VDR2000

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Voyage Data Recorder

Design
The VDR2000 is designed to record and maintain a retrivable record of the ship's nautical, technical and safety data, and is presently in its third generation. Like the black boxes carried on aircraft, VDRs enable accident investigators to review procedures and instructions in the moments before an incident, and help to identify its cause.
All data is stored in both the protective capsule (Hardened Voyage Recorder-HVR) and on the hard disk in the VDR2000. The stored data can be downloaded and analyzed for investigation purpose, training and simulation at any time.

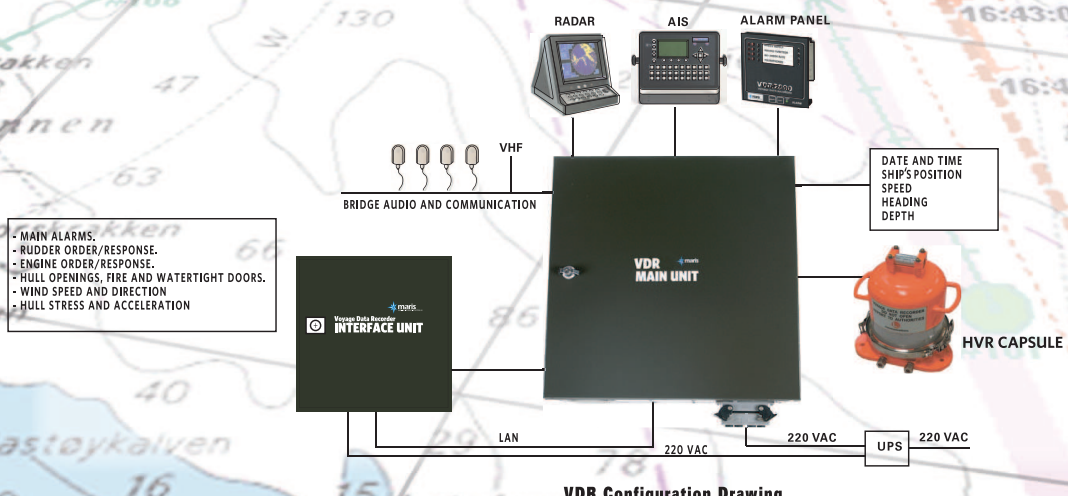
Standards and approvals
The VDR2000 meets the IMO Performance Standard A.861(20), the EU Directive 1999/35/EC and the IEC 61996 Test Specifications. VDR2000 is EC type approved (Wheelmark) according to EU Council Directive 96/98/EC of 20 December on Marine Equipment, as amended by directive 2002/75/EC.

Installation, Operation and Maintenance
The VDR2000 is easy to install, service and upgrade, resulting in low installation and life cycle costs.
The VDR2000 is small in size with low weight, and its use of COTS components ensures well proven solutions and high reliability.
The VDR2000 is maintenance free and requires no attention from shipboard personell once fitted (automatic operation).

Protective Capsule
The HVR is a two-piece design: A mountingbase sub-assembly, which is fastened directly to the ship, and a removable, hardened memory sub-assembly attached to the mounting base with a quick releasing v-band clamp.
The HVR has an externally mounted, under-water Location Beacon, and is painted in a highly visible fluorescent orange, with white reflective labels and SOLAS reflective tape containing the text:

VOYAGE DATA RECORDER, DO NOT OPEN, REPORT TO AUTHORITIES.

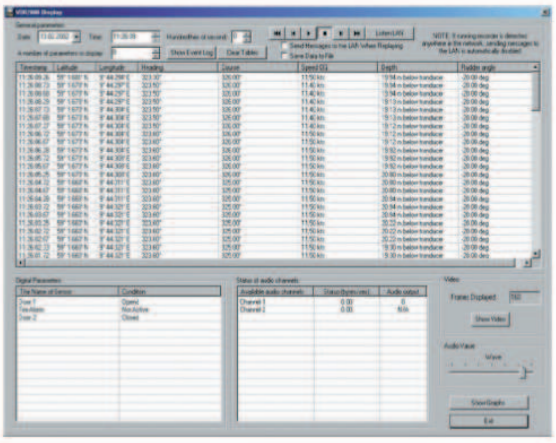
VDR Carriage Requirements
The VDR carriage requirements is listed in regulation 20 of the new SOLAS Chapter V.

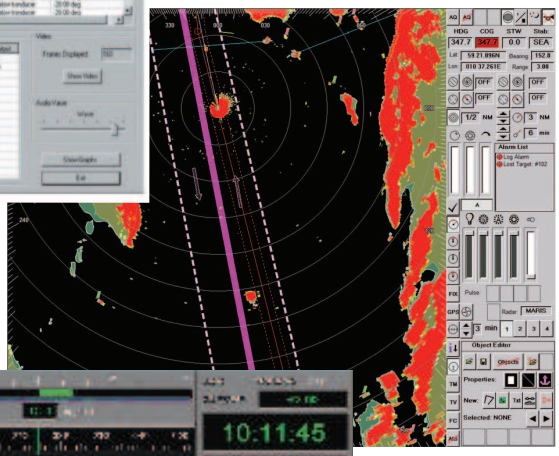


VDR Configuration Drawing

Recorded Data:

- Date and time (UTC).
- Ship's position.
- Speed.
- Heading.
- Bridge audio.
- Communications audio.
- Radar data - post-display selection.
- Echo sounder.
- Main alarms.
- Rudder order and response.
- Engine order and response.
- Hull openings (doors) status.
- Accelerations and hull stresses.
- Wind speed and direction.





Voyage Playback System

VPS2000 Voyage Playback System software is available for playback on one or more standard multimedia PC(s).
The information displayed, reflects that recorded in the VDR2000 at the date and time indicated.

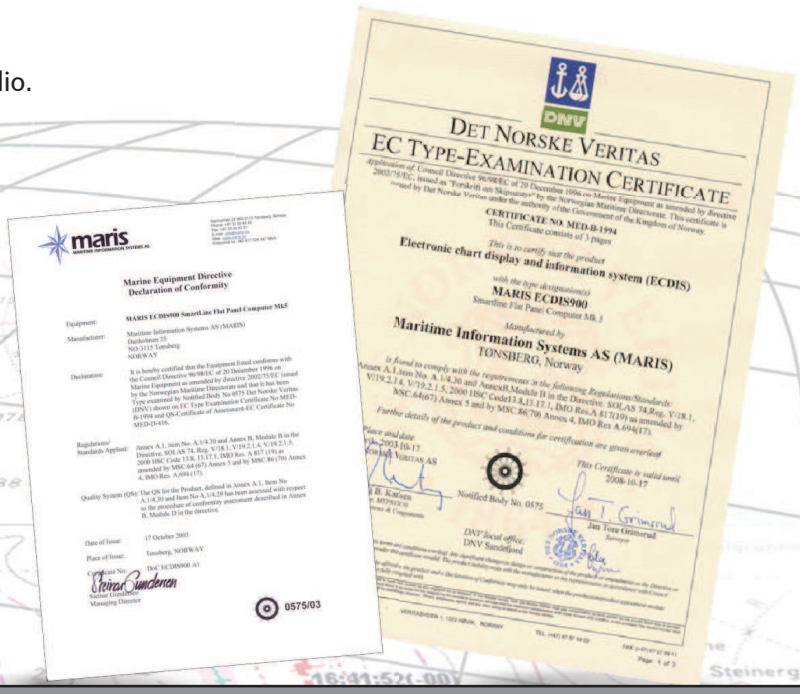
Interfaces

As standard the VDR2000 is provided with the following interfaces:

- 8 serial lines supporting RS422 and RS 485, complying with IEC 61162-1/2 input specification and NMEA.
  Protocols from our libraries are supplied free of charge. Please see below.
- Radar interface according to IEC 61996.
- 4 microphone units for recording of bridge audio.
- 2 channels for recording of VHF.
- 8 Analog 0-10V, 4-20mA and special signals.
- 32 digital channels for ON/OFF signals.

Optionally the following interfaces can be provided:

- Up to a total of 16 serial lines according to above specification.
- Protocols for interface of non IEC 61162-1/2 signals e.g. automation and control system.
- Analog 0-10V, 4-20mA, digital signals and special signals.
- Gyro/Log interface for non-serial inputs from gyro and speed log systems.
- Ethernet interface to navigation systems and other systems.



MARIS is a private limited company with head office in Tonsberg, Norway a recognised centre for maritime information technology. The majority owner is the Grieg Group (www.grieg.com): shipowning, shipbroking, fishfarming and processing, insurance broking and asset management. More than 1,500 navigation systems have been delivered to customers in more than 30 countries.

MARIS' roots go back to the start of the maritime information technology explosion of the mid-1960s. MARIS is a system house with world-class experience in maritime on-board systems. Innovative engineering from people in MARIS has added several 'world's firsts' to the global list of milestones. The digital coastline generator has formed the basis for Ship's Bridge Simulators delivered to more than 70 countries. Other world's firsts are 'Wheelmark' certified ECDIS and PC radar/ARPA and IEC 60945 certified Flat Panel Computer.

DNV 0575/04 Wheelmark Approved

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