Honeywell teams on obstacle radar

HONEYWELL HAS teamed with Coherent Technolgies (CTI) to propose development of a multimode infrared radar (MMIRR) for the US Army to provide helicopter pilots with advance detection of low-level obstacles such as cables and power lines.

The move follows a flight demonstration in conjunction with the US Army Aviation Technical Directorate (AATD). The companies now seek army funding to launch full development and plan to interest the UK in the system.

Having demonstrated elements of MMIRR with its own money, project manager Dick Krulis estimates that engineering manufacturing and development would take 30 months, rather than the usual five years, costing $30 million.

In the trial, which used an AATD Sikorsky UH-60, the system used a CTI 2µm laser to provide warning of small obstacles in the flightpath. It provided colour-coded warnings up to 750m (2,500ft) ahead and detected wire as small as 8.3mm (0.325in) thick at 550m against a cluttered background.

During the 10.6h flight trial the prototype MMIRR was also able to measure wind direction and speed outside the influence of the helicopter's downwash. ❑

Japan studies stealth aircraft development

THE JAPAN Defence Agency's Technical Research and Development Institute (TRDI) is studying the development of an advanced stealth aircraft.

The TRDI has ordered a stealth aircraft simulator from Mitsubishi Heavy Industries (MHI) at a price of ¥1.24 billion ($11 million), for delivery in October next year. The simulator will be used to gather data on high-agility stealth aircraft, with a view to a future aircraft development programme.

The institute has also signed a ¥2.48 billion contract with MHI for the delivery in 2002 of a conformal radar system providing omnidirectional radar coverage. MHI is unable to comment on either deal. ❑

Heliplane concept attracts interest from US Navy

GUY NORRIS/**LOS ANGELES**

TEXAS-based CarterCopter is working with NASA on design details of a hybrid proof-of-concept "Heliplane" transport which could be sized to meet the US Navy's requirement for a Grumman C-2A Greyhound replacement.

Design concepts have been completed for a range of hybrid "Heliplane" transports and utility aircraft, at least two of which are attracting strong interest from the navy, claims the company.

"We are trying to identify the size that is most likely to get funded and we are talking to the navy," it adds. Other than a C-2A/Bell Boeing V-22 Osprey sized proof of concept design – of around 22,700kg (50,000lb) maximum gross weight – the alternative most likely to be funded could be a smaller aircraft that would be sized to meet the requirement for the US Navy's medium-range unmanned air vehicle requirement.

The Heliplane builds on the CarterCopter concept which combines the features of a helicopter, gyroplane and fixed wing aircraft (*Flight International*, 28 March-3 April).

The Heliplane, which the company says could ultimately be expanded to Lockheed Martin C-130 Hercules proportions, will be capable of taking off, hovering and landing like a helicopter.

The company says that at speeds above 87kt (160km/h), the heliplane converts to a gyroplane by unloading the rotor and generating the lift from efficient high-aspect ratio wings, while also slowing the rotor to minimise profile drag.

Once in the cruise, the Heliplane would be able to operate at 370kt at 30,000ft (9,150m) and carry a 20,430kg payload for 1,290km with 45min fuel reserve. Range in short take-off and landing (as opposed to vertical take-off and landing) mode would be roughly three times this estimate, claims the company.

Turboprop engines, buried in the fuselage, would drive two four-bladed propellers through a two-speed planetary gearbox. A clutch would operate at zero torque, allowing the rotor to auto-rotate and begin slowing as the aircraft's weight transfers to the wing.

The composite pusher propellers would have a twistable spar and would not have a pitch change spindle, bearing or housing. Reverse pitch will allow the propellers to act as airbrakes. ❑

HH-3s to be at core of Italy's Special Operations

HH-3Fs will be used by Italy in the CSAR role

THE ITALIAN air force is forming a special operations unit for combat search and rescue (CSAR) and other behind-the-lines missions.

The new unit – known as the Special Operations Support Section (SOSS) – is being formed within the 9th Air Brigade which controls all special support units.

SOSS personnel will be trained by the Italian army's elite special operations regiment for a number of roles, but principally CSAR using the Sikorsky HH-3F helicopters operated by 15th Wing.

SOSS commandos will also be trained for explosive ordnance disposal and to act as forward air controllers behind the frontline, which will allow them to use ground based, man-portable laser designater to illuminate targets for precision guided munitions.

Italy's initative mirrors that of a number of European countries – including France, Germany and the UK. France has ordered CSAR-configured Eurocopter Cougars while some of Germany's NH Industries NH90s will be equipped for the role.

■ The US Government has offered Italy ex-US Air Force Lockheed Martin F-16ADFs to meet an interim fighter need, says a US industry source.

Italy is considering replacing 24 Panavia Tornado F3s when their lease from the UK comes up for renewal with another type which would supplement, and possibly replace, ageing Lockheed F-104 Starfighters until significant numbers of Eurofighters are in service (*Flight International*, 16-22 May).

Italy is seeking a five-year lease with a five-year option. The F-16ADF was developed for dedicated air defence duties with the US Air National Guard. The type can be fitted with either AIM-7 Sparrow or Raytheon AIM-120 AMRAAM missiles. ❑