UK Funds SPEAR-EW Rapid Design, Studies Joint Effort with Sweden

By Richard Scott

As it advances plans to introduce the SPEAR-EW stand-in jammer on Royal Air Force (RAF) Typhoon and F-35B Lightning II combat aircraft, the UK Ministry of Defence (MOD) has revealed that it has begun parallel studies with Sweden to explore the potential for a joint stand-in jammer program.

Derived from the MBDA (Stevenage, UK) SPEAR network-enabled mini-cruise missile, which is already planned for integration with both Typhoon and F-35B, SPEAR-EW has been conceived as a long-range stand-in jammer and decoy to support the suppression of enemy air defenses and thereby increase the survivability of offensive air in complex and contested airspace. While re-using the same basic turbojet-powered air vehicle as the kinetic SPEAR missile, the SPEAR-EW derivative dispenses with the seeker package and warhead in order to accommodate additional fuel (increasing range and loiter time) and a miniaturized DRFM electronic attack payload supplied by Leonardo (Luton, UK).

MBDA in September 2019 commenced a technology demonstrator program funded by the MOD. This was designed to de-risk the integration of the Leonardo EA payload into the air vehicle and wider weapon system, identify the necessary design adaptations, and inform the MOD's investment case.

The TDP, which concluded in March 2021, established the feasibility of a stand-in jamming capability utilizing the SPEAR Cap 3 airframe. It also confirmed the that the stand-in jammer variant could retain the same weapon body, mass and center of gravity characteristics as the kinetic weapon:

maintaining these physical characteristics is seen as critical in order to make significant financial savings in weapon/aircraft integration costs.

A follow-on SPEAR-EW Rapid Design Phase, planned to last 24 months, commenced in November 2022. According to the MOD, this activity will gather evidence to inform a future investment decision, amass component parts, complete design plans and produce evidence needed to deliver a small number of SPEAR-EW effector kits to support subsequent rapid qualification.

In parallel, the MoD has disclosed that the UK and Sweden in September 2022 began a bilateral stand-in jammer concept study. This 12-month program of work is aimed at determining if he two nations can agree a joint stand-in jammer requirement set, and consider options for a potential joint development program.

MBDA has already undertaken preliminary studies with Saab (Järfälla, Sweden) to examine the integration of Saab's "sovereign" small form-factor Arexis EA payload with the SPEAR-EW air vehicle and weapon system architecture. Saab has looked to offer the Arexis air-launched decoy/stand-in jammer to current and potential customers for its JAS 39 Gripen fighter.