Department of Defense
GRiDCASE 1590

The US Department of Defense (DoD) selected GRiD Defence Systems to provide user interface laptops for its Guided Missile Launcher Test Set (GMLTS) system, which is used to test the AGM-88 High-Speed Anti-Radiation Missile (HARM).

Legacy systems were obsolete, and the DoD sought a fully tested MIL-STD-1553 data bus card-carrying computer, selecting the ruggedised GRiDCASE 1590 15” laptop for this requirement.

Project Background

The US DoD has continuously operated the air-to-surface AGM-88 family of HARM for nearly four decades. It is essential that the missile is sufficiently tested before operation, which is carried out under the jurisdiction of the US Air Force.

The GMLTS system provides the interface for the missile to be tested, and GRiD was selected in 2020 to provide the rugged GRiDCASE 1590 15” laptop as the end user device of the wider system.

Project Requirements

The US DoD operated a legacy computer that integrated with the test bed, but this had become obsolete and no longer supported emerging requirements from the government for its HARM testing. The procurement specification from the former contract remained for the new acquisition, but there were additional interface and power requirements that also had to be met.

For one, the DoD sought a system that could integrate the MIL-STD-1553 data bus card, which allows it to interface with aircraft and missile systems.

It also required the laptop to meet very specific power requirements, namely to maintain a consistent power supply and to not overpower the system.

The DoD additionally had rigorous testing requirements for the laptops to ensure that they met military standards for environmental stress.

Why GRiD?

GRiD is one of only a handful of manufacturers that can integrate a 1553 data bus into its computers, with nearly 30 years of experience in providing this capability to customers.

For the DoD, GRiD delivered 85 GRiDCASE 1590 15” laptops with the 1553 card installed, deliveries of which were carried out over a 12-month period and completed at the end of 2021.

Adjusting our rugged laptops and tablets to customer requirements is commonplace for GRiD, so the amendments that were required for this contract such as moving connectors and altering the power supply are standard practice for the company, and the 1590 in particular lends itself to a reconfiguration of connectors and interfaces.

Moreover, rigorous testing is another standard for GRiD. Our in-house functional testing capability is utilised for all components that enter our workshop and every assembled GRiD tablet or laptop that leaves our UK facility.

At the request of the customer we can offer environmental testing in addition to our component and system-level testing. In this case the DoD required environmental stress screening – or ESS – testing for temperature and vibration in addition to all of the rigorous testing that comes as standard with GRiD products, as well as environmental qualification and electromagnetic compatibility (EMC) testing, making this an incredibly comprehensive testing package.

This rigorous approach ensured that the GRiDCASE 1590 laptops were qualified to be used for the GMLTS programme, and because in-house functional testing is standard at GRiD, this work was not out of the ordinary for our team.