

FACT SHEET - CTD SEA 1661 - Transforming Naval Combat Systems (OA-CTD)

What is a CTD?

The Defence Capability and Technology Demonstrator (CTD) Program, managed by the Defence Science and Technology Organisation, assists in the improvement of priority Defence capability by providing Australian industry with an opportunity to demonstrate their technology. This enables Defence to assess the potential of the technology to enhance military capability as well as the likely risks associated with acquiring the technology.

Summary

The OA-CTD was a joint initiative between industry and DSTO Maritime Operations Division. The project objective was to demonstrate:

- Integration of large, complex systems utilising open, standardised middlewares, and
- How a Network Centric Warfare (NCW) capability can be enhanced by the use of Open Architecture (OA) methods.

The project enabled all stakeholders to research and prototype OA implementations, and to demonstrate the benefits associated with the application of OA principles. In June 2008 the CTD successfully demonstrated how OA principles and technologies can be implemented to rapidly integrate systems from multiple vendors (Figure 1).

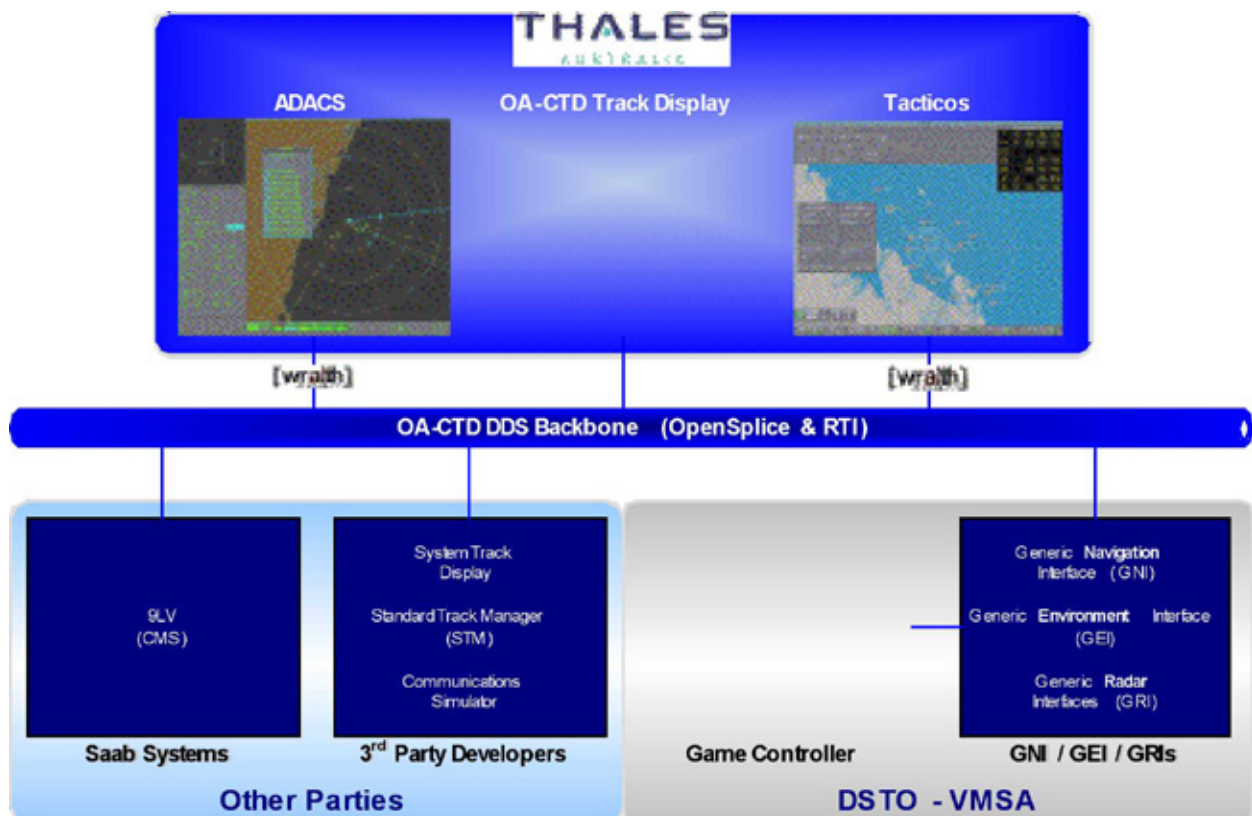


Figure 1: OA-CTD Architecture

Achievements

The key achievements of the OA-CTD were:

- Demonstrated portability of proprietary Combat Management Systems to an open architecture utilising COTS hardware and middleware, enabling utilisation of more freely available Operating Systems (OS) and virtualised environments,
- Researched and demonstrated the ability to define, develop and utilise a Common Information Model (CIM) in-cooperation with all industry players,
- Creation of models for a Generic Radar Interface (GRI) and a Generic Navigation Interface (GNI),
- Integration of large, complex systems utilising open, standardised middlewares such as the Data Distribution Service (DDS),
- Supported rapid integration of system of systems,
- Demonstrated Network Centric Warfare capability based on an OA implementation; and,
- Development of an Open Architecture gateway plugin enabling the rapid integration of legacy systems to the OA environment.

Background

Open Architecture (OA) is a set of business and technical practices yielding modular, interoperable systems that adhere to open standards with published interfaces. This approach significantly increases opportunities for innovation and competition, enables reuse of components, facilitates rapid technology insertion, and reduces maintenance costs.

Capability benefits

Integration of new capabilities is expensive and of medium to high risk. The introduction of OA encourages the standardisation of systems with a reduction in long-term integration and support costs. This is complemented by the ability to introduce the latest computing and communication technologies through the life of these systems.

Open Architectures ensure the flexibility to rapidly develop, integrate and evolve complex systems. This enables third parties to contribute components, increasing innovation and competitiveness. This approach facilitates industry to provide more cost effective solutions with shorter time to market.

Participants

The DSTO Maritime Operations Division.

Industry players:

- Thales Australia,
- SAAB Systems,
- Innovation Science; and
- Acacia Research.