Boeing Demonstrates Autonomous Command and Control of Multiple Unmanned Aerial Vehicles

Boeing [NYSE: BA] has successfully demonstrated the simultaneous command and control of multiple unmanned aerial vehicles (UAV) by a single operator, using advanced autonomous control software, three ScanEagle aircraft and an Airborne Warning and Control System (AWACS) console.

This next-generation capability will enhance interoperability with current and future command and control systems through an open, standards-based system and significantly reduce the workload of unmanned vehicle operators.

"Lessening the workload allows a single operator to manage a group of UAVs as a cooperative, coordinated system," said Ed Froese, vice president, Boeing Advanced Anti-Submarine Warfare and Intelligence, Reconnaissance and Surveillance Systems. "Mission operators are freed from micro-managing the routes and other activities. Instead, they describe their high-level goals and objectives to the system, and the advanced autonomous control software manages the UAVs to achieve a coordinated effect."

During the exercises at Boeing's Boardman, Ore., test facility, a single operator used the Boeing-developed Distributed Information-Centralized Decision (DI-CD) autonomous mission control software to manage three ScanEagles simultaneously. The operator also used Stalker target-tracking software to command one UAV to follow a moving vehicle without constant oversight and Open Mission Management (OMM) software to ensure NATO standard 4586 interoperability.

While the mission operator used the DI-CD software to control the surveillance activities of three ScanEagles, an "observer" in the field sent the location of a time-critical target via a cell phone to an AWACS Block 40/45 operator console. The AWACS operator successfully requested video of the target through the primary AWACS display.

The DI-CD software automatically generated updated ScanEagle task and mission plans, which were shown to the mission operator using the OMM software and sent to the UAVs using standard protocols. The UAVs beamed video back to the mission operator and the AWACS operator, who coordinated a simulated F/A-18 strike on the target. The same target video was relayed to the observer's cell phone.

In another test, a UAV operator used the Stalker software to order one of the ScanEagles to automatically follow and monitor a simulated terrorist truck. The software continually monitored the truck's movements even as it made several abrupt turns, stops and starts trying to evade detection. The system automatically adjusted the ScanEagle's flight path to stay undetected and in an optimal position to image the vehicle.

ScanEagle is a low-cost, long-endurance, fully autonomous unmanned aircraft system developed by Bingen, Wash.-based Insitu, Inc. in partnership with Boeing. ScanEagle has more than 40,000 flight hours of proven capability, including deployments with the U.S. Marine Corps and Navy. Visit www.insitu.com for more information.
A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses specializing in innovative and capabilities-driven customer solutions. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $32.4 billion business with 72,000 employees worldwide.
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