

EURO HAWK™ **HALE UAV Reconnaissance System** Based on the US Global Hawk System

Euro Hawk System -The European Solution

Within the context of a rapidly changing threat environment, the German and other NATO Military Forces have redefined their tasks and how they are being addressed.

In future conflicts, achieving information superiority becomes increasingly challenging. The direct and unrestricted access to high performance ISR systems will be indispensable.

To answer this need, EADS and Northrop Grumman suggest a transatlantic solution to fill this capability gap within the European defence forces. A Euro Hawk system, tailored to the needs of the German and European customer will be based on

- Global Hawk high altitude long endurance system developed by Northrop Grumman, flight-tested and combat proven with the US Air Force.
- German/European Sensor/mission system and exploitation technology provided by EADS.
- To support the system most efficiently, a European maintenance concept will be developed.

Global Hawk System - US Success

The Global Hawk HALE UAV reconnaissance system is designed to provide field commanders with high resolution, near real-time imagery over large areas. The superior performance of the Global Hawk's system significantly enhances the US military's ability to prevail in all types of operations - from sensitive peacekeeping missions to full-scale conflict.

The system combines advanced technology sensors with extensive range and the endurance to remain on station for long periods of time. High-resolution sensors that can look through adverse weather day or night from an altitude of 65,000 ft, can conduct surveillance over an area the size of Austria and Croatia combined, in just 24 hours. These proven capabilities are paving the way for Global Hawk and other UAVs to assume missions suited for autonomous aircraft - augmenting manned aircraft and contributing to national security in ways not imagined a few years ago.

Global Hawk's design approach uses extensive system redundancy to provide for high air vehicle reliability - integrating off-the-shelf hardware and

software wherever possible.
Intelligence Data

Near-real-time intelligence data is obtained through the use of different sensors on-board the Platform. Depending on the mission requirements. Missions range from collection of imagery data under all weather conditions, day and night, to Signal Intelligence data gathering.

The most immediate requirement in Germany is for the replacement of its existing SIGINT aircraft. The passive SIGINT sensors allow for detection and identification of electronic emitters such as radars or radios and thus provide the electronic situation in the area.

Radar pictures, generated with Synthetic Aperture Radar (SAR) provide reconnaissance results independent from weather conditions. Equipped with a Moving Target Indicator (MTI) mode, this sensor provides position and speed of moving targets.

An EO/IR sensor adds high resolution optical or thermal data to correlate with the radar data. The image quality enables users to distinguish types of vehicles, aircraft, and missiles.

With this, the following missions can be envisioned:
IMINT Detect, locate, recognize, track and identify ground moving targets (MTI), fixed and stationary targets (SAR) using a variety of sensors: camera, electro-optic, infrared and radar imagery

SIGINT Detect, locate and analyze signals of electronic and communication emitters

Maritime Surveillance Detect, locate, recognize, track and identify maritime surface vessels

Exploitation

In order to provide commanders with near real-time data, it is necessary to shorten the delays of evaluation by automation algorithms and real-time down linking of data.

This means as well to disseminate ISR results in near real-time to all national and NATO levels of command in support of tactical, strategic or operational assessments, military decision making, target

acquisition, battle management, battle damages assessment etc.

Communication System

In a final configuration, the system shall provide Line-Of-Sight as well as Beyond Line-Of-Sight connectivity for both Command/Control and sensor data. This will enable the military to operate the system from remote, or home bases via satellite link.

Platform Features

Propulsion

The Rolls-Royce AE3007H turbofan core engine specifically developed for the Global Hawk program is a growth version of the AE3007 engine, currently in use in the Citation X and the Embraer Regional Jet. In the 8,000- pound thrust class, the engine is a high bypass, two spool, axial flow engine, flat rated at 7,580 pounds of thrust, uninstalled, sea level static to 113 degrees Fahrenheit ambient temperature.

Survivability

Through very high operational altitude and standoff capability along with additional possibilities to include ESM measures in the aircraft provide for maximum survivability of the system.

ATC insertion

As a large aircraft, participating in regular air traffic for departure and recovery, the requirements for safety, reliability and certification are being closely coordinated among military and civilian authorities

