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To overcome readiness challenges, DoD must lean heavily on data, standards

PANEL OF EXPERTS



Col. Kerry George, Deputy Director, Maintenance Policy and Programs, U.S. Army



Col. Marlon Crook, Deputy Director, CIO/J-6 Directorate, National Guard Bureau



Mark Fox, Senior Manager for Global Defense Programs, Amazon Web Services



Risa Savold, Technical Director, Federal and DoD Solutions, Infor

BY JASON MILLER

Defense Department leaders didn't mince words when they wrote the National Defense Strategy. Restoring readiness is their top priority.

"Our backlog of deferred readiness, procurement and modernization requirements has grown in the last decade and a half and can no longer be ignored," the strategy states. "We will make targeted, disciplined increases in personnel and platforms to meet key capability and capacity needs."

Pentagon leadership recognize the increased risks the military faces without this focused effort to prepare the force for current and future combat missions.

"Without sustained and predictable investment to restore readiness and modernize our military to make it fit for our time, we will rapidly lose our military advantage, resulting in a Joint Force that has legacy systems irrelevant to the defense of our people," the strategy states.

DoD is driving this focus on readiness down to the services and components.

"As a logistician, [there are] several aspects of readiness that I'm very concerned about. Do we have the transportation assets in place? Do we have the preposition stocks? Do we have the ability to move things around the battlefield? Do we have the ability to track, predict and affect maintenance to keep our fighting forces moving forward in the battle?" said Col. Kerry George, the deputy director of maintenance policy and programs for the Army during a panel discussion *Maximizing Efficiencies, Readiness and Asset Management in DoD* sponsored by Infor. "In general, we're on track. The Army stated we have some readiness goals to achieve by 2020. With the additional steady funding we've been receiving, we're on track to achieve those goals for 2020."

George said one of the ways the Army is tracking its readiness is through its personnel and partner exercises. He said the service's metrics demonstrate how effective servicemembers are during the exercises and in the logistics tail.

"Are we able to deliver the equipment they need on time? And when they're done, are we able to bring that equipment back on time, reset, refit it and have it ready for the next appointment?" he said. "They're definitely some things we're learning through that process. Getting in and out of Europe, especially under peacetime conditions, there are constraints, but we have to anticipate what we would face in a true wartime scenario. It's making us better. It's making us better at predicting our requirements. It's making us challenge ourselves and the way we assess our readiness, which is a good thing. We're looking to how do we go to a more predictive model of maintenance rather than the legacy model where you bring your vehicle in every three months for an oil change whether it needs it or not."

Technology masking data challenges

Getting to that predictive maintenance model or a similar approach to readiness takes data and technology.

The technology, through the cloud and data analytics tools, is getting easier. But the data is where DoD can ensure its competitive advantage over near-peer adversaries, and that's why this readiness issue is much more difficult.

"When it comes to topics like material availability or equipment readiness, there's a common thought that simply having all that data at your fingertips is going to help us move the needle and achieve our readiness goals," said Risa Savold, the technical director for federal and DoD solutions at Infor. "Many people think that just means being able to aggregate that data from multiple sources and serve it up. Today, technology makes that problem relatively easy [to solve], but it's masking a much more difficult and fundamental problem. Data is our biggest problem and also our biggest opportunity. And historically, the problem has been can we trust that data? If we can't trust that data, we can't trust those insights, and we're not going to meet those readiness goals."

Savold, who started her career as a data scientist, said while interoperability of systems will make accessing data easier, success still comes down to standards.

"I've done a lot of systems modernizations and evaluations, and one of the first things is to actually take a close look at all the data. Are they even describing the same thing? Are we using the same terminology or the same codes?" she said. "In data science, some 60% of the effort is actually spent cleaning up that data before we can do any

analytics, develop any reports or dashboards, or even start looking at technologies like artificial intelligence.”

The need to clean up and standardize data is part of the DoDwide and service-specific initiatives. The Army, for example, is updating its data strategy and through it will enforce servicewide strategies.

“One of the biggest challenges we have in the Army is that we have a lot of data and it’s all on very discreet one-off systems. So not only do we need to be able to make sure we’re talking the same data, but [also make sure] we can actually access all the systems,” George said. “We’re moving forward in some ways. The integrated pay personnel system is one of the ways we’re pulling in 40 disparate, pay and personnel systems into a single dashboard. As we move forward to this condition-based maintenance, we will be looking at the same thing. The data coming off of each of the platforms isn’t necessarily going to be the same. So then how would we be able to compete at the edge to give that operator what they need to react now, the battalion the ability to react in the next 24-48 hours and then big Army the ability to aggregate the data to see what’s happening across the total fleet.”

National Guard making investments

Col. Marlon Crook, the deputy director in the CIO/J-6 Directorate for the National Guard Bureau, said when it comes to readiness, the bureau is a step ahead in many ways because the terms it uses already are standardized.

At the same time - being a community-based organization - the guard’s mission area always is expanding so the idea of readiness also is changing.

“Across the 54 states and territories, we say there are 54 different, individual National Guards. But one of the National Guard top priorities is data and getting after the data so we can look at it across the 54 for the Air National Guard and the Army National Guard,” Crook said. “We are trying to standardize harnessing that data to make it actionable data. We’re investing in a chief data officer, a chief technical officer and data scientists so we can manage that data into a joint dashboard, and the chief can have logs stats, readiness at his fingertips ... and, as far as interoperability, we can get feeds not only from the services, but from our partners at [our] fingertips.”

Crook said the current set up is using spreadsheets, manual processes and legacy systems.

Mark Fox, senior manager for global defense programs for Amazon Web Services, said data standards become even more important as the DoD expands its use of connected devices that are bringing back a large amount of data every day.

“How do you deal with that data to get what is my current state of readiness [so you can] start to make some decisions out of that,” Fox said. “There [are] some organizational changes that we’re seeing consistently: you’re seeing titles like chief data officer, chief digital officer and head of digital transformation across the board at almost every one of the military departments and DoD. I think that will be the first step. They’re starting out with a very holistic view, looking at ... the current state. What is the data? What are the data sources that are available?”

Cloud helps lay the foundation

Fox said nearly every military service and agency has to deal with data cleansing and data management challenges because they realize that's the only way the DoD will head down the right path to data-driven decision making.

"If we look outside into the commercial world, the IT capabilities that are there today, these enabling technologies have crossed that threshold for being able to do effective analytics within a unit level," he said. "That ability to bring it in and put the data beyond just the traditional data warehouses and move them into things like data lakes become a precursor to start to do that predictive artificial intelligence or machine learning that we are counting on. I do think we crossed a threshold."

George said the Army is moving toward predictive analytics because of the technology changes that have happened over the last five years.

"The cloud gives us that ability to see across the entire Army, not just what's inside the information that is coming up on an individual commander's dashboard. As our data repositories grow and mature, we start getting the data that really helps us start making truly informed decisions," he said. "We are tracking everything down to the serial or the batch number of a part. Rather than putting out a maintenance message where we are saying 'everybody, check your 50 caliber machine guns to see if this piece has a crack.' Now you can look at the serial numbers of 50 calibers that need to be checked because we're able to track those parts down to the discrete part number. We know the batch, we know the weapons that went into tracking those life cycle changes, and all the way from inception to disposition of services at the end."

Trust the data, trust the systems

Infor's Savold said the cloud, data standards and the other changes that are happening across DoD and other agencies are setting the foundation for these emerging technologies.

"They're all pointing toward automation and how you really integrate that into your business processes," she said. "Whether it's logistics or maintenance, you really have to trust that system, what it's doing, what kinds of decisions it's making for you. And that's why it goes back to the data problem."

George said for a long time the Army didn't have a trust in the systems or data, but all of that is changing.

"As we start developing that trust and confidence, we see the data actually working and delivering things when and where they are supposed to. And then we'll start seeing some culture shifts," he said.

Crook added the National Guard is seeing those culture shifts George is talking about. He pointed to the California wildfires where the California National Guard is piloting an AI-enhanced solution that helps with fire line detection and digital imagery.

"The National Guard is using big data, as well as AI and cloud computing to enhance our response time to our mission partners," he said. "We're looking to innovate some of our legacy systems to shorten that decision-making time to make us have better command and control so we can make decisions. But we're keeping the human in the process." 