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The

Defense Department

EXPLORES AI

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From the editor's desk



Ross Gianfortune, Managing Editor

AI is Key to the Pentagon's Future

Artificial intelligence is everywhere, and the Defense Department wants to be part of it all. Officials see AI and machine learning as pathways to augment personnel, while helping maintain the U.S. military edge over adversaries.

The department is in the middle of establishing a center — the Center for Calibrated Trust Measurement — that builds off service laboratories doing work with algorithms, machine learning and AI.

But not all AI is created equal, and the hesitation around

generative AI's utility, accuracy and ethics are not far from officials' minds. As the commercial sector embraces services like ChatGPT, DOD officials have directed the Air Force Scientific Advisory Board to assemble a small group to examine the military applications of AI systems. In August, the Pentagon established a task force to study the technology's applications on and off the battlefield.

DOD has set goals for AI application. As the technology progresses, the department is increasingly learning that it will have to move as fast as AI does. ✨

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BY GOVCIO MEDIA & RESEARCH STAFF

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DOD is Standing Up a Pilot Center to Help Assess AI Trustworthiness

The Pentagon’s Center for Calibrated Trust Measurement and Evaluation will address challenges around assessing its AI systems.

BY ANASTASIA OBIS

The Defense Department is establishing a center that will help the U.S. armed forces evaluate the trustworthiness of military systems powered by artificial intelligence.

The Center for Calibrated Trust Measurement and Evaluation comes as the Pentagon is starting to accelerate the use of AI in military applications, according to Kim Sablon, principal director for trusted AI and autonomy at DOD’s Office of the Under Secretary of Defense for Research and Engineering.

“There’s a balance of roles and responsibilities between humans and machines, and there’s different levels of human autonomy interactions that we ought to be thinking about,” Sablon said at the NDIA’s Emerging Technologies for Defense conference. “I just want to put it out there that at least we’re taking some critical steps to tackling those.”



The new effort is part of a broader effort across the U.S. military to embrace AI, which has vast opportunities but also presents a wide array of risks.

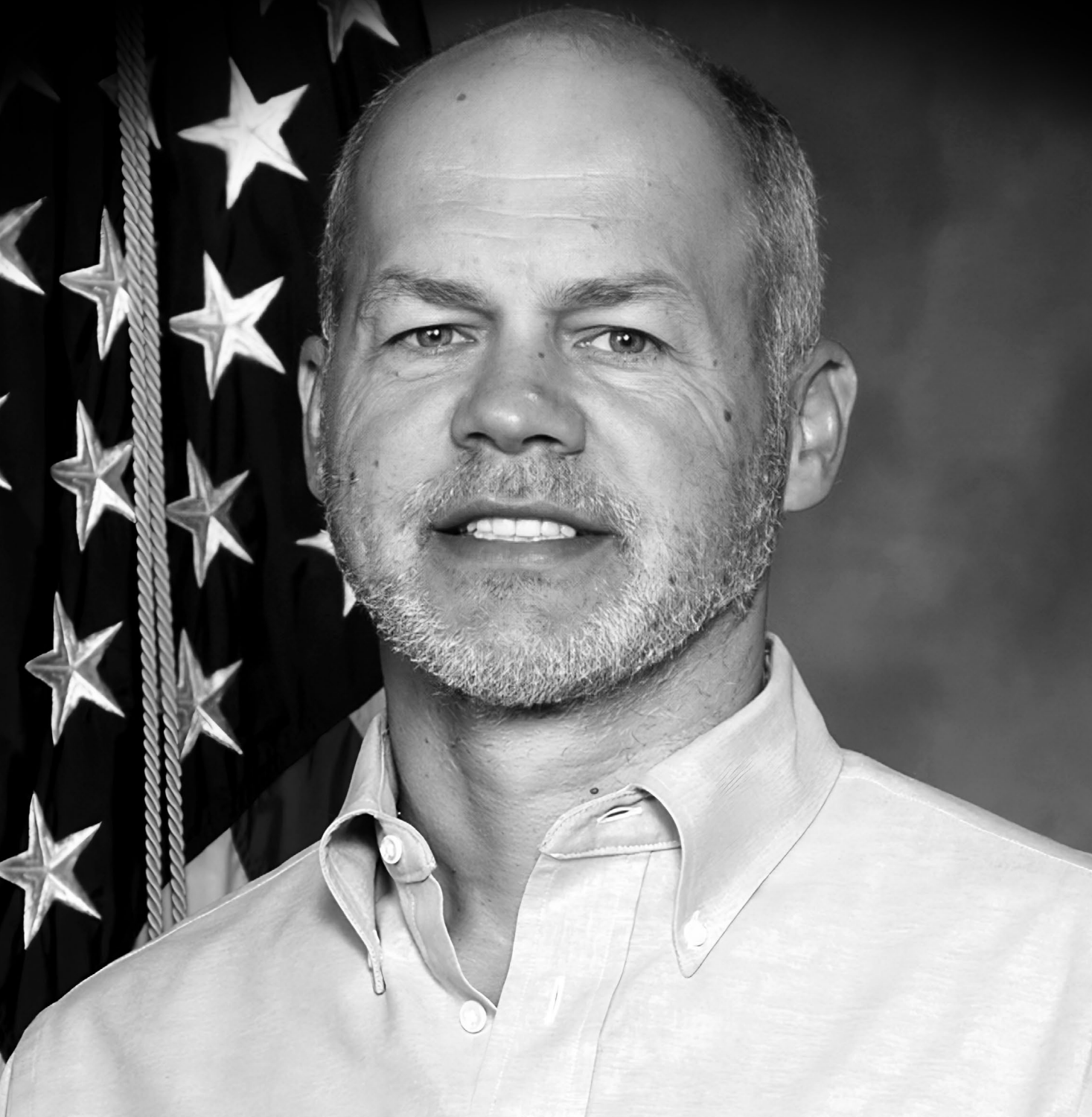
Earlier in 2023, the Air Force Research Laboratory said it successfully flew an XQ-58A Valkyrie drone entirely run by AI.

The lab’s Autonomous Air Combat Operations team developed the algorithms that “matured during millions of hours in high fidelity simulation events, sorties on the X-62 VISTA, Hardware-in-the-Loop events with the XQ-58A and ground test operations.”

“The speed in which we’re achieving new things ... it’s blowing my mind. I’ve literally been doing AI since 1973. I’m now on my 50th year of doing AI and, in that time, it’s never been as exciting as it is now,” said Steve Rogers, senior scientist for automatic target recognition and sensor fusion at the Air Force

Steve Rogers

Senior Scientist for Automatic
Target Recognition and
Sensor Fusion, Air Force
Research Laboratory



Research Laboratory.

“Last December, we publicly acknowledged we flew in Air Force F-16, with our AI bots controlling it, doing mission-related tasks. And just a couple of weeks ago, we publicly announced we flew in a Kratos XQ-58 drone over the Gulf of New Mexico doing it, being controlled by AI, doing mission-related tasks. Things have never happened this fast. It is an extremely exciting time,” Rogers added.

The Air Force requested \$5.8 billion over the next five years in its budget for the Collaborative Combat Aircraft program. The money will allow the service to build crewless weapon systems run by AI in an effort to enhance crewed weapon systems and achieve air superiority.

The new Center for Calibrated Trust Measurement and Evaluation will be another tool in the DOD’s toolkit to address the core challenges of ensuring that AI military systems are reliable and accurate.

But experts say that while the technology is developing rapidly, the path to trustworthy AI will be long and complicated. Even defining what it means to have a trustworthy and reliable system could be a challenge.

“During the different stages of AI lifecycle through the design, development, deployment and regular monitoring of the systems, it’s really important to reach to a very broad sense of expertise ... the tech community, but also ... psychologists, sociologists, cognitive scientists to be able to help us understand the impact of the systems,” NIST Information Technology Laboratory Chief of Staff Elham Tabassi told GovCIO Media & Research. 🌟

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— Steve Rogers, Senior Scientist for Automatic Target Recognition and Sensor Fusion, Air Force Research Laboratory

Task Force Lima: How the Pentagon is Exploring Responsible AI

An August 2023 Defense Department memo established a generative artificial intelligence and large language model task force called Task Force Lima. The effort focuses on DOD's exploration and responsible fielding of generative AI capabilities for its national security mission and aims to provide a responsible framework and initiative adoption within five core goals.

- ✓ Accelerate promising generative AI initiatives and solutions.
- ✓ Align development and research efforts into a single Defense Department community of practice to accelerate innovation and implementation.
- ✓ Evaluate solutions across doctrine, organization, training, materiel, leadership, personnel, facilities and policy.
- ✓ Drive education and build a culture of responsible AI use.
- ✓ Ensure coordinated engagement DOD partners regarding responsible development and use of generative AI.



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Pentagon Explores Generative AI Utility in Combat

Officials are honing in on use cases and how to integrate the technology ethically.

BY HARRISON DEITZ

The Defense Department has begun to explore ways the military can utilize generative artificial intelligence systems, such as ChatGPT.

However, the technology has been subject to criticism from officials, who believe the tools have “limited utility” and could lead to the spread of disinformation.

Air Force Secretary Frank Kendall spoke about the use cases for AI within the agency on June 22. He believes the technology could assist with tasks that involve pattern recognition or targeting.

“It definitely can make us better, faster, stronger,” said Defense Intelligence Agency Director Lt. Gen. Scott Berrier about generative AI at an Intelligence and National Security Alliance event in May.

To explore the possibilities, Kendall asked his Scientific Advisory Board to assemble a small group to examine the military applications of AI systems. He also called for a more permanent team to learn how to safely integrate machine learning into the workspace as soon as possible.

While Kendall sees potential for AI at DOD, he said the technology currently can only be used in moderation as it can lead to error.



“[It] is not reliable, in terms of the truthfulness of what it produces,” he said at the INSA event about AI systems writing documents.

Regarding the use of generative AI, Kendall is not the only one with apprehensions. Berrier also emphasized that the technology should be used



Craig Martell
Chief Digital and AI Officer,
DOD

with caution.

Additionally, Craig Martell, the department's chief digital and AI officer, voiced his concerns when asked about the topic at AFCEA's TechNet Cyber conference earlier in 2023.

"Yeah, I'm scared to death," he said. "[ChatGPT] has been trained to express itself in a fluent manner. It speaks fluently and authoritatively. So you believe it even when it's wrong, ... and that means it is a perfect tool for disinformation."

Even though the use of AI within the military has resulted in a polarizing response, some feel it is necessary.

In his opening statement for Tuesday's hearing regarding the department's adopting and deploying AI, Scale AI CEO Alexandr Wang stressed that the U.S. should urgently look for AI use cases in government.

He explained that China is actively looking for ways to use AI in warfare. It is more concentrated on technology than the U.S. spending 10 times more on it when adjusted for the total military budget.

"We must intensify our efforts to outmatch China's rapid advancements," Wang wrote. "The United States is at risk of being stuck in an innovator's dilemma because it is comfortable and familiar with investing in traditional sources of military power."

While DOD will look to find new ways to use AI technology, such as to automate rote tasks aboard Navy ships, Kendall noted that humans will monitor the process to ensure the responsible use of generative systems. 🌸

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