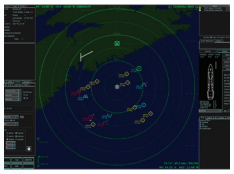
Combat Management System 330 (CMS 330)

CMS 330 was developed as a result of 30+ years' experience and knowledge of Canadian and NATO naval operations. In 2008, Lockheed Martin Canada was selected to design this system as part of Canada's HALIFAX Class Modernization project.

CMS 330 provides the Royal Canadian Navy with the operational ability to carry out multi-mission operations while defending its ships in an ever-evolving, threat environment. The system was also designed as a modern, affordable solution for mid-life upgrades in the international market.

A Trusted Solution for Demanding and Complex Surface Ship Missions

Open Architecture and ITAR-Free



An affordable and flexible solution with low life-cycle costs, CMS 330 is an open-architecture based system which adapts to a variety of subsystems, reducing risk and ensuring delivery of unique customer requirements. An ITAR-free CMS design allows the international customer to manage and exploit its full range of capabilities and advantages without restriction.

A Fielded and Trusted Solution

CMS 330 is not only proving itself on Canada's HALIFAX Class Frigates, but it is also the backbone of the technical solution for the Royal New Zealand Navy's ANZAC Frigate System Upgrade, as well as the command and surveillance management system for Canada's new Arctic O-Shore Patrol Ships (AOPS).

Benefitting from an active production line, future customers will have a ready, continually maturing solution with access to existing engineering designs and full requirements analysis. This keeps non-recurring engineering costs at an absolute minimum.

Ease of Implementation, Integration and Maintainability

CMS 330 is designed as a Service Oriented Architecture (SOA) based on the Data Distribution System (DDS) standard, making subsystem weapons and sensor changes easy to manage. CMS 330 has proven successful integration of third party components - including Saab 9LV, Harpoon Block II, Thales Smart-S 3D radar, ESSM, and SeaCeptor missile system.

CMS 330 can be scaled for platforms with different system limits, operator consoles, and subsystems without major rework to the entire system. All Multi-Function Workstations are fully interchangeable, meaning all user roles are available at all consoles. This gives Commanders the flexibility to allocate or remove war fighting capability to each operator role as the situation requires.

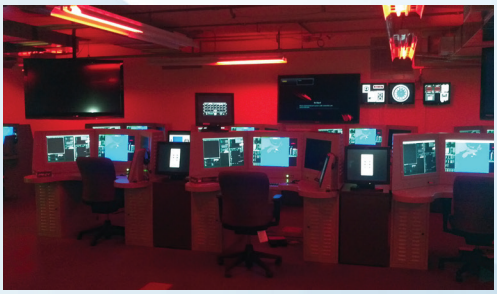
Scalable Training Solutions

CMS 330 core software architecture also forms the Synthetic Environment Advanced Combat Operator Training Systems.

Shore-based and on board training solutions use the same CMS operational software that is deployed in ships – not simulation software - reducing life cycle and associated support costs while providing high delity training and replicating the most demanding multi-threat environments.

CMS 330 Key Features

Open Architecture
Flexibility & Scalability
Tactical Picture Clarity
Exploiting Full Capability of "Ownship" Weapons
Reduced CMS Operator Workload
High Availability and Reliability
Access to External Networks
Information Management
Secure Information Networks
Advanced On-Board Training
Robust Data Collection, Storage and Analysis



CMS 330 includes:

Data Collection
- Audio Capture
- Video Capture
- Non-audio Video Capture
- Non-audio Video Viewer
- Audio Playback
- Video Playback

Infrastructure
- Non-real-time Database
- Real-time Database
- System Starter
- System Controller
- Time Management
- Health Management
- Common Services

Information Exchange Adaptation
- GCCS-M
- Multi-LINK
- AIS

Embedded Trainers
- SETT

Situational Awareness
- Local Data Fusion
- Global Data Fusion
- Local ID Fusion
- Global ID Fusion
- EW Track Management
- UWW Track Management
- AWW Sensor Management
- System Track Management
- Sensor Alignment
- Threat Evaluation

Tactical Operations
- UWW Tactics
- ASuW Tactics
- Stateboard Management
- Air Asset Management

HMI
- Tactical Situation Area
- Auxiliary Display Management
- Session Management
- LSD Management
- Alarm Management
- User Input

Tactical Execution
- Engagement Coordination
- Engagement Management
- Kill Assessment
- AAW Engagement Planning
- ASuW Engagement Planning
- UWW Engagement Planning
- AWW Engagement Execution
- UWW Engagement Execution
- Manual Engagement Support

Sensor Adaptation
- Radar including IFF
- ESM
- Laser Warning System
- Sonars
- Infrared Sensors

Weapon Adaptation
- Weapon Systems
- Guns
- Surface to Air Missiles
- Surface to Surface Missiles
- ECM

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