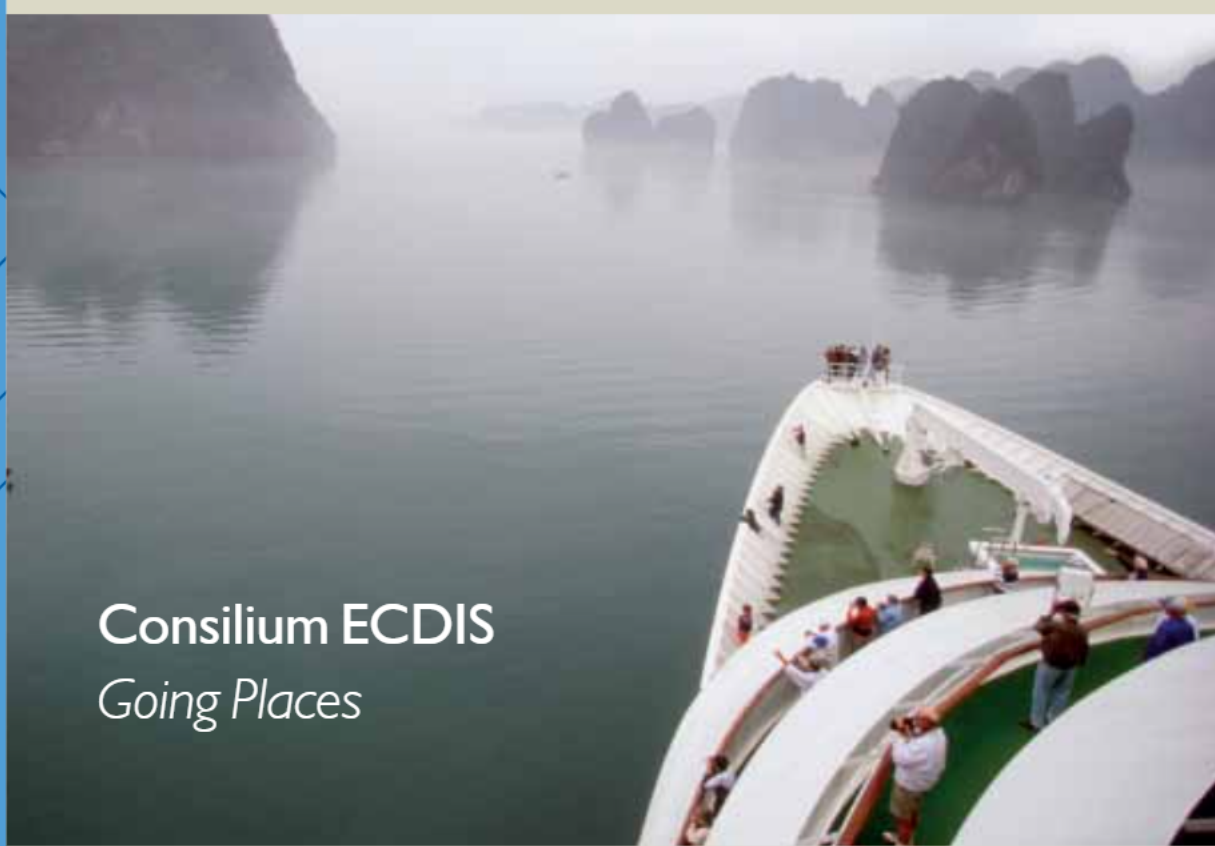
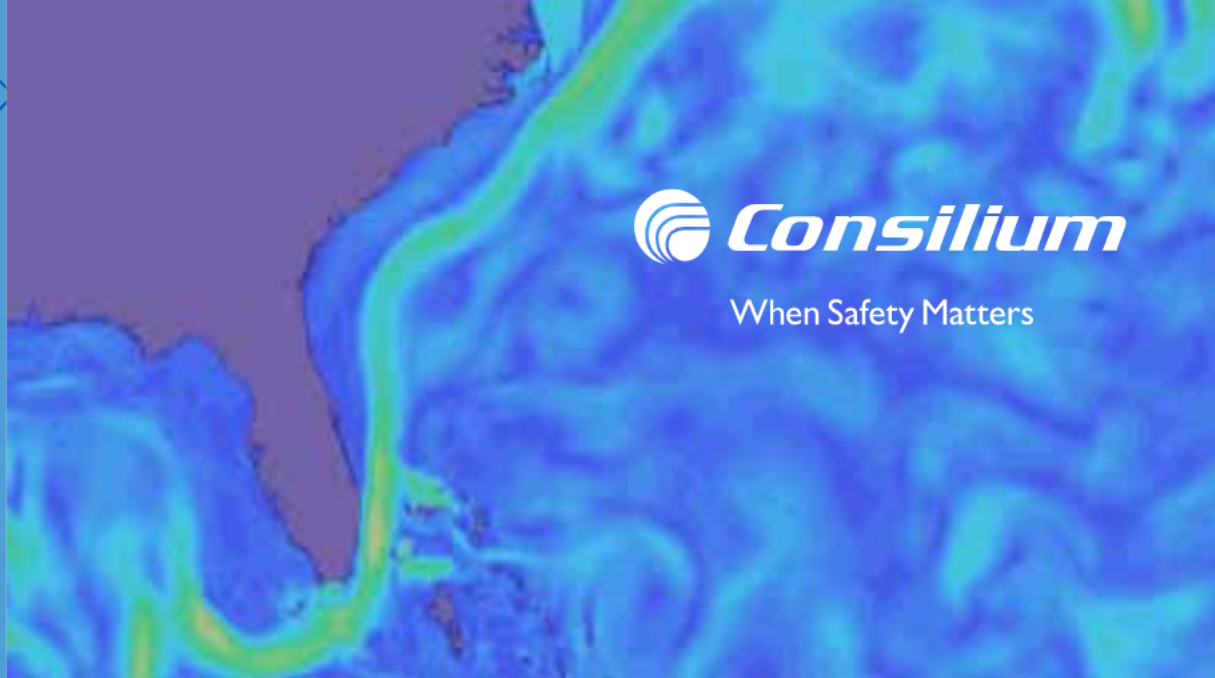


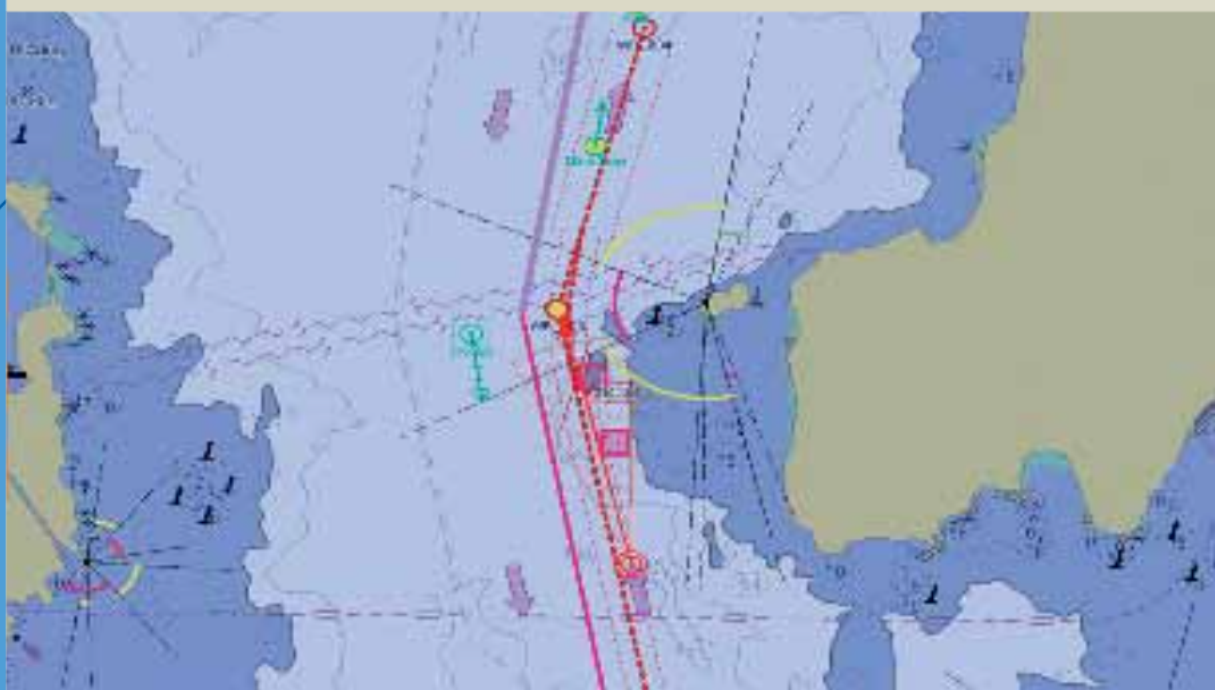
Consilium ECDIS



When Safety Matters



Consilium ECDIS
Going Places



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 fully compliant with the IMO Resolution A.817(19):1995, IMO Resolution MSC.64(67), Annex 5:1996, IHO S-57 and S-52 Standards, IEC 61174:1998, IMO A.817(19) Appendix A.7:1998 and IMO Resolution MSC.232(82).

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 Admiralty 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 then be pasted to paper charts.
- CD's 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 Admiralty ECDIS Service (ENC+ARCS).
- Simplified ordering and distribution

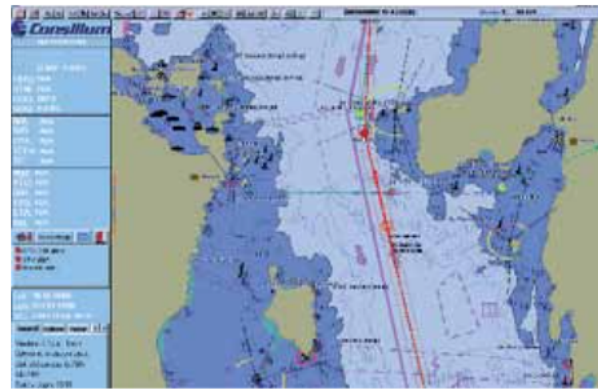
Chart Display Options

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.
- VesselTrack.
- 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.

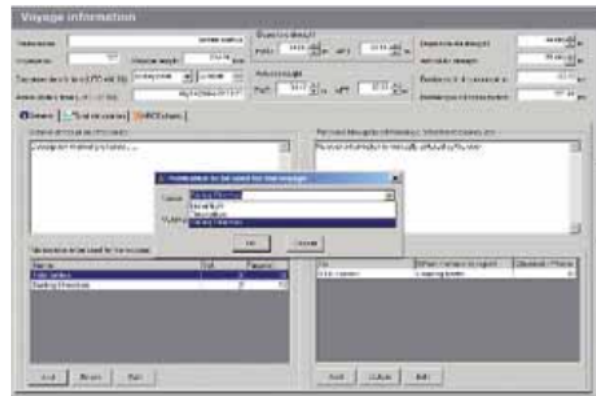
Object Editor for User information

- 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.



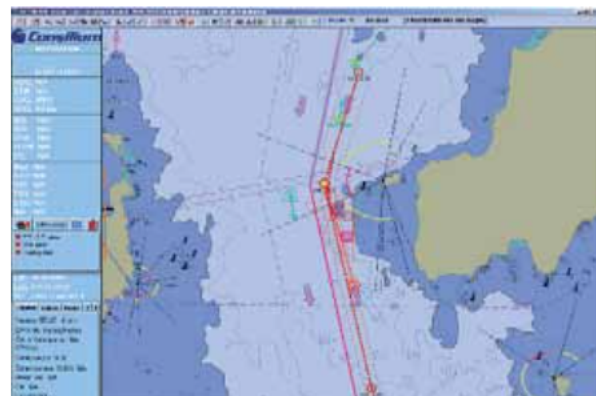
Passage Plan

- 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.

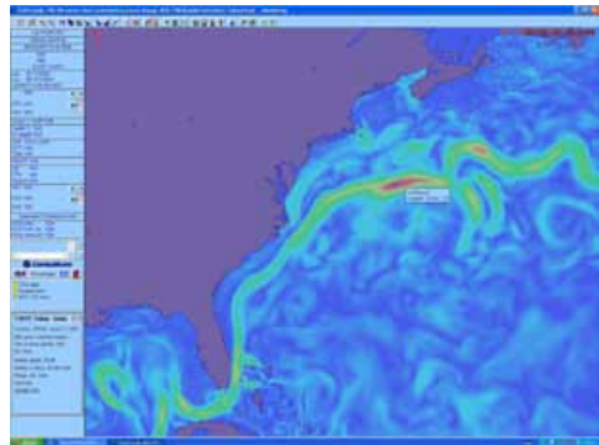
SAR patterns are corrected for current and drift.

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, Anemometer, 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:

- Panel PC with 19" TFT monitor
- Split version with separate PC and 19", 23" and 27" monitors.
- Console mounting



Technical Specifications

Monitor

Display	19" LCD TFT, 23" LCD TFT, 27" LCD TFT
Resolution	1280x1024, 1600x1200, 1920x1200
Viewable angle	+/- 85 deg. (typical) (up/Down/Left/Right)
Max colours	16.7 millions (depending on graphics card)
Light Intensity	250 cd/m ² (typical)
Contrast Ratio	500:1 (typical)
Dimming Range	0-100%
Active Display Area	408.0 mm (W) x 306.0 mm (H)

Computer

Processor	1 x Intel® Core™2 Duo Desktop Processor P8400 - 2.26GHz
Memory	2 x 1 GB installed (Dual Channel 200-pin DDR2 800MHz SO-DIMM)
Graphic	Intel® Graphics Media Accelerator GMA 4500MHD Integrated/Daughter Board (CH7307C)
Hard Disk	1 x Replaceable SSD 30GB or more* 2.5" SATA
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 (COM1) + 1 x RS-232/RS-422/RS-485 (COM2)
USB Ports	4 x USB ports - Supports 2.0 & 1.1
Ethernet 1	1 x 10/100/1000Mbps, iCH9M Intel® 82567L 1 x RJ-45
Ethernet 2	1 x 10/100/1000Mbps, Intel® 82574L PCI-E Gigabit LAN Controller
PCI Slots	2 x PCI Rev2.3 Slot 32-bit, 3V and 5V Interface (one used Default Configuration)

Power

Power supply	115&230VAC - 50/60Hz + 24VDC; Model HT B18 STD-Axxx (60W)
Power consumption	Computer operating: 30W 19" display: 100W (max) 23" display: 95W (typ) 200W max 27" display: 200W max

Environment

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

Software

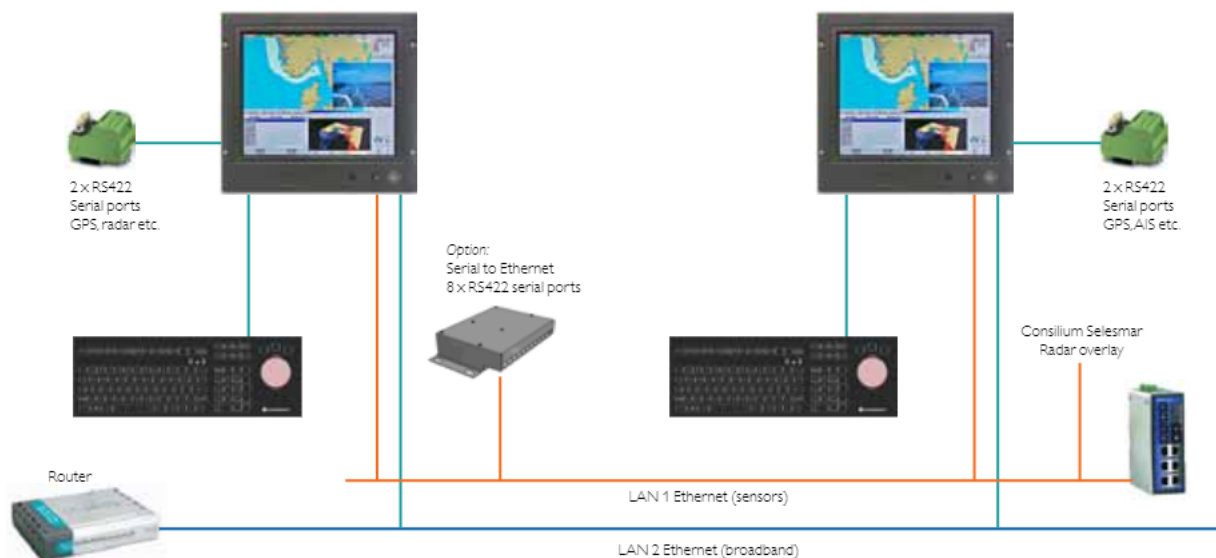
1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)
Consilium ECDIS software

Approvals

CE, Wheelmark (EU). Fully compliant with Annex A.1, item No.A.1/4 and Annex B, Module B in the Directive. IMO Resolutions A.694(17), MSC 191(79) & MSC 232(82) and technical standards IEC 60945 (2002), IEC 61174 (2008), IEC 61162-1 (2007), IEC 62288 (2008)

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
- Deck mounted console
- Extra stations



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 you can rely on

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.

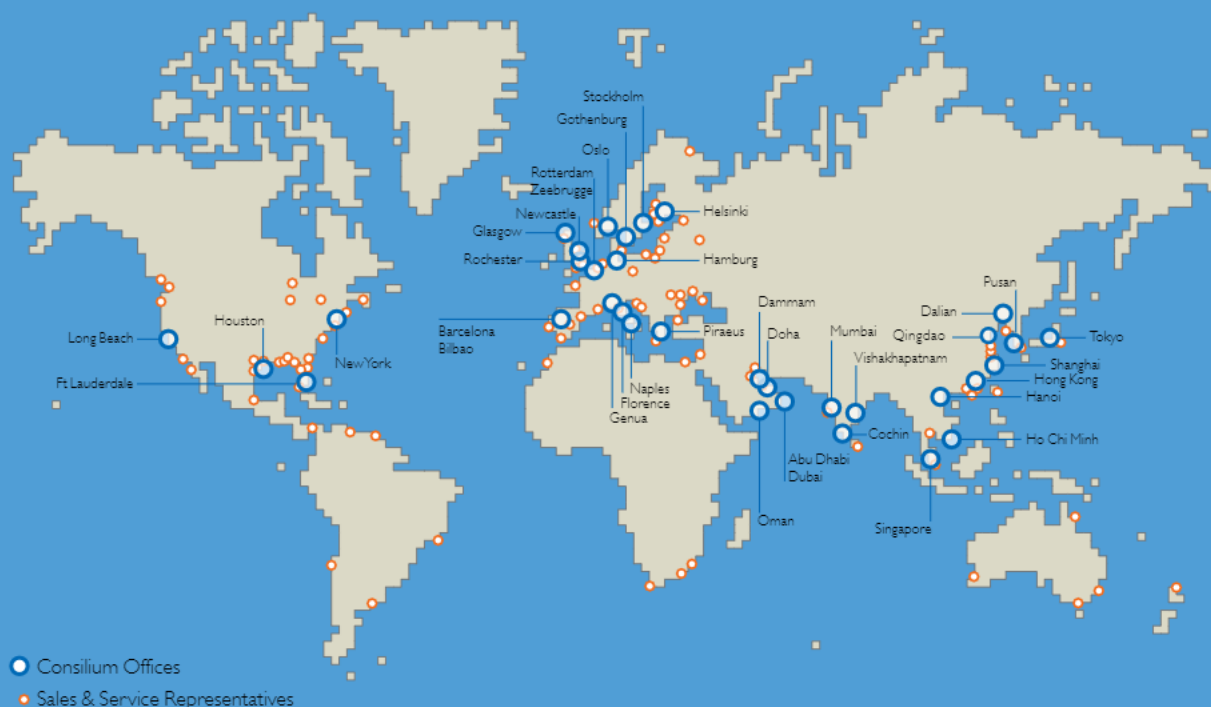
Operator Training

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.

Training on demand

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.

You find us worldwide



SWEDEN

Consilium Marine & Safety AB

Fire & Gas Marine Division
Gothenburg
Phone: +46 31 710 77 00
cmsab@consilium.se

Navigation Division
Stockholm
Phone: +46 08 563 05 100
cmsab@consilium.se

Storm & Co Skeppsradio AB
Gothenburg
Phone: +46 31 51 35 10
stormco@stormco.se

BELGIUM

Consilium Marine Systems BV
Zeebrugge
Phone: +32 50 70 30 97
info_nl@consilium.co.uk

CHINA

Consilium Shanghai Co. Ltd.
Shanghai
Phone: +86 21 5152 22 60
sales@consilium.cn

Dalian
Phone: +86 411 8386 4460

Qingdao
Phone: +86 0532 8786 9476

Hong Kong
Phone: +852 3521 19 14

FINLAND

Consilium Marine OY
Helsinki
Phone: +358 405 25 28 25
info@consiliummarine.fi

GERMANY

Consilium GmbH
Hamburg
Phone: +49 40 822 22 95-0
consilium@consilium-hamburg.de

GREECE

Consilium Marine Hellas
Piraeus
Phone: +30 210 428 7097/8
info@consiliumhellas.gr

INDIA

Consilium India Pvt. Ltd.
Mumbai
Phone: +91 2267935150-53

India cont

Vishakhapatnam:
Phone: +91 891 301 03 20
consilium.vizag@consilium.ae

Cochin
Phone: +91 484 238 4298

ITALY

Consilium Italy Srl.
Florence
Phone: +39 0571 68121
cmi@consilium.it

Genova
Phone: +39 010 553 3900

Naples
Phone: +39 081 542 3122

JAPAN

Consilium Nittan Marine Ltd
Tokyo
Phone: +81 3 5333 7060
cnm@consilium-nittan.com

NETHERLANDS

Consilium BV
Rotterdam
Phone: +31 182 382 422
info_nl@consilium.co.uk

NORWAY

Consilium Scandinavia AS
Oslo
Phone: +47 22 30 90 30
mail@consilium-norway.no

SPAIN

Consilium RMI Spain S.A.
Bilbao
Phone: +34 94 404 2121
attcliente@consiliummispain.com

Barcelona
Phone: +34 94 404 2121

SINGAPORE

Consilium Marine
Singapore Pte. Ltd.
Singapore
Phone: +65 6570 8998
mail@consilium.sg

SOUTH KOREA

Consilium Marine Korea Ltd.
Pusan
Phone: +82 51 740 5869/71-4

CINK

(Consilium Iljin Navigation Korea)
Phone: +82 51 755-6193/4
+82 51 755 9191

QATAR

Consilium Qatar LLC
Doha
Phone: +974 442 4849

UAE

Consilium Middle East (FZC)
Sharjah
Phone: +971 6 55 70 740

Abu Dhabi

Consilium Middle East
General Contracting LLC
Consilium Middle East Eqmt.
& Spare Parts LLC
Phone: +971 2 622 93 46

SAUDI ARABIA

Dammam
Consilium Saudi Arabia
Phone: +966 3 8179214
info.ksa@consilium.ae

UK

Consilium Marine UK
Folkestone
Phone: +44 1268 41 77 45
info_uk@consilium.co.uk

Glasgow
Phone: +44 1268 41 77 45

USA

Consilium Marine US
Fort Lauderdale
Phone: +1 954 791 7550

Long Beach
Phone: +1 954 791 7550

Houston
Phone: +1 954 791 7550

VIETNAM

Consilium Vietnam JSC
Hanoi
Phone: +84 4 37 93 14 31

Ho Chi Minh City
Phone: +84 8 410 13 38



www.consilium.se