

US tests new full-motion video sensor for Predator

■ BY Caitlin Harrington

Key Points

- The US military is testing a new sensor for the MQ-1 Predator that provides high-definition, full-motion video
- The new sensor is being tested as part of Empire Challenge: an annual ISR demonstration of security skills

The US military is testing a new sensor ball designed to relay encrypted, high-definition full-motion video from the MQ-1 Predator unmanned aerial vehicle (UAV) to ground stations.

The new sensor, known as the L-3 Wescam MX-15 HDi (High Definition integration) digital ball, is being tested as part of Empire Challenge: an annual intelligence, surveillance and reconnaissance (ISR) demonstration at the Naval Air Weapons Station in China Lake, California.

Although the new sensor is designed for the Predator, it is being demonstrated on board a Beechcraft King Air aircraft acting as a Predator surrogate.

The Air Force Research Laboratory owns the sensor, which is the first one to roll off the assembly line, according to Kathleen Jabs, a spokesperson for US Joint Forces Command, which is sponsoring Empire Challenge.

"This is a new type of sensor being developed for the Predator that we are demonstrating here to vastly improve the quality of video coming down," said John Kittle, the project manager for Empire Challenge.

During the demonstration, which runs from 6 to 31 July, military officials are

attempting to encrypt the full-motion video provided by the MX-15 and also ensure that the video imagery is distributed to operations centres and ground forces that need it.

"It's the first time we've had an opportunity on the exploitation side of the house to work on the interoperability challenges we expect to see with high-definition full-motion video," said Kittle. "Obviously there's more data that needs to be moved around architecture and we're anxious to work the problem."

Indeed, the focus of Empire Challenge is moving data to the 'tactical edge' - ground troops in contact - as quickly as possible.

The demonstration features a simulated brigade combat team at China Lake, which has to confront a 'Red Team' engaged in the type of activities common among adversaries in Iraq and Afghanistan. These include ambushes against convoys, sniper attacks and mortar fires against bases or logistics.

"We're trying to make sure that the dismounted units, that the small operational units, the autonomous battalions or brigades, are getting as much information as the wired rear operations centre," said Kittle.

Participants in the exercise include not only personnel at China Lake but also the

Joint Intelligence Lab in Suffolk, Virginia; the Combined Air Operations Center-Experimental at Langley Air Force Base, Hampton, Virginia; Service Distributed Common Ground/Surface System labs around the country; and coalition sites in Australia, Canada, the UK and the NATO Consultation, Command and Control Agency in the Netherlands.

"We push the information as close to real time as possible," said Colonel George Krakie, the military lead for Empire Challenge and the Joint Forces Command Director of Intelligence, Norfolk Naval Support Activity.

"We're making sure it's not the guy in the UK having to pick up the phone, securing the phone number, talking on the radio, passing it to someone. We take all those steps out. [Instead], he sits there, reads [the information], chats it and the people reading the chat get to react."

Aircraft participating in Empire Challenge include not only the Beechcraft King Air, but also a U-2 surveillance aircraft, RQ-4 Global Hawk UAV, RC-135 Rivet Joint SIGINT (signals intelligence) aircraft, a UK Sea King ASaC.7 airborne surveillance and control helicopter, Scan Eagle UAV, F-16CJ Fighting Falcon, a number of F/A-18E/F Super Hornet multirole fighters and an EA-18G Growler electronic warfare aircraft. ■