

MISSILE DEVELOPMENT PAUL LEWIS / TUCSON

Raytheon develops over-the-shoulder AMRAAM

Flight testing of improved medium-range air-to-air missile gets under way

Raytheon will begin delivering a high off-boresight (HOBS) modification for the AIM-120 AMRAAM to allow the missile to take advantage of wide-angle radar and infrared (IR) sensor suites on the next generation of fighters. Meanwhile, flight testing has just started of the AIM-120 pre-planned product improvement (P³I) missile at the US Air Force's Eglin AFB test centre.

HOBS, unlike the AIM-120 P³I programme, requires no changes to the missile's hardware, but uses modified flight control software to permit increased manoeuvrability against targets to the side or potentially behind a fighter. HOBS has been developed using Raytheon funding, but the company has a contract to deliver the new operational flight programme to the US government later this year.

"As we progress to aircraft with greater situational awareness and 360° sensors on a system that allows you to develop information, it's our objective to look at providing the agility to target those people they detect," says Calvin Derck, Raytheon senior manager business

development, air-to-air missiles.

AMRAAM was designed as an active-radar-guided missile, and can be launched before lock-on and use a number of other targeting cues. The Lockheed Martin F-35 Joint Strike Fighter will feature a distributed aperture IR system providing surround vision, while the Lockheed Martin/Boeing F-22 has growth provision for a side-looking radar array. AMRAAM could also be targeted using an off-board third party sensor.

An enhanced datalink is being considered as an extension to currently funded improvements. The P³I missile, which is due to enter

service in 2004, has a new reduced-length guidance section, as well as faster commercial processors, which has freed up around 150mm (6in) in the forward body for system growth.

"We've looked at pushing the warhead forward and using the space to grow the motor 6in [150mm]. This would give you substantially more range in the area of 15-25%," says Derck.

Raytheon's preference is for a new dual-pulse rocket after considering options including a liquid fuel ramjet, variable flow ducted rocket and the Evolved Sea Sparrow's larger diameter solid fuel motor.



F-22 Raptor could benefit from more manoeuvrable AMRAAM

US ARMY

Teams named for sensor bids

Lockheed Martin and Northrop Grumman have unveiled their partners for the US Army's Aerial Common Sensor (ACS) programme, following selection of the two competing teams for the component advanced development phase. With the army yet to decide on its choice of platform for ACS, system flexibility is regarded as critical to winning the full contract to be awarded next year.

ACS is intended to serve as a single type replacement for the US Army's RC-7 Airborne Reconnaissance Low and RC-12 Guardrail Common Sensor aircraft. The programme calls for the development of an integrated data collection system combining signals intelligence (SIGINT) and imagery, with a ground station for information dissemination.

Lockheed Martin's bid is being led by its Denver-based Space Systems division and will include its Aeronautics, Technical Operations and Systems Integration businesses. Lockheed Martin's Management and Data Systems will be charged with integration, while partners Argon will be responsible for the SIGINT element, Harris for communications and Veridian Engineering for modelling and mission payload.

The company has not revealed its recommended platform other than it is a business jet. "We did an analysis of alternatives covering 30 different platforms and provided the information to the army programme executive office," says Wes Colburn, Lockheed Martin acting vice-president ground systems.

Northrop Grumman's Baltimore-based Electronics Systems will be its prime contractor, Integrated Systems will be responsible for air platform system integration and logistics support, and Information Technology will handle modelling and simulation. Responsibility for the SIGINT package went to TRW's Electromagnetic System Laboratory.

UNMANNED SYSTEMS PETER LA FRANCHI / CANBERRA

Australia to add Global Hawk funds?

Australia may become a source of additional Northrop Grumman RQ-4 Global Hawk unmanned air vehicle (UAV) development funding as part of a proposed Royal Australian Air Force acquisition.

The Australian Department of Defence is to consider a proposal for a second round of investment at the end of June, ahead of proposed government approval for an acquisition, which is not expected until 2004 and is set at just A\$130 million (\$70 million).

Australia is also interested in the US Navy's proposed Broad Area Maritime Surveillance (BAMS)

Global Hawk, which will probably be equipped with a 360° surveillance radar in place of the RQ-4A's 180° synthetic aperture radar.

Australia injected an initial A\$30 million into the Global Hawk development programme in 1999. Australian development funding decisions will be influenced by a new strategic review now being prepared alongside a new 10-year capability plan.

The Australian government is expected to consider both in September, with this pushing a decision on extra Global Hawk

funds into October-December.

Northrop Grumman is targeting Australian companies as potential participants in Global Hawk production for US and export customers.

A Northrop Grumman team visited Canberra last week to discuss Australia's requirements. An industry briefing on 29 April included proposals from Northrop Grumman for Australian companies to participate in aerostructures and radome manufacture, electronic warfare self-protection development, software development and systems integration.