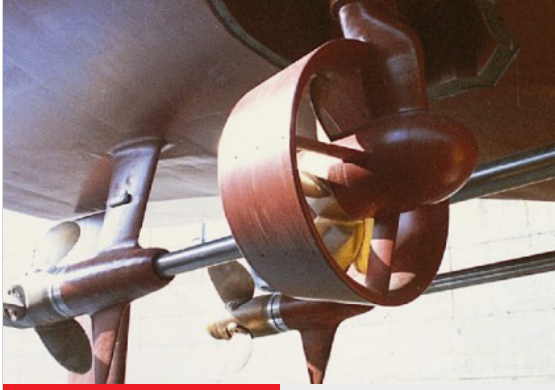
L3HARRIS™
FAST. FORWARD.

MINEHUNTING PROPULSION AND CONTROL SYSTEM



ACTIONABLE INTELLIGENCE

Complete Propulsion System For Minehunting Vessels

The minehunting propulsion system represents the ideal solution for the handling of dynamic positioning and auxiliary propulsion.

L3Harris' minehunting propulsion and control system (MHPS) is a complete automation system of the propulsion plant and of the integrated control system of a minehunting ship, including motion handling by means of the auxiliary propulsion in both manual and automatic mode. The minehunting propulsion (MHP) consists of three main components:

> the propulsion group, including a retractable azimuthal hydraulically driven thruster, featuring both low noise and magnetic signature able to provide a 360° directable thrust.

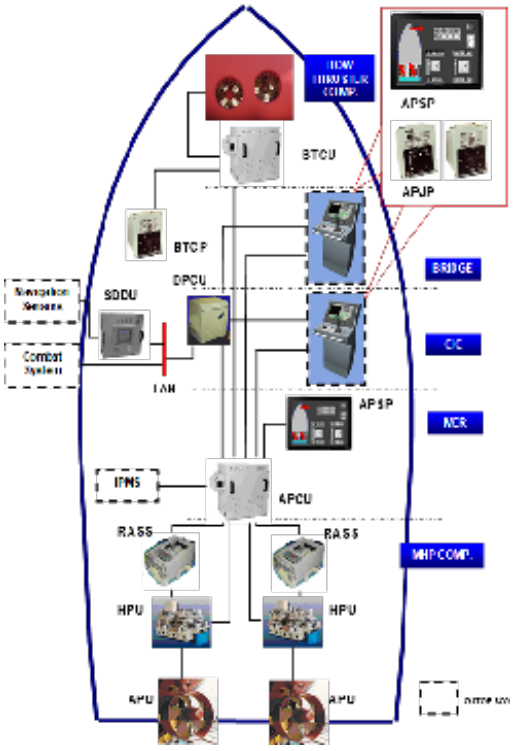
> the electrical twin bow thrusters, a single integrated unit inclusive of two fixed tunnel monodirectional thrusters with a bow thruster control unit (BTCU) and a joystick (BTCP) to provide a side thrust at the bow of the vessel.

> the integrated control system (ICS), providing complete automation of the MHP plant and the dynamic positioning functions of the ship

The MHP comes with two possible configurations:

> two auxiliary retractable and azimuthal thrusters and one twin bow thruster

> three auxiliary retractable and azimuthal thrusters



OTHER MAIN COMPONENTS:

The ICS includes the following elements:

> Auxiliary propulsion status panel (APSP), an operator panel for individual control of the auxiliary thrusters

> Auxiliary propulsion joystick panel (APJP), consisting in a joystick and a knob, enabling the coordinate control of the auxiliary propulsion.

> Dynamic positioning control unit (DPCU), performing the dynamic positioning of the vessel using the auxiliary propulsion

> Auxiliary propulsion control unit (APCU), performing the complete control and monitoring of the minehunting propulsion

> Smart data distribution unit (SDDU), which collects, processes and distributes navigation data provided by the sensors

> Remote auxiliary soft starter (RASS), an electronic unit performing the starting of the electric motor of the HPU reducing the peak of the starting current

FEATURING:

> **Autopilot mode**

> **Enhanced ship maneuverability**

> **Low magnetic signature**

> **Low acoustic signature**

> **Underwater explosion resistance**

AUXILIARY PROPULSION STATUS PANEL

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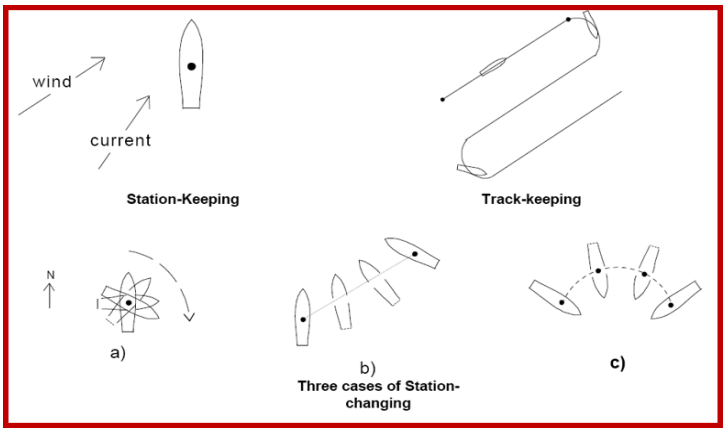
The DPCU includes the minehunting autopilot, an high performance dynamic positioning system for MCMVs vessels and special ships. The system is able to achieve precise ship handling on specified trajectories or hovering points, performing sea areas surveillance.

KEY FEATURES:

- Dedicated LAN interface for connection to IPMS. Major failure signals can be uplicated using hard wiring.
- Fiber optics communication with command and control for high disturbs immunity
- Redundant CAN open communication with APJP
- Redundant power supply with automatic switch in case of failure
- Easy-to-use and intuitive thrusters



AUTOPILOT OPERATIONAL MODES

SMART DATA DISTRIBUTION UNIT

APSP TECHNICAL CHARACTERISTICS:

- Power Supply: 110/240 Vac, 50/60 Hz
- Power consumption: c.a. 250 W
- Redundant fiber optics communication
- Certified with:
  MIL-STD 461-F for EMI/EMC
  MIL-STD-167-1:1987 type I for vibration
  MIL-S-901D:1989, classified as grade A, class I, type A for shock
- Dimming: from 0 to 100% of luminous intensity
- Enclosure: IP 54
- Temperature range: 0°C + 45°C (32°F +113°F)

Minehunting Propulsion And Control System

COMPLETE PROPULSION SYSTEM FOR MINEHUNTING VESSELS

Minehunting Propulsion And Control System

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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