Integrated Bridge Consoles

Naval Fleet Mine Hunter Technology



Captec's Subsystems Engineering division redesigned, manufactured, and integrated replacement bridge consoles for Royal Navy Sandown-class minehunters, preserving installation compatibility and familiar operation while improving equipment access for servicing and creating CAD data to support future manufacture.

The Customer

The customer is an international aerospace and defence company supporting the Royal Navy's Sandown-class minehunter fleet. The customer needed to refresh ageing bridge console equipment without altering established vessel layouts or operator familiarity, while meeting the specialist material, maintenan and integration requirements of a mi countermeasures environment.



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The Challenge

The customer needed to replace obsolete bridge console equipment on Royal Navy Sandown-class minehunters while retaining the original footprint and familiar operator arrangement. The replacement consoles had to fit existing vessel installations, making mechanical compatibility as important as the equipment refresh itself.

The absence of original CAD models added complexity. Only paper drawings and sample consoles were available, requiring the legacy assemblies to be reverse-engineered before updated designs could be developed. Minehunting operations also imposed material constraints: the consoles needed a low magnetic signature, and the integrated VME equipment had to remain accessible for servicing.

Alongside these requirements, the customer wanted a single UK-based partner to manage prototyping, metalwork manufacture and assembly, rather than coordinate several suppliers across the project.





The Solution

Captec's Subsystems Engineering division recreated the console CAD models from available drawings and sample equipment, working with the customer on-site during prototype development. The team also coordinated design requirements between multiple defence primes, keeping the replacement design aligned with existing installation constraints.

The consoles used stainless steel construction to reduce their magnetic profile and a custom VME subrack to provide servicing access to integrated equipment. Precision-engineered fixtures supported consistent assembly, while the overall design retained the footprint and familiar appearance required for retrofit.

Captec managed the mechanical build, including a complex bill of materials and specialist subcontractors, and consolidated metalwork manufacture and final assembly. This brought reverse engineering, design development and production coordination into one delivery process, reducing the number of activities the customer needed to manage separately.

The Outcome

Replacement bridge consoles were successfully retrofitted across multiple Royal Navy Sandown-class minehunter vessels. The updated units delivered enhanced functionality while preserving the original footprint and familiar look and feel, enabling the equipment refresh to fit within existing vessel arrangements.

The newly created CAD data provided a reusable design reference for future orders and updates, replacing the project's reliance on paper drawings and physical samples. The custom VME subrack also improved access for servicing, addressing a key requirement for the integrated equipment.

By managing metalwork manufacture, subcontractors and assembly through one delivery process, Captec reduced the customer's coordination burden, allowing its team to focus on other project priorities.



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