

Lockheed Martin To Improve Performance Of Computer Applications On Military Networks

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Lockheed Martin won an 18-month, \$3.75-million award from the Defense Advanced Research Projects Agency to significantly improve the performance of defense computer applications that degrade due to constantly changing network conditions, such as those occurring on the battlefield. The program also aims to increase by 60 times the availability of those applications to the warfighter. If all development phases are completed and options exercised, the program could be worth up to \$10.6 million.

Lockheed Martin's Synthesizing Adaptive Protocols by Selective Enumeration (SYNAPSE) program will deliver intelligent network sensing, learning, and reasoning technologies to stabilize the performance of collaborative applications operating on unreliable network infrastructures.

"Military computer applications communicate with each other based on design assumptions about network conditions, use patterns, support structures, and other conditions," said Patrick Lardieri, Lockheed Martin program manager. "When the network infrastructure falls beyond design parameters, applications become unstable, causing their performance and reliability to decrease below acceptable levels. This jeopardizes the warfighter's safety and mission."

By intelligently optimizing protocols despite network instability, SYNAPSE will enable smooth, near-optimal performance under drastically varying network conditions and use cases. Warfighters will be able to reliably interact with the applications they need to efficiently prosecute the battlespace. The technology will also reduce the time and cost of deploying and re-deploying large-scale network applications over changing networks.

Warfighters will benefit from dramatically more reliable end-to-end communications, commanders and command centers will stay connected to deployed elements, and commanders will maintain critical situational understanding of the battlespace.

SYNAPSE will also benefit the Defense Department as a whole with a commercial, off-the-shelf solution. SYNAPSE will help converge Internet applications, like voice over Internet and video conferencing, in a dynamic environment while maintaining the robustness required for military deployment.

SYNAPSE is a program within DARPA's Situation-Aware Protocols in Edge Network Technologies (SAPIENT) initiative.

Teammates are Lockheed Martin Integrated Systems and Solutions, Cornell University, Drexel University, and Architecture Technology Corporation.

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