MINER⬥VA

MILITARY INTEGRATED
NAVIGATION SYSTEM
FROM NAVANTIA

MINERVA is the fully **Integrated Navigation and Bridge System** solution from Navantia.

The fully **redundant** MINERVA **Ship Data Distribution System** provides **integration with other systems** from Navantia: COMPLEX Integrated Platform Management System, NAVCOMS-HERMESYS Integrated Internal and External Communication System, CATIZ Combat Management System; and from third-parties such as Closed-Circuit Television, Electro-Optical Surveillance System.

MINERVA is composed of a set of inter-related systems whose mission is to:
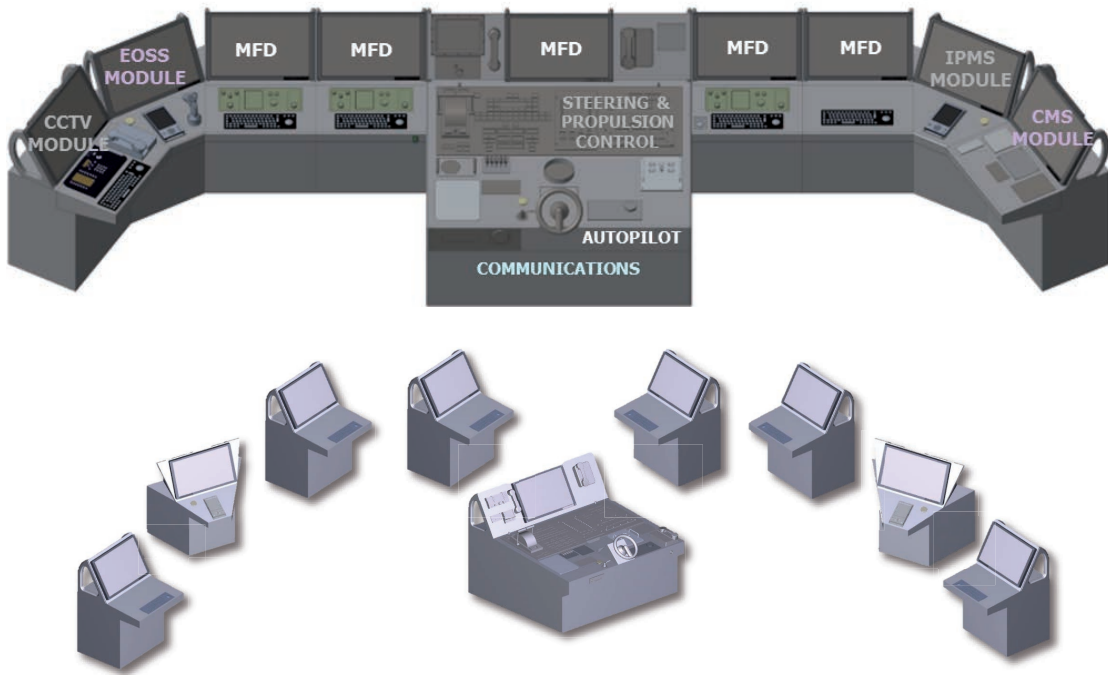
- manage the ship's navigation.
- control the ship's vital systems.
- supervise the ship's environment.

in order to guarantee safety in navigation operations and manoeuvres in restricted/shallow waters and/or coastal waters.

MINERVA supports mission success by assisting the decision-making process for safe navigation and reducing operator reaction time.

MINERVA main benefits:

- The MINERVA concept, **open architecture**, main capabilities and **cybersecurity** guarantee safe navigation of your ship according to **IMO standards**.
- High level of **adaptability** to ship mission and to ship configuration and equipment.
- Ergonomic **bridge** console with standardised central and wing **modules** and **Multi-Function Displays**, providing **redundancy** and **scalability**.
- The MINERVA **System Manage**r provides the status of all the navigation sensors and bridge system hardware and software elements.
- Extensive use of **COTS** sensors, equipment and components with associated **obsolescence management** benefits.

ABOUT NAVANTIA

Navantia is a Spanish Government Owned Company and is an Industrial Group with the following Business Lines:

- Naval shipbuilding and design.
- Systems. -
- Ship repairs and conversions.
- Diesel engines, gearboxes and power generation.
- Through Life Support.
- Transfer of Technology solutions
- Offshore wind energy

Command and Control systems
Integrated Platform Management Systems
Surveillance systems
Gun Fire Control Systems
Naval guns
Communications systems
Navigation systems
Simulators and training

More than 20 countries...

...with offices worldwide

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INTEGRATED NAVIGATION AND BRIDGE SYSTEM

Navantia

The MINERVA Ship Data Distribution System manages navigation data to the rest of onboard systems.

- Raw data collection from all navigation sensors.

- Data processing, taking into consideration sensor data quality, and sensor precedence.

- Generation and maintenance of official own-ship navigation data accuracy.

- Dead reckoning techniques, to ensure accuracy of raw data in the event of system degradation.

- Distribution of official data to consumers in accordance with established interfaces.

- Reduction in ship's cabling

- Application and network redundancy.

MINER≈VA

MILITARY INTEGRATED NAVIGATION SYSTEM FROM NAVANTIA

- Time Server
- Time Repeaters
- Bearing Repeaters
- Heading Repeaters
- Electro-Magnetic Speed Log
- Doppler
- Speed Log
- Echo Sounder
- Global Navigation Satellite System (GNSS)
- Magnetic Compass
- Satellite Compass
- Inertial Navigation System (INS)
- Bridge Navigation Watch Alarm System (BNWAS)
- Voyage Data Recorder (VDR)
- Meteorological Station
- Warship Automatic Identification System (WAIS)
- X-band Navigation Radar
- S-band Navigation Radar

- MINERVA Ship Data Distribution System (SDDS)

- MINERVA Integrated Bridge Console
    - » Steering and Propulsion Control
    - » Autopilot
    - » Integrated Platform Management System (IPMS) module
    - » Integrated Internal and External Communication System module
    - » Combat Management System (CMS) module
    - » Closed-Circuit Television (CCTV) module
    - » Electro-Optical Surveillance System (EOSS) module
    - » Multi-Function Displays (MFD)
        - ◇ Central Alarm System
        - ◇ Conning Information Display
        - ◇ Warship Electronic Chart Display and Information System (WECDIS)
        - ◇ Chart Server
        - ◇ Navigation Radars HMI
        - ◇ Automatic Radar Plotting Aid (ARPA)
        - ◇ Navigation System Manager
        - ◇ SDDS HMI

MINER≈VA Military Integrated Navigation System from Navantia