, “I prepare my food so that I get the most flavor and best cuts of meat that I hope will satisfy my friends.”

—**HOLLY DECARLO-WHITE**



RECONNAISSANCE ROTATION

A Soldier from 25th Infantry Division conducts field reconnaissance in October 2022 on Pohakuloa Training Grounds, Hawaii. (Photo by Sgt. Daniel Proper, 25th Infantry Division)

CAPABILITY, SET

| Future operating environment, strategic need fuel Army's network design goals.

by Amy Walker

The Army's design goals for its unified network of 2030 are shaped to tackle some tough challenges: large-scale ground combat operations, near-peer adversaries and a complex globally distributed and electronic warfare-contested battlefield—all as the pace of technology accelerates with increasing speed.

To retain U.S. decision dominance, the Army, joint service and industry stakeholders are collectively fleshing out potential solutions for this complex future operating environment.

"Near-peer threats operate in cyberspace at a very high level, and we need to acknowledge that and build a network that enables [joint] and coalition operations, with the flexibility to maneuver it and to defend it," said Lt. Gen. John Morrison, U.S. Army deputy chief of staff G-6, during his keynote address at the Army's Technical Exchange Meeting (TEM) 9 in Nashville, Tennessee, in December 2022. "Figuring out how to share intelligence so that we all clearly understand the threat and the environment is going to be absolutely critical for all of us moving forward—not as an Army, not as an industry company, but as a nation."

The TEM was the ninth in a series of semiannual meetings that provide continuous transparency with industry on Army network priorities and strategy. Industry will take feedback from this event to help scope research and development (R&D) investment and eventual proposals to shape the Army's network capability sets (CS). TEM 9 highlighted several key focus areas that support the Army's digital transformation and future network, including data centricity, agnostic and resilient network transport, zero-trust architecture, and unified network operations and management. The two-day event focused on the Army's network modernization CS-25 and CS-27 design goals, as well as the supporting acquisition approaches, such as the ongoing capability portfolio review and new business models such as a satellite communications (SATCOM) as a service. TEM X is planned for May in Philadelphia.

The Army uses its two-year incremental capability set process to execute network modernization across the force while keeping pace with technology advancements and emerging threats. Each capability set builds off the previous and is infused with commercial solutions informed by Soldier touch points, global experimentation, and developmental and operational tests that are synchronized and combined for maximum efficiency and effectiveness.

“The Army is now three years into the capability set fielding and development process and we have strong momentum,” said Maj. Gen. Anthony “Tony” Potts, program executive officer for Command, Control, Communications – Tactical (PEO C3T). “To deliver usable, actionable data to commanders, when and where they need it, we need a network transport that is modular, scalable and tailorable. We have to make it easier for our signal officers to set up multiple transport layers. We also want to understand where we can spread across [network] layers to be smarter about the way we use the bandwidth that is available.”



THIS IS WARFARE

Military service members assigned to the 7th Air Support Operations Squadron, Fort Bliss, Texas, and 729th Air Control Squadron, Hill Air Force Base, Utah, conduct warfare operations at the Technical Operation Center – Lite in October 2022 during Project Convergence 22 experimentation at March Air Reserve Base, California. (Photo by Spc. Brenda Salgado Morales, Army Futures Command)

The Army’s network community works on several capability sets at a time. While currently fielding CS-23, the Army is simultaneously prototyping and experimenting for CS-25, and maturing science and technology (S&T) efforts for CS-27 and beyond.

CS-21, which already has been fielded, focused on expeditionary and intuitive capabilities for infantry formations at the brigade level and below. Building on the CS-21 foundation, CS-23 focuses on network capacity, resilience and convergence, and CS-25 furthers automation and protected network capabilities. CS-23 and beyond target network modernization for mounted formations, as well as networking the division formation.

CS-25: AUTOMATED AND PROTECTED

CS-25 is moving from the prototyping and experimental phase to the system design and development phase, which begins with the CS-25 preliminary design review in April 2023. This review will ensure alignment of requirements, enabling technology, acquisition and funding to help ensure a successful transition from S&T to programs of record.

CS-25 solutions will help deliver data at the point of need, through the integration and enhancement of numerous capabilities, such as the new Command Post Integrated Infrastructure; resilient transport-agnostic network capabilities that incorporate initial high-throughput, low-latency multi-orbit SATCOM and automatic primary, alternate, contingency and emergency (Auto-PACE) solutions to reduce Soldier burden; and more robust cloud capability. CS-25 also advances the Army’s tactical data fabric and C5ISR/Electronic Warfare Modular Open Suite of Standards, which enables the Army to insert cards embedded with networked capabilities.

Soldiers will plan and manage the CS-25 unified network through an integrated set of unified network operations (UNO) software tools and begin to use zero-trust data security principles through UNO’s Identity Credentialing and Access Management software.

CS-27 AND BEYOND: MULTIDOMAIN CAPABLE

Key CS-27 design goals evolve multi-path signal diversity, Auto-PACE, data-centric network transport capabilities and modern security architecture. Major advancements include spectrum efficiency across dismounted and mounted platforms, and a unified network that blurs the lines between the traditional lower- and upper-tier tactical networks, bringing them together through seamless multi-path transport networking.

CS-29 design goals plan to move the Army from coalition mission partner networking to a true mission partner environment, where units do not have to set up a new network with every new mission. Fully operational tactical data fabric that converges mission command applications onto a “single pane of glass” and adheres to zero-trust principles will further enhance secure and relevant data exchange with joint and coalition partners. CS-29 will also increase usage of cloud services in a tactical environment, further enabling distribution of warfighter applications. Other CS-29 design goals will enhance line-of-sight and beyond-line-of-sight on-the-move communications and waveform spectrum efficiency.

“We have done a good job in aligning our S&T to program transitions, which have been very supportive in the delivery of the Army [of] 2030. As we’re looking ahead toward the design of the Army [of] 2040, we’re going to stay aligned from an S&T perspective, but we’re also going to get a lot more agile,” said Joe Welch, U.S. Army Combat Capabilities Development Command C5ISR Center director, assigned to Army Futures Command. “We’re putting a plan together, but we’re [also] making sure that we are able to react quickly as commercial developments accelerate, to be able to modify that plan and make sure that we adhere to our ability to stay agile in the S&T space.”

CONCLUSION

As it evolves with each capability set, the Army expects to retain several key attributes in the network of 2030 and 2040: transport-agnostic, data-centric, modern security architecture and cyber electromagnetic activities dominance. Although the service expects these attributes to retain relevance, it can’t yet know what revolutionary commercial technology, operational landscape or strategic need



ON-THE-MOVE PILOT

During the Army’s three-week Armored Formation On-The-Move Network Pilot, 1st Lt. T.J. Allen communicates with brigade headquarters in February 2022 from inside his network-integrated tracked vehicle at a remote location at Fort Stewart, Georgia. (Photo by Amy Walker, Project Manager Tactical Network)

could arise 15 or 20 years from now. The key is to build on current successes and to be open and agile enough to integrate innovation.

“We’re looking for you to come to us with your innovation, your transformative approaches, your breakthroughs, R&D, and anything else that you have,” said Raj Iyer, Ph.D., former chief information officer of the U.S. Army, to the TEM 9 industry audience. “We are telling you the threat environment that our commanders are operating in and what the strategic needs are; then you have to translate that to what it means in terms of your capabilities.”

For more information, contact the PEO C3T Public Affairs Office at 443-395-6489 or usarmy.APG.peo-c3t.mbx.pao-peoc3t@mail.mil.

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.



TECHNOLOGY IN TRANSITION

Ground station systems are mounted on a Joint Light Tactical Vehicle and will contribute to the Tactical Intelligence Targeting Access Node (TITAN) intelligence gathering capabilities. Fiscal year 2024 will be a critical year of technology transitions as PM Tactical Network and PEO C3T proactively apply lessons learned to assist with technology transition prioritization and prepare for maturing emerging technologies. (Photo by PEO IEW&S)

AVOID THE PLUNG

PEO C3T, the Network Cross-Functional Team and the C5ISR Center work to find a route around the technology transition valley of death.

by Tyler J. Cook

Many in the Army acquisition community are familiar with “the technology transition valley of death”—the all-too-common occurrence when emerging science and technology (S&T) programs fail to successfully transition to a project management office for potential integration, acquisition, production and fielding.

The Army’s technology transition process plays a key role in delivering emerging capabilities to U.S. forces and retaining technological overmatch against peer and near-peer adversaries. Global tensions and the potential for conflict with tech-savvy threats have renewed the Army’s interest concerning the plight of technology development programs and their successful transitions to project management offices.

In 2019, several commercial prototype development efforts focused on improving network resiliency and capacity were initiated as part of the Army’s two-year interval network modernization capability set acquisition and fielding process. These prototypes showed significant promise and highlighted the Army’s enhanced collaboration with industry and industry’s innovation to meet emerging capability requirements. The Army conducted successful assessments on these prototypes, followed by system improvements and touch point events with Soldier feedback to inform additional enhancements.

However, some of the prototypes stalled, teetering over the technology transition valley of death, because of evolving maturity levels or the lack of additional research, development, test and evaluation (RDT&E) funding needed to improve the prototype and integrate with existing Army network communications capabilities (Figure 1). Without the established funding, the technology transition bridge had only been built halfway, increasing the likelihood of prototypes toppling into the valley of death.

The Army implements technology transitions when an S&T system has reached a certain maturity level, known as a technology readiness level (TRL), which is measured through a technology readiness

assessment (Figure 2). Without the proper processes and funding in place, at best, any S&T transition will be in knowledge and lessons learned only, and not the systems themselves. Although the transition of knowledge is always beneficial, the absence of transitioned systems keeps capability gaps open and leaves the Army more susceptible to U.S. adversaries.

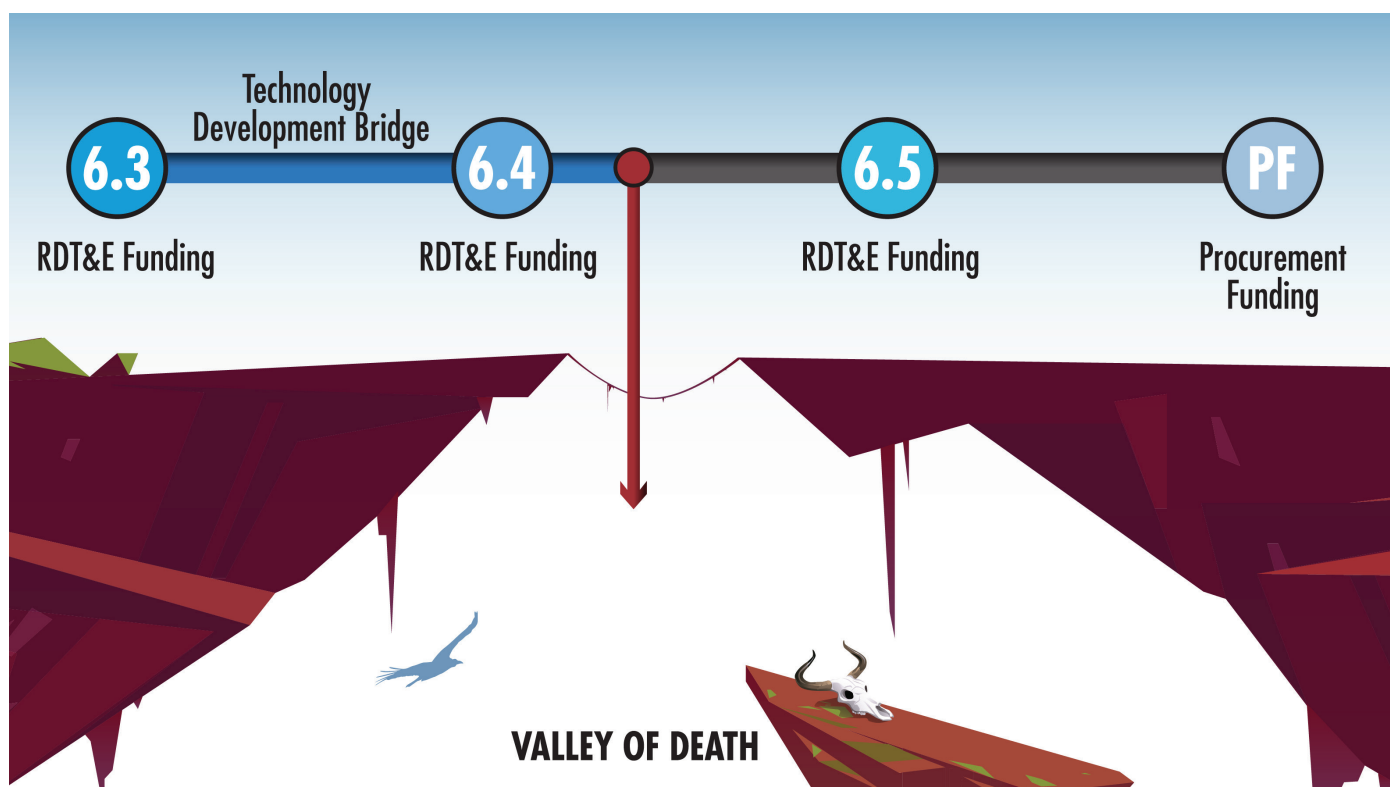
UP TO THE CHALLENGE

The Army is addressing technology transition challenges by establishing new integration offices at the Program Executive Office for Command, Control and Communications – Tactical (PEO C3T), which work in tandem with the Army Futures Command’s cross-functional teams and the Combat Capabilities Development

Command Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center. Over the last few years, these organizations, through tightly aligned goals and collaboration, have significantly increased S&T reviews, enhanced transition agreement processes and strategic reviews of acquisition plans, along with many other efforts.

While early project management office buy-in and transition agreements are critical for prototype technologies and capabilities, without these offices receiving additional RDT&E appropriations, the technology transition valley of death remains the unavoidable destination for many emerging modernization efforts. Project Manager (PM) Tactical Network is working closely within its

FIGURE 1



TECHNOLOGY BRIDGE

Teetering over the technology transition valley of death.
(Graphic by USAASC)

FIGURE 1 KEY

RDT&E: Research, development, test and evaluation

parent organization, PEO C3T, together with the Network Cross-Functional Team and the C5ISR Center, to lay the strong foundations required to truly bridge the technology transition valley of death and enter product development.

RDT&E BUDGET ACTIVITIES-4: ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES

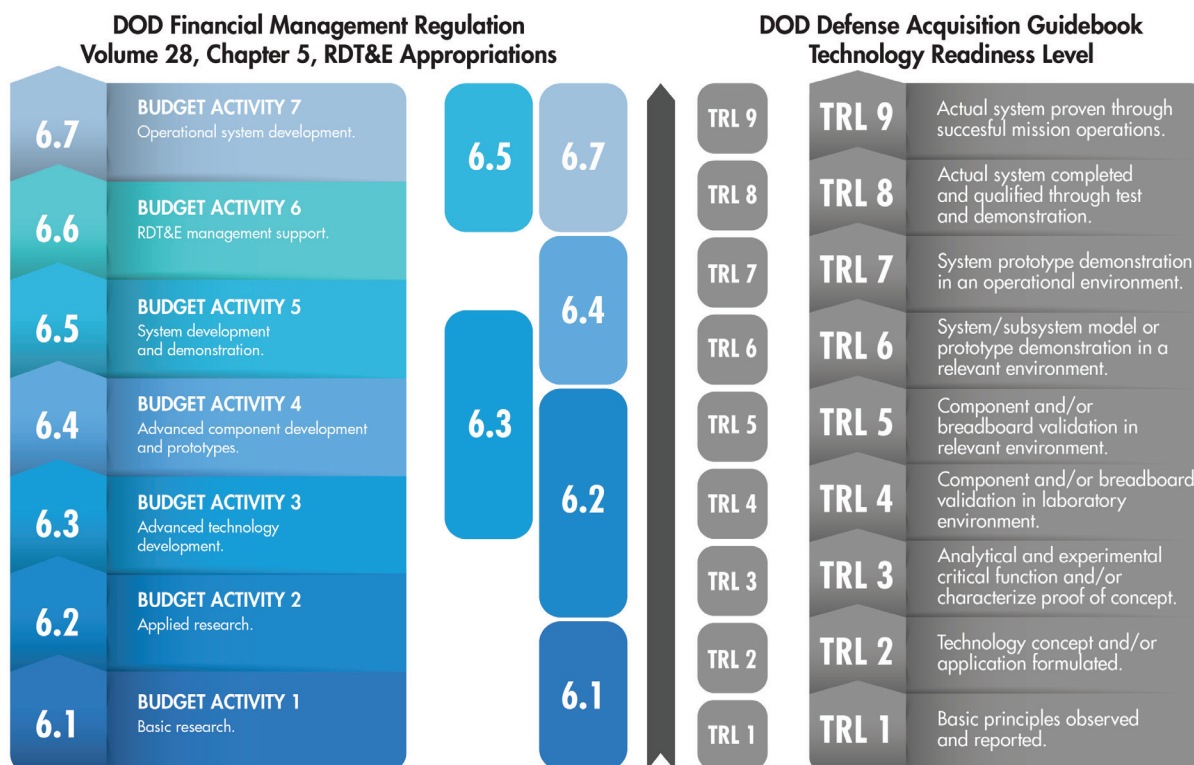
The Army's establishment of dedicated advanced-component-development and prototypes (6.4) RDT&E funding for use across PEO C3T is perhaps the single most important building block in the successful transition of mature S&T programs to their respective project management offices. This funding line enables the

development, system integration and demonstration of technologies and prototypes at TRL 6 and 7 (Figure 2).

To date, PM Tactical Network leverages two pathways to take advantage of this RDT&E funding (Figure 3), although there are others under consideration. The first is through formal technology transitions from the C5ISR Center to the project management office and the second is through technical exchange meetings (TEMs) with industry.

Formal S&T Pathway: The Army's formal S&T pathway is the more traditional avenue for technology development. It generally includes multiple years of basic research (6.1 funding),

FIGURE 2



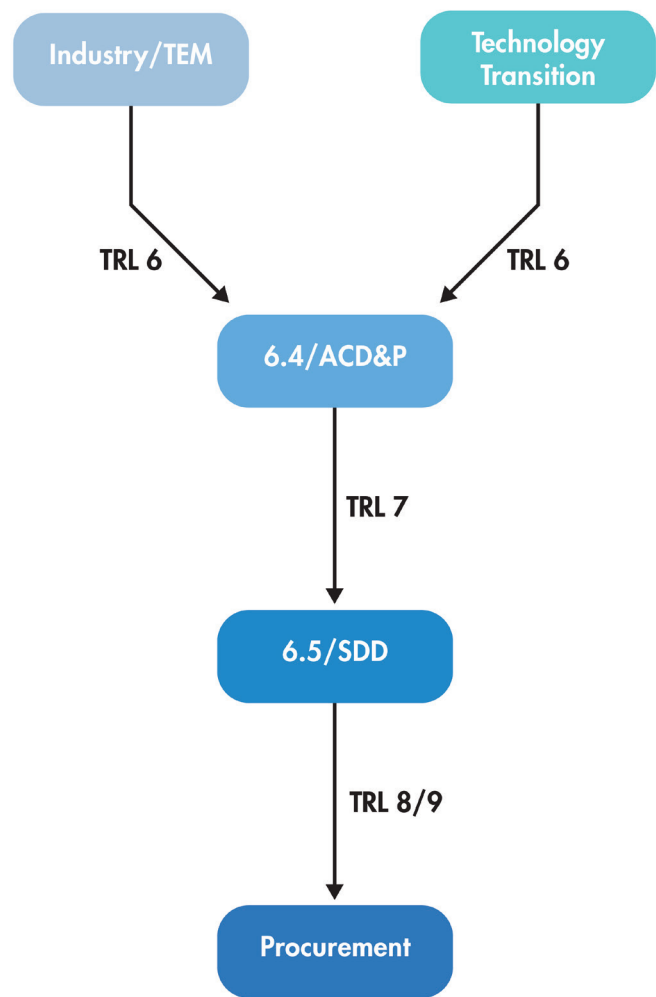
READINESS LEVEL

Financial Management Regulation – Technology Readiness Level (FMR-TRL) Map 1. (Graphic by DAU, adapted by the author)

FIGURE 2 KEY

RDT&E: Research, development, test and evaluation
TRL: Technology readiness level

FIGURE 3



GOING WITH THE FLOW

Conceptual flow of technology transition pathways and development. (Graphic by the author)

FIGURE 3 KEY

- ACD&P:** Advanced component development and prototypes
- SDD:** System development and demonstration
- TEM:** Technical exchange meeting
- TRL:** Technology readiness level

FIGURE 4

LEVEL	CHARACTERISTICS
9	<ul style="list-style-type: none">Transition to PEO funding and management completed.Transition after action report and storyboard documented on S&T portal.Transition success report to AT&L.
8	<ul style="list-style-type: none">Signed transition agreement between PM and S&T.Transition funding committed.
7	<ul style="list-style-type: none">Integration strategy defined.Transition cost estimate complete.Potential funding sources identified.
6	<ul style="list-style-type: none">Transition technical goals approved by PM, S&T.Transition schedule estimate developed.Project included in PM plans as a potential source.
5	<ul style="list-style-type: none">Expressed interest from PM office.Active communication with named PM contact.
4	<ul style="list-style-type: none">Target PMs briefed and provided progress updates.Key transition stakeholders named.Relevant programs named.
3	<ul style="list-style-type: none">Specific project technical goals established.Target acquisition programs identified.Potential transition stakeholders identified.
2	<ul style="list-style-type: none">Project initiated.TRL goals established (baseline).
1	<ul style="list-style-type: none">Working group interest expressed.Active tech discovery.Acknowledged gap.

CONFIDENCE CHARACTERISTICS

The characteristics of Technology Confidence Levels (TCLs). (Graphic by the author)

FIGURE 4 KEY

- AT&L:** Acquisition, technology and logistics
- PEO:** Program executive officer
- PM:** Project/program manager
- S&T:** Science and technology
- TRL:** Technology readiness level

applied research (6.2 funding), and advanced technology development (6.3 funding). Midway between the start and transition of an S&T program, the gaining project management office and the C5ISR Center sign a transition agreement, which identifies funding, knowledge points, decision points, technical readiness assessment criteria, transition product, etc. Once the technology is validated as TRL 6, and meets other project-specific transition criteria, it transitions to the project management office for ownership and additional technology maturation.

TEM Pathway: An alternate avenue to technology transition is to leverage the semiannual network modernization technical exchange meetings, which are co-hosted by PEO C3T, the

Network Cross-Functional Team and the C5ISR Center. These formal exchange meetings provide industry with updates and insight concerning the Army's network modernization strategy, including network modernization capability sets and development, through warfighter panels that highlight specific TEM network modernization efforts to fill capability gaps. Following a TEM, the Army solicits whitepapers, which industry submits to support potential prototyping efforts for specific TEM topics using 6.4 RDT&E funding.

Even though some TEM prototypes have not currently transitioned, the knowledge gained from these efforts helped enhance the technology transition and integration process for future S&T



TESTING THE LIMITS

National Guard Soldiers don M50 gas masks in response to a simulated chemical attack during a combat support training. Some Army prototypes that showed promise, followed by system improvements and Soldier touch point feedback, have stalled, teetering over the technology transition valley of death. (Photo by Sgt. Brandon Whittemore, 354th Mobile Public Affairs Detachment)

transitions that impact the Army's unified network. The concept and lessons learned from these prototypes have been carried forward as design goals for Capability Set 23.

RDT&E BUDGET ACTIVITIES-5: SYSTEM DEVELOPMENT AND DEMONSTRATION

To ensure the transition of products and not just knowledge, Army stakeholders are creating a stronger, more complete bridge to successful technology transition. In 2022, the Army announced new dedicated system development-and-demonstration (6.5) funding, to be used beginning in fiscal year 2024, to support the integration and testing of efforts that have matured past the 6.4 RDT&E funding stream and TRL 7. This "new start" funding line is dependent and modeled after the existing PEO C3T 6.4 RDT&E funding line. Efforts will vary each

year as systems meet the required TRL entry and exit gates. What will not change is the positive impact 6.5 funding will have on future Army network modernization efforts, including programs such as: S&T's Next Generation Tactical Terminal, a common satellite system that supports the Army's family of terminals approach; Non-Traditional Waveforms, which is a high-throughput line-of-sight communications capability; and the TEM 5 Intra Command Post Node Wireless system.

Fiscal year 2024 will be a critical year of technology transitions for PM Tactical Network and PEO C3T as additional 6.4 RDT&E efforts from S&T transitions and the 6.5 RDT&E funding line begin. These organizations are proactively applying lessons learned to assist with technology transition prioritization, to inform senior leader decisions and to prepare maturing emerging technologies.



LESSONS LEARNED

A Minnesota National Guard Soldier patrols within the perimeter of a division support area during a combat support training exercise at Fort McCoy, Wisconsin, Aug. 14, 2021. Without the proper processes and funding in place, any S&T transition will be in knowledge and lessons learned only. (Photo by Sgt. Brandon Whittemore, 354th Mobile Public Affairs Detachment)

TECHNOLOGY TRANSITION FOCUS AREAS, RECOMMENDATIONS

In today's fiscally constrained environment, prioritization of efforts remains critical throughout the technology transition and development decision process. PEOs and project management offices can leverage the following focus areas to help ensure successful technology transition and avoid the valley of death:

- **Establish a 6.5 RDT&E funding line.** A dedicated 6.5 RDT&E funding line provides the project management office with the flexibility to choose which efforts to fund across its portfolio based on maturity, schedule, requirements and impact to the warfighter. As new capability gaps and potential solutions are identified, funding can be adjusted much faster with 6.5 funding than it can by creating a program-specific funding line.
- **Assess the type of transition.** What is being transitioned? Is it only knowledge, or is the transition a physical or virtual product that fills a critical capability gap? This consideration can be useful in determining an S&T effort's return on investment beyond 6.4 RDT&E funding.
- **Plan the transition path.** Is the technology being transitioned via the TEM or the S&T pathway? Which path reduces risk the most or could be more impactful in the prioritization of future efforts? Are there other transition pathways that could be taken or created? As additional transitions occur across the PEO, is there a more proven path that could provide capabilities to close critical gaps?
- **Limit salami slicing.** Rather than partially funding multiple projects, fully fund one effort before funding the next. This does introduce risk in the unfunded project becoming technically obsolete if it is deferred to a later year, and there is risk in going all in on the funded project and it failing to fully transition into production. However, failing early can be useful to the Army, as seen in special operations acquisition, which uses a fail faster approach to make informed decisions much earlier in a project's life cycle. Showing that a project management office can successfully transition an effort by demonstrating the integrated system within an operational environment, may improve the likelihood of funding in the future, versus the salami slice approach where efforts may never fully mature.
- **Mature the Manufacturing Readiness Level (MRL).** Much of the PM Tactical Network portfolio includes

the integration of commercial off-the-shelf products that are already in production and have a high MRL. With planned technology transitions, renewed and increased focus should be placed on assessing and maturing MRL concurrently with TRL to ensure the production process is established and prepared to meet Army production requirements.

- **Determine the Transition Confidence Level (TCL).** Recent program reviews by PEO C3T, the Network Cross-Functional Team and the C5ISR Center have identified the need for metrics concerning the success and confidence levels across the technology transition community. The TCL, as discussed by Anthony Davis and Tom Ballenger in their January-February 2017 article in Defense AT&L, is another metric that should be adopted by project managers to assist with prioritizing efforts across the portfolio (Figure 4).

CONCLUSION

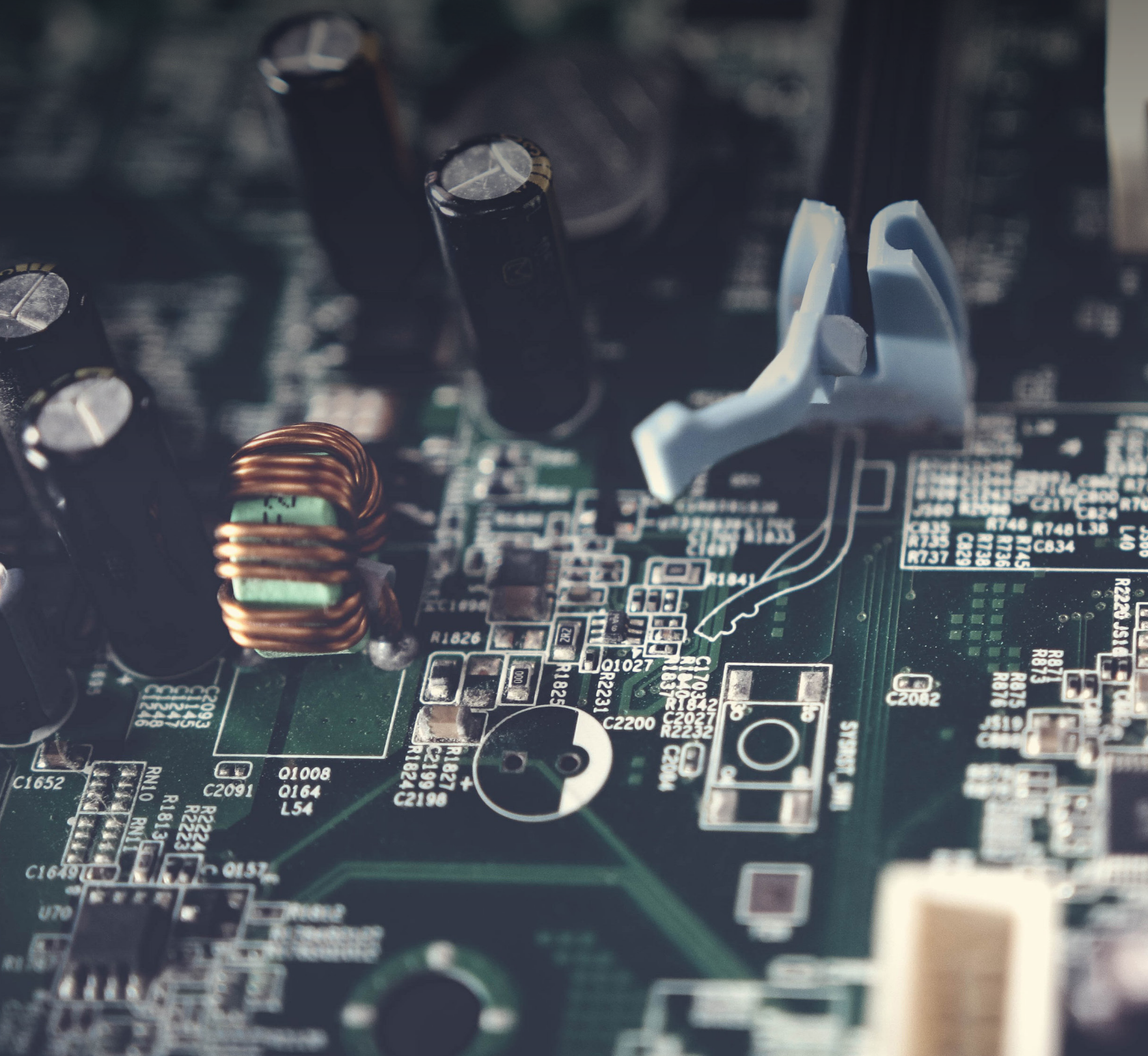
Army network modernization stakeholders will continue to streamline and optimize the technology transition process using these and other technology transition focus areas and processes. Forward thinking, analysis, planning and leveraging lessons learned will prepare project management offices for adapting near-term 6.4 RDT&E efforts and follow-on 6.5 RDT&E systems. PM Tactical Network and PEO C3T are working closely with Army network modernization stakeholders to plan and implement the successful transition of development efforts from the S&T community and industry to fielded Army programs. These efforts will help ensure the latest technologies reach U.S. forces as rapidly and effectively as possible, enabling decision dominance and mission success in multidomain operations against increasingly sophisticated enemies.

For more information, go to the PEO C3T website at <http://peoc3t.army.mil/c3t> or contact the PEO C3T Public Affairs Office at 443-395-6489 or usarmy.APG.peo-c3t.mbx.pao-peoc3t@mail.mil.

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GATHER THE DATA

Making consumable information out of raw data begins with harvesting data from external and internal sources, like satellites, aircraft, electronic sensors and unit-owned sensors. (Photo by Pok Rie, Pexels)



SERVING UP DATA

Like many foods, information needs some work before it's ready for consumption.

by Lt. Col. Philip J. Smith

Human beings consume information for the same reason they consume food: to survive and thrive in their environments. Food is converted into muscle and energy, while information is converted into knowledge that is used to make better decisions. Better decision-making is important to survival. As pointed out in an earlier article (see “Cloud Formations” in the Winter 2023 issue of Army AL&T), humans and machines must consume information in greater quantities at a greater velocity to achieve information advantage over competitors.

This is important, because when decision and action outpace observation and orientation, risk occurs.

To give Army commanders decision dominance, we must make data processing and availability a critical capability. The solution is not to try and squeeze more data more quickly from the Army's existing data architecture. The solution lies in rethinking the Army's entire data system and deciding if it can be improved or replaced, and then beginning to overhaul it.

Many organizations in the commercial sector and the Department of Defense have launched their information system overhauls by using the “as a service” models to acquire new capabilities. This approach lets them keep up with the accelerating speed of technological advancement while reducing resource and budget burdens, equipment obsolescence and other sustainment challenges.

To understand “as a service,” it is helpful to look at the evolution of data production and consumption. For a long time, gathering information was a “hunting and gathering” exercise similar to that of Stone Age tribes searching for food; it was time- and labor-intensive.

Initially, hunting and gathering of food and information both involved traveling out to prime hunting locations: a field, swamp or forest for a caveman, or a library for a student. The Paleolithic hunter relied on tools such as hand axes and spears to bring down a plump mammoth, while the earnest student relied upon tools such as the card catalog or the Dewey Decimal System to find books that would be scoured for information.

Over time, technology and the invention of agriculture made the procurement of food and information much easier. Nowadays, plentiful food is only as far away as the nearest supermarket or can even be delivered to your door. And today, thanks to airborne and terrestrial sensors, modern telecommunication systems, satellite links and mission command systems, Army leaders have immediate access to an abundance—a mammoth amount—of information.

This leads to the second part of this analogy. In those early days of hunting and gathering, cavemen knew that finding and killing that woolly mammoth was just the first step. To convert the animal into food, they still had to skin it, butcher it, transport the meat to a campfire and then cook it.

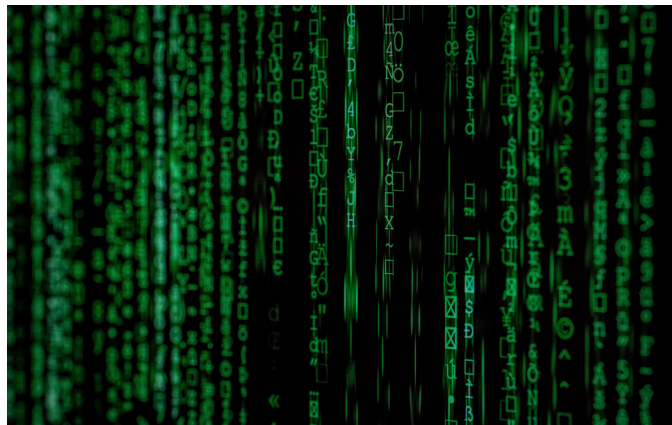
Like a freshly killed mammoth, raw battlefield information is not immediately ready for consumption. The huge amount of battlefield information is overwhelming. So the first tasks are to concentrate on finding, extracting, transporting and processing the valuable and useful information for the data consumers.

Processing data, like processing foods, requires an infrastructure. And like the food processing infrastructure, the data processing infrastructure is driven by the needs of the ultimate consumer—the Soldier, the staff and the commander.

SERVICE LEVELS, AN INTRODUCTION

Think of all the tools, transportation, processes and options that go into food production.

Specialized farming equipment such as combines and milking machines collect or harvest the raw food, which must be transported and undergo further cleaning, sorting and filtering. Depending on the proposed use of the food, we may see further transportation and storage where the food goes through final preparation to make it consumable in a variety of formats: a six-course gourmet meal served in a fine restaurant, a home-cooked meal eaten at home, a microwave burrito hastily wolfed down in a dorm or barracks room, or a Meal Ready to Eat issued to troops on the move.



RETHINKING THE SYSTEM

"As a service" models can help the Army rethink its data system and overhaul it. (Photo by Markus Spiske, Pexels)

Data consumption also varies. Sometimes a deep dive is needed to assess potential courses of action of an enemy. At others, a Soldier spots an oncoming group of vehicles and needs to make a snap decision on whether they are friend or foe, whether the targets should be engaged, and if so, what assets should be called in to fire upon the enemy.

To make consumable information out of raw data involves a variety of processes, starting with harvesting data in many ways. There are external sources, including satellites, aircraft and electronic sensors. Internal sources, such as unit-owned sensors, can be operated by subordinate or adjacent units, sister services, allies or intelligence agencies. Other data is collected internally, both from sensors on vehicles and unmanned aerial vehicles, but also from much less glamorous sources, such as manual counts of ammunition on hand, or Department of the Army 5998e maintenance forms.

The collected data moves via land lines, fiber optics, wireless transmission and satellites, and is stored in both electronic and paper form: spreadsheets, hard drives, email inboxes and shared network resources.

Finally, the data is prepared for consumption. Typically, the data is transformed by staff into unique and ephemeral standardized, text-heavy, information-packed slide decks that commanders and staff have to dig through to find useful nuggets. But technology is now making it easier to quickly convert that raw data into usable and consumable information, using technologies such as

automation and artificial intelligence. So, we must adjust our understanding of what new capabilities can be used to enable and improve the observe-orient-decide-act loop for commanders at strategic and tactical levels.

INFRASTRUCTURE AS A SERVICE PROVIDES OPTIONS

To continue using the analogy of food and data preparation, imagine you are a manager responsible for feeding a fixed number of people on a daily basis, but your cafeteria just burned down. While the cafeteria was reduced to ashes, everything else was saved: the appliances, pots, pans, furniture and the cooks. You can't afford to buy a new cafeteria, so what do you do? You rent one, instead, and restart operations using your staff, equipment and furniture.

This is an example of infrastructure as a service (IAAS). Under the IAAS model, you rent infrastructure (servers, data storage, facilities, heating, vents, air conditioning, etc.) and services (basic security and server resources utilized on a consumption basis). You must bring all your own data, data appliances and software tools, as well as data ingredients and trained and qualified people to wield the data tools.

In various tactical scenarios, a unit's servers may be inaccessible for a number of reasons. The servers may be undergoing maintenance or reset, in transit to theater, or unavailable while a tactical operations center is moving. There may also have been a catastrophic event and the hardware rendered unrecoverable. Due to personnel transfers, a unit might lack personnel with the required military occupational specialty expertise to administer tactical IT services. It is also possible that the mission might dictate such a geographic spread of personnel that there is not enough issued



DIGEST THE INFORMATION

A military adviser assigned to 1st Security Force Assistance Brigade checks communication equipment inside a vehicle. Raw battlefield information is overwhelming, and not ready for consumption—finding, extracting, transporting and processing the data is key. (Photo by Maj. Jason Elmore, 1st Security Force Assistance Brigade)

hardware to meet the need. Nonetheless, despite these sorts of challenges, units may still need to train, exercise or even execute the mission.

Because the U.S. Army has already invested in buildings, purchased servers and the necessary resources to run them, and has acquired software and appliances to run on owned hardware, this inefficient and less flexible model is the only one we can use as tenants in cloud service providers immediately without retooling or altogether rebuilding our software. However, to process raw data more

efficiently for information consumption in other logical and physical locations, we need to make additional changes.

PLATFORM AS A SERVICE PROVIDES THE TABLE

Extending the scenario, imagine that not only the building but also your appliances were lost in the fire. In addition, the number of people you are being asked to feed has been fluctuating wildly and unpredictably. Likewise, for your reopening, you have been tasked to make a special one-off meal that will require new and exotic food preparation equipment.



CHOOSE WISELY

Sgt. Galen Craig, 44th Expeditionary Signal Battalion – Enhanced, checks his equipment. For the tactical Army, SAAS may not meet requirements to operate in denied, disrupted, intermittent and limited bandwidth environments. (Photo by Candy C. Knight, 2nd Theater Signal Brigade)

How do you re-equip your kitchen so you can deal with all these variables?

Platform as a service (PAAS) is an option. It is the equivalent of renting a kitchen and staff by the hour, so you only pay when you need their services. PAAS provides a tenant from a cloud service provider with a collection of agreed-upon tools. They can include delivery and storage of U.S. Army or DOD-owned raw data, and a collection of modular software that, when properly orchestrated in a sequence—just like a recipe—can produce something consumable in a task-tailorable way. Platforms provide flexibility.

They can be increased when needed because of high demand or reduced to economize. Perhaps in a recipe a blender is needed, and many orders are now waiting at this step in the process. In a platform, multiple blenders, up to as many as can be hosted on the platform, can be called up for use to efficiently complete the overall task. When they are no longer needed, they are put away and the countertop real estate can be freed up for other resources.

Collections of these functions that consistently operate in the same way can be packaged in containers. Containers allow smaller chunks of software to be “built once, run anywhere.” That is, if your hardware and foundational “middleware” can support them, containers can be hosted on extendible hardware platforms at various locations as well as being connected with a central source.

To keep with the analogy, perhaps your kitchen is keeping up with an additional customer load, but you need more dining space. Dining room containers complete with tables, chairs, cutlery, etc., can be brought to various locations, maybe even separated from the kitchen if meals can be transported fast enough, to meet demand. You may need additional dishwashing capabilities as well.

SOFTWARE AS A SERVICE CONSUMABLES

Returning to the post-fire scenario, there is an additional option—software as a service (SAAS), which is the data equivalent of getting out of food preparation altogether and hiring someone else to do the job, potentially all the way to doorstep delivery of food. These services vary from the more traditional delivery of pizza, to other fast food, or meals from other types of restaurants. There are even custom services in which a driver brings pre-measured ingredients to your doorstep and you do the cooking.

With SAAS, a cloud services provider supplies data tools and information capabilities, and handles a variety of tasks such as dissemination and security. Additional services can usually be added at additional cost. These customizations or enhancements are generally provided from a palate of offerings from the cloud service provider, rapidly adapted en masse, but not software development specifically for an organization. To account for this, no- and low-code offerings are typically available with a graduating degree of customization for a tenant organization.

The Army’s most widely known venture into SAAS was the adoption of A365—Microsoft’s suite of SAAS tools, which include Azure Active Directory (identity and credential access management), Teams, Office 365, SharePoint Online, etc. These programs have enabled the Army to collaborate more effectively,

but unit level customizations have been slow to develop or be enabled, given that the service is procured at the U.S. Army level instead of the unit level. However, in the suite of tools made available are things like Power BI, Power Automate, and Power Apps that allow anyone in the Army to visualize their data, automate their processes and create apps for their organizations.

The drawback is that these SAAS solutions typically exist within cloud hyperscale resources or “off-premises,” meaning a connection is required to develop, utilize and otherwise consume those services. Hybrid architectures are available in some

cases, but they are still a mix of IAAS, PAAS and SAAS. For the tactical Army, pure SAAS may not meet requirements for the ability to operate in denied, disrupted, intermittent and limited bandwidth environments. However, for users who spend the bulk of their time in training and exercises, SAAS offers more exposure at reduced costs when these hybrid architectures are used with the right software.

WRAPPING IT UP TO GO

A range of options is on the menu from cloud service providers where ease of use is balanced against cost and responsibilities. Infrastructure, platform and software services aim to digitally process and help

users turn their data into digestible information in a multitude of methods that an organization can choose from. However, with so many options, organizations can spend a lot of time, effort and money trying to do new things the old way.

While it is possible to take current Army information technologies and implement them in cloud service provider resources built on the same concepts of operation using low level IAAS options, it may not be fiscally responsible. Somewhere along the way, inconveniences will become emergencies that are unnecessarily difficult to work through if we continue to try putting square pegs in round holes. If we intend to maintain Army software autonomy, we will have to adjust software delivery requirements to be cloud-native or container-based to be more readily consumable by the force.

For more information, contact Lt. Col. Philip J. Smith at philip.j.smith2.mil@army.mil.



THAT'S A FLEX

PAAS provides flexibility, producing something consumable in a task-tailorable way, increasing when needed because of high demand or reduced to economize. (Photo by Staff Sgt. Bill Boecker, 34th Red Bull Infantry Division)

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DEVELOPING A CULTURE OF INNOVATION THROUGH PURPOSE

In our line of business, if it's not in the user's hands, it's of no use to anybody.

But to meet that goal can be quite the process—one that in many cases is necessary, but in others must be improved if we are to ensure our Soldiers are never in a fair fight.

Yes, we need to:

- Rapidly develop prototypes and deliver capabilities to the workforce through alternative acquisitions.
- Constantly research, develop, test and evaluate.
- Streamline the Army Acquisition Workforce.

But it is everyone's responsibility across the Army acquisition community to instill and grow a culture of innovation and creativity if we are to ensure overmatch.

THE ENTREPRENEURIAL MINDSET

As I mentioned in my last column, 2023 is the year of digital transformation. This year will be a key steppingstone toward the Army achieving the Army of 2030 modernization goals, in which the Army Acquisition Workforce plays a critical role. As we become more laser-focused on problem sets and looking at ways to save time in the cost, schedule and performance timeline, we need to also look at how we're equipping our workforce with skills to help it shift to a related mindset.

When I go out and engage with program executive offices, I always ask what they need, and what I hear most is "critical thinkers." Being able to analyze facts and observations in a clear and rational way is necessary, but I would argue that above that, we need our acquisition professionals to have an entrepreneurial mindset.

An entrepreneurial mindset is one that cultivates innovation, is agile and sees mistakes as opportunities. We must push the envelope of technology and speed up our timeline. Leaders must encourage new ideas—nobody has a monopoly on good ideas. We must take a team approach and know when to rely on our partners, whether within our organizations, industry or academia. And we must know when to take risks. We too often get wrapped up on the unknowns when there are a lot of knowns we can be planning for.

The Army, including my office, has several professional development programs and training opportunities available for our workforce that can be used to help develop this mindset. As we promote and execute these programs, we must also be purposeful with how we are maximizing their use and impact.

PURPOSEFUL PROGRAMS

Our partnership with industry must continue to be strengthened and maintained, and we must share and learn what we can from one another. Our Training With Industry program embeds acquisition officers into the business sector for 12 months. The list of participating companies is specifically curated to include developers of innovative, cutting-edge technologies.

We need our acquisition professionals to have an entrepreneurial mindset.

On the civilian side, the Department of Defense's Public-Private Talent Exchange (PPTE) program gives acquisition civilians nine months of hands-on experience, gaining insight into the business's priorities, strategies and operations. Civilians may also gain industry experience as part of the Senior Enterprise Talent Management program's Army Senior Fellowship, which incorporates graduate training with 12 months training with industry.

In addition to sending our acquisition officers and civilians to industry, we can also look at bringing industry to us. The PPTE

program is bi-directional and brings the government a unique skill set and expertise—without having to contract for it.

PURPOSEFUL LEADERSHIP

While the Army has developed and continues to refine these programs, it is our leaders who have the most impact on their success. Organizational leaders must have awareness of the programs, understand their intent and value, and ultimately be supportive of sending workforce members. While it may seem there will be a short-term negative impact on the organization to lose an esteemed teammate for nine or

12 months, the long-term impact of sending quality acquisition professionals is an investment for that person, the organization and the Army—one that we depend on leveraging upon their return and into the future.

Leaders also should consider the needs of the organization and the Army's goals in the type of experience and expertise gaps we may be able to fill through these programs. As workforce professionals are selected to participate in these programs, leaders should set meaningful expectations and look for creative ways to put that new



EMBEDDED IN INNOVATION

The Training With Industry program strengthens and maintains the relationship between the acquisition workforce and companies that develop innovative, cutting-edge technologies. (Graphic by USAASC)



MAXIMIZE DEVELOPMENT

Brig. Gen. Christine A. Beeler, commanding general of the Army Contracting Command, speaks to military and civilian personnel at the Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) during a professional development event. Maximizing professional development programs in the acquisition workforce will be key for the Army of 2030. (Photo by Donnie Ryan, PEO STRI)



KEEP UP WITH THE COMPETITION

Col. Brandi B. Peasley, deputy commanding officer of the 75th Innovation Command, competes in a pushup challenge against a DroneDog during the 2022 Fed Supernova Conference in Austin, Texas. Fed Supernova connects entrepreneurs, government and industry to collaborate on dual-use solutions for the DOD. (Photo by Staff Sgt. John L. Carkeet IV, 75th Innovation Command)

experience and expertise to use within the organization.

PURPOSEFUL CAREER PLANNING

Each workforce professional is ultimately responsible for their own career path. It is important to properly plan your career development and growth, and map that alongside any personal milestones.

My office has developed career models for officers, noncommissioned officers and civilians in each available functional area. In addition to considering and applying for career development programs, continuous learning and training is another easily accessible path available to you now. As our time is invaluable, acquisition professionals, in conjunction with your supervisor, must be purposeful in determining what skills need refreshing or what new skills might be needed for the job you are doing now or expect to be doing in the near future.

The Defense Acquisition University Credential Program provides that timely and job-specific training. Through the Army Civilian Career Management Activity, acquisition civilians also have access to Udemy Business, an online learning platform with a variety of learning paths, such as the Digital Transformation 2023 Masterclass, which provides foundational skills, from design thinking to creating a digital transformation framework.

CONCLUSION

Our most valuable asset is our people, and we're fortunate to have been given resources to develop individuals and teams and to encourage an entrepreneurial mindset. Together, let's make the most of it through purposeful programs, leadership and career planning. 🙌🙌

TIES THAT BIND

You've found the person you want to spend the rest of your life with, but maintaining employment in your career field after becoming a military spouse is no small feat. (Photo by Andrea Román, Pexels)

THE MILITARY SPOUSE DILEMMA

An acquisition professional shares her career hurdles as the Army releases a new guide for veterans and military husbands and wives to better understand the federal hiring process.

by Holly DeCarlo-White

Imagine completing your master's degree and landing a job in the Army acquisition career field you have worked so hard for. Then, finding the person you want to spend the rest of your life with, who just happens to be active-duty military. As a current DOD civilian in contracting, which the Army needs all over the world, surely these skills are transferable without having to leave the career field? Well, as Jessica Raulerson discovered, that is not quite how it works once you become a military spouse.

It is career conundrums like this that DOD has the ability to better bridge if it is willing. Between 22 and 35 percent of military spouses across all branches of service face unemployment—that is four to six times the national average, as of 2022, and the numbers have been this way for the last several years.

NEW EMPLOYMENT RESOURCE

In a modest effort to ease the employment burden through more transparent and accurate information sharing, a new resource guide for military spouses and veterans, “Navigating Civilian Employment,” was recently released to ensure the most up-to-date information on laws, policies and programs are consistently available in a living document to help better understand the federal hiring process. The guide was created in response to a 2020 survey of military spouses currently employed as Army civilians, conducted by the Office of the Assistant G-1, Civilian Personnel. Findings from the survey illustrated a need to increase employment information sharing and improve the consistency and ease of access to employment information. The guide includes illustrated example hiring paths for different scenarios and experience, descriptions of job classifications, hiring requirements and forms.

Raulerson, who began her career as a contract specialist at the Missile Defense Agency (MDA) before becoming an active-duty



DETERMINED MILITARY SPOUSE

Jessica Raulerson began her career as a contract specialist at the Missile Defense Agency before becoming an active-duty spouse. (Photo courtesy of Jessica Raulerson)

spouse—also referred to as a dependent—agrees that more information on the hiring process is needed for military spouses.

THE NUMBERS

The consistently high unemployment rate among military spouses is not from a lack of willingness to work, education or know-how. These numbers are the result of circumstances placed upon families in consequence of an outdated view of military service as a family unit, where only one member is actually paid to serve.

In a 2021 study, the Government Accountability Office estimated a 25 percent unemployment rate for spouses in credentialed fields. Fortunately, a new law announced this January has come to fruition requiring states to recognize professional licenses from other states (except for law licenses) if a move was because of military orders. Still, 43 percent of active-duty families say spouse employment is their biggest stressor. These circumstances can continue after service members transition to civilians as well. According to USAJOBS, DOD employs 950,000 civilians serving in critical positions worldwide, and states, “DOD civilians are not active-duty military, but still serve as an integral part of the Army team to support the defense of our nation.” Families of DOD civilians overseas especially face the same unemployment issues as active-duty spouses.

As Air Force spouse and author of “Silent Sacrifice on the Homefront,” Michelle Still Mehta, Ph.D., wrote in a 2019 op-ed: “It is time for DOD to do more than provide window dressing in support of military spouses. Instead, it is time to aggressively attack and eliminate this problem, just like an enemy on the battlefield.”

A CHECKED BOX

The 2020 survey outreach in the Army family web portal that ultimately resulted in this hiring guide, prompted military spouse civilian employees to “Help be a ‘change agent!’ ” and “improve

“I spent an entire year applying to jobs without one referral.”

current employment processes and develop new initiatives to improve upon spouse employment.”

While this guide, developed by Army experts in human resources and Soldier and Family Readiness, is designed to help information become more accessible, it doesn’t aid or change the policies and infrastructural problems at the root of many unemployed spouses—issues like mobility that force spouses to leave their jobs, lack of child care availability on-post; spouse hiring preference job classification (temporary or excepted service versus competitive service) that can end up blocking spouses from jobs and career growth after the “hired” box is checked.

Spouse preference is rarely used for higher level positions, and volunteer positions are often created on post to fill service gaps, contributing to 30 to 50 percent under-employment rates. A spouse’s employment can also be directly tied to the military member’s employment—meaning a spouse can lose their job upon the military member’s decision to separate from the service—no matter how good an employee they are.

THE DOLDRUMS

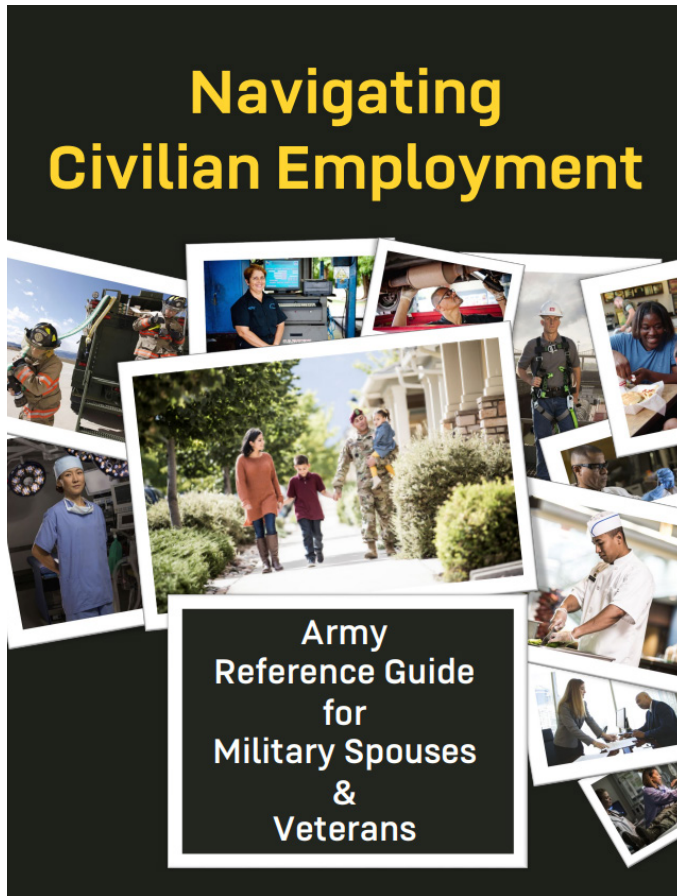
Even as a DOD civilian, Raulerson learned the hurdles firsthand and experienced how maintaining employment in your career field after becoming a military spouse is no small feat. “When we married, I moved

overseas with him to South Korea,” Raulerson said, adding that at the time she only had 90 days leave without pay (LWOP) status and was up against the three-year consecutive employment rule for credible federal service, a rule that the Office of Personnel Management has since eliminated. (The three-year rule required employees to serve three consecutive years, where a break in service more than 30 days meant essentially starting over.) “There were very few civilian positions available, but with military spouse preference I was able to gain employment with the U.S. Army Corps of Engineers as an engineering support assistant. This required me to pause my professional dreams of having a successful contracting career, but it was



A PERSISTENT CHALLENGE

Despite many government programs, hiring preferences and education benefits, military spouses have faced a stubborn unemployment rate of about 22 percent for the past decade. (Photo by Rebrand Cities, Pexels)



G-1 GUIDE

The cover of the latest resource guide for navigating Army civilian employment, released last fall by the Office of the Assistant G-1, Civilian Personnel. (Image by U.S. Army)

very important to me to keep that door open by continuing my federal employment,” she said.

“In the middle of our tour in South Korea, I applied for a contract specialist position but was not referred, despite having a master’s in acquisitions and contracting, being a prior [contracting series] 1102 and having earned my DAWIA Level II in contracting [now referred to as DOD contracting Professional], all in addition to submitting what I thought was the correct package of documents.”

When Raulerson returned to the U.S., she and her husband were stationed at Fort Irwin, California, where she said employment options were even more limited. So, she did what employment-seeking spouses are advised to do, and signed up with Civilian

Personnel Advisory Center to be placed into the military spouse preference Priority Placement Program. But she learned only after meeting with the Civilian Personnel Advisory Center director, that the human resources assistant had signed her up under positions and grade levels that did not exist at Fort Irwin.

“I spent an entire year applying to jobs without one referral,” Raulerson said. Fortunately, leadership at U.S. Army Corps of Engineers in Korea was kind enough to extend her LWOP status, since their duty station was remote and far from civilization, and she wasn’t able to gain employment in the first year. According to the G-1 resource guide, if a military spouse is on LWOP, he or she has more options to apply for jobs as a current civilian, in addition to jobs marked open to spouses.

Eventually, she did find a position—a program analyst at Headquarters, National Training Center, in the G-8 Manpower Office supporting travel and the Mass Transportation Benefit Program—but this was still not the contracting position that she was hoping for, nor did she ever see a position in the field open up.

GOOD TRANSFERS

It wasn’t until moving to Fort Leavenworth, Kansas, after a four-year gap, that she finally found an opening into the contracting career field again, with U.S. Army Mission and Installation Contracting Command (MICC). “Contracting at Fort Leavenworth was much different from contracting at MDA, but I was happy to learn something new,” she said. “MICC has a wonderful military spouse transfer program that I am more than grateful for. I was able to apply for contracting positions at our next duty station and be transferred to where I am now”—a contract specialist with MICC at the 922nd Contracting Battalion at Fort Campbell, Kentucky.

Raulerson explained how being able to transfer provided her with “built-in” rotations that broadened her skills. At MDA she was working on major weapons systems, at Fort Leavenworth she purchased information technology supplies and services, and at Fort Campbell she is now perfecting her skills in construction contracting.

Expanding transfer programs to both civilian and military spouses has proven successful in retaining a trained and capable workforce. In 2020, Army Materiel Command successfully renamed and expanded its former child care-employee-centric Nonappropriated Fund (NAF) Civilian Employment Assignment Tool to cover 90 percent of all NAF-employed spouses, although it still excludes higher career level and supervisor positions. The number

“I have learned that employment is not always guaranteed at the next duty station.”

of Army NAF employees eligible for the program increased from 7,000 to 22,000.

WHERE'S THE REMOTE?

In addition to expanding transfer programs, remote job opportunities are another realistic solution DOD has already used while sustaining support of mission requirements. Continuing and expanding DOD remote positions, to spouses and to the public, that have been remote since the COVID-19 pandemic would allow family members to apply and keep their jobs when it is time to move within the U.S. and to approved overseas locations. Currently, domestic employee teleworking overseas (DETO) agreements are rare, with cost and security cited as factors. However, staying remote could cost-effectively assist the military in filling gaps as it also faces recruitment shortcomings. The Army fell short on its 2022 active-duty recruitment goals by 25 percent.

The workforce demonstrated remote capabilities during the COVID-19 pandemic, which forced government and industry offices to find ways to continue their missions 100 percent digitally or in hybrid formats. DOD continued to meet mission requirements and provided new and improved ways of doing business, for example, remote training capabilities for foreign military sales programs (see “Perseverance is the Key” on AL&T News). Going remote also increased employee productivity, engagement and

overall civilian workforce satisfaction with leadership.

The Pentagon’s inspector general said that 88 percent of respondents surveyed on teleworking practices reported that their productivity increased while working from home or was as productive as they were in the office. So remote capabilities are not only possible, but the way of the future force if DOD is willing to accept it.

A memorandum from the Deputy Secretary of Defense Kathleen H. Hicks said, “Even before the pandemic, DOD policy has been for telework to be actively promoted and authorized for the maximum number of positions to the extent that mission readiness is not jeopardized. ... Continuation of flexibilities used during the COVID-19 pandemic increases the DOD’s efficiency and effectiveness, as well as allows the Department to better attract and retain those with the necessary skills and abilities needed to accomplish current and future missions.”

Yet, despite these lessons learned and statements from leadership, many DOD offices have chosen to mandate that all Army civilians, no matter their role and ability to continue the mission while fully remote, return physically to the office, whereby even one day per week effectively eliminates those roles for mobile military and civilian spouses and prolongs position vacancies.

CONCLUSION

While the Army remains inconsistent with any real change to military family employment issues, it doesn’t stop hard-working spouses like Raulerson from staying positive and continuing to support our warfighters in any way she can.

“I have learned that employment is not always guaranteed at the next duty station,” Raulerson said, “but I am hopeful that wherever my spouse receives PCS [permanent change of station] orders to next, I am able to continue reaching for my own professional career goals in contracting by gaining new skills, while also sharing my abilities with my new team.”

For more information, veterans and family members seeking employment in the U.S. or overseas can reach out to their local employment readiness specialist at the Army Community Service office on post for additional in-person guidance and resume assistance. To view the Army civilian and veteran employment resource guide, go to: <https://api.army.mil/e2/c/downloads/2022/09/29/bd7c6b845/navigating-civilian-employment-dtd-21sep2022.pdf>.

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CIVILIAN EXPERIENCE IN ALAP

Going through a military process as a civilian can be an eye-opening and career-broadening experience.

by Matthew Nestor

Competing to become a centrally selected product or program manager as an Army civilian can feel like trying to find your way through a foreign country. The Acquisition Leader Assessment Program (ALAP) can be particularly challenging for civilians who have not participated in an Army process such as this before. In writing this article, I hope to share my experience in this process and allow others to learn a bit more about this program.

Throughout my career as a government employee, I have supported various products that our warfighter has used in conflicts around the world. Each of these products was developed, fielded and supported by a program management office and led by a program manager. Seeing firsthand the direct connection between the work of the program office and the impact of bringing and sustaining a capability in the field, I knew that someday I would want to lead a program office.

Many of the program managers I have been exposed to have been uniformed military members, and for some time I was under the impression that only officers could hold these positions. However, learning about how these officers were selected for these positions, I came to understand that the Army and the assistant secretary of the Army for acquisition, logistics and technology are seeking the best candidates for these positions, regardless of status as a uniformed military member or civilian. My journey in this process began with an application to the centrally selected list positions, and I subsequently received an invitation to attend the fiscal year 2023 Acquisition Leader Assessment Program.

WORLD-CLASS, FAIR, CONSISTENT AND SAFE

ALAP is a five-day event that hosts a series of assessments, screenings and interviews intended to enhance the process used to select individuals for key leadership acquisition positions within the Army. The program has been structured with two main groups of personnel: the cadre—those tasked with administering the evaluations—and the candidates. The cadre

was made up of individuals from varying organizations across the Army. Through my experience, the cadre are truly striving to live up to their mantra of “world-class, fair, consistent and COVID-19 safe.”

ALAP is conducted concurrently with several other evaluations unique to Soldiers. For example, the Battalion Command Assessment Program (BCAP), the program the Army uses to select battalion commanders, has candidates taking the assessments right alongside of ALAP candidates. However, because ALAP is the only program to allow civilian participation, civilians by far will be in the minority. Since the program has all candidates participating in civilian clothes, when talking to other candidates, I found myself having to explain that not only was I not a uniformed military member, but also explain a bit about the Army Civilian Corps and what we do to support the Army. I would like to think that as much as I gained from talking with the other candidates in terms of their role in the Army, I was also able to pass on some knowledge of the Civilian Corps as well.

A MILITARY PROCESS

Upon arriving at Fort Knox, Kentucky, it became very clear that this was not going to be a standard TDY—also known as a temporary duty assignment. I knew where I was going to check into the program, thanks to the abundant information provided by the ALAP team well in advance, and signs were posted at most of the intersections guiding candidates to the mayor’s cell to check in. Once there, a team of noncommissioned officers from the cadre provided an in-briefing and a COVID-19 screening, assigned a barracks room and instructed me to conduct a reconnaissance of all facilities to be used over the next few days. Thankfully, the instructions provided were very easy to follow—though it was abundantly clear right from the in-processing brief that the cadre is available to help answer any questions and ensure all candidates are successful during ALAP.

I found that ALAP is very much a military process that civilians can participate in. While sleeping in the barracks and dining in the mess hall might not be the same as staying at the Homewood Suites with maid service, breakfast bar and unlimited coffee, accommodations are sufficient, and the ALAP team puts out a wealth of information on what to expect—as well as what to bring to make your stay more enjoyable. The schedule of the program also varies from the standard “civilian” workday, with events taking place later in the evening and running over the weekend. With that said, I chose to embrace these differences and appreciate the insight this program provides. Being part of the process and going through the assessments with a wide array of officers

has, in a small way, helped me to better understand the Army as an organization and to better see how the world looks through the perspective of my military colleagues.

ASSESSMENTS

I found the ALAP assessments to be a unique four-day interview experience in which candidates go through psychometric evaluations, an interview with an operational psychologist (trained Army psychologist), essay writing and leadership exercises, all of which culminate with a double-blind interview before a panel of Army senior leaders. ALAP was my first exposure to a double-blind interview, where neither the candidate nor the interviewing panel can see each other. During standard interviews, I tend to “read the room” in providing responses to interview questions. This style of interview does not allow this feedback and it can feel very strange. Each civilian candidate should see ALAP as a double-sided opportunity. Yes, ALAP can be seen as an extensive interview, but also, this is an opportunity for self-assessment and leader development.

ARMY COMBAT FITNESS TEST

The one event that is 100 percent optional to civilians is participating in the physical fitness assessment, the Army Combat Fitness Test (ACFT). When I was first reviewing the documentation on the ALAP program, I was ready to dismiss the ACFT as not something I would worry about. However, after thinking about it, I looked at this as an opportunity to change up my own fitness routine and I am very glad I did, as participation provided some tangential benefits.

The ACFT is also the one event where officers are required to wear their uniform. When I arrived at the gym not wearing an Army physical fitness uniform, I received quite a few questions. “Wait a minute, you’re a civilian and you’re doing this for fun?” After explaining what I was doing there, we were brought into the gym and were told to fall-in for warm-ups. Never having done this before and not seeing this as part of the ACFT from the documentation provided by the ALAP team, I had no idea what was going on, but all the other candidates clearly did. So, I made a beeline to the back of the gym and pretended like I knew what was going on as everyone lined up and spaced out to conduct warmup exercises. I stumbled through the warmups, following what everyone else was doing a few seconds behind, trying not to look like a dancer who doesn’t know the routine.

After completing warmups, and between the ACFT events, there was a distinct change. Conversations flowed more freely between the other candidates and me. There was a distinct sense

of camaraderie that I attribute to being the civilian who opted into the test when not required. Participating in the ACFT provided a glimpse into what uniformed military members must go through. Despite the test results not counting for civilians, taking the ACFT alongside field-grade officers provided a distinct sense of the pressure placed on them to perform. For these officers, passing the ACFT is a requirement for completing the command assessment program.

ALAP CONTINUES TO EVOLVE

While the ALAP process is key to how the Army continues to select for key acquisition positions and has been built around the cornerstone of world-class, fair, consistent and safe, it is not a static program. For the 2023 fiscal year cycle, the ALAP team updated several aspects of the program, including providing additional feedback to the candidates. The program has increased each candidate's time with an operational psychologist from 30 minutes to 45 minutes as part of the out-brief. Additionally, each candidate receives a feedback card upon completing ALAP. This feedback card provides the candidate's assessment outcomes compared with previous ALAP iterations. Also, the candidates now receive additional individual feedback after the centralized selection list (CSL) is published. Fundamentally, this feedback allows each candidate to grow, regardless of the outcome of the slating process. ALAP has evolved based on input received from the after-action review process and now incorporates several opportunities for feedback on the events and direct comments from the interview panel.

CONCLUSION

After completing all the assessments, I have come to reflect on this process and offer the following suggestions to civilians. First, embrace the program for what it is.

For me, I found a significant value in experiencing this process with many different officers. Second, don't hesitate to lean on the cadre to help you through the process, especially on tasks that you may have not experienced before. Finally, use the ALAP experience as an opportunity to learn, grow and build some connections with other members of the acquisition community. This program stands apart from other assessments and interviews, and the Army has committed to this process. Civilians who embrace it can reap the benefits of not only getting to compete for some of the top acquisition positions in the Army, but they also can use this as an opportunity to truly develop into more effective, resilient and decisive leaders.

For more information on the Army's Acquisition Centralized Selection Program and the Acquisition Leader Assessment Program, go to <https://asc.army.mil/web/centralized-selection-list>.

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CADRE ON CALL

ALAP candidates listen to a pre-event briefing as part of the strategic leadership exercise. The ALAP cadre is always around to answer questions during the program, even after briefings. (Photo by Lt. Col. Gena Cotton, Army Talent Management Task Force)



HONING SKILLS

During the ALAP workshop in September, participants took part in a mock blind interview and participated in an open conversation with volunteers and alumni. According to ALAP alumnus Steve Bielamowicz, "It was a great opportunity for some of our high-potential leaders to hone their writing and interview skills." (Photo by fauxels, Pexels)

RUN ALAP —AHEAD

A simple question led the author and her team to develop a workshop to assist colleagues in their career advancement.

by Joanna Chase

What started with a simple question about the upcoming centralized selection list (CSL) deadline quickly turned into the realization that there was as much larger opportunity at hand. “Once applications are in, what’s next? Are we now eligible to participate in ALAP?”

The Army’s Acquisition Leader Assessment Program (ALAP) began inviting civilian participants in the 2021 fiscal year, leaving many in the Joint Program Executive Office for Armaments and Ammunition (JPEO A&A) workforce unaware of this new opportunity. Not only that, but as conversations progressed, it was discovered that many employees weren’t fully familiar with the centralized selection list or centralized selection board (CSB) processes.

The Army Director of Acquisition Career Management (DACM) Office and the Army Talent Management Task Force worked together to design the ALAP program with the intention of improving and strengthening current methods for selecting leaders for CSL command and key billet positions. During ALAP, participants engage in a weeklong variety of scored and informing (non-scored) events that provide selection board members a more robust, whole-person leadership assessment.

TAKING ACTION

As part of the JPEO A&A Talent Management Office, my goal is to ensure that members of our organization have access to all the opportunities needed to not only be successful today, but to develop as strong leaders who will be prepared to guide the way tomorrow. I show up each day looking for new and creative ways to support our workforce without adding stress or creating a burden on time. In addition to leading many strategic initiatives for the organization, we constantly look for ways to support each of our smaller offices as well. When the conversation about ALAP arose, I knew we needed to do something to get

the information out there and to find a way to continue to support our teammates through the process.

I reached out to various organizations within the Army community to see if there was already a program or workshop available, but came back empty-handed. I was able to find publicly available written guides and decided to use them to develop our own training. With the help of JPEO A&A's ALAP alumni and a plethora of online resources, the brainstorming began. The goal was to not only educate the workforce on these available opportunities to get them focused on career ownership and building their career road map, but to also see how we could help prepare candidates who were invited to participate in ALAP in the 2024 fiscal year.

"ALAP is a win-win initiative all around," said Johnny Figueroa, an ALAP alumnus. "The Army wins by thoroughly assessing

the interpersonal skills of its up-and-coming leaders, while the candidates learn their innermost strengths and weaknesses and how to improve them."

A NEW ROAD

With those two goals in mind, we decided to take two different approaches. My colleagues and I launched the first ALAP information session at JPEO A&A on April 26, 2022. The deputy project director for Joint Bombs, ALAP alumnus Steve Bielamowicz and I presented a virtual information session to our workforce highlighting CSL, CSB and ALAP opportunities. Over the course of an hour, participants were able to gain a much clearer understanding of what the CSL and CSB are, when to start preparing for these opportunities if they are a part of future career goals, what the application process looks like, nuances with accepting or deferring these opportunities and what it means to be invited to ALAP.

We closed the session with a request and an offer for anyone who had applied to the 2024 fiscal year CSL or CSB. We asked that if they were invited to participate in ALAP over the course of the next few months, to reach out to the Talent Management Office. We promised that if interest was shown, we'd continue to build opportunities to help prepare these individuals as best we could for their weeklong travel to Fort Knox, Kentucky, for ALAP that October.

NOT QUIET FOR LONG

After the initial workshop, things were quiet, but not for long. Just a few months later, as the GS-14 and -15 ALAP participant lists were announced, emails began to trickle in, expressing both excitement and nervousness. This time we needed to do more than just a virtual workshop-type approach. Although I had an idea of where I wanted this program to go, I also wanted to make sure I had the support for developing it. We drafted an idea for the concept, being mindful that we weren't developing a program that would break any ALAP alumni nondisclosure agreements or prepare participants in any way that would compromise their participation at the actual event. With an encouraging approval from JPEO A&A's deputy program executive officer, the work began.

It started with researching and leveraging as many resources as I could find to develop an ALAP preparation support guide, which encourages and aids participants preparing on their own time for the ALAP experience. Referencing many of the already available Army guides and resources, it's easy to use and full of information on the various ALAP events, such as the timed argumentative writing assessment, blind interviews, physical fitness and psychometric assessments. The support guide also includes advice from ALAP alumni, ideas for practicing and



BEHIND THE CURTAIN

Volunteers sit behind a curtain waiting for a participant to join a blind interview session during the ALAP workshop in September. The hidden team—consisting of a former ALAP participant, a Senior Service College graduate and a senior leader—asked behavior-oriented interview questions and provided anonymous feedback based on the ALAP verbal communication rubric. (Photo by Keith Gooding, JPEO A&A)

preparing on one's own, and links to free online support tools and Army resources. For fun, there are also links to YouTube, where participants can watch a short video to gain a better understanding of barracks living at Fort Knox and enjoy some of the history and mystery behind the Kentucky Army installation.

"Last year, I felt a bit like I was feeling my way through the dark, so having this resource available [to those who want it] is a real benefit," said ALAP alumnus Matt Nestor.

As all-encompassing as the support guide is, it's still just that—a support guide. It wouldn't be enough to help our folks successfully prepare; they needed even more. With their demanding workloads and their busy personal lives, we knew

encouraging them to prepare on their own time would still provide a challenge. So, we designed a half-day, in-person workshop to complement the support guide and strengthen our preparation process.

In September, Keith Gooding, JPEO A&A's director of talent management and the Senior Service College Fellowship, with the help of senior leader volunteers and ALAP alumni, spent half a day working with our ALAP invitees. During this workshop, participants took part in a timed argumentative writing exercise and a mock blind interview, and participated in an open conversation with all the volunteers and alumni—each eagerly took notes as concerns were vocalized, questions were answered and valuable feedback and words of encouragement were shared.

"The JPEO A&A talent management team put a lot of effort into making this program as realistic and representative of the ALAP experience as possible," Bielamowicz said. "It was a great opportunity for some of our high-potential leaders to hone their writing and interview skills."

CONCLUSION

Although this was the first workshop of its kind for JPEO A&A, based on the feedback received, we know that this is just the beginning.

Multiple times, participants expressed their appreciation for the experience because it helped boost their confidence going into ALAP. It also gave them a focused opportunity to prepare without work or personal responsibilities getting in the way.

"I'm very appreciative of talent management taking the time to help us prepare for ALAP," said Anthony Cortese, a workshop participant. "It forced us to practice the most stressful parts of ALAP, which

"ALAP is a win-win initiative all around."

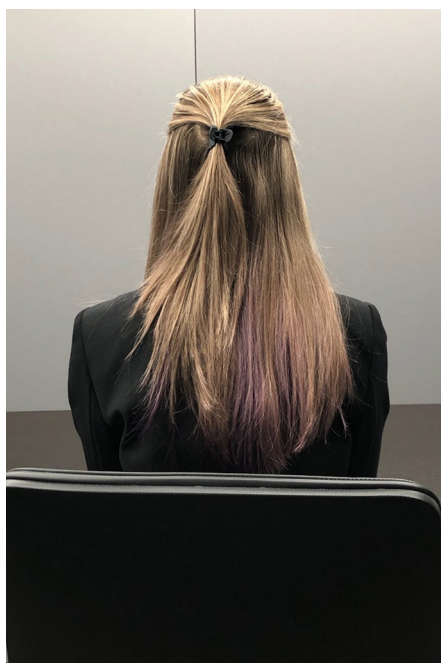
were the essay and blind interview. They provided invaluable feedback against the actual scoring matrices used to give us an opportunity to learn and perform at our best during ALAP."

The JPEO A&A talent management team is looking forward to continuing to build and develop these opportunities with the support of each year's ALAP alumni and encourages other organizations to do the same. We encourage all organizations to use the already available resources and consider developing their own workshop for future ALAP participants. This is one of the many ways that collectively we can support and develop our future leaders.

"ALAP was a unique and valuable process," said Elias Vainchenker, Project Manager Close Combat Systems. "There is definitely value in explaining how it functions."

For more information, contact the author at joanna.l.chase.ctr@army.mil.

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SEEING THINGS THROUGH

An ALAP workshop participant asks and answers questions during a mock blind interview. (Photo by Keith Gooding, JPEO A&A)



NICOLE KILGORE

COMMAND/ORGANIZATION: Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND)

TITLE: Deputy joint program executive officer

YEARS OF SERVICE IN WORKFORCE: 13

DAWIA CERTIFICATIONS: Advanced in program management

EDUCATION: M.S. in biomedical sciences from Hood College; M.S. in national resource strategy from the National Defense University, Eisenhower School; and a B.S. in biology from Mount Saint Mary's College

AWARDS: Commander's Service Award (2014 and 2016); Superior Civilian Service Award (2015); Excellence in Federal Career — Outstanding Supervisor GS-13 and above, Bronze (2015); Excellence in Federal Career — Rookie Employee of the Year, Science & Technology and Program Support, Silver (2011); Army Civilian Service Achievement Medal (2010 and 2011)

RISE TO THE TOP

Nicole Kilgore is the deputy joint program executive officer for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND). In this role, she leads civilian and military multidisciplinary teams whose mission is to protect warfighters and the nation from CBRN threats by generating affordable and state-of-the-art capabilities like the joint service general purpose mask, which allows warfighters to survive and maintain ground operations in a chemical and biological threat environment. Other life-saving projects Kilgore's teams handle include the Next Generation Diagnostics System 1, which identifies biological hazards in human clinical specimens and provides diagnostic information to facilitate delivery of appropriate medical countermeasures; and the nuclear, biological, chemical reconnaissance vehicle sensor suite upgrade, which is a specialized vehicle equipped with a system to detect chemical, biological and radiological contamination in its immediate environment and warn Soldiers of the risk.

Before working with the DOD, Kilgore was the senior manager of virology and safety operations for Panacos Pharmaceuticals, a development-stage biotechnology company that seeks to develop next-generation anti-infective products through the discovery and development of small-molecule oral drugs designed to treat human immunodeficiency virus (HIV) and other human viral diseases. As a scientist and acquisition professional, she brings a unique blend of expertise to CBRN defense. Initially, she joined the Army Acquisition Workforce to work closer to home, so she could better balance work and family life. However, she said, "Coming to the government was really a leap of faith for me. I had no idea what I was getting myself into and I left my first meeting in a total daze. I had never heard so many acronyms before in my life!"

Kilgore started as a contractor, then transitioned to a civilian position with the Joint Project Manager (JPM) Chemical Biological Medical Systems, now known as JPM CBRN Medical, as an assistant program manager, which allowed her to touch all aspects of the virology programs she was familiar with. "Specifically, I worked on the filovirus vaccine effort beginning at milestone A and was tasked with developing a strategy to take the product to licensure," she said. Ebola, for example, is a type of filovirus. "It took three months to develop the strategy, only for us to have to redo the work when it wasn't approved, initially. Budget constraints, technical risks and other factors required us to think outside of the box. But we developed a new, incremental strategy that offered greater flexibility and creativity. In the end, the program came back to life, and this gave me a unique perspective. I learned how the roles of contractors, scientists, civilians and service members all came together. I liked having the ability to keep some of these laboratory connections as I moved to other positions as a civilian."

Throughout her career, Kilgore has held several positions of increasing responsibility within JPM-CBRN Medical. Serving as the joint product manager for the Platforms for Rapid Integrated Solutions for Medical (PRISM) is one opportunity that stands out for her. "That group was really ahead of its time," Kilgore said. "So much of what we discuss now for fielding platform technology for the delivery of medical countermeasures started back with PRISM. It really sped up licensure and response processes so that we could

protect the warfighter. I developed a communications strategy that identified all federal and industry stakeholders, held recurring meetings to hone specific requirements and engaged senior leaders at a very high level. This was all a big pivot point in my career, since it meant building the team out in all aspects—funding profiles, team expertise, etc.”

Working as a joint product manager also meant working with the U.S. Department of Health and Human Services (HHS) and the Food and Drug Administration (FDA). “I had the opportunity to form very strong partnerships and working groups with the Biomedical Advanced Research and Development Authority, HHS and the FDA early on in my career. Many of the joint working groups between these organizations still function today,” she said. These relationships and connections, she explained, have helped the JPEO respond aggressively to COVID-19. As the acting deputy JPEO for Assisted Acquisition and Medical, Kilgore led coordination of the DOD’s COVID-19 Joint Assisted Acquisition (JA2) efforts in support of HHS. JA2 supports HHS by bringing together medical and acquisition specialists, innovative technology and agile business practices that enable procurement of vaccines, diagnostics and medical countermeasures and industrial base expansion for the domestic production of life-saving products for DOD and the nation.

“People are surprised to learn every single COVID-19 vaccine, diagnostic and therapeutic product we have in this country was procured by the JPEO-CBRND,” Kilgore said. “They are often unaware of the extent of our impact in COVID-19 acquisition, and the JPEO-CBRND does this every day for all of the CBRN defense needs for the warfighter and joint force.”

When Kilgore served as acting medical director in the Office of Deputy Assistant Secretary of Defense (DASD) for Chemical and Biological Defense, she gained a new appreciation for working at the Pentagon and the grander strategic view of the nation. “I saw for myself how Congress and the DOD interact,” she said. She would tell aspiring leaders in DOD, “If a senior leader asks you a question, it is very likely because someone else at the Pentagon, in Congress or at the White House is asking the question. The coordination efforts between the Pentagon and Congress are something I am grateful to have learned more about before entering my current position, where I interact regularly with Pentagon leaders.”

Kilgore said that the Army Civilian Education System Advanced Course was a great learning experience for her. She explained how she had the opportunity to meet with Senior Executive Service

(SES) members and get advice from them. One of these leaders, in particular, stood out for offering great advice. “Being technically ready, skilled and having a little bit of luck ... that is what helps someone move into new positions and grow,” she said. “Luck helps in terms of which positions open up, but most importantly, it’s your reputation, skills and readiness for the role that help your name rise to the top.”

As an Army acquisition professional, Kilgore’s greatest satisfaction is being able to witness the delivery of defense products to the force and the nation from start to finish, and the ability to touch all aspects of the development process. “There are so many capabilities we cover from R&D [research and development], contracting, legal authorities, etc. You have to be a bit of an expert in each one of those elements,” she said. “I have learned working in the industry means being more of a specialist, but in my position with the SES, I get to be more of a generalist and watch every project aspect unfold.”

Kilgore’s first piece of advice to new personnel entering the acquisition workforce is to fully understand your strengths and weaknesses, and where the latter is concerned, ask yourself how you grow and ideally ask others for help in overcoming or making up for areas where you are not as strong.

“You have to trust your team and learn to delegate,” Kilgore said. “I say this to women and mothers, in particular: Prepare yourself for when the big opportunity comes up and don’t let your current situation stop you from applying for a certain position. When you start a new position, think about where you want to be in three years. Make short- and long-term goals. Set yourself up for your future positions beyond the one you’re currently serving, understand where development opportunities exist, take advantage of them and figure out how to get the experience you need to progress. Finally, when you are preparing to enter a particular position, don’t be deterred by how someone else serves in the role. You may be more organized or skilled at certain aspects of the role and you can make it your own, you don’t have to emulate everything someone else is doing.”

— HOLLY DECARLO-WHITE



TRAIN WITH INDUSTRY

Sgt. 1st Class A.J. "Art" Dominguez receives a tour of Xcelerate Solutions Headquarters while assigned to Defense Logistics Agency as part of the TWI program. (Photos courtesy of the DACM Office)

ABUNDANT OPPORTUNITIES

The DACM Office offers robust training and education programs for officers and NCOs.

by Jacqueline M. Hames

The Army Acquisition Workforce is comprised of about 32,000 civilian and military professionals—and 90 percent have earned at least a four-year degree and nearly 50 percent an advanced degree. Those higher degrees can help open more opportunities for civilian and military professionals alike and are expanded upon by the development opportunities in the Army Director of Acquisition Career Management (DACM) Office.

The DACM Office offers many training and education programs, several of which are available to officers and noncommissioned officers (NCOs), like the Advanced Civil Schooling (ACS) program, the Training With Industry (TWI) program and the Acquisition Tuition Assistance Program (ATAP). All of these programs are designed to help military professionals increase their knowledge, skills and abilities to grow their careers.

GET SCHOOLED

The majority of the acquisition workforce is civilian—about 95 percent, in fact—but acquisition officers and NCOs are every bit as essential to the mission. As either Functional Area (FA) 51A (program management) or 51C (contracting) officers and NCOs, they meet the needs of the Soldier by incorporating technical

solutions to respond to the evolving threat environment and ensure the delivery of quality capabilities. Military personnel also work with joint and international partners, industry and academia to continually improve Army capabilities and interoperability.

After joining the acquisition workforce and completing the appropriate required training for either officers or NCOs, additional developmental opportunities can begin—through both higher education assistance and experiential programs.

Advanced Civil Schooling is available for both officers and NCOs—FA51 officers and 51C NCOs can pursue advanced degrees full time at civilian universities through this program. “I think that ACS is really beneficial,” said Sgt. 1st Class Kevin Brown, acquisition proponent NCO. “We have a lot of folks within our career field [who] have postgraduate degrees. So, you know obtaining that is something that makes you competitive against your peers. The Degree Completion Program allows NCOs to earn a bachelor’s degree while continuing to receive full pay and authorized benefits.”

Sgt. 1st Class William Yongue recommends Soldiers synchronize their educational opportunities with their career timelines to

get the most out of both. Yongue chose to begin the application process for the ACS program following his permanent change of station. "I realized I needed to focus on my move and new position but am working the application process into my long-term career timeline," he said.

The Naval Postgraduate School (NPS) is also open to NCOs and officers. NCOs may now apply through the ACS program and select NPS as one of the schools that they would like to attend. Yongue said that two NCOs currently attending NPS are expected to graduate this July, and two more will be enrolled that same month.

"The Naval Postgraduate School is also available to our workforce, where an individual could complete their intermediate-level education for military education, earn a master's and complete required classes for certification in their area of concentration," said Maj. Timothy Demerath, FA51 proponent officer with the DACM Office. "If you need a master's degree, then the Advanced Civil School option is great for accomplishing that degree."

Officers can apply to NPS to complete part of their Defense Acquisition Workforce Improvement Act-required certification training, as well as to complete master's degrees and intermediate-level education requirements, Demerath said.

However, sometimes money is the sticking point in continuing education—that's where the Acquisition Tuition Assistance Program comes in. The ATAP program is designed to fund individual college courses related to business and acquisition or those required for undergraduate and graduate degrees in a related discipline. It covers tuition as well as laboratory and technology fees, within limits, to acquisition workforce civilians and contracting NCOs. Everyone—civilians and military—can apply for ATAP.

GET TO WORK

Education can be a good way to advance your career, but experience outside of your normal work environment can also be extremely valuable—not only for you as the employee, but also for your employer. One of the DACM Office's best development opportunities for military personnel is the Training With Industry program.

TWI is a work experience program designed to provide exposure to managerial techniques and industrial procedures within corporate America. The program is mostly for FA51 officers, though there is one space for a 51C NCO at the Defense Logistics Agency in Lorton, Virginia, Yongue said.

Lt. Col. Rob Heatherly, who is currently attending the U.S. Army War College in Carlisle, Pennsylvania, participated in the TWI program earlier in his career. A self-described lifelong learner, he said he was "super lucky" to be selected for the TWI program during his acquisition career. "That was hands-down the best broadening assignment for an acquisition officer," he said. The experience allowed him to learn about partners in the defense industry and how they cooperate with DOD. One of the most valuable things he learned was how to cultivate relationships with defense contractors. "You should have open and honest communication. You should have a relationship with them, a professional relationship, but what makes relationships work is communication," he said.

Officers and NCOs can also attend various leadership courses to help hone their skills, including pre-command courses and program management courses for officers, and the Advanced, Senior or Master's Leaders Courses for NCOs.

CONCLUSION

The actual benefit of all that training and education can sometimes feel a bit nebulous. But if you stick with it, it can help advance you to high-level jobs.

Colonels, lieutenant colonels and sergeants major may be eligible to apply for centralized selection list (CSL) positions when they are ready to take on command or key acquisition billets. The CSL process selects the best qualified individuals for specifically identified positions to meet the needs of Army acquisition. Required training, certifications, work experience and relevant degrees from the DACM Office's training and education programs could help with securing a CSL position, Demerath explained.

"That was hands-down the best broadening assignment for an acquisition officer."

Whether your career goals are to enhance current skills and knowledge, or to progress through the ranks to important acquisition positions, it's important to take the first step and get answers to any burning questions. "The biggest piece of advice is don't be afraid to reach out to us," Yongue said of the proponentcy officers. "If they pick up the phone and call, hit us on Teams or by email, one of us is going to be available to answer those questions."

All of the DACM Office's training and education programs "are incredible for preparing a Soldier or even civilian for developing as an acquisition professional and leader—if they are new

or even if they have been around Army acquisitions for years," Demerath said.

For more information about military training and education, go to <https://asc.army.mil/web/dacm-office>.

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.



INSIDER INFO

Brent Perdu, Joint Contingency and Expeditionary Services (JCXS) contract program manager, briefs Dominguez regarding the JCXS contract during his assignment with the TWI program.



KELLY TISCH

COMMAND/ORGANIZATION: Program Executive Office for Command, Control and Communications – Tactical (PEO C3T) on a developmental assignment to the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (OASA(ALT))

TITLE: Deputy product manager, on developmental assignment as deputy director, OASA(ALT) Secretary of the Army for Acquisition Logistics, Intelligence and Simulation Hardware Directorate

YEARS OF SERVICE IN WORKFORCE: 13

DAWIA CERTIFICATIONS: Advanced in program management and business financial management

EDUCATION: Currently pursuing an M.A. in global leadership and management at Lawrence Technological University, Senior Service College Fellowship, B.A. in sociology, Haverford College

AWARDS: Special Act or Service Award (July 2019), Department of the Army Meritorious Civilian Service Award (July 2019), Special Act or Service Award (July 2021)

CHANNEL YOUR INNER AUTHENTICITY

As a child, Kelly Tisch will never forget watching her late grandfather—an Army prisoner of war during WWII—receive his Bronze Star (See "The Longest Battle," Page 116). It didn't come easily, but as she's learned from his experience, nothing worthwhile ever does. His heroic efforts, pride and dedication made an impression on Tisch, and years later inspired her to pursue a career with the Army at the civilian level that would be both challenging and fulfilling.

"I love that in some small way I am giving back to my late grandfather," she said of bringing her own brand of authenticity to her developmental role as deputy director for the Office of the Assistant Secretary of the Army of Acquisition, Logistics and Technology, Secretary of the Army for Acquisition Logistics, Intelligence and Simulation Hardware Directorate. "He was incredibly proud to have served, and every day I walk in the Pentagon I pass the WWII veterans display and I think of my grandfather and his sacrifice."

Tisch supports the Deputy for Acquisition and Systems Management (DASM) Office in a hardware directorate for the Program Executive Office for Intelligence, Electronic Warfare and Sensors and the Program Executive Office for Simulation, Training and Instrumentation. Both portfolios provide critical support to our Soldiers. "It's been interesting to learn about this organization and its responsibility to provide critical acquisition rigor and analysis to key senior leaders, Congress and DOD. I provide support and representation for intelligence, electronic warfare, cyber, sensors and simulation program efforts and quick reaction capabilities. I have only ever supported the Army from a PEO or deputy product manager perspective, and that support was specifically at PEO C3T [Program Executive Office for Command Control Communications – Tactical]." Now, she is more aware of how other PEOs manage and run their respective programs. "I'm not halfway done with my developmental training and I have already learned an incredible amount from my director, my team, the PEOs, the DASM and other stakeholders."

She began her Army career as an intern with Communications-Electronics Command at Fort Monmouth, New Jersey. "I didn't realize how much purpose and passion I would find in my first job as a program analyst. I loved that job!" She said she found the role of a program analyst to be the most critical role in the program management office. "I felt like I was the action officer program manager. I knew I needed to become savvy in the business, logistics and technical aspects of my programs, so I aimed to be the point person to ensure strong communication amongst the stakeholders including surfacing and mitigating risks, clarity of purpose and overall acquisition rigor," she said. "I was fortunate to have an awesome boss who threw everything at me the first two years including contracts, budget, cost and owning program reviews. He would give me acquisition homework over the weekend ranging from reviewing the FAR [Federal Acquisition Regulation] to fiscal law to how the Army runs. I loved it all and wanted more."

Tisch said her boss told other program management office team members, including the technical and logistics folks, to run their work by her, because if she couldn't understand it, then it wasn't simple enough. "At first, I would laugh and ask if I should be

insulted by this tactic. I quickly appreciated the importance of this approach as many initial drafts contained information written in a way that only an insider of a particular product or process could understand. From my perspective, the most effective people in the acquisition community are the ones who can take the highly technical aspects of their work and make it digestible to anyone.”

And simplifying details—like explaining what she does for a living—is something that Tisch, a mother of five, has grown accustomed to. “For my young kids, my message is simple—I help our brave Soldiers. I give them the equipment they need.” Plain and simple. If they have any questions each is answered accordingly. And she handles things the same way at work.

Her best advice is, “Don’t be afraid to ask questions. Ask a senior leader you respect to be your mentor. Ask for a developmental assignment. Ask to take a course,” she said. “I asked these types of questions and have often received a ‘yes.’ Mentorships, developmental assignments and multiple courses have all directly shaped me to be the employee that I am.” Tisch had mentors from the beginning and plans to until the end of her career. “What’s fun now is I’m beginning to pay it forward by mentoring others.”

Recalling the challenges her grandfather had faced and overcame while serving, Tisch said, “Throughout your career, remember there will be hard times.” Those may include your own personal challenges that make the workday feel harder or the professional ones you’ll need to tackle head-on during the workday. “I’ve had them,” she said. “Link up with the people who are there to help and support you. In every organization, seek those people out. They aren’t hard to find. Build that

support team for yourself. Acquisition is a team sport for products, and you should be building your own personal support team for your career.”

Tisch graduated from Army Senior Service College (SSCF) in May, remarking that it was a wonderful experience—to reflect, learn, reflect more and grow. “I learned through readings, classes, other senior leaders and my peers. It re-motivated me to do better and be better for myself, both personally and professionally, for my teams and the Army at large. I will always be a strong advocate of the SSCF program, as it built me a bigger network and gave me a stronger leadership foundation.”

It has also been of benefit for dealing with different personalities in the workplace. “I

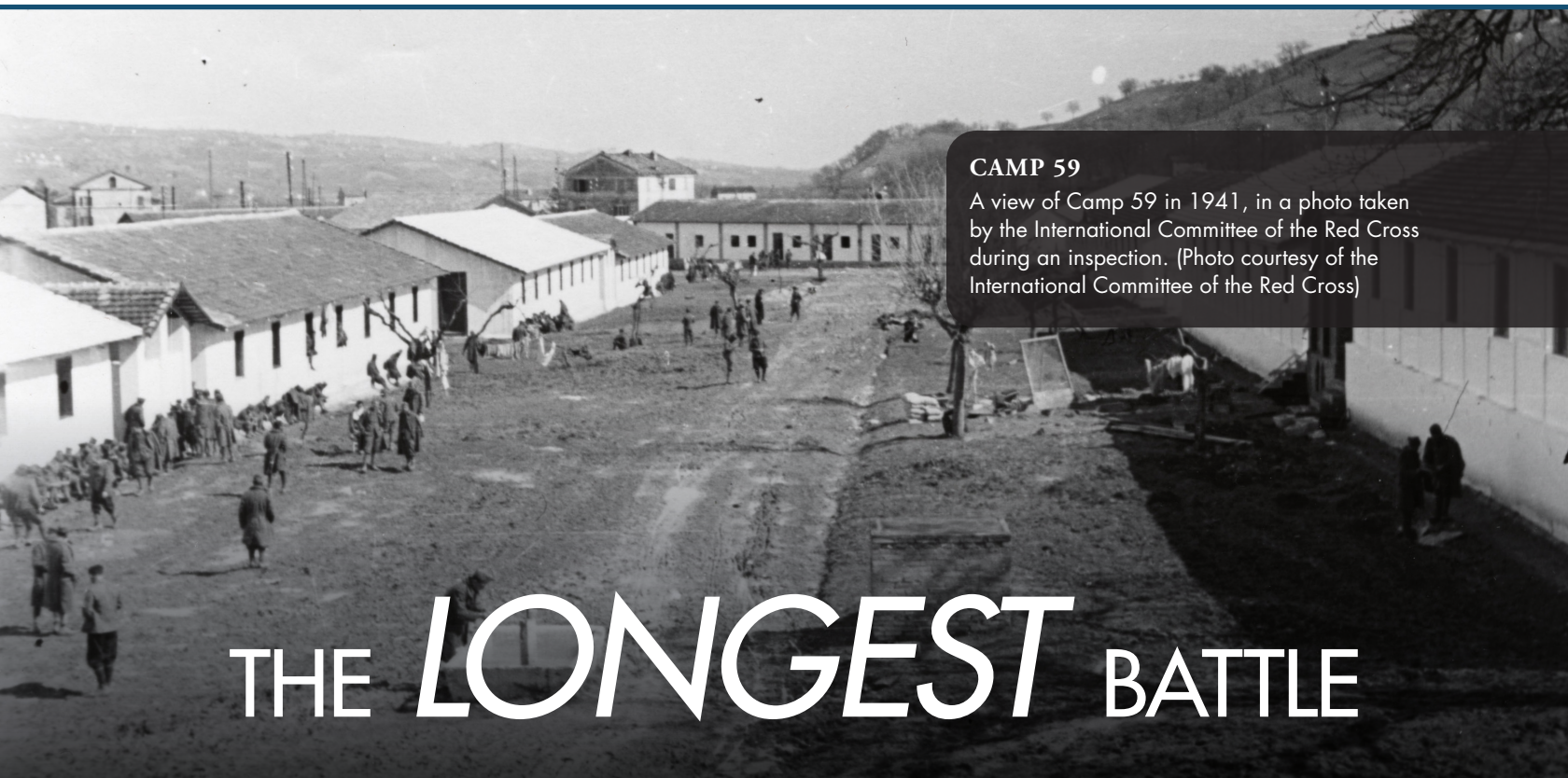
have five children, all very different with different needs. It’s kind of like working with the acquisition community. I need to seek to understand where each player, or child, is coming from. They have their own perspective on topics, and I need to learn it, understand it and see how it applies. After learning about Stephen Covey’s ‘The 7 Habits of Highly Effective People’ in SSCF, I realized how important it is to seek to understand others first, and then be understood. It’s a tenant I apply every day, with every meeting and conversation. The acquisition community is a small place and I want to make products, people and processes better.”

— **CHERYL MARINO**



REWARDING EXPERIENCE

Tisch, left, and her brothers Bobby, center, and Mike, right, with their late grandfather Joseph Mandese on Feb. 6, 1998. All were able to watch Mandese, an Army POW, receive his Combat Infantry Badge and Bronze Star. (Photo courtesy of Kelly Tisch)



CAMP 59

A view of Camp 59 in 1941, in a photo taken by the International Committee of the Red Cross during an inspection. (Photo courtesy of the International Committee of the Red Cross)

THE *LONGEST* BATTLE

Army careers are contagious, and Kelly Tisch's inspiration for service was her grandfather, a WWII POW and then escapee, who was proud to serve even though his post-discharge struggles endured for half a century.

by Cheryl Marino

In 1943, after being taken as a prisoner of war (POW) by the Italian Fascist regime, American infantryman Joseph Mandese escaped into the countryside. He then learned the Army had declared him dead, so as a fugitive on foreign soil, he wasn't in the best shape, but he was alive.

Just two years prior, the then-22-year-old private could never have imagined the turn of events that would unfold when he was drafted and deployed to North Africa to fight for the American cause in World War II. He had expected to serve in combat, but instead, found himself entangled in a very different kind of battle when he was captured in Tunisia by a German tank division, and held as a prisoner of war at Camp 59 in Servigliano, Italy, for nearly a year. He managed to escape with four other POWs, taking refuge with a family of Italian sharecroppers for another year, before being repatriated. If not for his steadfast will to survive, his granddaughter Kelly Tisch would never have been born. It was Mandese's loyalty, dedication and pride in serving his country that inspired her to want to serve too, as an Army civilian.

"My grandfather and other brave Soldiers like him are the reason I can enjoy my freedoms," said Tisch, adding that Mandese—whom she called "Poppy"—passed away in 2016. He could have done anything he wanted for a career after returning to the U.S. and being discharged from active duty. Instead, he opted to take a couple of months off before returning to work for the Army as a civilian—processing film for the Army Pictorial Center in Queens, New York, where he worked for nearly 30 years before retiring in 1970. After everything he endured as a Soldier and POW, to want to continue to serve the Army was astonishing, and also inspiring, Tisch said. "Most importantly, the will he had to survive taught us to value life and to cherish every day," she said.

GIVING BACK, SUPPORTING SOLDIERS

Tisch joined the Army 13 years ago as deputy product manager supporting the Program Executive Office for Command, Control and Communications – Tactical (PEO C3T). She is currently on a developmental assignment as deputy director for the Assistant Secretary of the Army for Acquisition, Logistics and Technology's

(ASA(ALT)) Secretary of the Army for Acquisition Logistics ZSM-Intelligence. As deputy director, Tisch supports two portfolios that provide critical support to Soldiers—the Deputy for Acquisition and Systems Management (DASM) Office in a hardware directorate for the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S), and the Program Executive Office for Simulation, Training and Instrumentation (PEO STRI).

“One of the things I like most about working at ASA(ALT) is that there is a very inclusive atmosphere, [at meetings] the focus isn’t always on the most senior leader or the main briefer, everyone in the room is acknowledged and appreciated.” That’s something that has always been important to her and her grandfather. Both Lt. Gen. Robert Marion, the military deputy, and Maj. Gen. Robert Collins include everyone in the conversation, she said. “As I learned in the [DAU] Senior Service College Fellowship, these two senior leaders have mastered creating psychological safety in the organization. And this is the type of environment that breeds creativity and learning. I want to be able to create a safe and open environment like they do as I move forward.”

Tisch said there is no “dream job” that she’s aspiring to. “My grandfather [and his sacrifice] is a reminder that there is nothing more important than keeping our Soldiers equipped and safe,” she said. “Professionally, I want to continue to learn from others and be a change agent in any way I can.”

LASTING IMPACT

Mandese’s sacrifice was not only significant, but long lasting. During his time as a POW where he faced starvation, dysentery, lice and mental torment behind 15- to 20-foot-high prison walls, Tisch said he had given up hope of ever being released or

of surviving the ordeal. Once he returned home, his physical scars had healed but the agonizing mental effects went far deeper. Mandese was diagnosed with post-traumatic stress disorder (PTSD) and suffered from flashback episodes that were difficult for Tisch to understand as a child.

“When I was about 8 years old, I remember being in his backyard with my middle-school-aged cousin, who was writing an

article about him for school. He had a flashback and started screaming, and I remember crying and running inside. I can still see the look of him, it was like he wasn’t there anymore. That was his first flashback I remember, and I would witness many more.”

The Department of Veterans Affairs (and its predecessor, the Veterans Administration) had provided him with medication,



FAMILY MATTERS

Tisch and her grandfather in April 2002 at her home in Toms River, New Jersey. Mandese’s loyalty and dedication to the Army inspired her to become an Army civilian. (Photo courtesy of Kelly Tisch)



BAND OF BROTHERS

Joseph Mandese and the four fellow escapees he called his “brothers.” At rear, left to right, are Peter Calvagno, Edmond Petrelli and Mandese. In front, left to right, are Tony Spicola and Phil Vacca. (Photo courtesy of camp59survivors.com)

WHAT IS PTSD?

It's normal to have upsetting memories, feel on edge or have trouble sleeping after a traumatic event. At first, it may be hard to do normal daily activities, like go to work, go to school or spend time with people you care about. But most people start to feel better after a few weeks or months.

If it's been longer than a few months and you're still having symptoms, you may have PTSD. For some people, PTSD symptoms may start later on, or they may come and go over time.

- **Avoidance** is a common reaction to trauma. When it is extreme, or when it's the main way you cope, it can interfere with your emotional recovery and healing.
- **Trauma reminders: Anniversaries**—On the anniversary of a traumatic event, some survivors have an increase in distress. Reactions can range from feeling mildly upset for a couple of days to more severe mental health or medical symptoms.
- **Trauma reminders: Triggers**—People respond to traumatic events with feelings of concern, anger, fear or helplessness. Those who have experienced trauma, loss or hardship in the past may be more likely than others to be affected by new, potentially traumatic events.
- **Aging veterans and post-traumatic stress symptoms**—For many veterans, memories of their wartime experiences can still be upsetting long after they served in combat.
- **History of PTSD in veterans: Civil War to Diagnostic and Statistical Manual of Mental Disorders (DSM-5)**—PTSD became a diagnosis with influence from a number of social movements. Research about veterans returning from combat was a critical piece to the creation of the diagnosis, so the history of what is now known as PTSD often references combat history.

Experiencing symptoms of PTSD? To take an assessment, go to: <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>

Treatment for PTSD works. To find a therapist, counselor or other mental health provider who can help with your recovery, go to: https://www.ptsd.va.gov/gethelp/find_therapist.asp

Veterans have unique options for PTSD treatment and other mental health needs. To learn about treatment programs in the Department of Veterans Affairs (VA), Vet Centers and VA benefits and claims, go to: https://www.ptsd.va.gov/gethelp/help_for_veterans.asp

If you are in crisis, there are options. Go to: https://www.ptsd.va.gov/gethelp/crisis_help.asp

- **Call 911** if you need police, fire or emergency medical assistance.
- **Call 988** if you need to speak to a trained crisis counselor who can help with mental health-related distress. You can also text 988 or chat online with the Suicide and Crisis Lifeline. You can also call if you are concerned about someone else.
- If you are a veteran or are concerned about one, call 988, then press "1" to speak with a responder qualified to support veterans. You can also text 838255 or chat online with the Veterans Crisis Line.
- **Go to the nearest emergency room** for immediate medical attention.

—U.S. Department of Veterans Affairs

individual and group therapy, but he was hesitant to talk openly about his ordeal and didn't see much value in group therapy, Tisch said. He also believed the medication side effects would have prevented him from working, so instead, he delayed treatment until after retirement. For years, Mandese powered through what he referred to as his "nervous disability," when he was suddenly overcome by traumatic memory flashes of the cold, bedbug-infested prison camp where he always wore the same clothes, slept on a straw mattress and relied on Red Cross food parcels as his only sustenance—typically torn open by prison guards and left outside for the rats to feast on before the prisoners.

Throughout her childhood, Tisch vividly remembers him screaming out in fear during flashbacks when he relived each horrific moment as a POW. "It was a loud scream followed by a long stretch of silence

as he returned to that hell. As a kid, I was just scared and cried every time. It wasn't until I was older that I began to understand the magnitude of the sacrifice my grandfather and other veterans have made and continue to make," Tisch said. "I'm glad we're learning more about mental health and seeing a shift for our Soldiers and society at large."

THE ENDURING BATTLE

After 665 days of captivity, escape and evasion, Mandese returned home in 1944 and read an account of his own death in the local newspaper. While he had been gone, the Army notified his parents that he was killed in the Philippines. So his first order of business was to personally inform loved ones that he was, in fact, alive.

Mandese had earned the Bronze Star for bravery. However, because of an administrative oversight, he did not receive it

until 54 years after his ordeal. He (and his family) tried in vain to acquire the well-deserved medal, but they were turned away time and time again.

"For reasons unknown, he did not receive the medal directly after," said Tisch. Then, there was a fire at the National Personnel Records Center in St. Louis, where the military records needed to verify Mandese's service had been stored, further delaying his acknowledgement. "At different times in his life, he tried to pursue it and hit roadblocks," she said. It wasn't until Robert Cannon, Tisch's father, contacted his congressman, who referred the matter to Rep. Steve Rothman, that finally, Mandese received his Bronze Star in 1998, at age 79.

"Every holiday, he would dress in his suit and tie all the way through his 90s. He would always wear his American flag and



LONG WAR AHEAD

Prisoners of war at Camp 59 in 1941, in a photo taken by the International Committee of the Red Cross during an inspection. (Photo courtesy of the International Committee of the Red Cross)

often would wear his Bronze Star, too,” Tisch said. Despite it all, never at any time did her grandfather regret serving. “He was never resentful toward the Army, he was only ever free. [Five years before he died] he said, ‘I helped my country to be free and helped the bravest of men.’” That meant everything to him.

RETURN TO SERVIGLIANO, YEARS LATER

In 2014, some 70 years after her grandfather’s escape from Camp 59, Tisch said her aunt and uncle, Rose Ann and Joseph Sverapa, went to both the prison camp and the farm in Servigliano where Mandese spent a year hiding out. The farm owner’s children, Enrico and Rosa Cardinali, remembered Mandese and acknowledged he was chosen for safe haven (above the other escaped prisoners) because he spoke their language and had volunteered to

work on their farm. They shared stories from the time Mandese stayed with them and said he was a hard worker and “they had chosen wisely.”

Some of the guardhouses still remained at the prison camp, but none of the buildings that housed the prisoners themselves. A museum honoring all the former prisoners was established on the grounds where schoolchildren could visit and pay their respects. The mayor at that time, Valeriano Ghezzi, presented Tisch’s aunt with a certificate to honor Mandese for his efforts in the war, stating that he and the other Soldiers helped their cause and that they were happy to help them. “Poppy had explained that they [the family] put themselves in grave danger, since the Nazis were dropping leaflets from planes saying that they were to kill anyone harboring a prisoner,” Tisch said. “He was concerned the

Italian family could be in danger if they caught him staying there.”

As Mandese’s predicament had grown more distressing, an unexpected turn of events enabled his return to the U.S. After the D-Day Normandy invasion in June 1944, an emaciated Mandese and the same four Soldiers he escaped the camp with, believed the coast was clear and emerged from hiding, fleeing the Italian countryside. They met up with the U.S. Army Air Force on July 12, in Foggia, Italy, where Mandese was hospitalized, then released and sent home on Oct. 31, 1944.

PUTTING THINGS INTO PERSPECTIVE

Tisch’s military ties extend beyond her grandfather’s service. Mandese’s four brothers also served in the Army during World War II. Her father, Robert H.



DIFFICULT PATH

The rugged landscape of central Italy, as viewed from the village of Santa Vittoria in Matenano, near Servigliano, where Camp 59 was located. (Photo by Dennis Hill/camp59survivors.com)

Cannon, was a U.S. Marine Corps corporal during the Vietnam War, and her husband, Robert Tisch, was an active-duty Soldier for five years before he became a civilian and, in 2021, assumed the role as product manager for network modernization at the Project Manager for Tactical Network office under PEO C3T. In addition to full-time jobs, the Tisches have five children, and Kelly is pursuing her master's degree in global leadership and management from Lawrence Technological University. With both she and her husband working full time, courses to complete and children to care for, life is hectic. But she still finds time to inspire her children with stories about their great-grandfather, in the same way that she had been inspired.

"I tell my youngest children about how brave my grandfather was, but I've shared more of the details of his POW story with my older boys," she said. "It has really helped to put the value of life into perspective. My boys are 18 now and I have taught them the importance of our Soldiers and their mission to protect us."

CONCLUSION

"My grandfather was incredibly proud when he heard I was supporting the Army," Tisch said. "The family I have, and the simplicity of [feeling safe], being able to go for a run, have been safeguarded by those who gave their lives and those like my grandfather who have fought bravely."

Tisch said both of her roles—as a granddaughter and as an Army civilian—have broadened her knowledge of how the Army supports Soldiers. "I have thought often about the modernized capabilities we give to our Soldiers, for example, communication capabilities to be able to see ourselves and the enemy. I can't help but think of my grandfather and how he probably wouldn't believe the capabilities we have now," she said. "I feel especially proud to currently support signature modernization efforts that will keep our Soldiers and country safe." Just as her grandfather had.

For more information about PTSD and how to find help, go to <https://www.ptsd.va.gov>.

CHERYL MARINO provides contract support to the U.S. Army Acquisition Support Center at Fort Belvoir, Virginia, as a writer and editor for Network Runners Inc. and Army AL&T magazine. She holds a B.A. in communications from Seton Hall University and has more than 20 years of writing and editing experience in both the government and commercial sectors. In addition to corporate communications, she is a feature writer and photojournalist for a biannual New Jersey travel magazine.



AMERICAN PRIDE

Soldiers raise the American flag. Though he suffered for decades, former POW Joseph Mandese was proud of his service during World War II. (Photo by Getty Images)



IT'S AN HONOR

The Bronze Star Medal was issued to Mandese on July 15, 1997, then presented to him at a ceremony on Feb. 6, 1998. (Photo courtesy of Kelly Tisch)

A WINNING TEAM

The Army is honored with three 2022 Defense Acquisition Workforce Awards.

by Angela Sanson



Photo by Getty Images

The Army claimed three winners in the 2022 Defense Acquisition Awards, announced in December, recognizing individual and collective contributions to the defense acquisition mission.

Army Acquisition Workforce members took home top individual honors in the categories of Financial Management and Acquisition in an Expeditionary Environment, and the Program Executive Office for Soldier Next Generation Squad Weapons team was one of five teams that earned a David Packard Excellence in Acquisition Award.

The Defense Acquisition Workforce Awards recognize individual and team accomplishments that support secretary of defense priorities through excellence in acquisition. These 25 prestigious awards honor the achievements of more than 187,300 civilian and military

professionals from across the Department of Defense, including the approximately 32,000 members of the Army Acquisition Workforce.

INDIVIDUAL ACHIEVEMENT

The Defense Acquisition Individual Achievement Award was established to encourage and recognize excellent performance in acquiring products and services for DOD across 19 acquisition workforce disciplines. Representing the Army among this year's honorees are Kathleen Single and Maj. Timothy Keilty.

Single received the award for Financial Management, recognizing her management of over \$65 billion in funding for contracts in support of the nation's COVID-19 response efforts. As finance manager for the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense's Joint Assisted Acquisition Team, Single's

efforts supported the production of more than 1 billion doses of the COVID-19 vaccines, 19 million therapeutics doses, over 2 billion needles and syringes, over 890 million over-the-counter COVID-19 rapid tests, and the development of domestic diagnostic and testing production facilities.

Keilty, assistant product manager for the Program Executive Office for Missiles and Space Search, Track, Acquire, Radiate, Eliminate (STARE) Project Office, received the award for Acquisition in an Expeditionary Environment. STARE manages Army air defense artillery and field artillery sensors, equipping and sustaining the global warfighter. Keilty is credited with building and leading a multi-discipline expeditionary team to prepare for NATO contingencies and directly support the presidential draw-down. His efforts resulted in the successful upgrade of the Sentinel radar software and

firmware across the XVIII Airborne Corps prior to deployment, and across the European Command Area of Operations. In addition to the Sentinel software upgrade, Keilty was the key force in the planning and transfer of the two Sentinel radars to Ukraine.

TEAM EXCELLENCE

The Next Generation Squad Weapons team, from the Program Executive Office for Soldier, took home a David Packard Excellence in Acquisition Award, which recognizes Department of Defense acquisition programs and teams that have demonstrated excellence and innovation in developing, acquiring and sustaining

operational capability that supports the National Defense Strategy lines of effort.

The Next Generation Squad Weapons team structured an innovative selection and contracting approach to identify and deliver technologically advanced small arms and ammunition that provide overmatch against peer and near-peer threats. Subject matter experts from Product Manager Next Generation Weapons, Product Manager Small Caliber Ammunition, the U.S. Army Combat Capabilities Development Command Armaments Center, the Soldier Lethality Cross-Functional Team and Army Contracting Command – New Jersey were instrumental in developing a streamlined prototyping and down-select approach, while setting the conditions to quickly produce and field the newest small arms weapons and concurrently establishing the required ammunition stock. The team's work represents a fundamental shift in how the Army acquires new small arms modernization capabilities.



THE ENVELOPE, PLEASE

The Army took home awards in three categories from the 2022 Defense Acquisition Workforce Awards. (Image by USAASC)



SPEAKING OUT

Undersecretary of Defense for Acquisition and Sustainment William A. LaPlante, Ph.D., explained the importance of recognizing defense acquisition professionals for their outstanding achievements, saying they are “critical in supporting our military.” (Photo by Petty Officer 2nd Class Alexander Kubitz, U.S. Navy)

CONCLUSION

The 2022 Defense Acquisition Workforce Awards were officially presented on Feb. 22 during a virtual ceremony hosted by Undersecretary of Defense for Acquisition and Sustainment William A. LaPlante, Ph.D. “We are extremely proud of these acquisition professionals and the work they do to deliver integrated capabilities to our warfighters at speed and scale,” LaPlante said. “Congratulations to all of this year's winners for their extraordinary achievements, as well as for setting an example others can emulate.”

In addition to the three Army winners, other awardees represented the U.S. Air Force, the U.S. Navy, the U.S. Space Force, the Defense Contract Audit Agency, the Missile Defense Agency, the Defense Contract Management Agency, U.S. Special Operations Command, the Defense Advance Research Projects Agency and the National Reconnaissance Office.

For more information about the Undersecretary of Defense for Acquisition and Sustainment Awards, go to <https://asc.army.mil/web/acquisition-awards/>.

ANGELA SANSON is a communications analyst in the U.S. Army Acquisition Center's Office of the Director of Acquisition Career Management. She has worked in strategic communication and public affairs for the U.S. Army for more than a decade. She holds an M.A. in public communication from American University and a B.A. in strategic communication from The Ohio State University.

ON THE MOVE



U.S. ARMY MATERIEL COMMAND

1: NEW DEPUTY COMMANDER AT AMC

Lt. Gen. Christopher Mohan, left, unfurls the three-star flag, supported by **Sgt. Maj. Samara Pitre**, right, and **Sgt. 1st Class Robert Peters**, during Mohan's promotion ceremony Dec. 2 at Redstone Arsenal, Alabama, where he pinned on his third star and officially commenced his duties as the 48th deputy commanding general of U.S. Army Materiel Command (AMC) and senior commander of Redstone Arsenal. Mohan most recently commanded Army Sustainment Command, the logistics arm of AMC's equipping mission, and before that, he served as the AMC's deputy chief of staff for operations and logistics. Mohan replaces **Lt. Gen. Donnie "Flem" B. Walker Jr.**, who retired in 2022. (Photo by Alyssa Crockett, AMC Public Affairs)



2: AMC WELCOMES NEW SENIOR ENLISTED LEADER

Command Sgt. Maj. Jimmy Sellers, left, accepts the flag from **Gen. Ed Daly**, AMC commanding general, center left, and assumes responsibility from **Command Sgt. Maj. Alberto Delgado**, right, during a change of responsibility ceremony hosted Jan. 12, at Redstone Arsenal. Also standing in view is **Sgt. Maj. Samara Pitre**, AMC G-3 sergeant major. Sellers previously served as the Headquarters, Department of the Army G-4 sergeant major. (Photo by Eben Boothby, AMC)



PROGRAM EXECUTIVE OFFICE FOR AVIATION

3: PEO AVIATION WELCOMES NEW CHIEF

Chief Warrant Officer 5 John Ulmer, left, inspects the officer's saber presented by **Maj. Gen. Rob Barrie**, center, program executive officer for Aviation, during a ceremony to mark the change of responsibility for Ulmer at Redstone Arsenal, Alabama, Dec. 9. **Chief Warrant Officer 5 Travis Dixon**, who became the first chief warrant officer for the Program Executive Office (PEO) for Aviation in 2019, presented the saber to the organization to serve as a symbol of warrant officer leadership in the organization, which changed from Dixon to Ulmer. Following the ceremony, Dixon retired after 28 years in the U.S. Army. (Photos by Michelle Miller, PEO Aviation)

JOINT PROGRAM EXECUTIVE OFFICE FOR CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR DEFENSE

4: JPL CHANGE OF CHARTER

Bruce Goodwin, right, accepts the charter for the joint project lead (JPL) for the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND) Enabling Biotechnologies from **Darryl J. Colvin**, the program executive officer for JPEO-CBRND, during a change of charter ceremony Nov. 9 at Fort Detrick, Maryland. Goodwin had been the acting JPL since April 2020 after **Dr. Matt Hepburn** (not pictured) left to join Operation Warp Speed. Goodwin has held numerous positions within JPEO-CBRND. (Photo courtesy of JPEO-CBRND)



5: RETIRING AFTER 28-YEARS OF SERVICE

Daniel McCormick, the JPEO-CBRND deputy for operations and modernization, retired after more than 28 years of service as an Army officer at a ceremony held on July 29 at Aberdeen Proving Ground, Maryland. With over 20 years of acquisition experience, McCormick previously served as the joint project manager for nuclear, biological, chemical contamination avoidance while on active duty as a colonel in the U.S. Army, during which time he deployed to Afghanistan to lead the planning, establishment and execution of the Afghan Public Protection Force efforts. Most recently, McCormick served as the acting deputy joint program executive officer for CBRND. (Photo courtesy of JPEO-CBRND)





1: RETIREMENT CAPS 26 YEARS OF SERVICE

Col. Sean McMurry, left, retired from active duty after 26 years of service at a ceremony held May 3 at Aberdeen Proving Ground. He stands with **Dr. Jason Roos**, the former joint program executive officer for CBRND. McMurry has served in leadership positions across Army medical and acquisition organizations and has been a member of the JPEO-CBRND staff for the past six years, serving as the joint product manager (JPM) for Chemical, Biological, Radiological, Nuclear and Explosives analytics and response under JPM CBRN Sensors, and more recently as the assistant JPEO for Medical. (Photo courtesy of JPEO-CBRND)

2: JPM CHANGE OF CHARTER

Steven Batts, right, accepted the charter for the joint project manager for CBRN Protection from **Darryl J. Colvin**, the program executive officer for JPEO-CBRND, during a change of charter ceremony held Dec. 20 in Stafford, Virginia. Batts most recently served as the deputy program manager for Engineer Systems, Logistics Combat Element Systems for Marine Corps Systems Command. (Photo courtesy of JPEO-CBRND)

3: CHANGE OF CHARTER AT JPM CBRN MEDICAL

Lt. Col. Owen L. Roberts II, right, assumed the role of joint product manager for

JPM CBRN Medical from **Col. Kara Schmid** (not pictured) during a change of charter ceremony on July 7 at Fort Detrick. He stands with **Col. Ryan Eckmeier**, joint project manager for CBRN Medical. Roberts served most recently as product lead for vaccines, therapeutics and enablers for JPEO-CBRND Joint Assisted Acquisition. Currently, Roberts is responsible for providing the research, development, acquisition management and joint service integration for U.S. Food and Drug Administration-approved medical countermeasures against chemical, radiological and nuclear threats. (Photo courtesy of JPEO-CBRND)

PROGRAM EXECUTIVE OFFICE FOR ENTERPRISE INFORMATION SYSTEMS

4: CHES WELCOMES NEW PL

Sergio Alvarez, left, the Enterprise Services acting project director, presented the charter for the Computer Hardware, Enterprise Software and Solutions (CHES) product office to **Sarah Mullins** at an assumption of charter ceremony Dec. 9 at Fort Belvoir, Virginia. Mullins, who previously served as a senior project officer for Defensive Cyber Operations, has assumed the role of CHES product lead. (Photo by Cecilia Tueros, PEO EIS)

5: ASSUMPTION OF CHARTER AT AIT

Col. Mark Taylor, left, Defensive Cyber Operations project manager, presented the charter for the Allied Information Technology product office to **David Waisanen** during a Jan. 12 assumption of charter ceremony



at Fort Belvoir. Waisanen assumed the role of product lead. (Photo by Laura Edwards, PEO EIS)

6: NEW DEPUTY PROGRAM EXECUTIVE OFFICER

William “Bill” J. Hepworth was selected to the Senior Executive Service and was appointed to the position of deputy program executive officer for Enterprise Information Systems on Dec. 30. Hepworth previously served as a contractor to various organizations within Headquarters, Department of the Army, the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology and U.S. Army Materiel Command. His primary focus over the last decade has been organization-wide information technology (IT) modernization with an emphasis on cloud transformation and instilling agile engineering in IT and related fields. (Photo by Laura Edwards, PEO EIS)

THE CHIEF OF STAFF OF THE ARMY

ANNOUNCED THE FOLLOWING GENERAL OFFICER PROMOTION:

Brig. Gen. Christopher D. Schneider now leads the Program Executive Office for Soldier at Fort Belvoir, Virginia.

ANNOUNCED THE FOLLOWING OFFICER ASSIGNMENT:

Brig. Gen. Ronald R. Ragin, deputy chief of staff for logistics and operations for Army Materiel Command at Redstone Arsenal, Alabama,

has been assigned to deputy commander for the Security Assistance Group-Ukraine, Germany.

ANNOUNCED THE FOLLOWING RETIREMENTS:

Maj. Gen. Rodney D. Fogg completed more than 35 years of service and concluded his distinguished career as deputy chief of staff for logistics and operations for Army Materiel Command at Redstone Arsenal, Alabama.

Lt. Gen. Leon N. Thurgood completed more than 36 years of service and concluded his distinguished career as director of hypersonics, directed energy, space and rapid acquisition for the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology at Redstone Arsenal, Alabama.

Maj. Gen. Kenneth T. Royar completed more than 34 years of service and concluded his distinguished career as commanding general, United States Army Aviation and Missile Command, Redstone Arsenal, Alabama.

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When I came to America, it was the first time I was free. It was one of the reasons I joined the U.S. Army because I wanted to show my appreciation.

– Tibor “Teddy” Rubin

HOLOCAUST SURVIVOR
KOREAN WAR HERO
MEDAL OF HONOR RECIPIENT





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“Innovation today is more important than ever, because the U.S. Army is in the middle of its largest modernization effort in 40 years. To enable this historic effort, we are counting on technology innovation that provides truly revolutionary new capabilities, not just marginal improvements on old technology.”

—The Hon. Douglas R. Bush
*Army Acquisition Executive and
Assistant Secretary of the Army for Acquisition,
Logistics and Technology (ASA(ALT))*

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