Integrated Platform Management System (IPMS)

Sophisticated Control System Solution

Image courtesy of BAE Systems

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The Northrop Grumman Sperry Marine Platform Management System provides a sophisticated solution that matches the needs of the most demanding warship automation and control requirements, scalable to any size vessel or budget.

Fully integrated in the ship's Ethernet network, the Integrated Platform Management System (IPMS) controls and monitors all aspects of the vessel's propulsion plant and systems, interfacing seamlessly with the Combat Systems and Navigation Suit.

COTS Based System

With over 30 years experience in the supply of control and navigation systems, the commercial off the shelf (COTS) based system provides low through life costs and solves the problems associated with obsolescence.

Selected by the UK MoD for the IPMS solutions in the Royal Navy's Type 45 Destroyer, Astute Class Nuclear Submarines (Boats 4 – 7) and for the control system upgrade on the Hunt Class Minesweepers.

Features & Benefits

The benefits provided by the Integrated Platform Management System include:

- Tailor made solutions to meet customer requirements for screen graphics and operation
- Open architecture, modular design
- Capability to integrate third party software
- Low through-life costs
- Integrated logistic support solution
- Ability to upgrade the system in service
- Worldwide service support

Design Features

Using commercial off the shelf (COTS) based hardware and software each solution allows flexibility and enables the choice of components that best meets your requirements and budget. The adaptability of the design produces a solution for all classes of vessels from patrol boats to aircraft carriers, including nuclear powered submarines.

An open architecture Ethernet Network solution was designed using industry standard protocols and solid state hardware, delivering variable levels of redundancy to suit the application. Expandability is built into the

design allowing low cost updates and additions such as CCTV to be added later in the vessel's life.

A typical warship IPMS includes:

- PLC based fully integrated alarm monitoring, control and automation
- Multi function consoles
- CCTV
- Built-in diagnostics and training
- Wireless operation using ruggedised laptops
- Safety management including damage control and stability
- Condition based monitoring
- Secure remote access
- Integrated logistic support

Through-Life Costs

The use of COTS HW and SW significantly reduces the design, delivery and through life support costs of the IPMS. The use of COTS components allows potential obsolescence issues to be managed out.

The open architecture and use of industry standard SW allows upgrades in system functionality and capacity to be introduced later in the vessel's life with minimum disruption.

The network design allows multifunction work stations (MFCs), using thin client technology, and remote I/O stations to be fitted at any position in the vessel minimising cabling requirements. Ruggedised laptops can be used in remote machinery spaces or in damage control scenarios in lieu of expensive localised workstations.

Built-in condition based monitoring enables the ship's systems to operate efficiently and reduces downtime by eliminating unnecessary routine maintenance.

Additional Military Features

Solutions are fitted with military standard shock mounts and additional features to allow the system to meet the stringent environmental requirements of military customers. Safety integrity level SW at SIL 2/3 is available for more demanding applications

such as nuclear submarine control systems.

Touch screen technology and high speed networks allow fast response times and reduces the training load. Intuitive screen navigation enables even the lowest grade operator to quickly master the system and carry out built in test and diagnostic procedures with ease.

Pop up features such as CCTV and prompts to assist operators in emergency situations and machinery breakdowns are also available.

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