Lockheed Martin Brings Advanced Communications Out Of The Lab And Into The Field

5G.MIL® Unified Network Solutions demonstrates secure, resilient hybrid networking

BETHESDA, Md., Nov. 1, 2023 – For the first time, Lockheed Martin demonstrated its Hybrid 5G-Tactical Mesh Network live in a multi-domain environment. This is a significant step toward ensuring the Department of Defense (DOD) has seamless access to critical information. Working with leading commercial technology companies, Lockheed Martin proved the integration of existing technologies with enhanced capabilities that provide superior advanced communications operations and management tools for military applications.

The 5G.MIL® Unified Network Solutions (UNS) were successfully tested across numerous mission simulations to establish stability and suitability for use in Joint All-Domain Operations (JADO) and Combined Joint All-Domain Command and Control (CJADC2). The resilient 5G.MIL UNS tactical mesh network and Lockheed Martin's AI Factory machine learning operations platform were critical to successfully deploying these AI-based capabilities.

Why it Matters

In this demonstration Lockheed Martin's 5G.MIL UNS performed as a tactical and commercial multi-node hybrid network for land, air and space domains—demonstrating system capabilities, performance and operations for customers in a field setting—and achieving Technology Readiness Level (TRL) 6+, meaning it is a fully functional prototype model. The deployed hybrid network included five hybrid base stations with 5G, tactical datalinks and space backhaul. Fifteen individual capabilities were demonstrated across mission scenarios, covering interoperability, resilience, security and operations. This exercise provided an opportunity to stress test the maturity and resilience of the independent hybrid network in a mission relevant scenario.

5G.MIL UNS Harnesses Advanced Commercial Technology

Lockheed Martin's solutions deploy, orchestrate and manage enhanced commercially available technologies from multiple embedded collaborators, including:

- **Intel's** FlexRAN™ reference software and processor capabilities.
- **Verizon's** adapted Mobile Onsite Network-as-a-Service (NaaS) solution and Single Pane of Glass (SPoG) Network Management tool.
- **Microsoft's** Azure Orbital Cloud Access (AOCA), Microsoft's solution for cloud-to-edge via SATCOM, and Azure Government cloud environment at Impact Level 4 (IL4).
- **Juniper Networks'** Session Smart Router (SSR) technology and the 5G Radio Access Network (RAN) Intelligent Controller (RIC).
- **Keysight's** RF planning, configuration and optimization tools.
- **Radisys'** End-to-end 5G Network Software.

Strategic Perspectives

Dan Rice, vice president, 5G.MIL UNS Programs, Lockheed Martin:
"To stay ahead of evolving security challenges, military commanders need fast, secure access to critical information for decision superiority, no matter the circumstances. Collaborating with commercial and defense technology leaders is a key component of Lockheed Martin's 21st Century Security vision and accelerates our delivery of secure 5G.MIL® Unified Network Solutions to enable prompt, data-driven decisions across all operational domains."

Caroline Chan, vice president & general manager, Network Business Incubator Division, Intel:
"Disaggregated hardware and software from Intel allows Lockheed Martin to provide more secure access to

essential data which is fundamental to next generation communication networks being deployed for Defense Industrial Base applications. Utilizing these commercially available optimized building blocks that helps ease integration and accelerates deployments."

Jason Payne, chief technology officer, Microsoft Federal:
"This exercise demonstrates how 5G.MIL can enable immediate information and decision-making advantage at the tactical edge through the combined power of hyperscale cloud, hybrid communications and 5G technologies. This demonstration showcases the strength of the Lockheed Martin and Microsoft relationship to drive innovation for critical missions for our national security customers."

George Riggins, vice president, Public Sector Technology, Verizon:
"We are proud of our strong relationship with Lockheed Martin and our work to successfully leverage innovations using 5G technology to produce new capabilities that will benefit the defense of our nation. By allowing users to transition between private, public and managed service networks, we are delivering reliable, mission critical connectivity so they can continue their mission across a wide range of environments."

Greg Bourdelais, vice president, Federal Sales, Juniper Networks:
"We are pleased to provide innovative 5G SD-WAN solutions that empower our partners to achieve their goals, and we were honored to be a part of Lockheed Martin's 5G.MIL field demonstration showcasing the utmost efficiency and effectiveness in challenging environments. The recent demonstration stands as a testament to the power of network collaboration, showcasing critical performance and operational networking excellence required in meeting the highest standards and driving successful customer outcomes."

Munish Chhabra, senior vice president & general manager, Software & Services, Radisys:
"Radisys is pleased to have collaborated with Lockheed Martin in achieving this successful 5G.MIL Hybrid Mesh demonstration to advance military networking solutions. With our award-winning Release 17 Connect RAN and 5G Core Network Software on Edge with resilient mobility, high bandwidth video upload support, Radisys looks forward to continuing to work with Lockheed Martin and its partners to advance robust, reliable tactical communications in a hybrid network via terrestrial and non-terrestrial access."

Vince Nguyen, vice president and general manager, Aerospace, Defense and Government Solutions, Keysight:
"Lockheed Martin brought together commercial 5G market leaders to collaborate, innovate and accelerate resilient, tactical solutions and use-cases to market for hybrid networking solutions. Keysight is proud to be a key contributor with its performance and validation capabilities."

What's Next?

Lessons learned from this field demonstration are already being incorporated into Lockheed Martin 5G.MIL UNS. The company will continue to work with commercial collaborators toward an Initial Operating Capability (IOC) in 2024. For more information, visit www.lockheedmartin.com/5G.

About Lockheed Martin
Headquartered in Bethesda, Maryland, Lockheed Martin Corporation is a global security and aerospace company that employs approximately 116,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

Please follow @LMNews on X for the latest announcements and news across the corporation.

Media Contact:
Cailin Schmeer, Corporate Media Relations, 301-214-3030 or media.relations@lmco.com

---

Additional assets available online: Photos (1)