Raytheon Unveils Scorpion Helmet Technology

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FARNBOROUGH, England (AP) -- As the desert landscape unfolds ahead, the jet fighter pilot glances to his right. Spotting an enemy target, a sensor attached to his helmet relays the information straight back to his flight controls, allowing him to fire immediately without turning his aircraft.

U.S. defense company Raytheon Inc. is giving the first glimpse of its Scorpion helmet technology for F-16 and A-10 combat jets on a simulator at the Farnborough International Airshow after this week announcing a $12.6 million contract with the U.S. Air Force.

Raytheon is marketing the technology, which transmits data on a single-eye monocle attached to an existing helmet, as a more advanced but also cost-effective alternative to current full visor offerings from its competitors — reflecting belt-tightening in the defense aerospace sector amid large cuts to national military budgets.

The monocle is both cheaper to produce than a full visor, and reduces operational costs because it is interchangeable between standard existing helmets. That means a unit can be equipped to full capacity by purchasing a smaller number of monocles that can be shared, instead of having to buy more expensive visor helmets to fit every pilot.

The monocle also improves on existing helmet vision technology by adding both color and night capability to a pilot's field of vision, allowing him to cue up weapons and access data from both on-board and remote sensors. The small size of the unit means that there's no noticeable extra weight on the pilot's head during long missions.

"On the modern battlefield, there is way more data out there than most people can use. If you are just trying to see it all through your eyes and read it in bits and bites, you're never going to understand it," said Todd A. Lovell, Avionics Department Manager at Raytheon, as he gives a demonstration of the Scorpion technology. "So the key to the modern technology is to take all that data and turn it into useful information that the pilot can recognize very quickly and act upon it."

That includes deploying weapons. Unlike pilots using a fixed display who must turn the nose of the plane to line up a shot, the helmet vision sends coordinates sighted by the wearer directly to the weapons system — leaving pilots simply to confirm a decision to fire by joystick. "If I get a symbol, I don't have to turn my plane all the way over there to get a sensor locked on it," says Lovell. "It reduces the amount of time and energy the pilot has to spend in acquiring a target, making sure he has the

right target, and then taking a shot."

Raytheon revealed at Farnborough that it has won a contract for an initial integration and qualification of the helmet-mounted system for F-16 and A-10 aircraft flown by the U.S. Air Force and Air National Guard. The contract, won against competition from U.S., European and Israeli companies, is part of a program with five one-year production options worth up to $50 million. Beyond the 1,000 F-16 fighters flown by the U.S. Air Force, Raytheon hopes to capture the market for the estimated 4,000 F-16 aircraft operated by foreign air forces.

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