Consilium ECDIS

Electronic Chart Display and Information System

Consilium ECDIS has been developed based on extensive experience of a world-class innovative engineering team with several “firsts” in maritime electronics within radar data processing, radar data extraction, display presentation and electronic cartography.


Consilium ECDIS is an extremely powerful navigation and information display system enabling radar video overlay. This combined with display of AIS data provides the professional mariner with the complete navigational situation on one display eliminating the need to reference and appraise information from multiple sources – charts, navigational sensors, radar, ARPA, etc.

Key benefits of Consilium ECDIS

- Total situation appraisal on one integrated display, chart, radar, ARPA and AIS eliminating the need to move between instruments and designed in accordance with IMO/IEC requirements for Integrated Navigation Systems.
- Type approved by DNV
- Powerful decision support and information tool.
- Capable of incorporating official HO ENC’s along with raster charts produced by several official Hydrographic offices.
- Enables extremely precise navigation providing precise bearings to lights and landmarks at long ranges.
- Greatly reduces workload in the production of Voyage Plans ETA’s and rapid changes to these.
- Operates with all major chart formats and provides seamless presentation of ARCS ENC charts.
- Simple, low cost update and maintenance of charts via email.
- Interfaces to large variety of navigation sensors.
- Selection of hardware options enabling ease and flexibility of installation on new buildings and sailing ships.
- Fuel saving
- User-friendly man machine operation with “built-in” user manual and on-line help.
- High mean time between failure and low mean time to repair.
Consilium ECDIS operates with multifuelled ENC (S57) and raster charts in the following formats:

**Raster Charts**
- ARCS – British Admirality charts
- NDI/BSB – raster charts by the hydrographical offices of USA and Canada
- NOS/GEO
- Seafarer – charts produced by the Australian Hydrographic Office

**Vector charts**
- ENC (S57)
- Primar ENC (S57)
- IC-ENC (S57)
- JHA-ENC (S57)
- NOAA-ENC (S57)
- AHO-ENC (S57)
- Compatible with C-MAP world wide database

**Chart Updates/Corrections**
Associated chart update – correction service provides:
- Instant update on board of ARCS, ENC charts via email
- Easy access and handling: installs charts along a selected route, instantly switches between different chart databases.
- Integrated help for paper chart corrections – updates using ARCS service an enabling print out of the latest updated chart files in actual scale. Tiles may be pasted to paper charts.
- CDs are provided every three months with complete updated chart collection.
- The associated service has distributor rights of the most significant chart and data providers worldwide.
- E-mail update of electronic charts from PRIMAR (ENC and Admirality ECDIS Service (ENC+ARCS).
- Simplified ordering and distribution

**Chart Display Options**
Simultaneous seamless display of ARCS and ENC charts to scale in transition between areas of chart coverage.
- User defined tool bar and menu configuration with day and night settings. Instant range zoom in or out.
- Displayed chart orientation may show any combination of following modes:
  - Head-UP/North-UP/Course-Up
  - True motion/Relative motion
Accurate Realtime Positioning
Consilium ECDIS provides the professional navigator with a total navigation situation appraisal and vital voyage information including:
- Primary and Secondary Ship Position
- Raw Radar overlay
- ARPA Target Information
- AIS target information with call sign display
- Navtex information
- Data from interfaced sensors – gyro, log, GPS, Echo sounder, anemometer etc.
- Vessel Track
- Weather data
- Display of the ship’s contours in the chart scales comparable with the ship’s dimensions
- Information relating to dangerous objects on charts
- Colour bearing lights sector displays

Radar overlay
- Raw radar video can be displayed on top of the electronic chart.
- Advanced image processing and numerous video control functions are available to give clear and precise radar picture presentation under all weather conditions.
- An unlimited number of ARPA targets can be displayed on the ECDIS
- Displays the route made active in ECDIS presentation and can use the same background charts as the ECDIS

AIS
- Consilium ECDIS includes as standard an advanced interface to operate any AIS transponder system without additional AIS keyboard and display (AIS man machine interface replicated in Consilium ECDIS)
- AIS targets are displayed together with ARPA targets and the AIS targets CPA/TCPA are calculated and all AIS events recorded in the system logbook
- Easy and efficient handling of incoming/outgoing AIS messages from the Consilium ECDIS – no need to move between ECDIS and AIS receiver
- In one click a standard message may be selected and broadcast from the Consilium ECDIS

Object Editor for User information
- Add personal annotations. Work on electronic charts as on paper charts with powerful graphical tools; bearing lines, range circles, parallel and perpendicular lines.
- Store navigation survey work in the logbook.
- Add marks, lines, zones.
- Create user object alarms: crossing a line, entering or moving out of an area and anchor alarms.
- Import chart and user files with or without datum corrections.
Route Planning
- Mix great circle and rhumb line legs, enter different turning radius values and select different XTE limits for each leg
- Route creation either by latitude/longitude co-ordinates, cursor, import or download from DGPS
- Multi route management: Display several routes. Create routes by selecting waypoint from any display route. Link or split routes, continue waypoint editing from any point.
- Check the route for dangers and highlight them on the chart.
- Route simulation: passage plan calculator including ETA/TTG and required speed.
- Check safety along the route in real time.
- Continuous display of heading, speed, depth and position.
- Select ETA and monitor speed required.
- Autopilot and track pilot control.

Passage Plan
- Prepare, store and print a passage plan linked to the selected route.
- Passage plans, compliant in particular with Tanker regulations are partially filled in by the Consilium ECDIS (Chart numbers and waypoint positions, and then completed by the navigator manually).

Navigation Data Log and Play Back
- Genuine Navigation Data Recorder: stores all navigation events including own ship, AIS and ARPA target positions, speed and course, alarms triggered and acknowledged, charts in use, manual position plotting, manual bearings and events.
- All data is written to a new and secure read only file every 24 hours.
- All stored files may be replayed at any time using the same ECDIS software and comparable with IEC 611996 Annex D.

Alarms
The following alarm groups are built into the Consilium ECDIS:
- Anti-grounding alert.
- Approach of critical points.
- Radar ARPA/AIS targets (CPA/TCPA).
- Sensor failures GPS, etc.
- XTE out of limits.
- User defined alarms.
- User defined anchor alarm.

Integrated NAVTEX information
Consilium ECDIS provides the professional mariner with a NAVTEX management facility providing:
- Automatic reading and processing of messages arriving via NAVTEX.
- Automatic extraction of coordinates, area transmitting station, topic and other parameters and plotting of data on the Consilium ECDIS chart display.
- Generation of automatic alarms on entry into an area with warnings broadcast by NAVTEX, or at the approach to a single message mark.
- Recording of NAVTEX messages in the logbook with the message mark displayed on the electronic chart.
Weather Forecasts

Consilium ECDIS weather module displays different weather layers including wind force and direction, pressure, swell, waves, typhoon history and forecasts and temperature. Weather forecasts may cover several days depending on the source of the data.

Consilium ECDIS weather module supports its own internal format GRIB data format and can import weather files from global meteorological offices.

Monitored parameters include:
- Pressure.
- Wind speed and direction
- Significant wave heights
- Swell (height, period, direction).

Fairplay Ports & Terminal Guide

Full details of all ports and terminals plus maritime atlas and distance tables.

Contains all of the information you need to plan your next port of call.

Comprehensive details are provided on over 8,000 ports and terminals including a complete description of the port and the relevant facilities, plans and mooring diagrams (over 4,000 in total), contact details of port service providers and agents, maritime atlas, port photographs and world wide distance table.

Search and Rescue

Consilium ECDIS enables search and rescue patterns/routes to be created in accordance with SAR search schemes recommended by the international SAR convention:
- Expanding square
- Parallel Track / Creeping line.
- Sector Search.
- Internet connection to read national or internal AIS network.

SAR patterns are corrected for current and drift.

Tide and current

- Tide and current predictions are available for thousands of main tide stations Worldwide.
- Local tide regions
- Real time calculations for specific areas.
- Seasonal ocean currents as on Pilot Charts.
- Moon rise and set hours

Sensor Monitor and Internet Connection

- Flexible software tool named Sensor Monitor to link system to external sensors or data via serial port, network, Internet and file transfer.
- Serial or TCP/IP interface with GPS, Gyro ARPA radar, Log, Aneometer, Echo sounder etc.
- Download or Upload routes from/to GPS or Radar.
- Download AIS targets through national AIS network.
- Advanced data logger for trouble shooting.

Network and Data Sharing

Numerous Consilium ECDIS workstations may be networked and data shared between them providing:
- All data input, including radar video can be broadcast over a network allowing several Consilium ECDIS stations to access the same data.
- Dual ECDIS system: network based applications ECDIS master and ECDIS back-up share the same data (sensor data input, Alarms, Active Route and Way point, etc.).
- Installation in captain’s cabin displaying the traffic.
- Consilium ECDIS may be installed in engine control room to display chart, own ship and surrounding traffic situation.
- ECDIS data may be extracted and broadcast to Passenger Information Systems onboard.

Hardware Configurations

Dedicated hardware in compliance with CE, Wheelmark and IEC 60945. The hardware is highly flexible allowing ease of installation on all types of vessels.

The hardware range includes:
- PanelPC with 19” TFT monitor.
- Split version with separate PC and 19”, 23” and 27” monitors.
- Console mounting.
### Technical Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Monitor</strong></td>
<td>Display: 19&quot; LCD TFT, 23&quot; LCD TFT, 27&quot; LCD TFT</td>
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<tr>
<td></td>
<td>Resolution: 1280x1024, 1600x1200, 1920x1200</td>
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<tr>
<td></td>
<td>Viewable angle: +/- 85 deg. (typical) (up/Down/Left/Right)</td>
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<td></td>
<td>Max colours: 16.7 millions (depending on graphics card)</td>
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<tr>
<td></td>
<td>Light Intensity: 250 cd/m² (typical)</td>
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<tr>
<td></td>
<td>Contrast Ratio: 500:1 (typical)</td>
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<tr>
<td></td>
<td>Dimming Range: 0-100%</td>
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<tr>
<td></td>
<td>Active Display Area: 408.0 mm (W) x 306.0 mm (H)</td>
</tr>
<tr>
<td><strong>Computer</strong></td>
<td>Processor: 1 x Intel® Core™ 2 Duo Desktop Processor</td>
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<tr>
<td></td>
<td>Memory: 2 x 1 GB installed (Dual Channel 200-pin DDR2 800MHz SO-DIMM)</td>
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<td>Graphic: Intel® Graphics Media Accelerator GMA</td>
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<td></td>
<td>Hard Disk: 1 x Replaceable SSD 30GB or more* 2.5&quot; SATA</td>
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<td>Serial Com Ports: 4 x opto isolated ports 1 x MOXA Serial I/O Card (4 x COM ports - Supports RS-232/422/485) 1 x RS-232/422/485 (COM2)</td>
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<tr>
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<td>USB Ports: 4 x USB ports - Supports 2.0 &amp; 1.1</td>
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<td></td>
<td>Ethernet 1: 1 x 10/100/1000Mbps, K&amp;H™</td>
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<td></td>
<td>Ethernet 2: 1 x 10/100/1000Mbps, Intel® 82574L PCI-E Gigabit LAN Controller</td>
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<td>PCI Slots: 2 x PCI Rev2.3 Slot 32-bit, 3V and 5V Interface (one used Default Configuration)</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>Power supply: 115&amp;230VAC - 50/60Hz + 24VDC: Model HT B18 STD-Axxx (60W)</td>
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<tr>
<td></td>
<td>Power consumption: Computer operating 30W 19&quot; display: 100W (max) 23&quot; display: 95W (typ) 200W max 27&quot; display: 200W max</td>
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</tbody>
</table>

### Environment
- Operating temperature: -15°C to +55°C
- Storage temperature: -20°C to +60°C
- Relative humidity: 10% - 95%, non-condensing

### Software
- 1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)
- Consilium ECDIS software

### Approvals

### Options/alternatives
- 19” TFT flat panel computer
- Multidisplay and Rack Computer
- ECDIS SW license only
- Radar video overlay
- Chart update service
- Weather, port, tide and current information services
- UPS
- Desk mounted console
- Extra stations

### Operator Training
- Consilium offers its customers operator training courses with the focus on the safe operation of Consilium ECDIS, proper uses of various types of ECDIS related information and knowledge of the capability and limitations of electronic chart systems.

### Global Service Network
- Consilium Marine & Safety is represented in more than 50 countries and has a presence in the most frequently used ports around the world. Customers are able to obtain spare parts or conduct servicing via the network of subsidiaries and agents. So no matter where you are you are never far from a Consilium expert.

### After sales support
- Consilium prides itself on providing customers with the benefit of a highly trained and resourceful after sales team. Each member of the team is fully experienced so customers have the added assurance of knowing that when they buy from Consilium complete customer satisfaction is an essential part of the deal.

### Operator Training
- To help customer to get the most out of our equipment Consilium offers educational courses and training seminars from their global network of offices. So should a customer have a special requirement Consilium representatives can help arrange and conduct specific seminars where attendees can discover everything there is to know about a particular product and its functions.