Imtech SeaGuide ECDIS

The Imtech SeaGuide Electronic Chart Display Information System has been designed according to the latest ECDIS regulations and is based on the well known Hagenuk ECDIS2000.

The Graphical User Interface of SeaGuide ECDIS has an improved system architecture and ergonomic menu structure, which is simple and intuitive to operate.

SeaGuide ECDIS includes Route Monitoring, Route Planning and Check Route functionalities as well as the real-time display of the ships’ position, which are safety advantages that cannot be realised with paper charts.

The intuitive and easy to use ‘Dual Fuel’ Chart Handler reads official encrypted (S-63) ENC’s (vector charts) as well as raster-chart data from British Admiralty (ARCS), offering a high degree of freedom for our customers with regard to the procurement of chart material.

With Imtech SeaGuide we achieved to combine our long time experience with a robust system architecture and state of the art marine certified components with solid state technology.

The basic System consists of an embedded Mini PC processing unit with display and input devices and a data collection unit for the navigation sensor data, the SeaGuide Data Matrix.

SeaGuide ECDIS offers a two-way redundant data connection between the data matrix and the processing unit both via an Ethernet navigation network and direct serial line.

The Imtech SeaGuide Data Matrix offers highest flexibility in the connection of ships’ sensors, which makes the Imtech SeaGuide ECDIS very easy to install in different type of bridge systems.

The sensor interface is designed for easy configuration and installation for new-building and retrofit projects, using an intelligent system configuration tool.

The navigation network distributes the sensor data and is used to synchronize ECDIS functions such as Chart Handling, Route Planning on and user inputs on all ECDIS stations.

Sensor Data Management is integrated in the SeaGuide ECDIS and support sensor data merging of navigation sensors.

Sensor Data Management also includes automatic switching/degradation management in case of failure of a sensor or communication.

By merging the available information, one set of navigation data is distributed to all ECDIS Stations in the system.

The SeaGuide ECDIS supports different types of TFT-displays from 19” standard to 27” widescreen monitors.

In addition, changing the monitors without loosing the ECDIS colour calibration is no more a vision, since Imtech SeaGuide ECDIS contains an intelligent self tuning and colour calibration function.

The optional Conning Display is a useful overview for the main navigational and engine sensor data and includes an ENC chart viewer.

The ENC Chart viewer provides with graphical feedback of the ship’s position in relation to the route and actual route parameters as well as chart information.

The optional Conning Display is built in accordance to class requirements.

The display for navigation and main engine information can be adjusted to ships specific parameters.

A graphical mimic with its alphanumerical value and sensor source information is well organized for a quick situation overview.

The ENC chart viewer offers a automatic navigation situation picture of the own ship corresponding to a route.

The optional Radar Overlay function allows a quick verification of the own ship’s position and therefore a predication for the accuracy of the EPFS.
Main features of the Imtech SeaGuide ECDIS

**Imtech SeaGuide ECDIS**
- Used in retrofit and newbuilding projects
- Heart of the Imtech Interfaced Bridge, part of the Multi Display SeaGuide
- The complete operation system as well as the ECDIS Software is held on a solid state disk.
- Imtech SeaGuide Data Matrix for redundant navigation sensor input
- Minimum Backup Solutions as well as Fully Redundant Backup Solutions available

**Hardware**
- Small system components for easy installation
- Simple and robust hardware architecture
- Industrial, rugged and fanless embedded PC with Solid State Disk
- New flexible Imtech SeaGuide Data Matrix for navigation sensor management
- Ethernet between ECDIS 1 and ECDIS 2 or further ECDIS stations in order to automatically synchronize user settings, charts and navigation sensor information
- Self tuning and automatic colour calibration to different types of monitors
- Dual use of the second ECDIS system - Back-up ECDIS and route planning

**Software**
- The operating system LINUX offers highest reliability.
- Ergonomic menu-driven operation.
- Object oriented quick functions via the right trackball button
- Bubbletext to get immediately important information from specific objects.
- Display of ship’s data (position, course and speed with the current sensor reference).
- Enhanced route planning with multiple planning construction tools. Flexible ETA calculations during planning and route steering
- Route check as a safety indication feature.
- Anti-grounding function.
- LOP position fixes to calculate the own ship’s position by help of cross bearings or doubling the angle of the bow
- Floating and Fixed EBL- and VRM presentation analogue to the presentation in the radar system (scalable chart in NM).
- Navigation Calculator
- Integration and presentation of ARPA radar targets as well as AIS targets.
- Automatic switch between orthodrome, loxodrome and radar projection.
- Precalculation of own ship’s position in prediction mode.
- Permanently DR function availability as a secondary independent position source
- Supported charts formats are encrypted S-57 (S-63), unencrypted ENC’s as well as ARCS and SENC distribution in Direct-ENC format

1000 Navtex messages can be stored in the system.
By use of the Navtex User interface, a choice of Navtex messages in refer to the frequency, categories and stations is available.

The Chart Handler offers the management of authorisations and chart permits as well as inform the user about the status of the chart fuel.

By use of the AIS User interface, the information can be sort against MMSI number, names and range. Furthermore the voyage related own ship information can be set.
The possibility of sending broadcast and addressed messages will round up the AIS control.
Main features of the Imtech SeaGuide ECDIS

The Chart Handling Display
- One operation concept for all type of electronic charts
- Permit Handling in accordance to the S64 standard
- Chart status overview
- Chart data manager

The Optional Conning Display
- Gyro course (Heading)
- Rate of turn (ROT)
- Bow Thruster Power
- Speed over ground (SOG)
- Speed through water (SPD)
- Course over ground (COG)
- Rudder angle (max. 2 rudder)
- Echosounder indication
- Propeller rpm and pitch (max. 2 propeller)
- Wind sensor data (True and relative)
- Automatic zoomed chartview with real S-57 chart information
- Wheel over point bearing, distance, ETA, waypoint name and time to go to waypoint Route name

Radar Overlay Display
- The radar overlay is designed according ECDIS requirements.
- Multilayer technology provides user defined selection of necessary nautical information.
- With a radar overlay board included in the system, ECDIS can be upgraded with the Imtech SeaGuide Radar

Optional functions
- Radar overlay function available in connection with the Imtech SeaGuide Radar
- Navtex Interface
- AIS control facilities
- Tender Location Interface
- Conning Display with real ENC chart view

Logistic
- Excellent manufacturer support
- Long time experience in modern navigation products
- STCW conform ECDIS training on our product

Log files are automatically produced and available for the user via the pasttrack information list. This are in detail:
- Primary Sensor logged every min. in a 12 hours loop
- Secondary Sensor logged every min. in a 12 hours loop
- Primary Sensor logged every 2 hours in a 3 months loop
- The protocol contains Position, Date and Time, Heading, Speed, ARPA Target Informations, AIS Target Informations, Loaded Charts at the defined Time and chart update history
- All Information can be stored on a USB-Stick
- Chart legend, Chart history and Chart log informs about the history of system use as well as state the actual chart update situation.

The included Alert management system is designed in accordance to the function parameters of IEC62288. All setups for the Alert management system are directly to manipulate within the Alert Management User interface.