



## Communications Coherency for Submarines (CCSM)

**Communications Coherency for Submarines CCSM is an excellent example of how SEA can work closely with military customers to provide pragmatic open architecture solutions to modernise and support obsolete military equipment.**

Prior to CCSM UK submarine radio rooms had a variety of stand-alone systems each one being controlled from the front panel. In setting up communications, the radio operator was required to set up each individual piece of equipment, and quite often to manually patch the communication system together.

SEA worked as part of a joint project team to enable Command, Control, Communications, Computation and Information (C4I) capability insertion into submarines. The customer was MoD SUB IPT DML the Prime Contractor and SEA sub-contracted to provide the system design.

CCSM provides the structural elements that allow remote control of equipment and automatic distribution of signal traffic, intelligence products, tactical and strategic information as well as producing a coherent External Communications System (ECS) that can provide the Command with seamless connectivity when and where required. Designed using a system approach CCSM includes:

- Integration with Legacy and Emerging equipments and systems
- An Automated Message Handling System, supporting military formal message formats and enabling UKSUBCAMS Screening-on-the-Fly
- Integration of platform systems with the Enhanced Submarine Information Exchange (ESIX) bearer
- Intra-platform networks to enable dissemination of information throughout the platform
- Centralised management and control facilities
- Commercial Off The Shelf (COTS) equipment
- Commercially developed software and systems

The CCSM design has achieved security accreditation and Environmental clearance. Integration and testing in the Communications Shore Integration Facility (CSIF) at Devonport has also taken place. Seven CCSM have been delivered and are now in the process of being installed onto each of the T class submarines as fitting opportunities arise.



*CCSM supplies Command with seamless connectivity when and where required, providing remote control of equipments and the automatic distribution of signal traffic, intelligence products and tactical and strategic information.*

*CCSM is state of the art for a submarine ECS. It offers value for money and a fleet wide approach to communications fits and future upgrades.*