

► Navigation Distribution System

The Navigation Distribution System (NDS) is a dual-redundant, real-time distribution system for ship sensor data. The NDS consists of two Navigation Processor Units (NPUs) which receive and relay inertial and navigation data.

Functions

The NDS will typically provide the following functions:

- Receives data from the following sensors: 2 Doppler Logs, 4 GPSs, 2 Electromagnetic Logs, 2 Weather Stations, 2 Echo Sounders and 2 Inertial Navigation Systems
- Monitors status of sensors
- Monitors link status to sensors
- Selects best source of sensor data
- Timestamps sensor data
- Provides age of data for selected sensor data
- Distributes sensor data
- Distributes additional switched sensor data (only from one NPU at a time)
- Distributes NDS status
- Distributes status of each sensor and status of the link to the sensor
- Displays NDS and sensor link status on front panel

Features

- Replicated Architecture
- Networked
- Fault-Tolerant
- Scalable
- Cost-Effective

Design and Architecture

The NDS's replicated and distributed hardware and software architecture ensures a high level of reliability and freedom from any single point of failure.



NDS Front View



NDS Rear View



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Interfaces

The NDS provides the following interfaces:

- 16 High-speed serial interfaces (UART or HDLC configurable up to 4 Mbps maximum per interface)
- 6 Low-speed serial interfaces (UART up to 115 Kbps maximum per interface)
- 2 Ultra high-speed LAN interfaces (FDDI, Fast Ethernet, Fibre Channel, etc.)

Applications

- Naval Ships
- Merchant Ships

NDS Specifications

Performance

- Sensor data latency of less than 1 ms for selected high-speed serial interfaces.
- Age of data accurate to 100 µs with a precision of 5 µs for sensor data on selected high-speed serial interfaces.

Physical Characteristics

- The NDS uses the ship's 115 V, 60 Hz power supply. The power supply requirements are specified by STANAG 1008.
- The NDS typically has a total mass of less than 100 kg.
- Temperature range of 0 C to 70 C.

Specifications	
Power Supply	115 V, 60 Hz or 240 V, 50 Hz The power supply requirements are specified by STANAG 1008
Power Consumption	Typically 3 A
Total Mass	± 30 kg
Temperature	0 C to 70 C
Shock	25 g (5 ms)
IP Rating	IP 54 (OEC-60529)
Heat Dissipation	150 W
Noise	46 dBA
Dimensions	L = 420 mm B = 483 mm H = 392 mm