



Industrial Computer Simulator Control Unit for Submarine Test and Training

Background

Celebrating its centenary in 2004, Rolls Royce has entered our language as a byword for excellence. On the seas and across the skies, Rolls Royce engines power global fleets of civil and military craft. In this particular instance, it's a maritime link between Blue Chip Technology and Rolls Royce. Rolls-Royce offers a product portfolio ranging from vessel design and gas turbine engines to water jets and deck handling equipment.

The Marine Electrical Systems business unit develops marine applications and specialist technology covering power electrical systems, automation and motion control. Providing the technology to power, steer and control the vessel is only part of the picture – Rolls Royce also develop the simulators to train and develop the people with their hands at the helm. Blue Chip Technology's Icon IPC is an integral part of the simulator installations for submarines.

The System Description

Each simulator is a full size mock up of the submarine control room. Typically Rolls Royce use five Icons in each simulator – one unit acts as the server, the other four are linked to touchscreen monitors. The simulator software generates graphical representations of mechanical, electrical and reactor operations in test



scenarios. These scenarios, responses and processes are all simulated realtime, putting an appreciable demand on processor performance.

Rolls Royce selected a 4U, rack mount, passive back plane configuration, installed with a Pentium III slot CPU card - also designed and manufactured by Blue Chip Technology. As we're dealing with a security class application, the system is equipped with removable hard drives, which are extracted on a daily basis for added data security. The chassis has a slight modification to handle this high degree of wear and tear on the drive caddies. The finished product is badged up with the Rolls Royce logo – an extra touch appreciated by a number of Blue Chip's customers to support brand consistency.

The Icon provides the reliability demanded by such a critical application. The unit incorporates power rail monitoring and an optional alarm and warning system. An enhanced systems status display offers CPU diagnostics (P.O.S.T.) and internal temperature monitoring. The positively pressurised chassis has two 92mm 12V DC fans drawing air through the front panel filters, which are easily accessed for cleaning or replacing.

Why Blue Chip Technology

In successful customer/supplier relationships, technological excellence is a given, it's the before and after support that makes the difference. Blue Chip Technology tailored a support package for Rolls Royce including a three year system warranty from installation and a ten year support commitment. That said, Blue Chip hasn't needed to issue an RMA for Rolls Royce since 2000.

"We need suppliers who can support us in supporting our end customer with an excellent end to end service." stressed Malcolm Bishop, Rolls Royce Senior Simulator Engineer, "Blue Chip Technology has been outstanding right down the line in terms of delivery, support and ongoing customer service."

Product stability is another key part of the Blue Chip ethos, the Icon life cycle is managed for maximum continuity, customers benefit from the latest processor technology with fully backwards compatible upgrade paths. We will be working closely with Rolls Royce to move to the next generation of P4 processor technology with the Ultima IPC.