

Lockheed Martin To Develop Control Software For Mobile, Robotic Communications Routers

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CHERRY HILL, N.J.

The Defense Advanced Research Projects Agency (DARPA) awarded Lockheed Martin a \$1.2-million contract to develop control software for semi-autonomous, mobile, robotic communications routers called LANDroids. The total value of the effort could be up to \$3.5 million, if all phases of the development program are completed.

As Warfighters move through urban areas, each must maintain radio contact with the other but barriers such as buildings and walls weaken or break the communications networks. LANDroids provide a solution. Once Warfighters launch them, LANDroids will sense the strength and patterns of radio signals and, like small spiders, automatically position themselves to fortify signal weaknesses or bridge outages.

"LANDroids will significantly improve Warfighter safety and mission success," said Peter Drewes, Lockheed Martin's LANDroids project manager. "This program provides an opportunity for us to assist our Warfighters through advanced, cooperative, manned and unmanned communications-based teaming."

Lockheed Martin's Advanced Technology Laboratories (ATL) will develop the LANDroid control software by leveraging successes on its ongoing research on cooperative robotic coordination and from LANDroids-related exploratory research. The software will use radio-frequency sensor data and inputs from other physical sensors to determine and maintain situational awareness. It will also use position data from other LANDroids and warfighters to coordinate their movements and maintain an optimum communications network.

Development will proceed through two increasingly challenging phases. Phase I will provide basic situational awareness and coordination capabilities, resulting in the ability of a small team of robots to work together. During Phase II, LANDroids will navigate more complex environments, coordinate their movements with larger teams of robots, and control their power consumption to achieve optimum operational life while responding to the communications network.

Previously, ATL demonstrated the ability to sense radio signals and physical characteristics of its surroundings, without prior programming of its position.

ATL leads a team that includes the University of Southern California and Rutgers University.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2007 sales of \$41.9 billion.

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