Consilium has developed, manufactured and installed Voyage Data Recorders for new-buildings and retrofit ships since 1996. Consilium is now launching its fourth generation combined VDR and S-VDR system. The platform is emphasising “Design For Assembly” with high focus on reliability and flexibility. Very easy and cost-effective installations and a minimal amount of maintenance needed.

The S-VDR interfaces to all on the market available bridge systems and sensors. The flexible design also offers many options: i.e. recording of up to four radar displays and recording of CCTV systems.


System Description

S-VDR Main Unit
The system is completely passive and records all data fed to the Main Unit. It will not interfere with other systems for data retrieval. The S-VDR/VDR system will store data from the past 12 hours (optionally also for longer periods), continuously erasing older data as new data is recorded.

Power Supply Unit
PSU with batteries for supplying the system and microphones with power during 2 hours in the event of a main power failure.

Microphone Unit
Can either be panel or bulkhead mounted and has a built-in loudspeaker for an automatic self-testing sequence. The design permits installation also on open bridge-wings.

Capsule
Continuously records 12 hours of data from the Main Unit. The Capsule completely fulfils the requirements in the test standard IEC 61996.

New Remote Control Panel SD4-6
With the SD4-6 control panel you can control and constantly monitor the system status and alarms. The new design with a 32 character LED display shows system status information in a user-friendly way.

The remote control panel is also equipped with an “Emergency back-up button”, designed to store an event on a standard USB2.0 memory unit for retrieval and very easy back-up.

**System Diagram**

- S-VDR Standard Input
- Main Radar Displays
- Ship Data
  - Data type: Date and time, Ships position, Speed, Heading, Communication audio, Radar (if COTS available), AIS (Mandatory if no Radar)
  - Data source: GPS, Speed Log, Gyro, 3-7 microphones, Designated VHF, Master radar display, AIS
- Optional Ship Data
  - Data type: Depth under keel, Main alarms, Rudder order & Response, Engine/Thruster order & Response, Hull openings, Watertight/Fire doors status, Acc. and hull stresses, Wind speed and direction
  - Data source: Echo sounder, IMO mandatory alarms, Steering/autopilot, Engine telegraph, Door indication, Door indication, IMO Mandatory hull stress system, Wind indicator
- Microphones
- Remote Control Panel
- VDR Main Unit
- Power Supply Unit
- Voyage Data Capsule

**NEW SYSTEM FEATURES**

- Optional Radar Displays
- Optional ECDIS Displays
- Optional Conning Displays
- Optional CCTV
Specifications may be subject to change for improvement without prior notice

Consilium S-VDR/VDR Technical Specification

M4 Main Unit
- Envirn. conditions: IEC 60945 protected equipment*
- Record period: 12 hrs, stored securely
- 16 NMEA 0183 INPUT: 14 channels (IEC 61162-1)
- 2 channels HS 38400 bit/s (IEC 61162-2)
- NMEA 0183 OUTPUT: 4 channels (IEC 61162-1)
- Audio channels: 12 channels with up to 8 microphones with self test
- VHF: 2 channels, 775 mV Line input (0 dBu)
- Radar: Display up to 1600x1200@60 resolution.
- Refresh rates up to 85Hz
- Can be configured for a capture interval as short as 5 seconds.
- Data export features: Data output for standard USB2.0 memory.
- Speed Log interface: incl. 2 channels, galvanic isolated: 12VDC-48VDC, 100p/Nm to 20000p/Nm;
- Updating frequency: 1.1Hz
- Digital input: Galvanic isolated
- Relay outputs: Maximum voltage: 125VAC, 60VDC; Maximum current: 1A
- RS-485: Baud rate: max 115200 bit/s
- Power Consumption: < 350 VA
- PSU: 2 hrs of continuous recording at power failure
- Power Supply PSU: IEC 60945 protected equipment*
- Emergency incident button: Stores a preconfigured amount of time on a standard USB2.0 memory stick.
- 32 character display: For user-friendly system status messages
- Dimmer: Continuously adjustable
- Alarm mute: Acknowledge alarms and errors
- Microphone AM1: IEC 60945 protected equipment*
- Loudspeaker: Standard feature for automatic self testing sequence
- Housing for outdoor use IP66 classed

Voyage Data Capsule VDC
- Compliant to IEC 60996
- Record period: 12 hrs
- Penetration: 250 kg/100 mm probe at 3 m
- Fire protection: 60 minutes at 1100°C
- Impact: IEC 68-2-27, 50 g, 11 ms, and half sine shock
- Immersion: 6000 meters depth for 30 days

Analogue/Digital Module
- Envirn. conditions: IEC 60945 protected equipment*
- Analogue/Digital: 1024 separated inputs on each Gateway.
  +/− 10 V DC 8 inputs on each module
  4 - 20 mA 8 inputs on each module
- Digital 16-32 inputs on each module
- Number of different interfaces/adapters are available on request.

Data Acquisition Unit DAU
- New centralized Analogue/Digital Unit
- Including 6 modular Digital/Analogue PCB’s for flexible combination.
- Up to 96 digital inputs
- Up to 24 (+/-10V or 4-20 mA) analogue inputs.

Options/Additional
- Local Area Network LAN, TCP/IP data export for extra data storage (no limit)
- CCTV Cameras Up to 4 separate cameras
- Radar 4 separate Radar, ECDIS or Conning displays
- Frame rate down to every 5 second.

* Refer to technical manual for details temperature range for sub-parts

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Consilium Navigation AB
P.O.Box 5021
SE-131 05 NACKA
STOCKHOLM, Sweden
Phone: +46-8-563 05 100
Telefax: +46-8-563 05 99
E-mail: navigation@consilium.se
Internet: www.consilium.se

SWEDEN
Consilium Marine Group AB
Phone: +46-8 563 05 300
Telefax: +46-8 563 05 399

Consilium Marine AB
Phone: +46-31 710 77 00
Telefax: +46-31 710 78 00

ITALY
Consilium Selesmar Srl
Phone: +39-0571 68 21
Telefax: +39-0571 67 07 98

GERMANY
Consilium GmbH
Phone: +49-40-822 22 95 0
Telefax: +49-40-822 22 95 99

GREECE
Consilium Marine Hellas Ltd.
Phone: +30 210 4287 037-8
Telefax: +30 210 4287 165

HOLLAND
Consilium Marine Systems BV
Phone: +31-182 382 422
Telefax: +31-182 382 675

UNITED KINGDOM
Consilium Marine UK
Branch Office
Phone: +44-1268 417745
Telefax: +44-1268 417051

USA
Consilium US, Inc.
Phone: +1-978-486 9800
Telefax: +1-978-486 0170

Consilium Marine U.S. Inc.
Phone: +1-978-486 75 50
Telefax: +1-978-75 95 99

SINGAPORE
Consilium Marine Singapore Pte Ltd
Phone: +65 6251 6016
Telefax: +65 6251 6017

SOUTH KOREA
Consilium Marine Korea Ltd
Phone: +82-51-740-5871/72/73
Telefax: +82-51-740-5870

CHINA
Consilium Shanghai Rep. Office
Phone: +86-21-644 803 98
Telefax: +86-21-644 812 11

China Sweden Marine
Equipment Co. Ltd
Phone: +86-21-5885 6638
Telefax: +86-21-5885 8422

ext. 2421/2561

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7. **Cabling of the VDR M4 System**

All cabling necessary to interconnect the VDR M4 system units is described in this section.

"Full" VDR

* AIS information, if radar video capture is impossible.