

## **Boeing ScanEagle Team Achieves Compliance with NATO UAV Interoperability Standard**

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The Boeing [NYSE: BA] and Insitu, Inc., ScanEagle team has gained compliance with the North Atlantic Treaty Organization's (NATO) unmanned aerial vehicle (UAV) interoperability standard. The standard, also known as Standardization Agreement (STANAG) 4586, establishes specifications for a common ground station system for UAVs used by NATO military forces.

Compliance with STANAG 4586 allows NATO member nations to jointly support military operations using their own UAVs and ground control station equipment. This increases interoperability and allows data and information processed by member nation UAVs to be shared real-time through a common ground interface.

"This accomplishment demonstrates Boeing's continued commitment to systems interoperability," said Marshall Williams, Mission Management Systems manager, Boeing Unmanned Systems. "This new capability will pave the way for even greater versatility for ground station deployment choices and support advanced multi-vehicle autonomy features to be demonstrated later this year."

Using a ScanEagle Vehicle Specific Module and an Insitu Multiple UAV Software Environment ground station with an "Army One" ground control station Common UAV Control Software package developed by CDL Systems Ltd., the team flew a three-hour simulated mission to demonstrate various functions and levels of STANAG 4586 specifications. The test also included numerous flight route and payload functions and the collection of video and still imagery of multiple targets.

"We were impressed with how quickly the Boeing team was able to implement a Vehicle Specific Module for the ScanEagle air vehicle," said Albert Sulmistras, Business Development manager, CDL Systems Ltd. "This reflects favorably on the maturity of the STANAG 4586 standard as a key enabler to UAV interoperability. We are thrilled that the Boeing team selected our VCS-4586 software for their ground station."

NATO maintains STANAG processes and procedures for military and technical equipment as well as procedures commonly used by member nations. STANAG was established so that one nation's military can access and use the procedures and equipment of another through common interfaces.

STANAG 4586, formally ratified by NATO in 2002, defines five levels of UAV interoperability:

- Level 1 -- Indirect receipt/transmission of UAV-related payload data
- Level 2 -- Direct receipt of Intelligence, Surveillance and Reconnaissance (ISR) data where "direct" covers reception of the UAV payload data by the unmanned control system when it has direct communication with the UAV
- Level 3 -- Control and monitoring of the UAV payload in addition to direct receipt of ISR and other data
- Level 4 -- Control and monitoring of the UAV, less launch and recovery
- Level 5 -- Control and monitoring of the UAV, plus launch and recovery

During the test flight, the ScanEagle team achieved Level 2 for the UAV and sensor system; Level 3 for the onboard electro-optical camera and sensor system; and Level 4 for the UAV and payload control.

STANAG compliance will enable existing and future deployed ScanEagles to be utilized by current STANAG ground control stations such as Army One as well as other member nation ground control station systems.

The ScanEagle team soon will begin the next test phase using multiple ScanEagles and ground control stations to validate various autonomous functions.

CDL Systems Ltd., is a software engineering corporation that designs, develops and produces leading edge software for the control of unmanned vehicles. The VCS 4586 is fully integrated ground control station software that can simultaneously control multiple UAVs carrying different payloads.

Insitu, located in Bingen, Wash., develops Unmanned Aerial Systems (UAS) for commercial and military applications. Insitu introduced the first Unmanned Aerial Vehicle (UAV) to cross the Atlantic Ocean and has partnered with Boeing to develop ScanEagle and Fugro Airborne Surveys to develop GeoRanger. For more information about the company, see [www.insitu.com](http://www.insitu.com).

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$32.4 billion business. It provides network-centric system solutions to its global military, government, and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance systems; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer; a foremost developer of advanced concepts and technologies; a leading provider of space-based communications; the primary systems integrator for U.S. missile defense and Department of Homeland Security; NASA's largest contractor; and a global leader in sustainment

solutions and launch services.  
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