Pentagon IT Challenge: Introducing New Technology, While Still Using Legacy Systems

Sailors simulate the navigation of a littoral combat ship inside Integrated Tactical Team Trainer 2 at the Center for Surface Combat Systems LCS Training Facility, April 6, 2021. In 2007 the LTF became the first surface warfare training facility to provide integrated bridge and combat systems tactical-scenario training for Sailors assigned to a littoral combat ship. *U.S. NAVY / Mass Communication Specialist 2nd Class Kevin C. Leitner*

ARLINGTON, Va. — As the U.S. Defense Department races to develop a 21st century systems of systems linking all services, commanders, platforms and personnel, two top Pentagon officials say the challenge won't be just acquiring new technology, but getting rid of the old 20th century stuff.

The Defense Department's Joint All-Domain Command and Control (JADC2) strategy aims to connect sensors from all of the military services — Air Force, Army, Marine Corps, Navy and Space Force — into a single network to share intelligence, surveillance and reconnaissance (ISR) data to enable faster decision making. The change is needed because in a digital-driven world, decisions in future conflicts with degraded environments will have to be made swiftly, perhaps within seconds, say Pentagon officials.

An unclassified version of the strategy for public release is still awaiting approval by Defense Secretary Lloyd Austin and other leaders, Marine Corps Lt. Gen. Dennis Crall, the chief information officer for the Joint Chiefs of Staff (J6), told the virtual C4ISRNET conference April 21. Crall, who is

overseeing JADC2, said Army Gen. Mark Milley, the chairman of the Joint Chiefs, and Deputy Defense Secretary Kathleen Hicks have already been briefed on the document. “We’re making some final revisions on that draft and it should move quickly” from Milley to Hicks and then on to Austin, he said, possibly “in days.”

The massive shift to artificial intelligence and machine learning across the department presents a test for a decades-old, platform-centric culture, Crall said. “The biggest challenge is our own history,” he added, noting that once legacy platforms and technologies are rolling, “it is incredibly difficult” to bring the new thing on-board.

“Then you have a resource problem. You’ve got to keep the legacy alive while you’re on-boarding the very thing you’re trying to do,” Crall said, adding that there comes a curve in the cost continuum where “it’s the most expensive to operate during that transition.” How funding streams are made available should get a hard look, the general said. “We need to collapse those things that are both expensive and not delivering results.”

In the conference’s last session, Vice Adm. Jeffrey Trussler, the director of Naval Intelligence, made a similar point about Project Overmatch, the Navy’s plan to develop a new fleet architecture using artificial intelligence and manned/unmanned teaming to enable Distributed Maritime Operations.

“The Navy is a platform-centric service, big capital ships and submarines. That’s what we do, and it enables us to operate around the world 24/7/365,” Trussler said. “As we’ve gotten into the Information Age in the 21st century, the Navy has discovered, as have all the services, we ought to be able to connect those sensors and pass data seamlessly among each other.

“It’s not really a technological problem we have,” Trussler

said, “our challenge in that technology is the legacy platforms and systems we have now,” and replacing them across a 298-ship Navy with software-defined radios and other digital systems.