British Rugged Computing for Red Arrows Mission Support

GRiDCASE 2510 Tablet

Project Background

The Royal Air Force's Aerobatic Team, the world-renowned Red Arrows, required a modern cockpit-mounted mission support capability to support the planning, execution, and review of display flying, transit sorties, and flypasts for its BAE Systems Hawk T1 aircraft. Working alongside the wider aircraft support and mission systems team, GRiD Defence Systems supplied a customised rugged tablet solution based on the GRiDCASE 2510 platform.

The project was not a standard off-the-shelf tablet deployment. The technology had to operate in the demanding environment of a fast-jet cockpit, where space is limited, visibility is critical, and equipment must be integrated securely into the aircraft.

The programme began with qualification units and progressed through a rigorous approval process before moving into production. The result was a compact, fully rugged, aircraft-integrated display solution capable of supporting Inzpire's GECO mission support software and enhancing pilot situational awareness.

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Project Requirements

The requirement called for a lightweight, compact, and rugged tablet that could be customised for cockpit installation while retaining the performance and reliability needed for military aviation use. The system needed to support mission planning and in-flight situational awareness, giving pilots access to critical data.

Key requirements included a cockpit-mounted form factor, onboard GPS/GNSS, aircraft power connectivity, configurable interfaces, and a bespoke control arrangement. The rugged tablet also needed to be robust enough to withstand the environmental and mechanical demands associated with aircraft operation.

Qualification was central to the programme. The solution was subject to rigorous environmental and aircraft-specific testing, including temperature, altitude, humidity, vibration, shock, acceleration, pressure, and magnetic influence considerations. This qualification activity helped demonstrate that the system could meet the operational demands of the Hawk aircraft environment.

Why GRiD?

GRiD was selected by the Design Organisation BAE Systems because the project required more than a rugged consumer tablet. It needed a proven defence and aerospace computing partner capable of adapting an existing rugged platform into a fully integrated, mission-specific solution.

The GRiDCASE 2510 was originally derived from existing GRiD technology, using the Main Base Assembly of the GRiDCASE 1510 and the same, existing display assembly, with modifications to the casework and configuration to meet the customer's needs.

With its compact 5.6-inch rugged High-bright Display designed for military and aerospace environments, a sealed aluminium chassis and a configurable connector panel, the GRIDCASE 2510 tablet is equipped further with input options suited to demanding operational use. GRiD's ability to tailor connectors, interfaces, casework, and controls enabled the tablet to be configured around the aircraft and user requirement.

GRiD's experience in long-term defence programmes was also important. The project called for engineering flexibility, qualification discipline, and supply-chain confidence.

By combining in-house rugged computing expertise with a UK-based defence manufacturing heritage, GRiD was able to deliver a solution that supported the operational, integration, and resilience requirements of a significant British aviation programme.

Conclusion

This project demonstrates the value of working with a British specialist that understands the stresses of UK defence and aerospace environments.

GRiD was able to bring together bespoke engineering, ruggedised design, independent qualification, and UK-based supply chain resilience to deliver a solution tailored to a highly demanding fast jet application.

As defence customers place increasing emphasis on supply-chain transparency, sovereign capability and trusted national suppliers, GRiD's UK footprint and established specialist supplier base provide a compelling point of differentiation.

The GRiDCASE 2510 programme highlights not only GRiD's ability to customise proven rugged technology for mission-specific requirements, but also its strength as a resilient British partner for complex, long-term defence programmes.

Links:
https://www.griduk.com/products/rugged-tablets/gridcase-2510/
https://www.griduk.com/case-studies/

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