Lockheed Martin, Red Hat Collaborate To Advance Artificial Intelligence For Military Missions

Military platforms adapt to threat environment in real time using leading-edge AI and Kubernetes technologies

The Big Picture

Lockheed Martin and Red Hat, Inc. today announced a collaboration to advance artificial intelligence (AI) innovation at the edge on Lockheed Martin military platforms. Adopting the newly announced Red Hat Device Edge will enable Lockheed Martin to support U.S. national security missions by applying and standardizing AI technologies in geographically constrained environments.

With Red Hat Device Edge, Lockheed Martin is equipping U.S. military platforms, such as the Stalker unmanned aerial system (UAS), with advanced software that was previously too large and complex for these systems. This advanced software enables small platforms to handle large AI workloads, increasing their capability in the field and driving faster, data-backed decision making.

In a recent demonstration, Lockheed Martin used Red Hat Device Edge on a Stalker UAS to demonstrate how AI-enhanced sensing can advance Joint All-Domain Operations. The Stalker used onboard sensors and AI to adapt in real-time to a threat environment.

The Stalker was flying an intelligence, surveillance and reconnaissance (ISR) mission to detect a simulated military target. Once the Stalker detected the target emitter, project engineers used Red Hat Device Edge to update the Stalker's software in-flight. The new software – now managed on platform by Red Hat Device Edge – enabled the Stalker to deploy updated AI-based computer vision capabilities, also known as automated target recognition capabilities. As a result, Stalker was able to more accurately classify the military target, providing more useful ISR data and enhancing the situational awareness of the threat environment for U.S. military decision-makers.

Expert Perspectives

Justin Taylor, vice president, Artificial Intelligence, Lockheed Martin:

"With Red Hat Device Edge, Lockheed Martin is leading the infusion of cutting-edge commercial technology into military capabilities that deliver advanced solutions to our customers. Unlocking these AI technologies can help national security decision-makers stay ahead of adversaries, enabling a safer and more secure world."

Francis Chow, vice president and general manager, In-Vehicle Operating System and Edge, Red Hat:

"Lockheed Martin is at the forefront of global innovation that often defines a technological era. With our latest solution, Red Hat Device Edge, we'll be able to work together to change what communications and artificial intelligence looks like in the most space-constrained and far-flung environments, whether it's a remote mountain range or beyond the boundaries of Earth's atmosphere."

Dive Deeper

Red Hat Device Edge delivers an enterprise-ready and supported distribution of MicroShift, a lightweight Kubernetes orchestration solution built from the edge capabilities of Red Hat OpenShift, along with an edge-optimized operating system built from Red Hat Enterprise Linux. This latest product in the Red Hat edge portfolio allows an organization's architecture to evolve as its workload strategy changes.

Lockheed Martin is a key contributor to the MicroShift project, collaborating to help build out the project's edge capabilities for remote and inaccessible environments.

What's Next?

Lockheed Martin, Red Hat and other industry collaborators are enhancing 5G.MIL® capabilities with RAN Intelligent Controller (RIC) functionality using Red Hat OpenShift, the industry's leading enterprise Kubernetes platform, to deliver resilient communications for the Department of Defense.

As part of Lockheed Martin's 21st Century Security vision to leverage the best commercial technologies for the defense industry, the company plans to continue to innovate using Red Hat Device Edge and edge Kubernetes capabilities for a broader range of applications across all domains: land, sea, air, space and cyber.

About Lockheed Martin
Headquartered in Bethesda, Maryland, Lockheed Martin (NYSE: LMT) is a global security and aerospace company that employs approximately 114,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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About Red Hat
Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

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