

ARMY PEO EIS VISION GUIDE: NETWORK MODERNIZATION



Welcome letter from Doug Wiltsie, PEO EIS

As the Army continues to evolve in response to changing mission and budget realities, one priority has remained unchanged: network modernization.

The Army's Program Executive Office Enterprise Information Systems (PEO EIS) is working with a strong team across the Department of Defense to realize this critical mission to increase capacity and reduce our current footprint. Working with our partners in the Army CIO/G-6, Army Cyber Command, Army Network Enterprise Technology Command, the Defense Information Systems Agency and the DoD CIO, we are implementing the next-generation network that is more streamlined, unified and secure. We know that the future, globally responsive force requires unfettered access, a more expeditionary capability, information sharing and collaboration across joint environments and unparalleled cybersecurity. These are the features of the next-generation global IT network that will fundamentally change the way that we operate in any environment, through any mission space.

The massive undertaking of network modernization will be entirely reliant on teamwork, creative thinking and rapid implementation. In addition to our DoD collaborators, we also rely heavily on our industry partners to work with us to implement effective solutions to tough Army problems. Together we are advancing technical solutions to increase our current capabilities and maintain our reputation for reliability, while safeguarding more than 1 million Army team users and their data.

The Project Manager Installation Information Infrastructure-Communications and Capabilities (PM I3C2) is acquiring and delivering the generating force network capability required to ensure a single Army network from each post, camp and station. I3C2 designs and builds the network infrastructure and provides the capabilities to plan, coordinate, synchronize and conduct network operations, preserving global connectivity.



Defense Communications and Army Transmission Systems (DCATS) acquires, implements and sustains strategic satellite and terrestrial communication systems. Our DCATS program office is providing the critical connectivity and reliability for the next-generation network.

No less important to the mission of connectivity is Enterprise Services (ES), whose mission is to develop and sustain enterprise-level IT services that enable end-to-end communication, collaboration, content management and application hosting across the Army. ES manages the systems that support cloud computing and data-center consolidation, and is the material developer for next-generation enterprise services.

PEO EIS is the Army's technical leader for business information systems: Our systems support every soldier, every day, everywhere. Please keep in touch with us through our website, www.eis.army.mil, Twitter @PEOEISPAOffice and Facebook (www.facebook.com/peo.eis).

**Sincerely,
Doug Wiltsie**

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C4ISR & Networks is the media brand committed to the network-based defense and intelligence community. C4ISR & Networks magazine and the website, C4ISRNET.com, are the source for in-depth news, analysis and insight on the networked technologies that enable situational awareness for war fighters, and collaboration, responsiveness, connectivity and agility across the enterprise of national security.

Modernizing the network

The Army's plans overhaul strategy as well as equipment

BY ERIN WIECZOREK, PEO EIS PUBLIC AFFAIRS

The Army's goal is simple: increase operational effectiveness, improve security and be efficient. Getting there is not. The question becomes: How do you connect the global Army across approximately 1.4 million people in nearly 150 countries with the latest capabilities and the highest security? The Army has an answer in the current network-modernization effort.

The program focuses on three lines of effort that will result in a more connected, reliable, agile and secure network: network capacity, enterprise services, and NetOps and security. Through increasing network capacity, the Army can connect and operate across time, space and mission. Enterprise services such as Voice over Internet Protocol, collaboration tools and cloud services will enhance sharing regardless of location and improve teamwork and communication. Finally, NetOps and security will allow the Army greater access and better defense of the network, protecting soldiers, missions and infrastructure.

THE DRIVING FORCE BEHIND NETWORK MODERNIZATION

According to Undersecretary of the Army Brad Carson, "These are difficult times in the defense budget, and the Army is having to prioritize everything, but modernization of the network is among the very highest priorities." Army Chief of Staff GEN Ray Odierno reiterated the importance of modernizing the network by outlining what the Army needed to do.

To meet these requirements, the Army developed LandWarNet 2025, a blueprint of where Army modernization needs to go to be successful. Establishing a single end-to-end network; modernizing from strategic core to the tactical edge; deploying with limited notice anytime, anywhere, in any environment; the ability to provide live/virtual/constructive training; incorporating Department of Defense requirements; and standardizing network operations and management form the foundation of this monumental effort. In addition to improving connectivity and capabilities, network modernization is expected to also significantly reduce costs and green Army IT by reducing its footprint and introducing IT components



STEVEN STUBBS/DEFENSE DEPARTMENT

CAPT Erin Velazquez studies a route recon on a tablet during a humanitarian assistance/disaster response exercise.

that are more energy efficient.

ARMY MODERNIZATION YESTERDAY

Army modernization efforts in the past have been siloed and segregated. Today, the result is more than 30 separate Army networks and roughly 800 individual security stacks around the world.

To complicate matters, the Army upgraded IT at posts, camps and stations based on geography. It typically took about five years to modernize a single post, camp or station, from routers, switches and outside plant components like wiring and fiber installation. With more than 200 bases around the world, the Army was able to modernize roughly four to five bases in a year. Over the life of the program objective memorandum, the Army was modernizing about 25 out of more than

200, or approximately 12.5 percent. What the Army never had was capability across the Army that was the same at any one time.

ARMY MODERNIZATION TODAY

The Army is modernizing more than just the IT network and infrastructure; it's also modernizing the approach and implementation strategy. Instead of focusing on geography, the modernization effort is now based on functions, beginning with bandwidth.

The Army's Program Executive Office Enterprise Information Systems, Army CIO/G-6, Army Network Enterprise Technology Command, Army Cyber Command and Defense Information Systems Agency have already been teaming on this effort. The Army was able to leverage existing DISA infrastructure, invest in upgrading the DISA nodes, and connect them to each post, camp and station, achieving a design that will continue to scale as needed, avoiding bandwidth as a constraint in the future.

Similarly, working with DISA has also allowed the Army to create regional security stacks that will protect the entire Army. Unified capabilities are up next and promise to be a game-changing shift for Army communication and collaboration in the future. The Army's comprehensive, enterprise strategy will deliver more capability at faster speeds with greater security at lower costs — successfully connecting the global Army. □

Connecting the globe

Modernizing the future network with Power Projection Enablers

BY COURTNEY N. CASHDOLLAR, PDM P2E PUBLIC AFFAIRS

With responsibility for the full spectrum of network, information and modernization services outside of the continental United States (OCONUS), the Product Manager for Power Projection Enablers (PdM P2E), part of the Army's Program Executive Office Enterprise Information Systems (PEO EIS), is engaged in several major efforts to improve network access and modernize information technology infrastructure to support voice, video and data at the Army's Regional Area Networks and Strategic Command Centers.

These complex projects support base realignment strategic initiatives, including the major Yongsan Relocation Plan/Land Partnership Plan (YRP/LPP) in South Korea and the European Installation Consolidation (EIC), according to Product Manager LTC Mollie Pearson.

REBUILDING THE ARMY'S GLOBAL IT INFRASTRUCTURE

PdM P2E recently established data-center infrastructure in the main communications facility on Camp Arifjan, Kuwait. This successful modernization effort involved a \$49 million contract designed to increase efficiency, performance, data security and command and control of the IT environment.

PdM P2E provided the first theaterwide operational Army unified capabilities/Voice over Internet Protocol implementation in Europe, converging voice, data and video into the sample transport infrastructure system.

According to PdM P2E Technical Management Division Chief Tony Moles, "This accomplishment is extremely significant as it reduced life-cycle costs considerably; supported DoD enterprise initiatives; and obtained a cost avoidance of approximately \$20 million by finding a more efficient, less expensive solution that addressed the existing end-of-life voice time division multiplex system that exists in Europe."

PdM P2E provides and continues to enhance Non-Secure Internet Protocol Router, Secure Internet Protocol Router, Voice Over Secure Internet Protocol, Inside Plant and Outside Plant networks across Southwest Asia, Europe and the Pacific theaters. It also plans to install state-of-the-art technology at Strategic Command centers in Europe and the Pacific, as well as a mission command facility in Hawaii.

The P2E team also supports strategic goals of realignment and consolidation of personnel and services through the YRP/LPP in Korea; as well as the EIC Project, which reduces the Army's foot-



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LTC Mollie Pearson and LTC Eddie Galarza greet Ministry of National Defense representatives at Industry Day for the Yongsan Relocation Plan/Land Partnership Plan.

print throughout Europe. To date, P2E has established C4I services in new facilities in Wiesbaden, including the Gen. John Shalikashvili Mission Command Center and the Lt. Gen Robert E. Gray Cyber Center.

PATH FORWARD

PdM P2E's network modernization OCONUS project provides enduring installations in Southwest Asia, Europe and the Pacific Areas of Responsibility with an optimized and standardized network to enable cyber domain agility; improve war-fighting effectiveness; and reduce the cyber attack surface. Network modernization involves a standardized JIE integrated architecture that connects end users within a single security architecture on a globally integrated network, increasing overall adaptability and agility.

Likewise, the U.S. Army's Pacific Command mission command facility in Hawaii will consolidate C2 and other mission support functions by leveraging JIE's communication, computing and storage, mission application and application and data services.

PdM P2E will continue support for strategic realignment through YRP/LPP and EIC, creating a new C4I infrastructure that is aligned and compliant with the secure JIE, providing soldiers with required information systems and network services to support the future of Army Operations.

The P2E team is spearheading myriad global building projects and will continue to shape the Army's future by providing modernized C4I services and seamless information infrastructure upgrades while complementing the Army's strategic vision of becoming a single network that supports the Joint Information Environment construct. □

The joint future

Military partnerships central to network modernization

BY AMBER CORRIN

There are a number of different partners and stakeholders involved in the military's overarching plan to modernize Defense Department networks and IT, but one central tenet of the broad strategy is standard for everyone involved: Collaboration is the new normal.

From the highest levels of the Pentagon to the brigades upgrading network switches on bases, DoD plans for network modernization encompass a top-to-bottom approach. It begins with modernizing the infrastructure underpinning DoD IT operations, including the implementation of new hardware, as well as transitioning everyday desktop office tools to enterprise services. In the long term the modernization effort also includes satellite upgrades that will help enable a globalized defense force with more bandwidth and greater computing power to carry out operations in the most remote corners of the world.

At the heart of DoD's network modernization is the implementation of the Joint Information Environment, a centralized, integrated IT environment that enables better sharing between services, enhanced security and a common operational picture. The effort itself is a partnership between the military branches and other DoD components, chiefly the Defense Information Systems Agency, which is helping lead the effort.

The path to JIE is under way, but also still under construction as defense leaders negotiate the way forward, particularly when it comes to partnerships and responsibilities of those involved. Acting DoD CIO Terry Halvorsen has launched a joint task force to help determine the next steps in the transition process, and he has emphasized the need for all hands on deck.



AFP/GETTY IMAGES

Partnerships are key to the Defense Department's network modernization plans, such as the multiservice Joint Information Environment effort led by the Defense Information Systems Agency.

"We're in a position today where [we share] space between the [military departments], DISA, [the intelligence community] and some of the partners. It's not going to be easy to just say, 'OK, we stood up the joint task force, DISA you got it.' That will not work. It



ARMY/SGT. ZANE CRAIG

Communications specialist Master Sgt. Robert Beveridge participates in joint force, joint component cyber training.

will take some process in place on how we do that,” Halvorsen said in June. “Everyone needs to see shared picture — if we put this together and some DISA watch source is the only group that can see the network picture, that’s as big a failure as we have today. Everybody needs to see that and know what the defined rules are for them to make decisions.”

Leaders of DoD organizations already are busy collaborating on the best ways to implement JIE, including determining acquisition strategies, instituting the shared services that will be a JIE hallmark, and carrying out modernization work.

Within the Army, Air Force and DISA, work is well under way on shared enterprise services, such as collaboration and communication tools under the unified capabilities (UC) umbrella. Enterprise email was the first such capability to launch, and now officials are looking to that example as they move forward with initiatives like an enterprise service desk to handle IT requirements, as well as messaging, voice, video and chat capabilities and more.

“We’re working with DISA and the Air Force on the UC acquisition, which can be an added challenge because it’s another group contributing to the requirements set,” said Jeremy Hiers, project



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director for enterprise services at the Army’s Program Executive Office Enterprise Information Systems (PEO EIS). “But we’ve found it’s actually not that challenging, because we’re not that far apart. We’re not building aircraft or tanks — we’re talking about user-facing IT. How we do PowerPoint and Word is not that different.”

Hiers said that officials are heading off many challenges by regular meetings, often on a weekly basis, to talk about joint schedules, project plans, risks and issues they’re all working through.

“We have regular collaboration at all echelons. We’re doing it better today than I’ve ever seen before — the partnership is there, the collaboration is there, the teamwork is there,” Hiers said.

Numerous defense officials noted that the approach to enterprise IT is likely to change in the coming months and years, particularly as offerings from industry become more efficient, more commoditized and higher tech. DISA officials are factoring that into their plans for buying the IT and services critical to enterprise capabilities, as well as the interoperability concerns that inevitably will crop up along the way.

“UC is really more than just telephony solutions. Enterprise SharePoint, enterprise portal service, Defense Connect Online, enterprise email — they’re running, but those things will continue to evolve as we go forward on the migration path that we’re targeting,” said Lisa Belt, UC portfolio manager at DISA. “And at the end of the discussion things all have to work together. That’s the impetus behind standing up the portfolio ... to ensure that we’re on a trajectory to all of this interoperating at the enterprise level.”

Beyond UC, the Army and Air Force also are collaborating on the joint regional security stacks (JRSS) program, designed to improve command and control capabilities, offer greater situational awareness, and enable the single security architecture central to JIE.

“The Air Force is doing a lot with JRSS, firewalls [and network operations] tools — it’s shared management to an extent,” said LTC Robert Mikesh, product manager for the Army PEO EIS’ Installation Information Infrastructure Modernization Program. “The Army, Air Force and DISA are there together developing the [concepts of operations], step by step ... it’s happening because we’re all participating in this great, integrated project team.”

At the helm of many of the cooperative efforts, particularly those tied to JIE, DISA is acting as the common thread tying together the pieces of broader enterprise strategy.

“DISA, in coordination with Army, Air Force and so on, [is] trying to look at what are the consistent and common requirements that we would have so we can put together an acquisition strategy and approach that gives us the right capability that could be made available as an enterprise solution so that DoD at large could leverage it, as opposed to everybody coming up with their own unique approach,” said Dave Bennett, DISA CIO. “What you see right now is a lot of that upfront requirements definition between stakeholders to come up with standard set of requirements, which will help shape our acquisition approach going forward.” □

DoD's near-term aims

Modernization efforts span multiple aspects, timelines and strategies

BY AMBER CORRIN

The Defense Department is more than a year into a major IT modernization effort, one that spans multiple aspects, timelines and strategies. While those efforts can be roughly broken up into near-term, mid-term and long-term projects, many of the initiatives overlap between goals and offices, and the overall target is central: provide the military with the IT power required by a world-class force.

Looking at the big picture, it's still early in DoD's network modernization strategy. Upgrades are starting on the infrastructure that underpins Pentagon technology and communications, and DoD components incrementally are rolling out shared, enterprise-level services that will ride on the improved IT backbone. Long-term efforts include improvements to defense satellite communications and technology, which will help provide military users with much-needed bandwidth to support global operations.

In the near term, much focus is on upgrades that will streamline DoD network operations, improve security and catalyze network speed. This includes efforts such as the implementation of the multiprotocol label switching, or MPLS, routers, as well as joint regional security stacks, or JRSS. MPLS' routers regulate network traffic and allow for faster operations, while JRSS improve command and control capabilities, offer greater situational awareness and enable the single security architecture central to DoD's Joint Information Environment.

"JRSS, the major component of DoD's single security architecture, will reduce our attack surface from over 700 points of presence on the Internet to 23 worldwide — making the network much more defensible. MPLS upgrades to the network backbone are expanding capacity and increasing throughput, setting the conditions to deliver enterprise services across our formations from enterprise to installations and the tactical edge," Army CIO LTG Robert Ferrell said in a recent C4ISR & Networks interview. "JIE will also optimize information-sharing, collaboration and situa-



ARMY PDM I3MP

Upgrades to the network are already rolling out to the top 40 most populated bases.

tional awareness across mission partners. This improves joint operations and has the potential for greater coalition information-sharing."

ARMY BASES UNDERGOING MODERNIZATION

The upgrades taking place under plans like the move to JRSS, MPLS and the migration to core data centers are especially visible at Army bases, where the work has already started. The Army is several bases into the modernization strategy, which is being rolled out according to the top 40 most-populated bases, according to LTC Robert Mikesh, product manager for the Army Program Executive

Office Enterprise Information Systems installation information infrastructure modernization program.

Mikesh said that since the big-buy procurement in 2013 of more than 12,000 switches, his teams doing the upgrades — which includes teams from the 7th and 9th Signal Commands — are now swapping out an average of 36 switches per day and have just wrapped up work at Fort Bliss, Texas, the fifth base to be modernized.

Furthermore, the Army also is moving migrating routing to Defense Information Systems Agency core routers, effectively flattening and standardizing the network, Mikesh said. The result is a major reduction in core nodes; at Joint Base Antonio alone the number of core nodes was reduced from 22 to fewer than 10, decreasing power usage at the base.

Those efforts fall in line with broader Army and DoD network modernization goals, and provide tangible examples of progress for a project that can, on the surface, seem difficult to measure for success.

"We're partnered with CIO/G-6 and DISA to go out there and build that capacity, extend the bandwidth and remove bandwidth as a constraint," Mikesh said. "When we're successful at increasing that capacity, we will basically lay a foundation for the ingenuity of the soldiers and our operating commands to do things on top of that capacity, whether we want to push voice, video, unified capabilities, virtualization — all over the network." □

DCATS takes the long view

Improving critical connectivity through a system of systems

BY AMBER CORRIN

The Army's Defense Communications and Army Transmission Systems (DCATS) leads the Program Executive Office Enterprise Information Systems efforts in technology when it comes to satellite and terrestrial communications. In terms of network modernization, much of this work centers on Defense Department communications infrastructure, satellites and the transport layer underpinning the Joint Information Environment.

Today DCATS' mission revolves around Army forces returning stateside from deployment, requiring improved connectivity throughout the U.S. to support training at their home station and combat training centers, whether it's live, constructive or virtual training. That connectivity — and the infrastructure supporting it — becomes even more critical amid the DoD-wide move to JIE.

"As we transition from an enterprise environment that was miniscule [and] that has centrally supported our installation IT environment and our operational IT environment, we're now turning that upside down and making the enterprise the major portion of the overarching network modernization," said Carlton Brown, DCATS deputy project manager. "Our capabilities are going to allow our soldiers to have more reliable communications, with faster and greater bandwidth, and with a lot more flexibility than we currently have."

Those communications can be voice or data, from the dismounted soldier to the commander in chief. Driving the improved communications is a major, long-term plan to upgrade strategic long-haul communications, centering on two high-level efforts.

The first is wideband satellite operation management systems, or WSOMS, which deals with improving, monitoring, configuring and managing communications payloads for new wideband global satellites as well as three legacy defense satellite communication systems. The second is improvement and upgrades to legacy terminals under the modernization of enterprise terminals, or MET, with the Army replacing legacy terminals at a clip of roughly one per month for the next seven to eight years.

"For the MET, right now we're looking at working on this until about 2021 or 2022 for installing the last terminal, give or take. With the WSOMS we're looking at a three- to five-year period," said LTC Samuel Ancira, product manager for Wideband Enterprise Satellite Systems (WESS).

The capabilities resulting from the satellite work carry impacts



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Under the MET program the Army is replacing about one legacy terminal a month.

across the military, from hand-held and vehicle-mounted radios to real-time operational views for combatant commanders to presidential communications, Ancira noted.

"Everything goes through the satellites and terminals. We're a system-of-systems integrator," he said, noting that the upgrades will effectively widen the "pipes" of communication and, in particular, much-needed bandwidth. "Communications is a combat multiplier. If you take down communications, we're in the dark. This is a significant increase in capability."

Part of the satellite work, particularly when it comes to upgrading the terminals, is a function of getting up to speed with newer satellite systems, noted Walton Brown, WESS satellite terminal systems product director.

"This particular program was initiated not to provide a new capability per se, but to provide a life cycle upgrade of some very old satellite terminals that go back to the 1970s," Brown said. "We've had several increments of satellite capabilities over the years that loosely correlated with new satellite constellation launches, and each time we incrementally modernized little portions of those old terminals. We've gotten to the point where we just had to do a wholesale replacement of them ... to improve reliability, provide greater capacity and to ensure interoperability with the emerging satellite constellation [Wideband Global SATCOM]." □

LTC Robert J. Mikesch, Jr.

Product Manager, Installation Information Infrastructure Modernization Program

One of LTC Robert Mikesch's primary missions is the modernization of IT infrastructure at Army bases across the continental U.S. (CONUS). It's a mission that has evolved from spot upgrades of a post's data or voice networks to wholesale modernization in a range of technology-related functions. Those functions will only increase in importance as the military draws down its presence in southwest Asia and troops return to their home bases.

Mikesch recently sat down with **C4ISR & Networks Senior Staff Writer Amber Corrin** to talk about how his mission has changed with the Defense Department's evolving demands.

Let's talk about your mission to modernize IT on CONUS bases and how it has evolved over the years.

Mikesch: We're in the middle of a transition now from what we would consider a legacy-type project, which was intended to be focused on [Base Realignment and Closure Act] efforts. When BRAC was going on this program received a lot of missions from CIO/G-6 to go out and do upgrades associated with new buildings and any new infrastructure needed to support that. So the last five to 10 years of this program were really focused on getting these legacy projects done.

Some senior leaders would say that really we never finished the modernization of bases — we were asked to do a little bit here and a little bit there. We've now switched that paradigm, and it really started in fall of 2012 with CIO/G-6 and our mission partners and Defense Information Systems Agency looking at our mission and saying, how can we modernize our bases in a more holistic fashion? Can we get to where we're finishing a base and getting done and moving on to the next base, but also can we start to look at solutions for soldiers that are not base-specific technical solutions? Where can we look to DISA and enterprise solutions?

In first quarter fiscal 2013, CIO/G-6 developed an IT modernization concept involving modernizing a base's Installation Campus Area Network (ICAN) as a set of capabilities, known as the Institutional Capability Set (ICS). Under the ICS modernization concept PdM I3MP took action to survey designated bases for holistic

upgrades of a site's ICAN network devices, outside plant infrastructure, and assured service voice communications. These actions allowed us to provide CIO/G-6 and [Network and Mission Command] leaders with a plan to "finish" a base's IT infrastructure modernization and build acquisition strategies.

One reason for the enterprise focus is to enable maximum benefit of procurement dollars available to CIO/G-6. Making a shift to getting IT capabilities as a service would allow use of operations and

maintenance dollars and preserve procurement funding for other modernizations. Technology has changed so much in this area of commercial IT and infrastructure; we're at a point now where we can reasonably expect to get voice services from something that's an enterprise model rather than base-specific. I'll use the example of conference bridging. Today, legacy-wise, each base has a conference bridging solution, and we have to pay for licensing and tech refresh of each of those solutions. Why can't we look to a mission partner like DISA that can offer conference bridging through their [Defense Information System Network]? That's where enterprise is important to us now and we're looking to what industry has for us as solutions.



LTC Robert Mikesch, Jr.

What have been some of the lessons you've learned as your mission has evolved?

Mikesch: Partnering with my operation and maintenance command, NETCOM and 7th Signal Command, and being able to harness the power and skills that these soldiers have in these commands ... to be able to go out there and do some of this work that traditionally was done by industry — it's extremely exciting to see that happen. Not only are they excited to do it, they're getting trained in some of the new skills and operating systems.

There's been a lot of change for us in terms of the internal structure inside the [program management office], but it's been well worth the effort. We've also taken many months to sit down with industry and work with them to find out what went right and what didn't go right in some of the last contracts we did in the 2012 time frame. They've been very helpful; there were plenty of areas to improve upon, and I think we've got that. We're more efficient in how we execute and in how we [handle procurement]. So it's dual-prong from the contracting perspective and the performance perspective, and I'm excited to see how that's going to move forward.

We absolutely will continue to meet with industry in the future. The next [project] that has some challenges to think through is voice because the technology is pretty well understood, but addressing some of the base-specific things in these services is something we need to think through. What does it mean to modernize from legacy to Voice over Internet Protocol? They know our bases, they've been there, so they can help us avoid pitfalls, if we can. □

Jeremy Hiers

Project Director, Enterprise Services

Jeremy Hiers is helping to lead network modernization efforts that will stretch across the Army, expanding capabilities and improving security. He's working with other components of PEO EIS, the Army and the Defense Department in a collaborative effort to be the material developer for next-generation enterprise services and push toward the Joint Information Environment.

With a bigger network, the Army is able to bring more of its IT services from a local level to the enterprise level, a move Hiers says will bring significant economies of scale.

He recently sat down with **C4ISR & Networks Senior Staff Writer Amber Corrin** to talk about his office's priorities and progress.

Let's talk about what's on your plate. What are your biggest projects and priorities right now in network modernization?

Hiers: With enterprise email we learned that we were ready to start taking more to the enterprise level; we also learned more about our dependencies and limitations. We learned what the network has to look like to support enterprise services at an enterprise level, and about the security requirements we need.

Enterprise email was really the first big milestone, and now we're working on the Army enterprise service desk and an enterprise collaboration suite.

At one time each IT service provider at each installation had their own service desk, so we're collapsing those individual help desks to a single user interface: the Army enterprise service desk. That's achieving savings and standardization that are critical to efficiencies, and so that's what we're in the process of now.

We're also working on collapsing the multiple software collaboration tools and systems out there into a single Army collaboration suite. Three to four years ago the technology was not there to bring voice, video and data together. If you wanted to talk to someone, you either used the telephone, videoconference or emailed — all these were separate. We are looking to use software clients to bring it all together as unified communications from a desktop. For example, we're looking to collapse independent software and hardware packages so that if a person tries to call via soft client and gets a busy signal, an instant message can be sent that says, "Call me back" — much like you can with smartphones today.

So we're seeing steady progress with those two efforts and we're looking at how to bring other things to the enterprise level. We're following the precedent of enterprise email.

With these kinds of changes you're inevitably affecting how a lot of people do their daily jobs. What are you up against in terms of cultural challenges, and how are you addressing that?

Hiers: It's a challenge that we respect. The culture needs to be continually addressed as changes occur. Now everyone types on their own keyboard to send emails, but there was a time that people told other people what to type using a typewriter and then sent a letter. We have to convince people to operate differently in their daily jobs, but it also affects people's areas of responsibility.

You can't take technology like this and turn it on overnight. We need to leverage smart acquisition strategies that enable us to incrementally field the solutions, garner stakeholder engagement and buy in throughout the life cycle, and set the policies that help to change the culture. A lot of what we've learned from the implementation of enterprise email and the enterprise service desk will help to inform the changes

moving forward.

Besides the cultural aspect, what have been some of the other challenges along the way? What have you learned?

Hiers: Every time you take services and put them at a higher level, there are technical challenges. Many of them will be resolved through this network modernization and technology advancement from industry.

Anytime you collapse services, each organization you're collapsing had their own processes. Take the service desk: Each one had their own ways to take in issues and route them to be fixed. At the enterprise level, it's a much more standardized, rigid process. So you end up restructuring people, who people talk to, every step of the process. That's something we ran into with both enterprise email and the enterprise service desk, the disparate processes and turning them into an enterprise process.

In terms of the services you're providing, you have to find the lowest common denominator that fits everyone's needs. Finding that common denominator that works across the environment, without losing the intent of the capability — that becomes an art. We have to anticipate today's needs as well as future needs. If we water down the capabilities too much, we run into trouble with user adoption.

We've learned a lot about individual and unique needs with enterprise email; we had to adapt to meet those needs. We're thankful for enterprise email. That's what paved the way for fielding standardized processes, and we're leveraging those lessons learned across the Army. □



Jeremy Hiers