UNMANNED SYSTEMS

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AUVSI 2015: New software enables NATO partners to collaboratively operate UAVs

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Proxy Technologies unveiled a new software capability that uses STANAG 4586, a NATO standard for unmanned control system and unmanned aerial vehicle (UAV) interoperability, to enable networking and collaboration of proprietary systems.

In April Proxy Technologies demonstrated its virtual air controller (VAC) during a flight test with two co-operating aircraft using STANAG 4586, Robert Davis, president and CEO of Proxy Technologies, told *IHS Jane's* on 5 May.

Co-operating operations were added through the company's UAV control software system: PROTEUS. "VAC enables PROTEUS to run on top of STANAG," he noted.

"It enabled two aircraft to collaborate on searching an area. We flew [our] SkyRaider [test aircraft] and had a simulated Predator; so we had two aircraft and two payloads collaborating in an ISR [intelligence, surveillance, and reconnaissance] search," Davis said.

The VAC permits customers who may not feel comfortable opening up a manufacturer's aircraft to add the networking and collaboration software, Davis said.

"This is an inexpensive way to add capability by adding small box."

The software is agnostic so it can be used on any UAV and the software needs only a general-purpose processor, he noted.

Davis said it is possible to get upward of 32 UAVs to co-operate and a single ground station could be used to control multiple UAVs. In such a configuration, Davis said it would be possible to have six air vehicles under the control of a single ground station and each UAV preforming a different task.

Flight plans and mission objectives are uploaded into the UAV pre-flight so the aircraft operate within predefined and preapproved tactics, techniques and procedures, he said.

The UAV is launched using Proxy Technology's Virtual Pilot software.

"The ground station operator is really a manager," Davis said. "They can take control [of the UAV] anytime and re-arrange [its] priorities."

The company has demonstrated the capability during 'Empire Challenge', a Department of Defense (DoD) exercise that highlights intelligence technologies and 'Trident Specter', an annual

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Special Operations Command event focused on new technologies.

Davis added that Proxy Technologies is in the process of preparing responses for the DoD's Rapid Innovation Fund, which according to the DoD, is a collaborative vehicle for small businesses to provide the department with innovative technologies that can be rapidly inserted into acquisition programmes that meet specific defence needs.

COMMENT

Proxy Technologies has also been able to demonstrate a sense-and-avoid capability for UAVs with its PROTEUS software system, Davis said.
"Any UAV running with PROTEUS generates a future planned path of where it is going," he said. Aircraft in the network know where they are going, in relation to each other, Davis added.
The company is also in discussions with Boeing about implementing an autonomous taxiing capability instead of having a ground crew steer and guide a UAV to a runway. Under this concept, an aircraft would autonomously leave its hangar and taxi to the runway where it would autonomously take off. When the UAV returns it would autonomously land and then taxi back to its hangar, Davis said. "We did achieve that capability."

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