

Revealed: The next generation electronic warfare system for Eurofighter Typhoon that won't require updates to its airframe

Berlin, 20 November 2024. The EuroDASS consortium, the industrial partnership responsible for the Eurofighter Typhoon's 'Praetorian' defensive suite, has unveiled details on the next generation of Typhoon sensing and jamming capabilities following the completion of concepting work and technology flight trials. EuroDASS partners Leonardo, ELT Group, Indra and Hensoldt, drawing on Europe's sovereign electronic warfare expertise, are working with systems integrator BAE Systems to develop the system in support of its Typhoon Next Generation initiative.

The next-generation electronic warfare system will future-proof Typhoon against new and emerging threats through to 2060 and beyond, providing improved situational awareness and increased survivability.

Key features will include advanced complex threat characterisation, Digital Radio Frequency Memory (DRFM) capabilities and the provision of interfaces for an external, high-powered electronic attack pod for Suppression of Enemy Air Defence (SEAD) missions; a key NATO requirement. Wideband Active Electronically Scanned Array (AESA) Electronic Counter-Measures (ECM) will be provided with increased power for self-protection.

The new system will be a form-fit retrofit option for Typhoon's in-service Defensive Aids Sub-System (DASS), named Praetorian after the elite Roman bodyguard corps. It will have no impact on the outer mould line of Typhoon and impose no restrictions on the current flight envelope. This minimises aircraft clearance and ensures ease of integration for new build aircraft as well as retro-fit to existing platforms. Typhoon will be more capable, more survivable, and more available, meeting the operational needs of air forces across Europe and the Middle East for decades to come.

The EuroDASS consortium has already completed substantial development work on the next-generation system, including the 'Praetorian eVolution' concepting phase and flight trials of component parts of the new capability.

Following concept finalisation, trials in 2023 saw digital receiver and band extension technologies flown on a test aircraft. Then in 2024, flight trials on-board a Eurofighter Typhoon were executed successfully. As well as maturing the capabilities, the partners were able to gather substantial data on representative threat scenarios to support further development.

Because threats to combat aircraft are expected to rapidly evolve in the decades to come, the Typhoon's new defensive capabilities are being designed with a data-centric architecture at its core.

This includes the provision of high-speed, high-bandwidth infrastructure to transmit raw signal data to an advanced central processing hub. This will enable pilots to identify and prioritise multiple complex threats at once, and at greater ranges. Cognitive Electronic Warfare (CEW), using AI and machine learning will exploit the high-fidelity data captured and respond to new threats as they emerge.

The in-service Praetorian system has protected the aircraft for more than 30 years from threats including Infra-Red (IR/heat-seeking) and radar-guided missiles. Under the ongoing Eurofighter four-nation Phase 4 Enhancement (P4E) package, this system is being upgraded to make the most of its integration with Typhoon's AESA radar options, including the in-service European Common Radar System (ECRS).