Multi-Functional Display

Version: 3.00.340

ECDIS User Manual

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Printing House Conventions

Sample of notation	Usage comments
Setup.exe	Messages, commands, files, folders and other Windows OS info
<enter></enter>	Keyboard key names
Button	Buttons
Interface	Names of windows, pages, panels
Menu	Menu items
Ahead	User interface elements and the ECDIS task objects
Multi-Functional Display (v. 3.00.340). ECDIS User Manual	Names and sections of documents
Note, Warning, Caution	Note, Warning, Caution
Auxiliary text	Auxiliary text
Cross reference	Cross reference
http://www.amver.com	URL

Table 1. Printing House Conventions

List of Documents

Multi-Functional Display (v. 3.00.340). ECDIS User Manual. Multi-Functional Display (v. 3.00.340). RADAR User Manual . Multi-Functional Display (v. 3.00.340). Functional Description. Multi-Functional Display (v. 3.00.340). Additional Functions. Multi-Functional Display (v. 3.00.340). ECDIS Quick Reference. Multi-Functional Display (v. 3.00.340). RADAR Quick Reference. Multi-Functional Display (v. 3.00.340). Installation Guide Part I. Multi-Functional Display (v. 3.00.340). Installation Guide Part II. Multi-Functional Display (v. 3.00.340). Utilities. Navi-Sailor 4100 ECDIS (v. 2.00.348). Special Functions. Navi-Planner 4000 (v. 3.00.346). User Manual.

Preamble

Preamble provides general information on the work with document.

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Purpose of ECDIS Task

Annotation

The aim of this book is to provide the user with guidelines in the solution of various tasks, which may arise during the voyage, and to give the user some ideas of the operating principles and capabilities of ECDIS task. The description is divided into 11 parts:

Chapter 1.	ECDIS User Interface.
Chapter 2.	ECDIS Task Turning On/Off.
Chapter 3.	ECDIS Task Control.
Chapter 4.	Navigation Tasks.
Chapter 5.	Setting of Safety Parameters.
Chapter 6.	Using Logging Functions.
Chapter 7.	Manual Updating.
Chapter 8.	Handling of Maps.
Chapter 9.	Handling of Routes.
Chapter 10.	Handling Radar Information and Target Designation Units.

Chapter 11. Obtaining of Information in the ECDIS Task.

Definitions and Abbreviations

Definitions

Activated AIS target

Target activated for the display of additional graphically presented information.

Appropriate portfolio of up to date paper charts (APC)

A suite of paper charts of a scale to show sufficient detail of topography, depths, navigational hazards, aids to navigation, charted routes, and routeing measures to provide the mariner with information on the overall navigational environment.

CIE Colour Calibration

Colour calibration at the monitor performed to transform the CIE-specified colours for ECDIS into the colour coordinate system of the screen

Common Reference System

Means provided to assure that when navigational information from sensors and other information sources is displayed together with charted information, it is referenced to a consistent common reference point (CCRP).

Compilation Scale

The scale at which the data was compiled.

Corrupted Data

ENC data produced according to the IHO S-57 ENC product specification, but altered or modified during production, transmission, or retrieval.

Dangerous Target

Tracked radar or reported AIS target with a predicted CPA and TCPA that violates values preset by the user. The respective target is marked by a "dangerous target" symbol.

Dead-Reckoned Position (DR)

Position extrapolated from the last accepted position update, based on present course and speed, and updated on a time interval selected by the operator.

Degrade

Reduce the quantity or quality of information content.

Display Base

The chart content as listed in Annex A and which cannot be removed from the display. It is not intended to be sufficient for safe navigation.

Display Redraw Time

Interval from when the display starts to change until the new display is complete.

Display Regeneration Time

Interval from operator action until the consequent redraw is complete.

Display Scale

Ratio between a distance on the display and a distance on the ground, normalized and expressed as, for example, 1:10 000.

Electronic Chart Display and Information System (ECDIS)

Navigation information system which with adequate backup arrangements can be accepted as complying with the up-to-date chart required by regulation V/19 and V/27 of the 1974 SOLAS Convention, as amended, by displaying selected information from a system electronic navigational chart (SENC) with positional information from navigation sensors to assist the mariner in route planning and route monitoring, and if required display additional navigation related information.

Electronic Navigational Chart (ENC)

The database, standardized as to content, structure and format, issued for use with ECDIS by or on the authority of a Government authorized Hydrographic Office or other relevant government institution, and conform to IHO standards.

ENC Cell

The basic unit of ENC data covering a defined geographical area bounded by two meridians and two parallels

ENC Data

Data conforming Electronic Navigational Chart (ENC)

ENC Test Data Set

Standardized data set and testing instructions available as IHO S-64.

Estimated position (EP)

Position extrapolated from the last accepted position update, based on present course and speed (STW), including effects of wind, tide, current, and updated on a time interval selected by the operator.

Fix

Position of own ship determined, without reference to any former position, by the common intersection of two or more LOPs.

Important Indication

Indication that is displayed visually and continuously, which needs special attention and cannot be removed from the display other than by eliminating the cause of the indication.

Indication

Display of regular information and conditions, not part of alert management.

Line of Position (LOP)

Plotted line on which own ship is located determined by observation or measurement of the range or bearing to an aid to navigation or other charted element.

Lost Target

Tracked radar or reported AIS target for which the system is no longer receiving valid position data.

Non-ENC Data

Data not conforming to ENC data.

Official

By, or on authority of a government, authorized Hydrographic Office or other relevant government institution.

Overscale

Display of the chart information at a display scale larger than the compilation scale.

Readily Available Indication

Indication that can be, at any moment, immediately displayed by a single operator action.

Presentation Library

Implementation of the display specifications in IHO S-52, Annex A, by de-coding and symbolizing the SENC.

Raster Chart Display System (RCDS)

A navigation information system displaying RNCs with positional information from navigation sensors to assist the mariner in route planning and route monitoring and, if required, display additional navigation-related information.3.1.31

Raster Navigational Chart (RNC)

A facsimile of a paper chart originated by, or distributed on the authority of, a government-authorized Hydrographic Office.

RTS

Reported Target Simulator as defined in Annex F of IEC.

Route

Series of waypoints connected by one or more legs including both straight and curved segments.

RNC Data

Data Conforming to Raster Chart Display System (RCDS).

RNC Test Data Set

Standardized data set and testing instructions available as IHO S-64.

Single Operator Action

Procedure achieved by no more than one hard-key or soft-key action, excluding any necessary cursor movements, or voice actuation using programmed codes.

Safety Contour

Borderline between safe and unsafe water based on depth defined by the mariner.

Safety Depth

Depth defined by the mariner, e.g. the ships draught plus under keel clearance, to be used by ECDIS to emphasise sounding on the display equal to or less than this value.

Selected Target

Target selected manually or automatically for the display of detailed alphanumeric data, information and text in a separate user dialogue area. The target is represented by a "selected target" symbol.

Sleeping AIS Target

AIS target indicating the presence of a vessel equipped with AIS in a certain location. The target is represented by a "sleeping target" symbol indicating the vessel's orientation. No additional information is presented until the AIS target is activated.

Standard Display

The display mode intended to be used as a minimum during route planning and route monitoring.

System Electronic Navigational Chart (SENC)

A database in the manufacturer's internal ECDIS format, resulting from the lossless transformation of the entire ENC contents and updates.

System Raster Navigational Chart (SRNC)

A database resulting from the transformation of the RNC by the RCDS to include updates to the RNC by appropriate means.

Abbreviations

- AIS Automatic Identification System;
- ARCS Admiralty Raster Chart System;
- ARPA Automatic Radar Plotting Aid;
- BAM Bridge Alert Management;
- BNWAS Bridge Navigational Watch Alarm System;
- BWOL Bearing to Wheel Over Line;
- BWW Bearing Waypoint to Waypoint;
- CCRP Consistent Common Reference Point;
- CIE International Commission on Illumination;
- CMG Course Made Good;
- COG Course Over Ground;
- CPA Closest Point of Approach;
- DGPS Differential Global Positioning System;

- DR Dead Reckoning;
- DWOL Distance to Wheel Over Line;
- EBL Electronic bearing line;
- ECDIS Electronic Chart Display and Information System;
- EML Expected Motion Line;
- ENC Electronic Navigational Chart;
- EP Estimated Position;
- EPFS Electronic Position-Fixing System;
- ER Echo Reference;
- ERBL Electronic Range and Bearing Line;
- ETA Estimated Time of Arrival;
- ETD Estimated Time of Departure;
- GC Great Circle;
- GMT Greenwich Mean Time;
- GPS Global Positioning System;
- GZ Guard Zone;
- HCRF Hydrographic Chart Raster Format
- HDG Heading;
- HO Hydrographic Office;
- IEC International Electrotechnical Commission;
- IHO International Hydrographic Organization;
- IMO International Maritime Organisation;
- INFO Information;
- m metre;
- min minute;
- MMSI Maritime Mobile Service Identities;
- MSI Maritime Safety Information;
- MOB Man Overboard;
- NAVTEX Navigational Telex;
- NM Nautical Mile;
- NMEA National Marine Electronics Association;
- NS Navi-Sailor;
- PS Positioning System;
- PTA Planning Time of Arrival;
- RCDS Raster Chart Display System;

- RIB Radar Integrated Board;
- RL Rhumb Line;
- RMS Route Mean Square (error);
- RNC Raster Navigational Chart;
- ROT Rate Of Turn;
- RPM Revolution Per Minute;
- SENC System Electronic Navigational Chart;
- SOLAS Safety of Life at Sea;
- SAR Search And Rescue;
- sec second;
- SMG Speed Made Good;
- SOG Speed Over Ground;
- STG Speed To Go;
- TCPA Time to Closest Point of Approach;
- TTG Time To Go;
- UTC Universal Time Coordinated;
- VDR Voyage Data Recorder;
- VRM Variable Range Marker;
- WGS-84 World Geodetic Datum;
- WOL Wheel Over Line;
- WPT Way Point;
- WS Work Station;
- XTD Cross Track Distance.

Purpose of ECDIS Task

The main purpose of the ECDIS task is to:

- display on the electronic charts;
- display the ship position on the electronic chart;
- monitoring of approach to the dangers to navigation plotted on electronic vector charts or on map created by navigator;
- route planning and drawing up the schedule of proceeding along this route;
- solution of various kinds of navigational tasks (Navtex database, Tide & Currents database, SAR routes).

The ECDIS task is compliant with the IHO Standards, which are specified on the Transas website http://www.transas.com/products/navigation/ecdis/ECDIS#compliance.

Chapter 1. ECDIS User Interface

This chapter describes principles of building the ECDIS user Interface

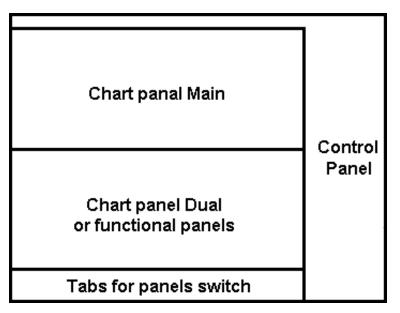
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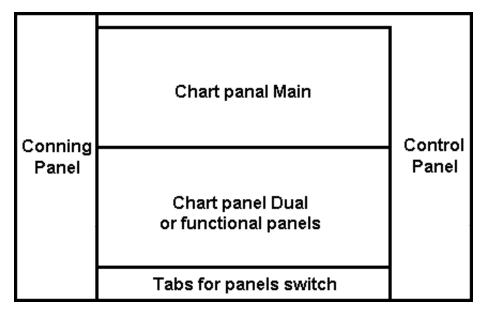
ECDIS User Interface Structure

In the ECDIS task, to enable the display of electronic charts and associated information, **Main** and **Dual** panels are used. The essential and other data and control tools are arranged on the Control panel. The rest of information and functionality for the control of the ECDIS environment is contained on functional panels. The panel layout can be presented diagrammatically as shown below:

• For monitors 19, 23 inches:



• For monitors 24, 26 and 27 inches:

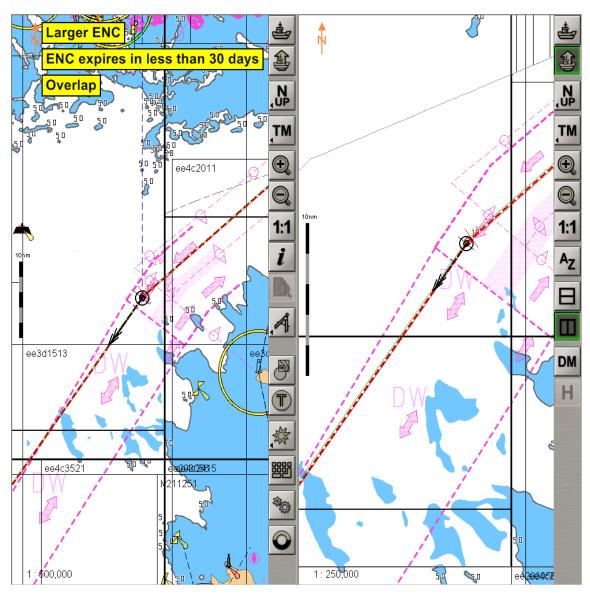


For Conning Panel windows description, see document *Multi-Functional Display (v. 3.00.340)*. Additional *Functions, Chapter 3*.

Main and Dual Chart Panels

The **Main** panel is always displayed on the ECDIS task screen. The **Dual** panel or only one functional panel can be displayed simultaneously with the **Main** panel.

You can change vertical dimensions of functional panels and of **Dual** chart panel by using the cursor. As the cursor is positioned on the bottom boundary of the **Main** panel, it will change its form, then get hold of the boundary and set it at the desired height. If the two Chart panels are arranged vertically, this functionality is retained for altering horizontal dimensions (this arrangement is possible for Chart panels only).



The Main panel is the principal Chart panel.

The **Dual** panel is an additional Chart panel where the ship symbol is permanently displayed. The panel is not displayed if any of functional panels are turned on (activated), and vice versa: when it is displayed, no functional panels can be seen.

The panels consists of two areas:

- Chart Area;
- Toolbar.

Chart Areas

The Chart Area of the each panels (Main and Dual) is designed for the following purposes:

- to display electronic charts showing classes of chart information (determined on **Charts** panel);
- to display the ownship symbol with motion vectors;
- to display the route loaded for proceeding by in the Navigation Mode;
- to display the AIS objects (only Main panel).

Displayed in the top left corner of the Chart Area is the panel orientation symbol 1 : an arrow showing direction to the north.

The bottom right corner of the electronic chart displays an angle shaped indicator _____

The line is a graphic presentation of the maximum possible error of plotting objects on the chart. When a chart is displayed on the scale of the original, the linear size of the error is taken to be 2 mm. As the scale is growing, the linear dimensions of the indicator increase showing to which extent the chart information can be relied on.

Toolbars

The toolbar of Main chart panel contains the following control buttons:

- to return to the display of the ownship symbol;
- 🛃 to set the ship symbol in the position of the cursor which appears when this mode is turned on;
- N H UP

UP

- to select chart display orientation (North Up/Head Up/Course Up);

- to select ship symbol motion mode (True/Relative);
- 3 to increase the chart display scale by the fixed scale value;
- 3 to decrease the chart display scale by the fixed scale value;
- 1:1

RM

- to display the chart on the original scale;
- to call Info cursor for obtaining information;
- to display HCRF format chart viewing panel;

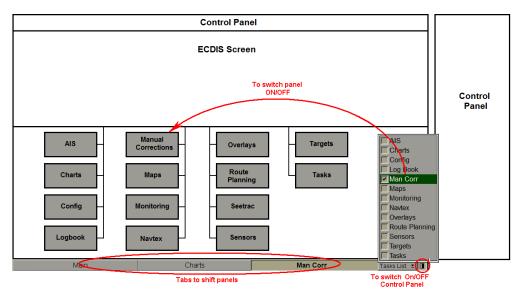


User Interface Components

Panels

There is direct access to panels from the task. For ECDIS task, this is primarily the Control panel, which shows operational information and contains the most important task controls.

In ECDIS task, apart from the Control panel there are 14 functional panels, each designed for its special purpose within the ECDIS task:



Panels (except the Control panel) are switched with tabs in the bottom part of the screen.

For the operator's convenience, the system implements a function for saving the current condition of **Main** chart panel when the functional panels are switched. This function's operation can be shown in a table:

Panel name	To open panel	To switch the open panel with the tab
Main	А	S
Dual	S	Н
AIS	А	н
Charts	Р	К
Config	Р	Р
Log Book	Р	К
Man Corr	L	К
Maps	L	К
Monitoring	Р	Р

Panel name	To open panel	To switch the open panel with the tab
Navtex	L	К
Overlays	Р	К
Route Planning	L*	К
Seetrac	L	Н
Sensors	L	К
Targets	А	Н
Tasks	L	К

where:

- A the vessel is displayed on the ECDIStask screen, Ahead, Autoload and Autoscale functions performed automatically; orientation setting is North, motion setting is True;
- H the display (chart boundaries) of the Chart panel is saved, along with the last orientation
 (North/Head/Course) and motion (True/Relative) settings which were made on this panel before;
- K the display (chart boundaries) of the Chart panel which was set on this panel before it is saved;
 orientation setting is North, motion setting is True;
- L the display (chart boundaries) of the Chart panel which was set in the previous active functional panel is saved; orientation setting is North, motion setting is True;
- L* for **Route Planning** panels only: if a route has been selected, the focusing on the edited route is made automatically;
- S the ship is displayed on the screen, Ahead function performed automatically; the last Chart panel orientation (North/Head/Course) and motion (True/Relative) settings are retained;
- P the display (chart boundaries) of the Chart panel is saved, along with the last orientation (North/Head/Course) and motion (True/Relative) settings which were made on the previous active functional panel.

Pages

If functionality, which the panel is intended for, is rather extensive, for the convenience sake it is divided into pages. The purpose of pages corresponds to the individual tasks within the panel functionality. In the ECDIS task panels are divided into pages. They are switched by using tabs in the top part of the panel, which they belong to. Shown below is **Sensors** panel with pages intended for selection of essential information sensors: **Ship Position**, **Heading**, **Speed** and **Echosounder**:

GPS 1	GPS 2	DR	EP	ER
PRIM SEC	PRIM SEC	PRIM SEC	PRIM SEC	PRIM SEC
58° 58.239 N 21° 20.770 E	58° 58.239 N 021° 20.787 E			58° 58.271 N 021° 20.824 E
fset:	Offset:			Offset:
00°00.000' N 00°00.000' E	00°00.000' N 000°00.000' E		 Last drift 	00°00.000' N 000°00.000' E
	Cancel Offset			Cancel Offset
Set Offset By 👻	Set Offset By 👻		○ Total current	Set Offset By
Show Pos mark	Show Pos mark		 Manual input 	Select targets
			° kn	Reset targets

Control Panel Windows

The Control panel consists of windows. Each window serves for the display of some operational information, or contains the most frequently used task controls. Graphically, windows are divided with special lines. The sample below shows some Control panel windows of the main tasks.



ECDIS Control panel has the **Multipanel** window, which allows setting different displays serving for accomplishment of operational tasks. Displays are selected from the drop-down list opened by pressing the button with the name of the currently set panel.

AIS Messages
AIS Messages
Checklist
Environment Data
Far Sounder
Manually Fix Position
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

List Box Menu

The list box menus serve for selecting the necessary name or value from the list. The list box menus have a form with a button with an arrow. A press on the button opens up a menu which the selection is made from. The selected name or value is shown on the button after the menu is closed:

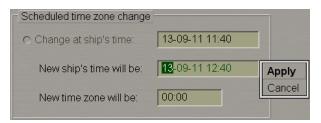


Text Boxes

Text boxes are used for entering values or names:

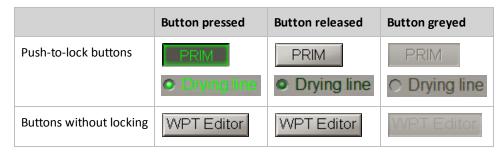
Byname	Alarm		
Aalesund	CPA	0.00	NM
	TCPA	0.0	min

Input of names is made from ES6 keyboard. Values can be entered from the keyboard or by using the trackball. The trackball motion in the vertical direction produces fast change of a value in the text box, whereas the horizontal motion results in much slower change. In some text boxes, all you have to do after the input of the necessary value is press the left trackball button for the program to accept the entered value. In other text boxes, to exit from the input mode it will be necessary to press the right trackball button and confirm the entered value:



Buttons

Buttons are designed for activating some functions. If a button is greyed, the operation of the corresponding function is not available in the mode in question. Buttons may be of the following types:



If to be turned on, certain functionality needs input of a parameter value, which will be monitored, the button will be greyed until this parameter value is entered.

Parameter value is not entered	Parameter value is entered, the function is not switched on	Function is switched on
○ Sounder depth 0 m	Sounder depth 10 m	Sounder depth 10 m

Radio Buttons

These buttons serve for selecting one function only from the offered set:

Ship Condition F-di	
• Loaded	556
Medium	370
In Ballast	185

Indicators

Indicators show a level for the value set by using the buttons placed next to them:

Bright:	
Gain:	
Rain:	
Sea:	

Progress Bars

The progress bars show the degree to which the program has completed the operation run by the user:



ECDIS Task Control Panel

The ECDIS task Control panel consists of a number of windows. Windows are displayed near the Chart panel. In addition, some the displayed windows can be moved (by dragging them with the cursor or by double clicking the left trackball button in the window area) onto the Chart panel. To return the window to its place, press subutton. If the Control panel does not contain any windows, the area is filled with chart information. Control panel contains the **Display Panel** window, which is intended for the display of various data types. The window consists of nineteen displays:

- AIS Messages;
- Checklist;
- Environment Data;
- Ice charts;
- MOB (Man Over Board);
- Manually Fix Position;
- Monitoring and Advisor;
- Navigator;
- Parallel Index Lines;
- Precision Instruments;
- Radar Settings;
- Route Data;
- Sensor Data/Status;
- Special Purpose Objects;
- Sun / Moon;
- System Information;
- TRIAL/TGT Simulator;
- Targets;
- User Configurations (displayed only in the Multipanel window).

The displays are selected from the list opened by pressing the button with the name of one of displays in the top part of the window (except **MOB** and the **User Configurations** displays).

Button to the right of the **Display Panel** window window on the ECDIS task Chart panel. The system enables simultaneous independent operation with information displays selected in both windows.

COG/SOG/HDG/STW Window



COG/SOG/HDG/STW window is designed for the display of ship motion parameters. The panel displays the following parameters:

- HDG course from gyrocompass;
- **STW** ship speed through the water.

Note: Only longitudinal part if DLOG selected.

- COG ship course over the ground;
- **SOG** ship speed over the ground.

Note: Calculated part (longitudinal and transversal) if DLOG selected.

The data source is specified to the right of the own ship motion parameter name:

- GYRO1 gyrocompass with a digital input, its number specified;
- GPS1 GPS (DGPS), its number specified;
- ER echo reference mode;
- DR dead reckoning mode;
- MAN manual input;
- LOG1 log (Speed Through Water) with a digital output, its number specified;
- **DLOG1** Doppler log, its number specified;
- NONE no source available.



As a free cursor is positioned on the source name, the source alias entered in the System Configuration utility is displayed on the pop-up prompt window.



If there is an offset to the gyro, the window displays corrected coordinates and a special symbol: the yellow triangle. As a free cursor is positioned on this triangle, the correction value is displayed on the pop-up prompt window.

For the data display principles, see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 2*, section *Navigational Sensors*, paragraph *Display of Navigational (Essential) Information*.

Alerts Window



The **Alerts** window is intended for displaying the alarms, warning and cautions. The window contains the following units:

- to open a list of generated alarms;
 - to open a list of generated warnings;
- to open a list of generated cautions.

Below the example for cautions is given:



For more detailed description of the alerts display, see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 4*, section *Display of Alerts*.

Application Window

ECDIS Radar Conning BAM

The Applications window is intended for loading/switching MFD applications:

- ECDIS to turn on/switch to the ECDIS task;
- Radar to turn on/switch to the RADAR task;
- Conning to turn on/switch to the Conning task;
- BAM to turn on/switch to the BAM Viewer.

Position Dropped Window

Position Dropped

TRANSAS

The window contains the following controls:

• **Position Dropped** – button with the message meaning that the ship symbol is not displayed on the chart. With a press on the button, the display of the ship symbols is restored. After the restoration of ship symbol display (also with the use of Ahead function), Transas logo appears in the place of a message.

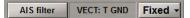
Sensors Window



The **Sensors** window is intended for the display of information from different sources. The window contains the following controls:

- X-1 to select a scanner which the radar picture is supplied by;
- Overlay to turn on display of radar overlay information on electronic chart in ECDIS;
- AIS to turn on display of AIS targets;
- ARPA to turn on display of information on targets processed by the ARPA and to select ARPA targets sources.

Vectors Window



Vectors window is designed for the display the following parameters:

AIS filter - to promptly open the AIS page of the Targets display on the Control panel. If the sleeping AIS targets filtering is enabled, or the display of some AIS target type it turned off (the filter is on this page), the button name is shown in yellow (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Important Indications*);

AIS filter VECT: T GND Fixed -

- VECT: T GND indication showing the AIS targets vector mode and stabilization mode (see also document Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4, section Indications, paragraph Display of Important Indications);
- Vectors to call a menu for setting the lengths of the own ship and target motion vectors; Fixed option allows a constant vector length to be set (in proportion to the screen size), the rest by the set time value (in minutes, 1–24 min).

Network Window

* (W01) MASTER *

The **Network** window is intended for display the station name and status in the network and, in the case of MASTER status, also the transfer of rights to other stations in the network. The window contains the following control:

• (W01) MASTER – to display the station name and status in the network.

Indications Window

No ENC available

Indications window is designed for the display the indications.

As a new indication appears, the drop-down list button displays the sign. Press the button for familiarizing yourself with all the indications.



For more detailed description of the indications display, see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Indications*.

Time Window



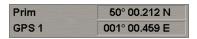
The **Time** window is intended for the display of the current time. There may be two types of time values in the window: UTC and ship's time. To switch between them, press the button with a picture of the clock face (ship time if the button is pressed, UTC if it is released):



The window contains the following elements:

- UTC/Ship's information on which time is currently displayed;
- 00:00 W/E time zone or the difference between the ship time and UTC (not displayed if UTC is selected); the format is hh:mm;
- 01-01-01 display of the current date according to the selected time type; the format is dd-mm-yy;
- 00:00:00 display of the current time; the format is hh:mm:ss.

Primary Window



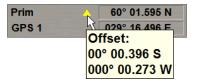
The **Primary** window is intended for the display of the primary positioning system and coordinates obtained from it. For the principles of displaying primary positioning data, see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 2,* section *Navigational Sensors,* paragraph *Display of Navigational (Essential) Information.*



The position source is specified in the left bottom part of the window. As a free cursor is positioned on the position source name, the source alias entered in the System Configuration utility is displayed on the pop-up prompt window.

Prim	50° 00.212 N
DGPS 1	001° 00.459 E

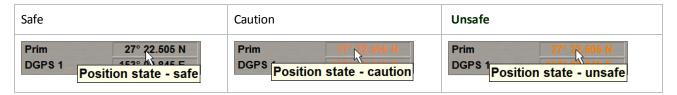
In case of GPS work in differential mode, the prefix "D" is added before its name.



If there is an offset to the ship position coordinates, the window displays corrected coordinates and a special symbol: the yellow triangle. As a free cursor is positioned on this triangle, the correction value is displayed on the pop-up prompt window.

If RMC (IEC 61162 ed.4) message is available, MFD process it and display status of RAIM in the **Primary** window. The color of value of coordinates shows the quality of position state:

- Black safe;
- Orange caution;
- Orange unsafe (this event is recorder to the Log Book).



Secondary Window

Sec:GPS 2 167.5° - 9 m

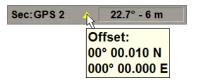
The **Secondary** window is intended for the display of the secondary positioning system, and of the bearing and range to the position obtained for the Primary positioning system. For the principles of displaying secondary positioning system data, see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description*, *Chapter 2*, section *Navigational Sensors*, paragraph *Display of Navigational (Essential) Information*.



The position source is specified in the left part of the window. As a free cursor is positioned on the position source name, the source alias entered in the System Configuration utility is displayed on the pop-up prompt window.

Sec:DGPS 2 167.5° - 9 m

In case of GPS work in differential mode, the prefix "D" is added before its name.



If there is an offset to the ship position coordinates, the window displays corrected coordinates and a special symbol: the yellow triangle. As a free cursor is positioned on this triangle, the correction value is displayed on the pop-up prompt window.

Charts Area Window

a259	- Autoload OFF
Last upd.:	23-02-2012
Updated to:	WK08-12

The Charts Area window is designed for the adjustment of the chart display on the chart panel:

- Chart number to call a menu with a list of charts under the ship position (if the ship symbol is displayed on the chart) or the list of all the charts available in the ship folio; shown on the button is the current chart number;
- Autoload to turn on the function for the automatic loading of charts, there is an indicator to the right of the button:
 - ON the function is turned on (Autoload button is greyed);
 - **OFF** the function is turned off;
 - **FIX** to fix the current chart.
- Last upd. date of the most recent chart updating in dd-mm-yyyy format;
- Updated to the media, which was used for the latest updating of TX-97 or SENC chart collection.

Display Panel Window

AIS Messages
AIS Messages
Checklist
Environment Data
Far Sounder
Manually Fix Position
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

The Display Panel window is intended for the display of various data types.

The window consists of displays which are selected from the list opened by pressing the button with the name of one of the displays in the top part of the window.

Button Display Panel window is intended for displaying additional the Multipanel window on the ECDIS task Chart panel. The system enables simultaneous independent operation with information displays selected in both windows.

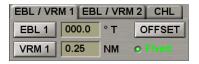
Operational Window

STD DISP Event

The window contains the following functional buttons:

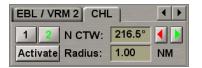
- STD DISP to turn on the display of objects included in the standard display;
- Event to make a manual entry of data in the electronic ship logbook for the current moment, and to place a special mark on the ownship track.

EBL/VRM/CHL Window



The **EBL-VRM1** and **EBL-VRM1** pages of the window is intended for turning on and adjusting two independent electronic measurement tools. The window contains the following units:

- EBL 1(2) to turn on EBL 1(2) true or relative;
- VRM 1(2) to turn on VRM 1(2);
- OFF SET to turn on the shift of EBL/VRM 1(2) reference point;
- Fixed to fix EBL/VRM 1(2) reference point relative to the ground (operates in the OFFSET mode only).



The CHLpage of the window duplicates functionality from the CHL page of the Precision Instruments display of Display Panel window (see document *Multi-Functional Display (v. 3.00.340). Additional Functions, Chapter 1,* section *Precision Instruments,* paragraph *Using the Curved Heading Line*). All the buttons and fields are synchronised. The page contains the following parameters:

- 1 to turn on the display of the 1 Curved Heading Line on the ECDIS task screen;
- 2 to turn on the display of the 2 Curved Heading Line on the ECDIS task screen;
- Active 1/2 to switch between the Carry and Drop modes for 1/2 Curved Heading Lines;
- N CTW ship course after the turn and buttons for its setting;
- Radius ship turn radius.

Information Window

Depth in Metres

letres WGS-84

This window includes:

- Depth in Metres information on the depth measurement units used in the ECDIS task;
- WGS-84 to warn that the ECDIS uses charts based on WGS-84 datum.

Abbreviations Used in the User Interface

ECDIS task use the following abbreviations:

Abbreviation	Full Name	Abbreviation	Full Name
AIS	Automatic Identification System	HDG	Heading
ARPA	Automatic Radar Plotting Aid	LOG (DLOG)	Log (Doppler Log)
BRG	Bearing	LOP	Line Of Position
BWOL	Bearing to Wheel over Line	N Up	North Up
BWW	Bearing waypoint to waypoin	PS	Positioning System
С Up	Course Up	РТА	Planning Time of Arrival
COG	Course Over Ground	RAD	Radius
СРА	Closest Point of Approach	R	Range LOP's
CRS	Route leg course	RM	Relative Motion
DIST	Distance	RNG	Range
DR	Dead Reckoning	ROT	Rate Of Turn
DWOL	Distance to Wheel over Line	SOG	Speed Over Ground
ENC	Electronic Navigational Chart	Stand	Standard
ETA	Estimated Time of Arrival	STG	Speed To Go
EBL	Electronic Bearing Line	STW	Speed Through the Water
EP	Estimated Position	ТСРА	Time to Closest Point of Approach
ER	Echo Reference	ТМ	True Motion
ECHO	Echosounder	TTG	Time To Go

Abbreviation	Full Name	Abbreviation	Full Name
glo (Dglo)	Global Orbiting Navigation Satellite System (Differential Global Orbiting Navigation Satellite System)	V	Visual Bearing LOP's
GLONASS (DGLONASS)	Global Orbiting Navigation Satellite System (Differential Global Orbiting Navigation Satellite System)	VR	Visual/Range LOP's
GPS (DGPS)	Global Positioning System (Differential Global Positioning System)	VRM	Variable Range Marker
GYRO	Gyrocompass	WPT	Way Point
GZ	Guard Zone	XTD	Cross Track Distance
Н Up	Head Up		

Use of Uniform Measurement Units

In the ECDIS task, measurement units are set by default and can be changed by the operator on **Units** page of **Config** panel (see *Chapter 3*, section *Setting of Measurement Units*). The following units and their shortened names are used:

Physical Value	Measurement Unit	Abbreviation
Ship and target speed	Knot	kn
	Kilometre per hour	km/h
Distances	Nautical mile	NM
	Kilometre	km
	Statute mile	stm
	Hectometre	hm
Precision Distances	Metre	m
	Feet	ft
	Yard	yrd
Depth/Height	Metre	m
	Feet	ft
	Fathom	fm

Physical Value	Measurement Unit	Abbreviation
Draught	Metre	m
	Feet	ft
Wind speed	Metre per second	m/s
	Knot	kn
	Kilometre per hour	km/h
Temperature	Degree Celsius	°C
	Degree Fahrenheit	°F

The ECDIS task uses geographic coordinates calculated on the basis of WGS 84 datum only.

Keyboard

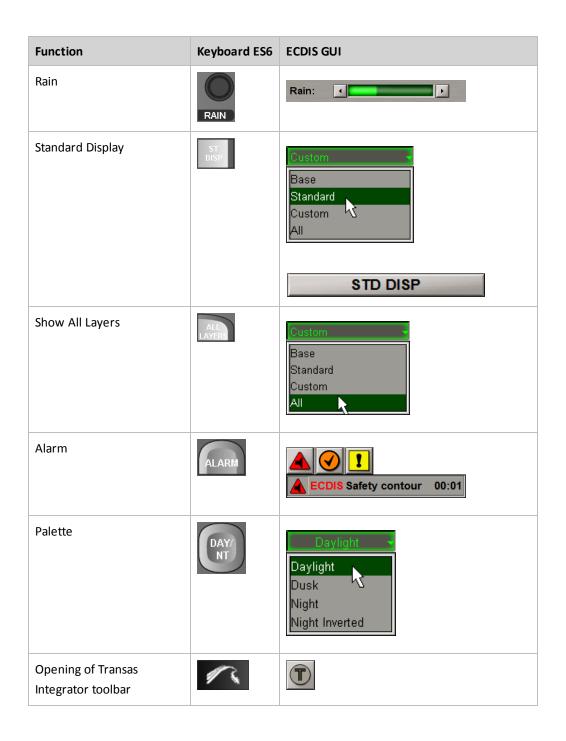
The ECDIS task ES6 keyboard is intended for the information input and task control.

The ECDIS task ES6 keyboard is presented below:



Function	Keyboard ES6	ECDIS GUI
Ownship motion modes	TM/RM	
Zoom In	ZOOM	Ð
Zoom Out	ZOOM	Q
Ahead	AHEAD	
Event	EVENT	Event
Overlay	OVERLAY	Overlay
Targets	TGT	ARPA -
		AIS
МОВ	мов	
Ownship presentation modes	N/H/C UP	
EBL	EBL DNOFF	EBL / VRM 1 EBL / VRM 2 CHL EBL 1 000.0 ° T OFFSET VRM 1 0.25 NM • Fixed
VRM	VRM DNOFF	EBL / VRM 1 EBL / VRM 2 CHL EBL 1 000.0 ° T OFFSET VRM 1 0.25 NM • Fixed
Gain	GAIN	Gain:
Sea	SEA	Sea:

Provided below is a table which specifies the ECDIS tasks and ES6 keyboard corresponding controls.



Virtual Keyboard

Where a trackball only is available in the MFD configuration, the use of a virtual keyboard is provided for.

To display the virtual keyboard, press the 🕮 button in the Chart panel toolbar.

The button is not shown in the toolbar of the Chart panel unless it was activated in the System Configuration utility during the installation (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration*, paragraph *Workstation Settings*).

0	n-S	cre	en I	Keyl	boa	rd																			X
File	Ke	ybo	ard	Sel	tting	ļs	Help																		
esc			F1	F2	F	3	F4		F5	F6	F	7	F8		F9	F10	F11	F12	psc		brk				
	1		2	3		4	5	6		7	8	9)	-	=	bk	sp	ins	hm	pup	nik	7	•	-
tał	5	q		•	е	г	T	t I	y	u	i	Т	o	р				V.	del	end	pdn	7	8	9	
lo			а	s	L	d	f	g	I	1	i	k	Γ	Т	;	•	er	nt				4	5	6	+
s			z	T	×	C	Ŀ	,	Ь	n	m	T			1							1	2	3	
ctrl		2	2													<u>-</u> E	c)		ent

The virtual keyboard is shown in the bottom part of the Control panel and can be moved within it. To do this, position the free cursor on the virtual keyboard as shown below, and press the left trackball button. Holding the left trackball button, move the virtual keyboard to the necessary place so that it does not obscure the necessary input box.

There are two ways to close the virtual keyboard:

- Press the button 🔀 in the top right corner of the virtual keyboard;
- Release the button in the Chart panel toolbar.

Chapter 2. ECDIS Task Turning On/Off

This chapter describes the procedure used for starting/exiting from the MFD.

Turning the ECDIS Task On	
Turning the ECDIS Task Off	

Turning the ECDIS Task On

Each WS is started by pressing On/Off button on its console.



The Transas Integrator window will be loaded.



Tasks can be equally well switched and started in following ways:

- 1. From the ES6 keyboard. To turn on the ECDIS task, press <ECDIS> key on ES6 keyboard.
- 2. From Control panel. All the tasks use identical task-switching user interface implemented as buttons with task names.

ECDIS	RADAR
ECDIS Radar Conning BAM	ECDIS Radar Conning BAM
CONNING	BAM
ECDIS Radar Conning BAM	ECDIS Radar Conning BAM

3. From the Transas Integrator. To turn on the ECDIS task from the Transas Integrator utility, press ECDIS button

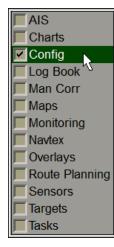
The following window will be displayed on WS upon start of ECDIS task loading.



After the program loading, the ECDIS task screen will be displayed.

Turning the ECDIS Task Off

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Palette Timer notification Chart panel cursor AutoZoom Settings Daylight Every 1 min At 16-02-2016 07:03 DM Settings 1: 5,000 Ship history Skin Off Initial Scale: 1: 4,000 Time of update: 20 s Metallic Off Display reset to Mute alert sound Ship Condition F-dist, m Omin Test alarm Generate alarm 300 Metalum 300	General Radar setting	s Time Zone License Info COM	I Trace Units Ship Sett	ings Route Settings		
0 min 10 % Mooring Mode F-dist, m • Loaded 400 • Medium 300	Daylight -	Every 1 min At 16-02-2016 07:03	Short Long DM Settings Initial Scale:	Maximum scale: 1:5,000 • Time of update:	Steps: 5	
Coperate alarm					F-di	ist, m
In Ballast 200			Test alarm Generate alarm		MediumIn Ballast	300 200

Use the tab in the top part of **Config** panel, which will open up, to switch to **General** page.

Press Exit button in the right-hand part of the panel: confirmation window will appear.

🔀 Navi-Sailor 4000 E	CDIS		×
Navigation mode	is about to be term	inated. Are you sure you	want to exit?
	Yes	No	

Press Yes button to confirm exit from the program.

The program will be closed.

Chapter 3. ECDIS Task Control

This chapter describes the general procedure used in the operation of the ECDIS task.

Transfer of Rights	
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Setting Control Panel Windows Display	52
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Transfer of Rights

On ECDIS task with MASTER status in the **Network** window of the Control panel, press **MASTER** button and select Change **MASTER** station line from drop-down list.



Press the Yes button in the window which will appear to confirm the transfer of rights to another WS.

🔀 Navi-Sailor 4000) ECDIS		×
Do	o you really want to ch	ange MASTER station?	
	Yes	No	

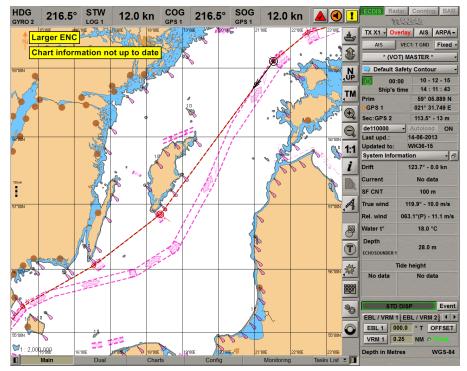
On ECDIS task with SLAVE status, press Take Over Control button in the Network window of the Control panel.

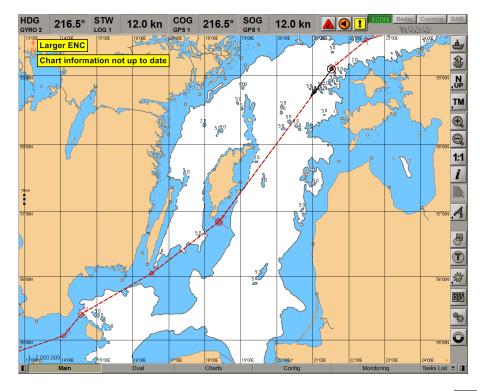
Take Over Control

As this button is pressed on one of WS's, all the rights are transferred to this station. The former station with MASTER status will have SLAVE status. If Take Over Control button was not pressed on any of the stations during the transfer of rights, all the rights remain with the station, which the transfer of rights was initiated from (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 10*, section *ECDIS Master and Slave*).

Turning On/Off Control and Conning Panels Display on the ECDIS Task Screen

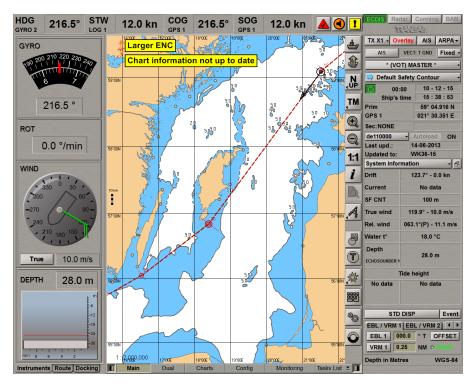
To turn off the Control panel display on the ECDIS task screen, press the button 🔳 in the right part of the tabs zone.





To re-display the Control panel, press the button 🔳 in the right part of the tabs zone of the ECDIS task screen.

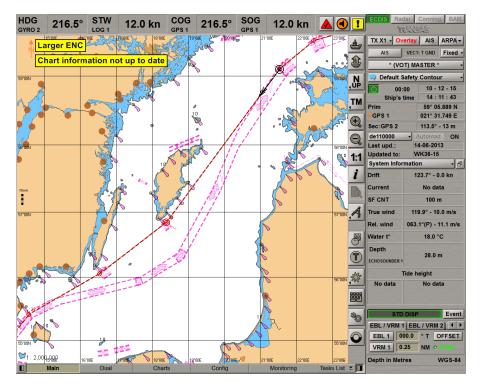
To turn on the Conning panel display on the ECDIS task screen, press the 🔟 button in the left part of the tabs zone.



The Conning Panel contains three Screen Views (see also document *Multi-Functional Display (v. 3.00.340)*. *Additional Functions, Chapter 4,*, section *Conning Task Structure*), which are formed according to their functional purpose from the viewpoint of navigation:

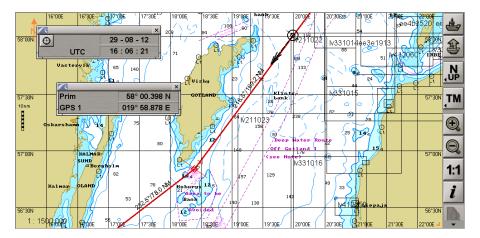
- Instruments;
- Route;
- Docking.

To turn off the Conning panel press the 🔳 button in the left part of the tabs zone of the ECDIS task screen.



Setting Control Panel Windows Display

Set the order of the panel windows display by "dragging" them as required to the Chart panel.



To return windows to the Control panel, press 🔀 button in the top right corner of each window.

Setting of Measurement Units

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Internet Log Book ^N
Man Corr
Maps
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
📕 Tasks

Use the tab in the top part of Config panel, which will open up, to switch to Units page:

General Radar settings Tim	ne Zone License Info COM Trace Units Ship Settings
Ship and Target Speed	kn 🔹
Distances	NM -
Precision Distances	m •
Depth/Heigths	m •
Draught	m •
Wind Speed	m/s -
Temperature	• 0 °

Press the button opposite to the name of physical value.

General Radar settings Tir	ne Zone License Info COM Trace Units Ship Settings
Ship and Target Speed	kn -
Distances	kn km/h
Precision Distances	m v
Depth/Heigths	m v
Draught	m -
Wind Speed	m/s 🗸
Temperature	• °C

From the drop-down list, select the necessary of measurement units.

Create a necessary configuration for all measurement units (the list of available units see in *Chapter 1*, section *Use of Uniform Measurement Units*).

ECDIS Task Screen Configuration

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
🗖 Log Book 🗥
Man Corr
Maps 🗌
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of **Config** panel, which will open up, to switch to **General** page:

General Radar settings Time Zone License Info COM Trace Units Ship Settings Route Settings				
Palette Daylight Skin Metallic	Timer notification Every 1 At 16-02-2016 07:03 Off	Chart panel cursor Short Long DM Settings Initial Scale: 1:4,000	AutoZoom Settings Maximum scale: 1 : 5,000 • Time of update: 20 s	Help EXIT Ship history Steps: 5 Interval: 2 s
	End of Watch notification	Display reset to 10 % Test alarm Generate alarm	Mute alert sound	Ship Condition F-dist, m • Loaded 400 • Medium 300 • In Ballast 200

Setting of Screen Colour Palette

Palette group is designed for selecting the screen colour palette to suit the outside illumination:

- Daylight;
- Dusk night with moon;
- Night moonless night;
- Night inverted moonless night (Control panel text inverse colour).

For S-57 format charts, three palettes are used: Daylight (Daylight), Dusk (Dusk) and Night (Night and Night inverted).

In Palette group, press the button with the name of the set screen colour palette.



In the list, which will open up, select the necessary menu line to set screen colour palette.

Attention! Use of the brightness control may inhibit visibility of information at night.

There is another way to switch the palettes. Press successively the <DAY/NT> on ES6 keyboard. Palettes will be switched in the order of their arrangement in the **Palette** group of **General** page.

Setting of Screen Graphic Presentation

Skin group is designed for selecting the screen graphic presentation:

- No skin;
- Black;
- Carbon;
- Elastic;
- Metallic;
- Plastic.

In Skin group, press the button with the name of the set screen graphic presentation.



Switching the Graphic Cursor Type

The graphics cursor is used during the operation of some of ECDIS task functions and represents an intersection of lines corresponding to the latitude and longitude of the given point, but the form of the graphics cursor can be changed as required. **Chart panel cursor** group serves for setting the following types of the graphics cursor:

- Short the cursor is shown in the form of a small cross;
- Long the cursor is shown in the form of an intersection of two lines across the entire Chart panel.

Chart pane	l cursor
• Short	Long

In Chart panel cursor group, check the appropriate checkbox to select the graphic cursor type.

Setting of Screen Boundaries Re-Draw as the Ship Symbol Approaches Them

Display Reset to group is used for setting the calculated screen redraw boundaries – percentage ratio of the screen length and distance from the ship symbol to the screen boundary (10–90 per cent).



Use the input window in **Display reset to** group to set the ratio (in per cent) between the screen length and distance from the ship symbol to the screen boundary.

As the ship symbol approaches the screen boundary so that the set ratio is fulfilled, the screen will be redrawn.

Chart Panel Settings

Setting of Main and Dual Panel Displays

To enable the display of electronic charts and associated information, Mainand Dual panels are used.

You can change vertical dimensions of **Main** and **Dual** chart panels by using the cursor. As the cursor is positioned on the bottom boundary of the **Main** panel, it will change its form, then get hold of the boundary and set it at the desired height. If the two Chart panels are arranged vertically, this functionality is retained for altering horizontal dimensions (this arrangement is possible for Chart panels only).

Use the tab in the lower part of ECDIS task screen to switch to **Dual** panel.

This panel is an additional Chart panel where the ship symbol is permanently displayed. The panel is not displayed if any of functional panels are turned on (activated), and vice versa: when it is displayed, no functional panels can be seen.

The Chart Area of Main and Dual panels is designed for the following purposes:

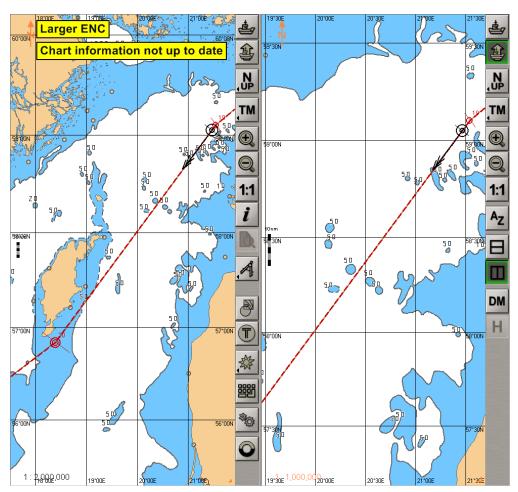
- to display electronic charts showing classes of chart information (determined on Charts panel);
- to display the ownship symbol with motion vectors;
- to display the route loaded for proceeding by in the Navigation mode;
- to display the targets and AIS objects.

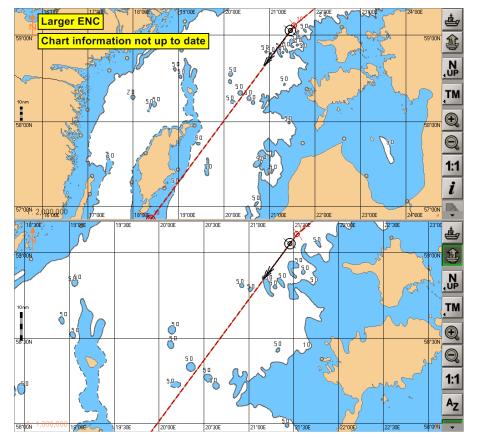
Displayed in the top left corner of the Chart area is the panel orientation symbol: 🕅 an arrow showing direction to the north.

The bottom right corner of the electronic chart displays an angle shaped indicator _____

The line is a graphic presentation of the maximum possible error of plotting objects on the chart. When a chart is displayed on the scale of the original, the linear size of the error is taken to be 2 mm. As the scale is growing, the linear dimensions of the indicator increase showing to which extent the chart information can be relied on.

By default, **Main** and **"Dual** panels are displayed vertically, that corresponds to pressed use button in **Dual** panel.



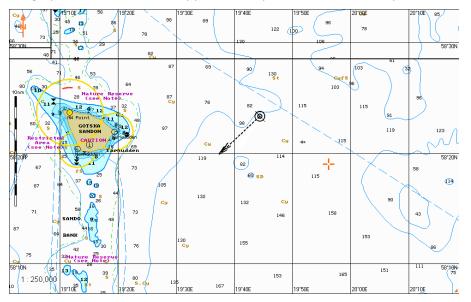


To change the order in which the Chart panels are displayed, press 📕 button in the **Dual** panel.

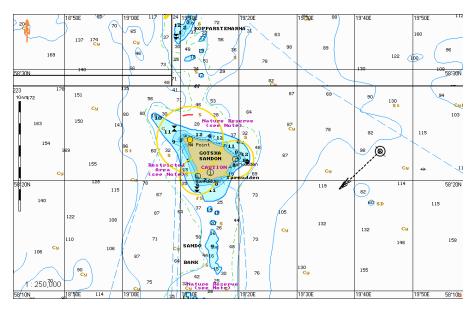
The display of panels will change.

Setting of Ship Symbol on the Chart Panel by the Cursor Position

To set the ship symbol in the relative motion mode in any point of the Chart panel, press button. Position the graphic cursor, which will appear, in the place within the Chart panel convenient for the ship symbol display.



Press the left trackball button. The Chart panel will be re-drawn so that the ship symbol is in the place indicated with the cursor.



Setting Chart Panel Orientation

Set the Chart panel orientation by pressing the button in Chart panel toolbar :

N	HUP	CUP	NUP
NUP	H	CUP	HUP

UP

UP

NUP

- for the orientation to the north

- for the orientation by the compass heading;

- for the orientation by the direction of the current leg of the monitored route.

There is another way of setting the Chart panel orientation. Press successively the <N/H/C UP> key on the ES6 keyboard. The Chart panel orientation will be switched in the specified order.

Setting Ship Symbol Motion Modes

To select the ship symbol motion mode, press the button in the toolbar of the Chart panel:



- to select relative motion mode;

- to select true motion mode.

There is another way to select the ship symbol motion mode. Press successively the <TM/RM> key on ES6 keyboard. The ship symbol motion mode will be changed to the reverse.

Setting Ship Display and Its Motion Parameters on the ECDIS Task Screen

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page:

Route Monitoring Safety Alerts Navigational Alerts				
Ship: Headline COG vector HDG vector Ship by contour Align by HDG No wind				
Route: Load route	Set schedule Unload TD Radius Course/Leg/Spd	WPT name Wheel over line Sun / Moon Heading mark Ref. point Remark		
Waypoints Next waypoint: Auto selection Auto selection From Route Table	Past track settings Track color : Plot interval: Time label: Own ship track: 0 s 30 min 0 hours Track history : Current Focus on Track • Show time-labels • Show primary track • Show secondary track/position	Alerts End of route Out of XTD Out of schedule min WPT approach off leg course 5.0 Alternative route segments Approach to segment 		

To turn on/off the display of own ship and its motion parameters, press the following buttons in the Ship group:

- Head line to display own ship compass course line;
- COG vector to display motion vector (over the ground);
- HDG vector to display vector of motion relative to the water (log speed and compass course).



Select from the drop-down lists the following settings:

- Ship by ... to display of the own ship (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3,* section *Ship Motion Data,* paragraph *Ship Symbol on the Electronic Charts*) on the Chart panel as:
 - symbol the ship symbol (regardless of the scale);
 - contour the ship contour (when the current screen scale is commensurate with the ship dimensions).
- Align by ... to switching orientation (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3,* section *Ship Motion Data,* paragraph *Own Ship Motion Vectors*) of the own ship symbol display along:
 - HDG the vector of the ship's motion as per the course detector (gyro) reading;
 - COG the ship's true motion (COG) vector.
- Wind vector to select true wind vector display mode (see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 2,* section *Other Sensors,* paragraph *Wind Interface*).

Setting of the Lengths of the Own Ship and Targets Vectors

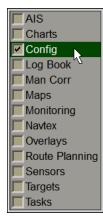
Press vectors button in the Vectors window on the Control panel (the button shows current vector length).



Select the required vector length (see document *Multi-Functional Display (v. 3.00.340). Functional Description*, *Chapter 3*, section *Own Ship Motion Data*, paragraph *Own Ship Motion Vectors*) from the list, which will open up and press the left trackball button.

Setting Time Zone

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



General Radar settings Time Zone License Info COM Trace Units Ship Settings					
Current time zone se	Current time zone settings				
UTC time:	10-12-15 16:00	Change at ship's time: 10-12-15 16:00			
Ship's time:	10-12-15 16:00	New ship's time will be: 10-12-15 16:00			
Time zone:	00:00	New time zone will be: 00:00			

Use the tab in the top part of Config panel, which will open up, to switch to Time Zone page.

Setting Current Time Zone

Current time zone settings group contains the following elements:

- UTC time line for the display of the current UTC time;
- Ship's time line for the display of the current ship time;
- Time zone line for the display of the time zone (difference between the current ship and UTC time).

0:31
2:31

Use Time zone line to enter the ship's time zone (from 14E to 12W). Press <Enter> key: the time zone value will be set, whereas the ship time value in Ship's time line will change to suit the entered time zone.

As the ship time is entered in Ship's time line, the time zone will change in Time zone line.

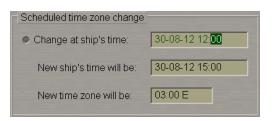
Setting Time Zone Change

Schedule time zone change group contains the checkbox for enabling (checkbox checked) the change of time zone function and a line for change settings:

- Change at ship's time line for the input and display of the ship time when the time zone is required to be changed (clock put forward/back);
- New ship's time will be line for the input and display of the new ship time;
- New time zone will be line for the input and display of the new time zone.

Scheduled time zone change	
O Change at ship's time:	30-08-12 10:27
New ship's time will be:	30-08-12 10:27
New time zone will be:	00:00

Use New time zone will be line of Schedule time zone change group to set the new time zone value. Press <Enter> key. Use Change at ship time line to set the ship time value when the time zone is expected to change.



Press <Enter> key. Check the activated Change at ship time checkbox. At the set time, the time zone will be changed to suit the value entered for it.

Use of ECDIS Task Tools

Return of Own Ship Symbol Display to the ECDIS Task Screen

There are three ways to return the own ship symbol display to the ECDIS task screen:

- 1. Press Ahead 📥 button on the Chart panel toolbar.
- 2. Press <AHEAD> key on the ES6 keyboard.
- 3. Press the STD DISP ______ button in the Operational window of the Control panel.

STD DISP Event

The own ship symbol will appear on the ECDIS task screen: the screen is re-drawn so that the ship symbol moves in the direction opposite to the current course.

Attention! In true motion mode, even if the ship symbol is available on the ECDIS task screen, the screen is redrawn relative to the ship symbol.

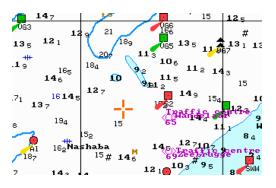
Viewing Charts

Standard View cursor view (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3,* section *ECDIS Task Cursors*, paragraph *Free Cursor*) appears on the Chart panel by pressing the right trackball button.

As the left trackball button is pressed, Review function is turned on, whilst the cursor acquires the form of a

graphics cursor

By moving the cursor with the trackball, view the necessary charts beyond the ECDIS task screen boundary. At this stage, Autoload function is required to be ON (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 1*, section *Chart Control*, paragraph *Autoload*).

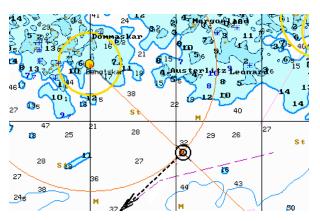


The graphic cursor coordinates are displayed in **Review** information window in the bottom part of the Control panel.

Review					
Latitude	58°47.601' N				
Longitude	021°16.823' E				
- Ship position	true relative				
	216.9 000.4				
Opp. Bearing	036.9 1 79.6 °				
Range	9.78 NM				
	18120 m				
Press Tab to edit manually					

ERBL

Standard ERBL cursor **ERBL** (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3*, section *ECDIS Task Cursors*, paragraph *Free Cursor*) appears on the Chart panel by pressing the right trackball button.



Coordinates from the ERBL (bearing and range to the selected point) are displayed in the information window in the bottom part of the panel.

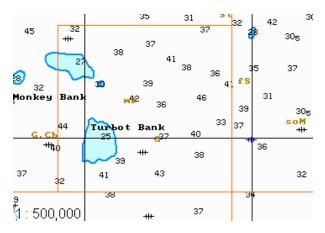
ERBL				
Latitude 1	59°02.926' N			
Longitude 1	021°15	.70	8	
Latitude 2	59°10.8	886	' N	
Longitude 2	021°03	.86	5' E	
From previous	point			
Bearing	322.6			
Opp. Bearing	142.6	•		
Range	10.05 NM			
18608 m				
Press Tab to edit manually				

Zoom

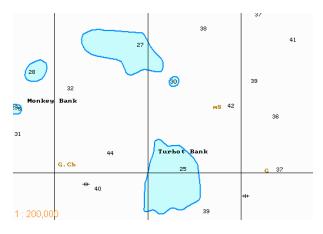
Standard Zoom cursor $\xrightarrow{\oplus}$ (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter* 3, section *ECDIS Task Cursors*, paragraph *Free Cursor*) appears on the Chart panel by pressing the right trackball button.

A press on the left trackball button turns on **Zoom** function, whilst the cursor assumes the form of graphics cursor _____.

Position the graphic cursor, which will appear, in the corner of the chart fragment required to be viewed. Press the left trackball button. Select the required chart fragment by moving the cursor with the trackball.



Press the left trackball button. The Chart panel scale will change so that the selected chart fragment is fully displayed on the Chart panel.



Using Touchscreen Functions

When NS4000 is used as an ECS there is a capability to work with touchscreen monitors. In this case, it is necessary to take into account some special features of work with such monitors. The touchscreen mode is turned on and relevant settings are made in the System Configuration utility at the installation stage (see document *Multi-Functional Display (v. 3.00.340)*. *Installation Guide Part I, Chapter 2*, section *MFD Configuration*, paragraph *Workstation Settings*, item 2).

With the touchscreen functionality turned on, to switch the modes of using the free cursor use the relevant buttons which appear in the bottom part in the Chart panel toolbar.



In any mode, you can move the cursor in the Chart panel with a single finger, and you can pinch zoom in and out by using two fingers. If OS Windows 7 is installed, it is possible to move the Chart panel by using two fingers.

When the Hand button is activated, the cursor is in no mode, and it is only possible to use the actions described above.

With the View button activated, the cursor switches to the chart viewing mode and behaves as described in the *Viewing Charts* paragraph (see above).

Review					
Latitude	02°56.435' S				
Longitude	007°37.730' W				
Ship position	true relative				
Bearing	249.0 4 111.0 °				
Opp. Bearing	069.0				
Range	490.83 NM				
Press Tab to edit manually					
Apply Cancel					

The Review information window looks like follows:

Use the **Apply** button instead of the left trackball button, and **Cancel** instead of the right trackball button. When the **ERBL** button is activated, the cursor switches to the ERBL mode and behaves as described in the *ERBL* paragraph (see above).

The ERBL information window looks like follows:

ERBL - True				
Latitude	54°37.734' N			
Longitude	013°56.993' E			
Ship position	true	relative		
Bearing	178.8	∢ 056.1 °		
Opp. Bearing	358.8	123.9 *		
Range	37.30	NM		
	69084	m		
CPA	30.98	NM		
ТСРА	52.0	min		
Press Tab to edit manually				
Apply Cancel				

Pressing successively the Apply button switches the ERBL mode to the ERBL-Relative, ERBL-True, ERBL mode (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3*, section *ECDIS Task Cursors*, paragraph *Free Cursor*).

With the **Zoom** button activated, the cursor switches to the Zoom mode and behaves as described in the **Zoom** paragraph (see above).

The **Zoom** information window looks like follows:

Zoom				
Latitude	56°54.1	96' N		
Longitude	027°29.2	201' W		
Ship position	true	relative		
Bearing	274.2	039.3) °		
Opp. Bearing	094.2	◀ 140.7 °		
Range	1394.14 NM			
Press Tab to edit manually				
Apply Cancel				

The first press on the **Apply** button set the top left corner of the zoom area in the cursor position, the second press turns on the zoom mode.

During the input of alphanumeric symbols, rules common for all the modes work in the input boxes.

Tap any digital input window. It should be noted that is this is a box for entering digital values, the built-in input keyboard will appear.

1	2	3	-10	+10
4	5	6	-1	+1
7	8	9	Previous	Next
0			Cancel	Apply

Enter the necessary value from the keyboard and then press the Apply button.

Digital values can also be entered with fingers. Upward/downward motion permits rough increase/decrease of values, whereas leftward/rightward motion increases/decreases values with high accuracy.

When name input boxes are used, an icon of a virtual keyboard built into Windows, appears. Tap any letters input box:

🔁 Ne	ew	WPT Editor 🔒 Ref. Points	Q Focus	E Show	v 👻 🛃 Mo	nitoring		
🕲 : Lo	🕲 Load 🗸 📓 Save							
11	WPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn 🔺 Radius 💾
	0 S	st-Petersburg	59° 53.844 N 030° 13.508 E	XX	XXX.X XXX.X	XXX.X	XXX.X XXX.X	XXX.X
14	1		59° 53.292 N 030° 12.754 E	RL	214.5° 0.22 NM	0.22 NM	0.10 NM 0.10 NM	0.50 NM
	2		59° 53.236 N 030° 11.608 E	RL	264.4° 0.74 NM	0.96 NM	0.10 NM 0.10 NM	0.50 NM
	3		59° 53.119 N 030° 10.756 E	RL	254.7° 0.32 NM	1.28 NM	0.10 NM 0.10 NM	0.50 NM
Edit	Options	Anchor Check Route Schedule Cal	culation Voyage p	lan Prote	ection control			
Adv	Advanced Cursors Quick Distance Calculator							
-1	-	90.0 1 0.10 NN	A Reverse	Shi	ift From	WPT: 0	▼ St-Pete	rsburg
					To WF	PT: 86	- Hambur	g
		270.0 × 99.9 NK		The Del	Distar	nce:	1398.29	NM

Press on the virtual keyboard icon: the input box will appear.

Tools	litting Joining	· · · ·	
Touch Keyboard	← Bksp	Del	→
	Tab	Ent	ter
	Space	←	\rightarrow
	Num Sy	/m V	Veb

To enter names, press the button with a picture of keyboard in the top left corner.

	Tools 🕶
Esc	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
Tab	qwertyuiop{{}}
Caps	a s d f g h j k l ∶, ", ↔
Shift	z x c v b n m < , > ? / [↑] Shift
Ctrl	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

Enter the necessary name by using the virtual keyboard.

EBL/VRM

EBL/VRM/CHL window is intended for turning on and adjusting two independent electronic measurement tools. EBL 1/VRM 1 are shown on the Chart panel as a dashed lines. EBL 2/VRM 2 are shown on the Chart panel as a dashed lines with another length of the dash.

For the variable range marker (VRM) and electronic bearing line (EBL) to be displayed on the ECDIS task Chart panel:

1. To display the first EBL/VRM pair on the ECDIS task Chart panel, press **EBL 1** and **VRM 1** buttons respectively on **EBL/VRM 1**page of **EBL/VRM/CHL** window of the Control panel.

EBL / VRM 1 EBL / VRM 2 CHL				
EBL 1	000.0	°۲	0	FFSET
VRM 1	0.25	NM	•	

To display the second EBL/VRM pair on the ECDIS task Chart panel, press EBL 2 and VRM 2 buttons on EBL/VRM 2 page respectively.

To set the base point offset of the first EBL/VRM pair relative to the ship position, press **OFFSET** button. The base point will move relative to the current ship position in bearing and distance specified in **EBL** and **VRM** boxes. By default (the **Fixed** button is depressed), the EBL/VRM during offset will be referenced to the selected point on the ground, i.e., it will be moving relative to the own ship at a SOG speed in the direction opposite to the COG. If it is necessary that the EBL/VRM centre move together with the own ship, release the **Fixed** button.

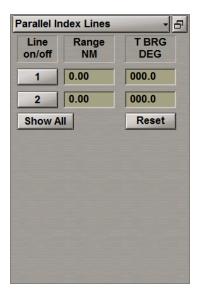
2. By turning <EBL> and <VRM> keys on ES6 keyboard, set the required values of EBL and VRM. Press on <EBL/VRM> key to change between EBL/VRM 1 and 2.

Index Lines

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Parallel index lines line and press the left trackball button.



Press the button with index line number. Position the free cursor in the Range input field and press the left button.

Line on/off	Range NM	T BRG DEG		
1	2.00	000.0		
2	0.00	000.0		
Show A		Reset		

By rolling the trackball, set the required value of distance from the centre of the own ship mark, or enter it from the keyboard. Press the left trackball button. The index line will be set at the specified distance.

Note: Distance to the index line is measured along the perpendicular dropped from the own ship mark centre to the index line.

Position the free cursor in the T BRG input field and press the left trackball button.



By rolling trackball, set the required value of the index line bearing or enter it from the keyboard. Press the left trackball button. The index line will be set in the specified direction.

Note: 0° bearing corresponds to the line direction to the north. The index line bearing varies from 0° to 360°. On the reciprocal bearings, the line direction is the same, but it is located on different sides of the own ship mark.

To set the index line bearing value equal to the current ship course, press the Reset button.

To turn on/off the display of all the parallel index lines on the ECDIS task screen press the Show All button.

Quick Distance Tool

For the Quick Distance Tool operation, press the *button* on the Chart panel toolbar.

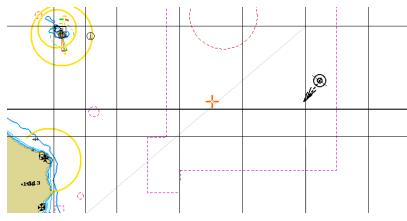


Select the necessary method of distance measurement.

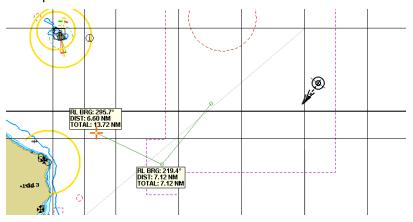
Graphics cursor (see document Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3, section

ECDIS Task Cursors, paragraph Free Cursor) appears on the Chart panel.

Position the graphics cursor on the initial measurement point on the Chart panel and press the left trackball button.



Position the graphics cursor on the next point on the Chart panel and press the left trackball button. The distance measured from the initial point and bearing from the initial to the set point will be shown on the Chart panel.



Set the necessary number of points for the distance measurements.

Quick Distance Tool - RL		
Latitude 1 55°10.526' N		
Longitude 1	015°16.944' E	
Latitude 2	55°10.526' N	
	015°16.944' E	
Longitude 2 015°16.944' E		
Bearing	000.0	0
Opp. Bearing	180.0	0
Range	0.00	NM
rtange	0	m
	,	1
Total distance	13.72	NM
	25405	m
Press Tab to edit manually		

The information window in the bottom part of the Control panel displays the following data:

- Latitude 1/Longitude 1 coordinates of the graphics cursor;
- Latitude 2/Longitude 2 coordinates of the last set measurement point;
- Bearing/Opp. Bearing bearing (reverse bearing from the last set point to the cursor);
- Range distance from the last set point to the cursor;
- Total distance total distance from the first set point to the cursor.

To exit from the graphics cursor mode, press the right trackball button.

Manual Entry in the Ship Log

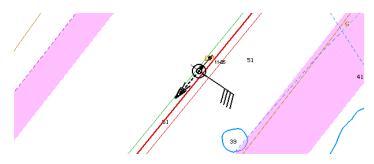
There are two ways to make a ship log entry on the entire set of events as of the current moment:

• Press Event Event button in the Operational window on the Chart panel:

STD DISP Event

• Press <EVENT> key on the ES6 keyboard.

An entry will be made on the Electronic system logbook, and a special mark will be made on the own ship track.



Chapter 4. Navigation Tasks

This chapter describes the procedure used during the operation in the navigation mode.

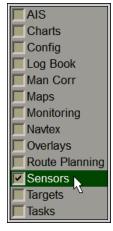
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Loading of Route and Schedule in the Navigation Mode	
Setting Lead Distance (F-dist)	
Loading Route	
Selection of Safety Parameters when Loading Monitored Route	
Loading Schedule	
Obtaining Current Information about Monitoring Route and Schedule	
Unloading Route and Schedule	
Handling Charts and Chart Information	
Prompt Search and Load Charts	
Loading and Scaling Charts under Own Ship Position	
Switching Chart Information Layers	
Handling ENC Format Charts	
Handling AIO Chart	
Handling TOD0 Charts	
Using Auto Zoom Function	

Using the Mooring Mode	
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Using Man Overboard (MOB) Mode	
Creating SAR Routes	
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SPO Deleting	
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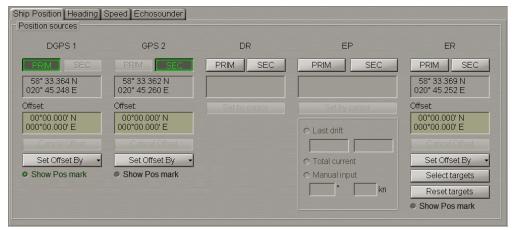
Setting Position Sources

Attention! Setting of position sources is available only at station with the status MASTER.

Open **Sensors** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Sensors panel, which will open up, to switch to Ship Position page:



Ship Position page is designed for selection of position source. Ship position page displays all the connected coordinates sensors, as well as Dead Reckoning (DR) and Echo Reference (ER) modes.

Setting Electronic Position Fixing System (EPFS)



The group of each EPFS source contains the following elements:

- **PRIM** to select the source as primary positioning system; the window is intended for display of the current coordinates received from the positioning system;
- SEC to select the source as secondary positioning system; the window is intended for display of the current coordinates received from the positioning system;
- Position window for the coordinates display;
- Offset window for the input and display of the ship position coordinates offset;
- Cancel Offset to cancel the entered corrections;
- Set Offset By to enter the correction by specifying new coordinates with the ECDIS task graphic cursor.

Press PRIM and SEC buttons to select the primary and secondary positioning systems.

To monitor parameters of the EPFS used for the primary positioning system, press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects ^N
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Sensor Data/Status line and press the left trackball button.

Use the tab in the top part of the **Sensor Data/Status** display panel which will open up, to switch to the **Primary Status** page.

Sensor data/status 🚽 🗗		
Primary Status AIS VDL Data		
Fixed UTC	21 : 36 : 24	
Latitude	56° 48.766 N	
Longitude	018° 21.135 E	
Quality	DGPS SPS	
Satellites	5	
HDOP	1.0	
Data age	10.0	
Station ID	0000	
RMS 95%	20 m	

Primary Status page is used for presenting the following data from EPFS, which used as primary positioning system:

- Fixed UTC UTC time which the data is provided for;
- Latitude latitude coordinate;
- Longitude longitude coordinate;
- Quality positioning quality indicator (GPS operating mode);
- Satellites number of satellites used for the positioning;
- HDOP HDOP (Horizontal Dilution of Precision) value;
- Data age age of differential corrections;
- **Station ID** name of the station, which transmits differential corrections for the DGPS used by the primary positioning system (where the differential mode is used);
- RMS 95% ship position 95% RMS error (for the 95% RMS error calculation algorithm, see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 2,* section *Navigational Sensors,* paragraph *Positioning,* under *RMS Calculations for Different Positioning Systems*).

In the absence of data from PS positioning systems (or in absence of valid GGA sentence), there are empty fields on the display.

To enter the EPFS offset, use the following procedure:

1. To manual input. Position the cursor in **Offset** window on the minute value and press the left trackball button to activate the window. Enter the coordinate offset and press <Enter> key.

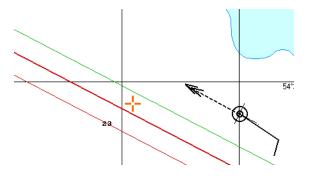


The ship symbol will move to the corrected coordinates, the coordinate offset will be displayed in **Offset** window, whilst position window will show corrected coordinates from position source.

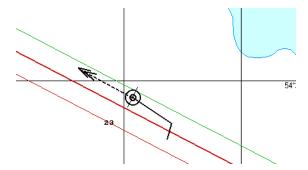
2. Input EPFS offset by the cursor. Press Set Offset By button position source group and select Cursor.



Move the graphic cursor, which will appear, to the corrected ship position coordinates.



Press the left trackball button. The ship symbol will move to the specified coordinates.



The coordinate offset will be shown in **Offset** window, whilst position window will display corrected coordinates from position systems.



Setting ER Mode



ER group contains the following elements:

- PRIM to select ER mode as primary positioning system;
- SEC to select ER mode as secondary positioning system;
- Position window for the coordinates display;
- Offset window for the input and display of the ship position coordinates offset;
- Cancel Offset to cancel the entered corrections;
- Set Offset By to enter the correction by specifying new coordinates with the ECDIS task graphic cursor;
- Select targets to select targets as fixed reference points (button is enabled if at least one steadily tracked target is available);
- Reset targets to cancel reference points.

To set the ER mode, it is first necessary to set the reference points. Press the **ARPA** button in the top part of the Control panel to turn on the display of targets.

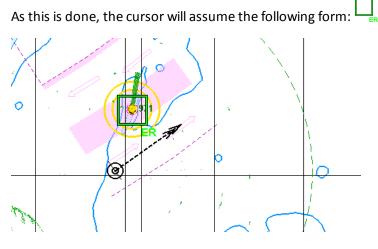
X-1 - Overlay AIS ARPA-

Note: If at least one steadily tracked target is available, Select targets button will be activated.

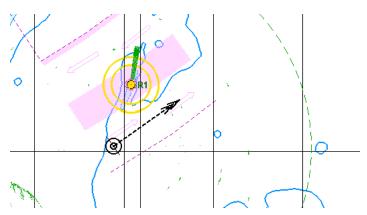
Press Select targets button.

Position the free cursor on the tracked target, which will serve as a reference point.

Note: Any ARPA tracked stationary target can serve as a reference point.



Press the left trackball button.



"R" index will show up next to the reference point. Set the necessary number of reference points (up to 5). To use position determined with the aid of reference points in ER group, press PRIM or SEC button.



To monitor parameters of the ER mode, press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects ¹
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Sensor data/status line and press the left trackball button.

Use the tab in the top part of the **Sensor data/status** display panel which will open up, to switch to the **Primary Status** page.

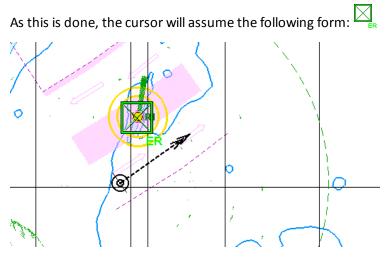
Sensor data/status 🚽 🗗			
Prima	ry Status AIS V	DL Data	
	List of ER targets		
Tgt Id	Brg-Dist (nm)	RMS 95%	
R1	015.8° 96.2	774	
R2	136.4° 3.1	312	
R3	127.8° 3.5	337	
Total RMS = 773 metres			

Primary Status page is used for presenting the list of ER targets:

- Tgt Id reference point ID;
- Brg-Dist bearing and distance to the reference point;
- RMS 95% 95% RMS error for each reference point;
- Total RMS the maximum 95% RMS error among all the reference points (for the 95% RMS error calculation algorithm, see document *Multi-Functional Display (v. 3.00.340)*. Functional Description, Chapter 2, section Navigational Sensors, paragraph Positioning, under RMS Calculations for Different Positioning Systems).

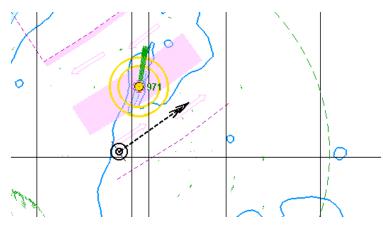
To cancel the reference point, press Reset targets button.

Position the free cursor on the reference point, which will cancel.



Press the left trackball button.

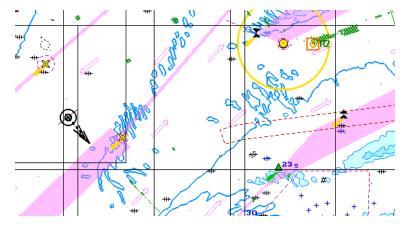
"R" index will stop show up next to the reference point.



The position offset by cursor for the ER is entered in much the same way as for the EPFS (see the previous paragraph). To enter the ER offset, use the following procedure:

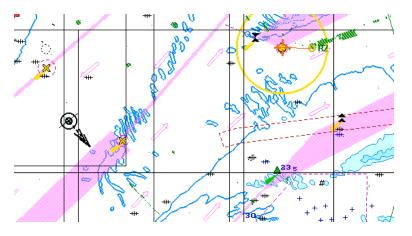
- 1. The position offset manually and by cursor for the ER is entered in much the same way as for the EPFS (see the previous paragraph).
- 2. The position offset by target. Press Set Offset By button position source group and select Target.



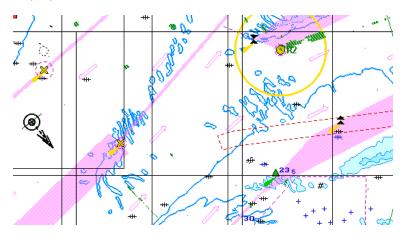


Position the acquisition marker which will appear, on the required reference point.

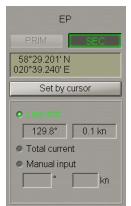
Press the left trackball button. The marker will "acquire" the reference point and change own form. Set the cursor in the new coordinates corresponding to the reference point on chart.



Press the left trackball button. The ship symbol (as well as the radar scanning centre if displayed) will move to the calculated coordinates.



Setting EP Mode



EP group is intended for setting parameters used in the EP (corrected DR) mode and contains the following elements:

- PRIM to select DR mode as primary positioning system;
- SEC to select DR mode as secondary positioning system;
- Position window for the display and input of coordinates;
- Set by cursor to enter the position by specifying new coordinates with the ECDIS task graphics cursor;
- Last drift to use the last calculated drift parameters;
- Total current to use parameters of drift caused by total tidal and surface current from the database;
- Manual input to enter drift parameters manually (0–360 degrees/0.0–9.9 knots).

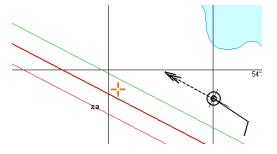
In EP group press PRIM or SEC button. Enter current ship position in the input window.

In this case the name of the position source displayed in the **Primary (Secondary)** window of the Control panel will be shown in yellow (see also document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Important Indications*).

Prim	56° 15.684 N	
EP:Drift	017° 01.092 E	

To input EP by cursor, press Set by cursor button.

Move the graphic cursor, which will appear, to the corrected ship position coordinates.



E 2 2 3

Press the left trackball button. The ship symbol will move to the specified coordinates.

Position window will display new coordinates from EP.

Setting DR Mode

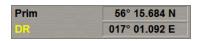


DR group contains the following elements:

- **PRIM** to select DR mode as primary positioning system;
- SEC to select DR mode as secondary positioning system;
- Position window for the display and input of coordinates;
- Set by cursor to enter the position by specifying new coordinates with the ECDIS task graphics cursor.

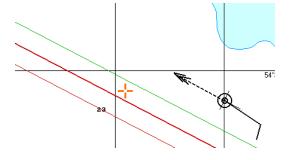
In DR group press PRIM or SEC button. Enter current ship position in the input window.

In this case the name of the position source displayed in the **Primary (Secondary)** window of the Control panel will be shown in yellow (see also document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Important Indications*).



To input DR by cursor, press Set by cursor button.

Move the graphic cursor, which will appear, to the corrected ship position coordinates.



54". 22 23

Press the left trackball button. The ship symbol will move to the specified coordinates.

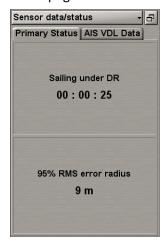
Position window will display new coordinates from DR.

To monitor parameters of the DR mode, press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects ¹
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Sensor data/status line and press the left trackball button.

Use the tab in the top part of the **Sensor data/status** display panel which will open up, to switch to the **Primary Status** page.

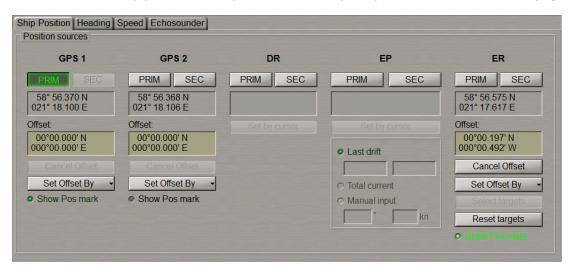


Primary Status page is used for presenting the following parameters:

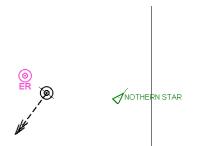
- Sailing under DR time of sailing in DR ship positioning mode;
- 95% RMS error radius ship position 95% RMS error (for the 95% RMS error calculation algorithm, see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 2*, section *Navigational Sensors*, paragraph *Positioning*, under *RMS Calculations for Different Positioning Systems*).

Display of Non-Primary Positioning System Symbol on ECDIS Task Screen

There is a capability to display the own ship position from the Non-Primary positioning systems. Use the tab in the top part of **Sensors** panel, which will open up, to switch to **Ship Position** page.



To this end, check the Show Pos mark checkbox of the relevant positioning system.



The own ship symbols will be displayed on the ECDIS task screen.

Use of Manually Fix Position for Determining Ship Position

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position 📡
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list which will open up, select Manually Fix Position line and press the left trackball button.



Manually Fix Position display is intended for constructing the ship line of position (LOP) by measuring bearing and/or range to one or more visible objects whose coordinates are known in advance (or the object can be uniquely identified on the chart).

The display contains the following items:

- Accept position to record the calculated ship position on the chart and in the Ship Logbook (when the DR positioning system is used, to enter calculated coordinates for further computation);
- Cancel all to cancel all the measurements which have been made;

- 1...6 to switch bearing and/or range measurements. That number of buttons is active which is equal to the number of measurements which have been made, the rest are disabled. Depending on the measurement status, the buttons have the following colours:
 - black bearing/range determined and referenced to the chart conspicuous point;
 - red measurement taken and referenced, but the system considers it incorrect on the basis of LOP being at a distance of more than one mile from the reckoned position (with LOP advice function ON only);
 - blue free cell for setting the measurement;
 - white the data is entered, but the position line is not referenced by the user.
- Bearing to enter bearing;
- Distance to enter range;
- Brg/Dist to enter simultaneously the bearing and distance to one object;
- Automatic jump to new LOP to turn on automatic transfer to the next measurement after the input of LOP data without referencing to an object;
- LOP advise to turn on the function providing a warning that the position line is more than 1 mile away from the reckoned position. In this case, the button with the measurement number turns red;
- Snap LOP automatic referencing to objects.

Press **Bearing** button. After the selection of the measurement type, **Manually Fix Position** display looks like shown in the drawing below:

Manually Fix Position 🛛 🗸 🗗
Lines Of Position (LOP)
Time: 12:28:24 D: 00:00
Brg: 250.0 °
Name:
Apply Cancel
• Automatic jump to new LOP • LOP advice • Snap

In this case, depending on the measurement type, the display contains the following items:

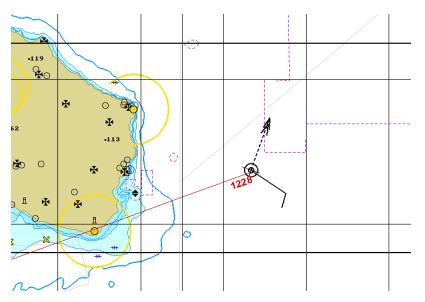
- Time time of the current measurement data input;
- D difference between the input of the first and current measurement data in minutes and seconds;
- Brg to enter bearing to the object;

- Name name or type of the object which is referenced to with the Snap to Object function turned on (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3,* section *Manually Fixed Position,* paragraph *Line of Position Referencing*);
- Apply to confirm the entered current measurement data. With Automatic jump to new LOP function ON, there is an automatic transfer to the input of the next measurement;
- Cancel to cancel the entered current measurement data.

Enter the bearing to the object in Brg input box by using the trackball or keyboard. Press the left trackball button.

Note: Measurement time in Time box is set at the current time minus 5 seconds.

Press the activated Apply button.



A red coloured line will be drawn on the Chart panel, with the measurement time specified.

Use the button in the top part of **Manually Fix Position** display to switch to the next measurement (if **Automatic** jump to new LOP function is ON, the switching is made automatically).

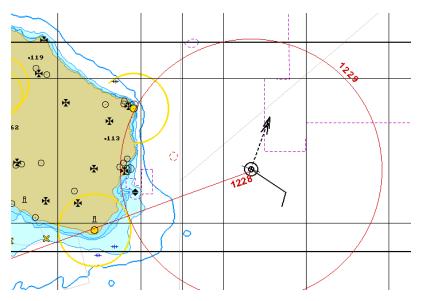


Press Distance button.

Manually Fix Position 🛛 🗕 🗗	
Accept position Cancel all	
Lines Of Position (LOP)	
1 2 3 4 5 6	
Time: 12:29:22 D: 00:58	
Dist: 9.11 NM	
Name:	
Apply Cancel	
• Automatic jump to new LOP	
o LOP advice o Snap	

Enter the distance to the object in **Dist** input box by using the trackball or keyboard. Press the left trackball button.

Press the activated Apply button.



A red coloured position line will appear on the Chart panel.

To reference the position lines, press the button with the first measurement number in **Manually Fix Position** display. After the confirmation of the entered current measurement data, **Manually Fix Position** display looks like shown below:

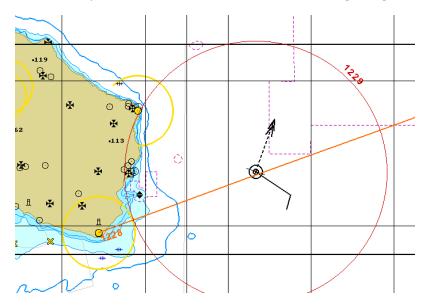
Manually Fix Position 🔹 🗗
Accept position Cancel all
Lines Of Position (LOP)
Time: 12:28:24 D: 00:00
Brg: 250.0 °
Name:
Move and reference Delete
Automatic jump to new LOP
o LOP advice o Snap

In this case, the display contains the following items:

- Move and reference to reference the position line to a chart object;
- Delete to cancel the entered current measurement data.

Press Move and reference button.

On the Chart panel, bring the beginning of the position line in coincidence with the object which the bearing was measured to (if the Snap to object checkbox is checked, the LOP will be referenced to the object automatically if it is not farther than 0.5 mile from its beginning). Press the left trackball button.

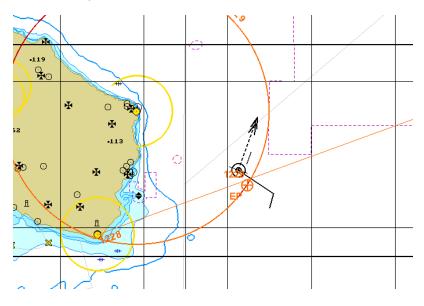


To bind the next position line, press the button with the next measurement number in **Manually Fix Position** display.

Manually Fix Position 🛛 🚽 🗗
Accept position Cancel all
Lines Of Position (LOP)
1 2 <u>3</u> 4 5 6
Time: 12:29:22 D: 08:47
Dist: 9.11 NM
Name:
Move and reference Delete
• Automatic jump to new LOP
o LOP advice o Snap

Press Move and reference button.

On the Chart panel, bring the centre of the position line circle into coincidence with the object which the distance was measured to (if the **Snap** checkbox is checked, the LOP will be referenced to the object automatically if it is not farther than 0.5 mile from its centre). Press the left trackball button.



The position line will be bound to the object and will be displayed in the orange colour. After the binding of two position lines, the orange coloured \bigoplus symbol will appear on the Chart panel in the point with coordinates of the calculated ship position. Specified next to the symbol are the letters "EP" and the most recent calculation time.

Construct the necessary number of position lines.

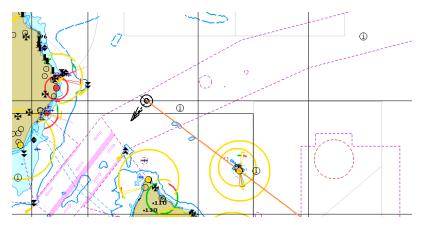
If it is necessary to accept the results of manually fix position, use Accept position button (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3*, section *Manually Fixed Position*).

If an Optical Bearing Device (OBD) is connected to the MFD, a button for turning on the bearing line presentation appears on the **Manually Fix Position** display.

Manually Fix Position 🚽 🗗
Accept position Cancel all
Lines Of Position (LOP)
2 3 4 5 6
Bearing Distance Brg / Dist
Automatic jump to new LOP
LOP advice Snap
OBD: show Bearing Line

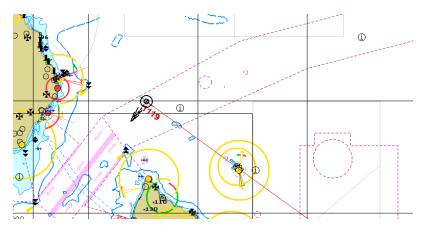
The OBD continuously transmits bearing information to the MFD. This allows the ECDIS task screen to provide a real-time display of an Optical Bearing Line – showing what the OBD operator is looking/pointing at.

Press OBD: show Bearing Line button.



The Chart panel will show the Optical Bearing Line in the form of a yellow line.

After the OBD operator has fixed a position, the Chart panel will display a LOP with the measurement time.



At the same time, the obtained bearing will be accepted as a measurement for the Manually Fix Position Method.

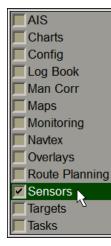
Manually Fix Position
Accept position Cancel all
Lines Of Position (LOP)
1 2 3 4 5 6
Time: 11:18:33 D: 00:00
Brg: 126.0 °
Name:
Move and reference Delete
• Automatic jump to new LOP
o LOP advice
• OBD: show Bearing Line

Data from the OBD will be displayed in the Brg input boxes and can be subsequently used for further calculations (see above).

Setting Heading Source

Attention! Setting of heading sources is available only at station with the status MASTER.

Open **Sensors** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Ship Position Heading Heading sources	Speed Echosounder		
GYRO 1	GYRO 2	MAGNETIC	MANUAL
232.5°	232.5°	232.5°	°
Gyro Offset:	Gyro Offset:	Magnetic variation:	
+0.0 °	+0.0 °	+0.0 ° Auto	

Use the tab in the top part of Sensors panel to switch to Heading page:

Heading page is designed for selection of heading source. **Heading** page shows all the connected heading sensors.

The group of each heading source contains the following elements:

- GYRO 1 to select this sensor as heading source; the window is intended for display heading value from the sensor;
- Gyro Offsetr for the manual input of the gyro offset (for gyro compass);
- Magnetic variation for the input of the magnetic variation from the database (Auto button), or manually in the input window (for magnetic compass);
- MANUAL to select the use of manual heading input; the window is intended for heading input.

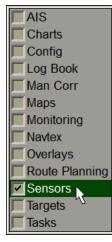
Press the button with the source name to select the main source of heading whose data will henceforth be used for making all the calculations in the system.

If necessary, enter errors (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 2,* section *Navigational Sensors*, paragraph *Compensations for Navigational Data*) for gyro and variation for magnetic compass.

Setting Speed Sources

Attention! Setting of speed sources is available only at station with the status MASTER.

Open **Sensors** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Ship Position Heading STW sources DLOG 1	Speed Echosounder	LOG 2		
SIMRAD	LOG 1 STN	IEL2M	MANUAL	
▲ 10.0 kn	10.0 kn	10.0 kn	10.0 kn	
0.0 kn				
SOG sources				
Prim PS: GPS 1	DLOG 1 SIMRAD	ER	Set + Drift	
GARMIN	▲ 10.0 kn	10.6 kn	11.0 kn Set 120.0 °	
10.0 kn	0.0 kn	Select targets	Drift 1.1 kn	
		Reset targets		

Use the tab in the top part of **Sensors** panel to switch to **Speed** page.

Speed page is designed for selection of speed source.

Setting Speed Source Through the Water

STW sources			
DLOG 1 SIMRAD	LOG 2 IEL2M	MANUAL	
▲ 10.0 kn 10.0 kn	10.0 kn	10.0 kn	
0.0 kn			

STW sources group is designed for selection a source of speed through the water. The group shows all the connected speed through the water sensors.

The group of each speed through the water source can contain the following elements:

- DLOG to select DLOG as a source of STW; the windows are intended for display longitudinal and transverse component of the speed-through-water vector, the arrows showing the direction of components;
- LOG to select LOG as a source of speed through the water; the window is intended for display STW value from log;
- MANUAL to select the use of manual STW input; the window is intended for speed input.

Press the button with the source name to select the source of speed through the water, whose data will henceforth be used for making all the calculations in the system.

Setting Speed Source Over the Ground

SOG sources					
Prim PS: GPS 1	DLOG 1 SIMRAD	ER		Set + Drift	
GARMIN	▲ 10.0 kn	10.6 kn	11.0 kn	Set 120.0 °	
10.0 kn	0.0 kn	Select targets		Drift 1.1 kn	
		Reset targets			

SOG sources group is designed for selection a source of speed over ground. The group shows all the connected speed over ground sensors.

The group of each speed over ground source can contain the following elements:

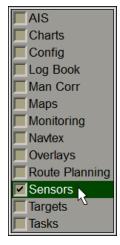
- Prim PS: GPS 1 to select EPFS as a source of SOG; the window is intended for display SOG value from EPFS;
- **DLOG** to select DLOG as a source of SOG; the windows are intended for display longitudinal and transverse component of the SOG vector, the arrows showing the direction of components;
- ER to select ER mode as a source of SOG; the window is intended for display SOG value; the buttons is intended for:
 - Select targets to select targets as fixed reference points (button is enabled if at least one steadily tracked target is available);
 - Reset targets to cancel reference points.
- **STW** + **Drift** to select STW as SOG, manual drift input taken into account. The window is intended for display SOG value. The input windows are intended for:
 - Set to display and manually enter the set;
 - Drift to display and manually enter the drift.

Press the button with the source name to select the source of speed over ground whose data will henceforth be used for making all the calculations in the system.

Setting Depth Source

Attention! Setting of depth sources is available only at station with the status MASTER.

Open **Sensors** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Sensors panel to switch to Echosounder page:

Ship Position Heading Sp Depth sources	beed Echosounder	1	
ECHOSOUNDER 1 SIMRAD	ECHOSOUNDER 2 GARMIN		
28.0 m	27.8 m		
Ship's draught:	Ship's draught:		
0.0 m	0.0 m		

Echosounder page is designed for selection of depth source. **Echosounder** page shows all the connected depth sensors.

The group of each depth source can contain the following elements:

- ECHOSOUNDER 1 to select this sensor as depth source; the window is intended for display depth value from the sensor;
- Ship's draught to enter ship's draught in the place of echosounder transducer location.

Press the button with the source name to select the main source of depth whose data will henceforth be used for making all the calculations in the system. Enter ship's draught for each echosounder.

Obtaining Current Information about Navigational Data

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator 📐
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Navigator line and press the left trackball button.

Navigator	
HDG -	269.9°
STW -	5.0 kn
COG -	269.9°
SOG -	5.0 kn
ROT -	1.0/min PORT
XTD -	135 m STBD

Navigator display is intended for enlarged presentation of the following selectable data:

- HDG (Heading);
- STW;
- COG;
- SOG;
- ROT;
- XTD;
- BWOL (Bearing to Wheel Over Line);
- BWW (Bearing Waypoint to Waypoint);

- DWOL (Distance to Wheel Over Line);
- ETA;
- TTG (Time To Go);
- Radius (turn radius at the next waypoint);
- Turn Radius.

Only six values could be displayed simultaneously at the display.

Press the button in the left-hand part of the display and from the pull-down list, select navigational data which is required to be shown on the display.

Navigator		
HDG -	232.5°	
STW -	12.0 kn	
BWOL	232.5°	
BWW		
DWOL	2.0 kn	
ETA (Sh	ip)	
TTG	.0/min	
RAD	0.00	
	RAD 8 m	
	STBD	

Make up the **Navigator** display configuration which suits you best.

To display depth from the echosounder on the ECDIS task screen, press the button with the name of the set display in the **Display Panel** window of the Control panel.



System Information - 8 Drift 135.0° - 0.0 kn Current 354.0° - 0.0 kn SF CNT 50 m True wind 119.9° - 10.0 m/s Rel. wind 075.7°(P) - 9.5 m/s Water t° 18.0 °C Depth 28.0 m ECHOSOUNDER 1 **Tide height** 5.1 m Sandettie Bank

In the list, which will open up, select System Information line and press the left trackball button.

In Depth row it is displayed value of water depth under the keel (from the sounder data).

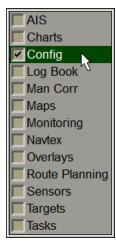
Loading of Route and Schedule in the Navigation Mode

Here and Schedule in the navigation mode is available only at station with the status MASTER.

Setting Lead Distance (F-dist)

Attention! For the F-dist setting no route should be loaded in the monitoring mode.

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Conorol Dodor cotting	s Time Zone License Info COM	A Trace Units Ship Set	tings Route Settings		
Palette Daylight Skin Metallic	Timer notification Every 1 At 16-02-2016 07:03	Chart panel cursor Short Chart panel cursor Short Chart panel cursor DM Settings Initial Scale: 1:4,000	AutoZoom Settings AutoZoom Settings Maximum scale: 1: 5,000 • Time of update: 20 s	Help Ship history Steps: 5 Interval: 2	EXIT
	End of Watch notification	Display reset to	Mute alert sound	Ship Condition F-dis Conded	
		Generate alarm		MediumIn Ballast	300 200

Use the tab in the top part of **Config** panel which will open up, to switch to **General** page:

Note: The lead distance (F-dist) is set during the installation on the Ship Settings page of the INS panel (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I , Chapter 2,* section *MFD Configuration,* paragraph *MFD Settings*).

In Ship Condition group, select ship loading conditions.

Note: If the monitored route is selected or the WS is not the Navigation MASTER, the group will be greyed.

Ship Condition F-dist, m			
Loaded	556		
Medium	370		
 In Ballast 	185		

In the input to the right, set the F-dist. The selected distance will be taken into account in the operation of various functions throughout the MFD (e.g., route planning, Curved Heading Line, Track Control etc.).

Loading Route

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 🗌
Monitoring
Navtex 🔨
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page:

Route Monitoring Safety Alerts Navigational Alerts				
Ship: Headline COG vector HDG vector Ship by contour Align by HDG No wind				
Route: Load route	Set schedule Unload XTD Radius Course/Leg/Spd	WPT name Wheel over line Sun / Moon Heading mark Ref. point Remark		
Waypoints Next waypoint: Auto selection Auto selection From Route Table	Past track settings Track color : Plot interval: Time label: Own ship track: 0 s 30 min O hours Track history : Current Focus on Track Show time-labels Show primary track Show secondary track/position	Alerts • End of route • Out of XTD • Out of schedule 0 min • WPT approach 0 min • • Off leg course 5.0 0 Alternative route segments Approach to segment min		

Route group enables loading and unloading of monitored routes and schedule by using the following buttons:

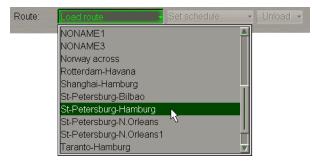
- Load route to select and load a route from the offered list;
- Set schedule to select and load a schedule for the loaded route from the offered list;
- Unload to unload the previously loaded route and/or schedule.

Route: Load route

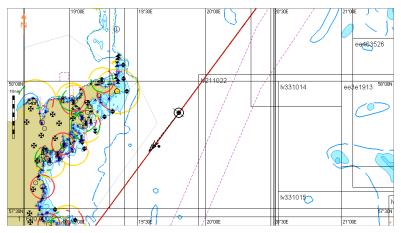
Set schedule

Unload

Press Load route button in Route row of buttons.



Select the required route and press left trackball button. The selected route will be loaded for sailing in the Chart panel, and its name will be displayed on the button. The route loaded for sailing will be shown in red colour.



Waypoints group contains buttons and windows for the input values used for calculating mutual positions of the route elements and the ship:

- Next Waypoint to select the mode of setting the next WPT for calculating parameters of motion along the route:
 - Auto selection to switch WPT's successively in the automatic mode; the WPT closest to the ship position is selected automatically;
 - Manual selection to set the next WPT number manually; input of the next WPT number is made in the appropriate window.
- Radius to set parameters of the turn radius arc for the display of an approximate track on the turn on another route leg:
 - Same for All WPT's to set manually for all the route points in the window to the right;
 - From Route Table to set automatically form the data entered in the route.

Waypoints	
Next waypoint:	
Auto selection	- 29
Radius :	
From Route Table	-

For the manual setting of the next WPT, press Next Waypoint button.

Waypoints			
Next waypoint:			
Auto selection	-	29	
Auto selection			
Manual selection			

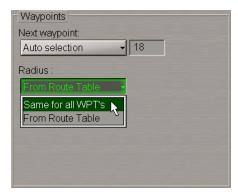
In the list, which will open up, select Manual selection and press the left trackball button. Use the activated input line to enter the next WPT number.



Press the left trackball button.

Attention! In the automatic mode, it is the next WPT of the route leg which the ship is proceeding by which is set. If some other WPT is selected manually for the next one, all the calculations are made relative to the route leg adjacent to the selected WPT.

For the manual setting of the turn arc parameters, press Radius button.



In the list, which will open up, select Same for all WPT's and press the left trackball button. Use the activated left-hand input line to enter a new turn arc radius.

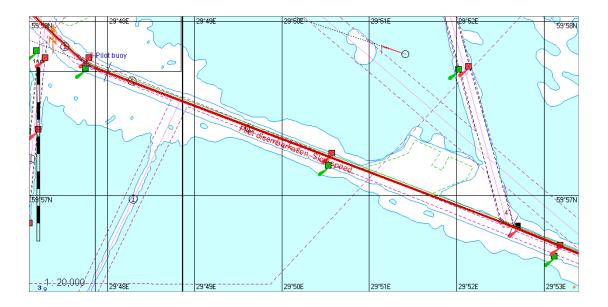


Press the left trackball button. The set parameters will be fixed for all the points of the monitored route.

XTD Radius	WPT name	Wheel over line	Sun / Moon
Course/Leg/Spd	Heading ma	rk Ref. point	Remark

To turn on the display on the ECDIS task screen monitoring route elements, press following buttons:

- XTD to display deviation from the route line (set during the route generation see *Chapter 9*, section *Creating a Route*);
- Radius to display set turn radius arc on the turn to another route leg;
- WPT names to display the names of waypoints set in the route plan;
- Wheel over lines to display Wheel Over Lines;
- Sun/Moon to display sun and moon rises and sets symbols;
- Course/Leg/Spd to display course, range and speed for each route leg;
- Ref. points to display Reference points. The Reference points are entered at the route planning and editing stage on the Route Planning panel (see *Chapter 9*, section *Voyage Plan Creation*, paragraph *Obtaining Information on Sun/Moon on the Route*);
- Heading mark to display dashed lines stretching the current and next legs of the monitored route in both directions to the limits of the ECDIS task screen;
- Remark to display additional important remarks in plain text for every route leg. The route leg remarks are entered at the route planning and editing stage on the Route Planning panel (see Chapter 9, section Work with Route, paragraph Creating a Route, item Entering Additional Data).



Selection of Safety Parameters when Loading Monitored Route

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Safety Alertspage.

Route Monito	oring Safe	ety Alerts	Navigational Alert	s			
Safety frame Safety parameters			Area alerts				
Ahead:	6	min	Shallow contour:	10	m	IMO Areas Additional Are	eas
Port:	0.20	NM	Safety contour:	30	m	Anchorage area	• Areas to be avoided
Starboard [.]	0.20	NM	Safety depth:	10	m	• Caution area	Inshore traffic zone
O Show out	j		Deep contour:	30	m	Marine Farm Culture	Military area
 Antigroundin Nav. haze Safety control 	 Show safety frame Antigrounding alerts Nav. hazard Safety contour Highlight Danger 		Source of safety parameters: From route Fixed		 Offshore prod area Restricted area Submarine transit 	 PSSA Seaplane landing Traff separ zone 	

In the Source of safety parameters group, select the source which the safety parameters will be taken from for the route monitoring.

If the route is not loaded for monitoring, the **Fixed** radio button will be selected automatically, safety parameters set in the **Safety parameters** group are used for monitoring dangers.

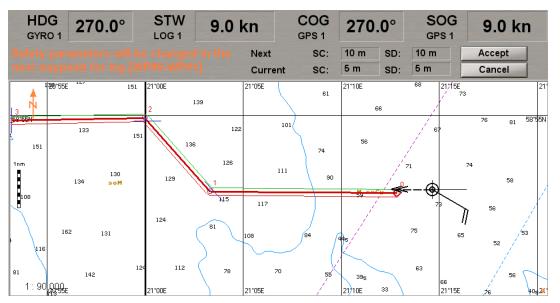
As a route to be monitored is loaded, the last operator-selected From route or Fixed value is set automatically.

If the Fixed value is selected, the safety parameters set in the Safety parameters group are used (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4,* section *Main Alerts Generation Principles,* paragraph *Safety Alerts.*).

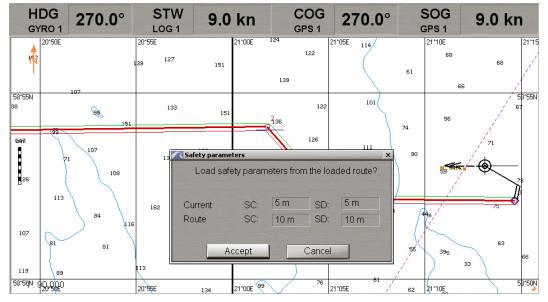
If the From the route value is selected, safety parameters are selected by using the procedure detailed below.

Depending on the sailing area (narrows or open sea), when creating the route, the user can specify appropriate safety parameters (safety contour, safety depth) for each leg. As the ship is proceeding along the route, should the current values of safety parameters differ from the values set on the route, the ECDIS will automatically offer to apply new safety parameters (with the Advanced Planning option ON). When a monitored route is loaded, there may be two scenarios depending on the ship position relative to the route at the moment of loading:

1. The ship is approaching the start of the route, i.e., it is WPT "0" which will be monitored after loading.

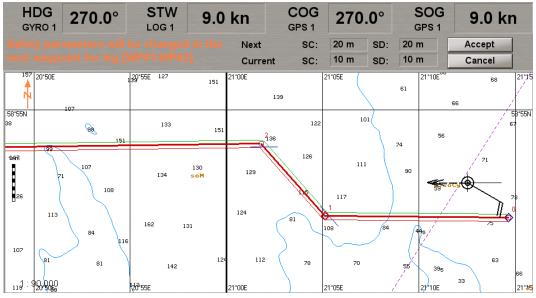


If the safety contour (SC) and safety depth (SD) values in the loaded route match the current values (set on the **Safety Alerts** page of the **Monitoring** panel), no warnings will be displayed. If the values of safety parameters differ from the current values, the top part of the Chart panel will display a warning in which the user will be requested to apply the values specified in the route for the WPTO-WPT1 leg by pressing the **Accept** button, or leave the current safety parameters by pressing the **Cancel** button. New safety parameters will be applied (i.e., they will become the current values and will be displayed on the **Safety Alerts** page of the **Monitoring** panel) after WPT 0 has been passed. If the operator ignores the warning, larger SC and SD values will be set with a change of the waypoint.



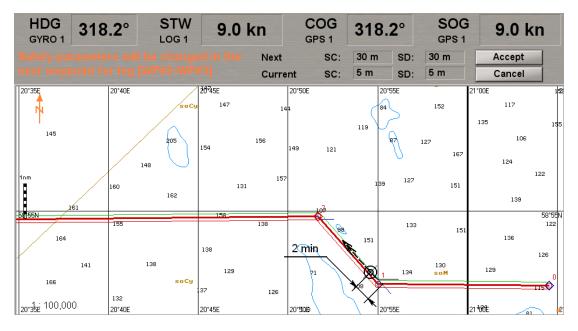
2. The ship is on some leg of the route which is being loaded, on the WPTO-WPT1 leg in the example below.

If the safety contour (SC) and safety depth (SD) values for the current leg of the route which is being loaded match the current values, no warnings are displayed. Otherwise the Chart panel will display the **Safety Parameters** pop-up window. This window specifies the current SC and SD values as well as the values set for the current route leg (WPT0-WPT1). The user should select values which should be loaded for monitoring: from the route (**Accept** button) or leave the current values (**Cancel** button). If new safety parameters are applied for the current route leg, they will immediately become the current values and will be displayed on the **Safety Alerts** page of the **Monitoring** panel).



After this, if the SC and SD values for the current leg (WPT0-WPT1) do not match the values set for the next route leg (WPT1-WPT2), the top part of the Chart panel will display a relevant warning (for further information see item 1).

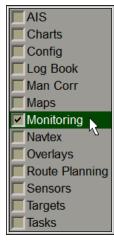
As the ship is proceeding along the monitored route, if the SC and SD values of the next leg are different from the current value, 2 minutes after the waypoint (WPT1) is changed, an appropriate warning will appear in the top part of the Chart panel (for leg WPT2-WPT3).



The user is then required to use the procedure described in item 1.

Loading Schedule

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Route Monitoring Safety Alerts Navigational Alerts Headline Ship by contour - Align by HDG -Ship: No wind WPT name Sun / Moon Route Load route XTD Course/Leg/Spd Heading mark Ref. point Remark Waypoints Past track settings Alerts Next waypoint: Track color End of route Plot interval: Time label: Own ship track: Out of XTD 30 min 0 0 s hours Out of schedule 0 min Track history WPT approach min 🗸 Focus on Track Current 0 5.0 Off leg course Show time-labels Show primary track Alternative route segments Show secondary track/position Approach to segment min

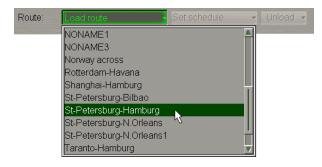
Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page.

Route group enables loading and unloading of monitored routes and a schedule by using the following buttons:

- Load route to select and load a route from the offered list;
- Set schedule to select and load a schedule for the loaded route from the offered list;
- Unload to unload the previously loaded route and/or schedule.

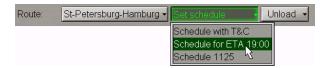


Press Load route button in Route row of buttons.



Select the required route and press the left trackball button. The selected route will be loaded for sailing on the Chart panel, and its name will be shown on the button.

Press Set schedule button in Route row of buttons.

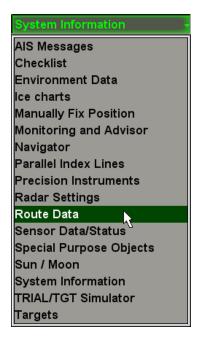


The list of schedules created for this route will open up. Select the necessary schedule. Press the left trackball button. The selected schedule will be loaded.

Obtaining Current Information about Monitoring Route and Schedule

Route Data

Press the button with the name of the set display in the **Display Panel** window of the Control panel.



In the list, which will open up, select Route Data line and press the left trackball button.

Use the tab in the top part of the Route Data display which will open up, to switch to the Route Data page.

Route Data 🚽 🗗					
Route Data Schedule RDV					
Route	St-Petersburg-Hamburg				
To WPT 20					
BWW	216.5°				
XTD	8 m - STBD				
BWOL	216.5°				
DWOL	168.51 NM				
ETA (UTC)	09-12-15 05:15:32				
TTG	0 d 14 h 02 m				
N	Next WPT 21				
BWW	232.5°				
RAD	0.50 NM				

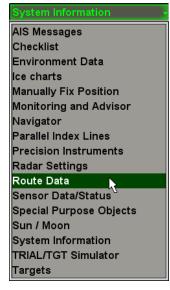
Route Data page is intended for the display of data as the ship is proceeding along the route to the next waypoint (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5,* section *Route Monitoring,* paragraph *Sailing Along the Route*).

The page contains the following data:

- Route name of the monitored route; as End of route warningis generated, the word "Route" is shown in the orange colour;
- To WPT number and name of the current WPT which the ship is proceeding to; the WPT name is shown in black colour if the WPT is selected automatically, and in the blue colour if selected manually;
- BWW direction of the monitored route leg which the ship is proceeding by if the leg is of RL type; or the current course in case of the GC leg;
- **XTD** actual distance from the current route leg; as **Off track** alarm is generated, the letters "XTD" are shown in orange colour;
- **BWOL** bearing to the current WOL;
- **DWOL** distance to the current WOL;
- ETA the estimated time (UTC/Ship depending on the setting made in the Control panel) of arrival in the current WPT, the remaining distance and current speed (SOG) taken into account;
- TTG time to go to the current waypoint calculated with regard to the actual speed (SOG);
- Next WPT number of the next WPT;
- BWW direction of the next route leg;
- RAD radius arc on the turn to the next route leg.

Schedule Information

Press the button with the name of the set display in the **Display Panel** window of the Control panel.



In the list, which will open up, select Route Data line and press the left trackball button.

Route Data 🚽 🗗				
Route Data Schedule RDV				
To WPT: 20				
Schedu	le	Current SOG		
ETA	09	-12-2015		
(UTC)	0	5:15:32		
TTG	0 d 14 h 00 m			
DWOL	1	68.1 NM		
PTA	09	-12-2015		
(00:00)	0	5:45:27		
Qu	ick cal	culation		
STG (kn)	STG (kn) PTA (Ship time)			
8.0	12-	12-15 00:28		
12.0 09-12-15 12:21				

Use the tab in the top part of the **Route Data** panel which will open up, to switch to the **Schedule** page.

Schedule page serves for presenting information connected with sailing according to the selected schedule (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5,* section*Route Monitoring,* paragraph *Sailing Along the Route*). For the display of data, it is necessary to load a route on **Route Monitoring** page of **Monitoring** panel (see above *Loading Route*). The schedule elements whose values differ from those set on **Route Monitoring** page of **Monitoring** page.

The display contains the following data:

- To WPT to select a WPT number for the display of associated schedule elements; the line to the right shows the name of the WPT if any was given by the operator;
- Schedule to turn on the display of ETA and TTG calculated with regard to the prepared schedule;
- Current SOG to turn on the display of ETA and TTG calculated with regard to the current speed (SOG);
- ETA (UTC) estimated time of arrival in the selected WPT calculated from the remaining distance and set speed (UTC/Ship depending on the setting made in the Control panel);
- TTG time to go to the specified WPT calculated with regard to the actual ETA;
- DWOL distance to to wheel over line;
- PTA planned time of arrival in the specified WPT taken from the schedule.

In the bottom part of the display there is a calculator for calculating speed to go (STG) to the specified waypoint or planned time of arrival (PTA) in the specified waypoint:

- **STG** operator-entered planned speed of proceeding to the specified point for the PTA calculations in the window on the right;
- **PTA** operator-entered planned time of arrival (PTA) to the specified point for the STG calculations in the window on the left.

Unloading Route and Schedule

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 📃
Monitoring
Navtex "
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page.

Route Monitoring Safety Alerts Navigational Alerts									
Ship: Headline COG vector HDG vector Ship by contour Align by HDG No wind									
Route: St-Petersburg-Hamburg	Schedule with T&C - Unload XTD Radius	WPT name Wheel over line Sun / Moon							
	Course/Leg/Spo	Heading mark Ref. point Remark							
Waypoints Next waypoint: Auto selection Cartering Radius : From Route Table	Past track settings Track color : Plot interval: Time label: Own ship track: 0 s 30 min 0 hours Track history : Current Focus on Track Show time-labels Show primary track Show secondary track/position	Alerts • End of route • Out of XTD • Out of schedule 0 min • WPT approach 0 min • • Off leg course 5.0 ° Alternative route segments Approach to segment 0 min							

In Route group press Unload button. The route and/or schedule loaded for sailing will be unloaded.

Route:	St-Petersburg-Hamburg -	Schedule with T&C -	Unload 🚽
			Schedule 📐
			Route and schedule

Handling Charts and Chart Information

Prompt Search and Load Charts

Open **Charts** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the left part of **Charts** panel, which will open up, to switch to **Complete list** or **By position** page depending on which chart is required to be found. All the functions of these pages are identical, the only difference between them being in the set of charts available for work.

Complete list By position					General Layers ENC Main chart panel		
Chart Number	▲ Scale	Last upd.	Updated to	Format		Chart autoload:	N OFF FIX
aa4c1xms	1:60,000	02-01-2008		ENC	H	Chart autoscale:	OFF
aa4c1xoo	1:60,000	02-01-2008		ENC		Scale ratio	0 -
aa5c1ab1	1:14,000	02-01-2008		ENC			
aa5c1ab2	1:14,000	02-01-2008		ENC		 Show only libraries for D 	
aa5c1cde	1:14,000	02-01-2008		ENC		Chart priority	Navi-Planner
aa5c1foo	1:14,000	02-01-2008		ENC		None	
aa5c1hio	1:14,000	02-01-2008		ENC		ENC	
aa5c1jkl	1:14,000	02-01-2008		ENC		DNC	
aa5c1mns	1:14,000	02-01-2008		ENC		HCRF	
aa5c1moo	1 · 14 000	02-01-2008		FNC			

The aforementioned pages contain the following:

- Chart number input window and Find button activate the chart search function by the number entered in the window.
- If the chart with the required number has not been found, the prompt bar in the bottom part of the area displays the following message:
 - No charts found no charts with this number have been found;
 - **Partial match found** a group of charts has been found, whose numbers start with the entered characters.

- Manual chart selection window. Charts in the list can be sorted by the following parameters:
 - Chart Number chart number;
 - Scale chart scale;
 - Last upd. date of the most recent chart updating in dd-mm-yyyy format;
 - Updated to the media, which was used for the latest updating of TX-97 or SENC chart collection;
 - Format chart format.

Type the number or the first characters of a chart from the ship folio in the input field, and press Find button.

nl110 Find Load Chart							
Chart Number	▲ Scale	Last upd.	Updated to	Format			
lv512101	1:10,000	08-07-2011	WK21-12	TRS			
lv513700	1:7,500	08-01-2012	WK21-12	TRS			
lv532100	1:8,000	10-10-2011	WK21-12	TRS			
lv532102	1:8,000	08-01-2012	WK21-12	TRS			
lv532103	1:8,000	17-09-2011	WK21-12	TRS			
lv613215	1:2,000	08-05-2009	WK21-12	TRS			
lv613250	1:2,000	10-10-2011	WK21-12	TRS			
lv613504	1:5,000	10-12-2009	WK21-12	TRS			
nl110	1:75,000	19-01-2012	WK08-12	TRS			
nl110a	1 · 40 000	19-01-2012	WK08-12	TRS			

The necessary chart will be highlighted in the table. Press Load Chart button, the selected chart will be loaded in the Chart panel.

Loading and Scaling Charts under Own Ship Position

Open **Charts** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config 🔨
Log Book
Man Corr
Maps
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the right-hand part of Charts panel, which will open up, to switch to General page.

General Layers ENC						
Main chart panel						
Chart autoload:	OFF FIX					
Chart autoscale:	OFF					
Scale ratio:	0 -					
• Show only libraries for DNC charts						
Show only ibraries for L						
Chart priority	Navi-Planner					
	Navi-Planner					
Chart priority						
Chart priority None	Navi-Planner					
Chart priority None ENC	Navi-Planner					

This page is intended for the control of chart automatic loading and scaling which are determined by the following parameters:

- Chart autoload chart loading modes switching buttons:
 - ON to turn on the chart autoload mode whereby the largest scale chart will be automatically loaded;
 - **OFF** to turn off the autoload mode; as this is done, the current chart under the ship position or the chart loaded manually is fixed until the loading mode switch;
 - **FIX** to turn on the chart fixing mode; as the ship symbol crosses the boundary of such chart, the chart loading mode is automatically switched to ON position.
- Chart autoscale chart scaling modes switching buttons:
 - **ON** to load the chart on its original scale;
 - **OFF** to load the chart on the screen current scale.
- Scale ratio to set the loaded chart scale differing from its original scale by the number of fixed scale values (±5);
- Show only libraries for DNC charts to enable displaying of DNC library name instead of DNC tiles names (if DNC charts used);
- Chart priority to set the chart loading priority under the ship position:
 - None to load charts most suitable to the set scale. In this case, if there are several charts on the same scale, priority is given to the TX-97 (TRX) format charts;
 - ENC to load ENC format vector charts;
 - DNC to load DENC format vector charts;
 - HCRF to load ARCS and Seafarer format raster charts (RCDS mode, see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Important Indications*);
- Navi-Planner to open the Navi-Planner 4000 application;
- HCRF Review to open the window for viewing ARCS and Seafarer format charts.

Chart Loading

To turn on chart autoloading:

1. Press ON button in Chart autoload row of buttons (if not depressed).



2. Press Autoload button in the Charts Area window of the Control panel.

a259 -	Autoload OFF
Last upd.:	23-02-2012
Updated to:	WK08-12

This window is designed for the adjustment of the chart display on the Chart panel:

- **Chart number** to call a menu with a list of charts under the ship position (if the ship symbol is displayed on the chart) or the list of all the charts available in the ship folio. The button shows the current chart number;
- Autoload to turn on the function for the automatic loading of charts. There is an indicator to the right of the button:

ON - the function is turned on (Autoload button is greyed);

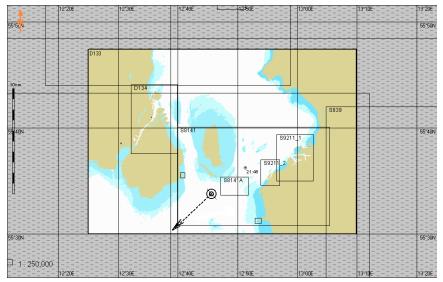
OFF – the function is turned off;

FIX – to fix the current chart.

The chart autoloading mode is set. To manual loading of the required chart, press **OFF** button in **Chart autoload** row of buttons (if not depressed).



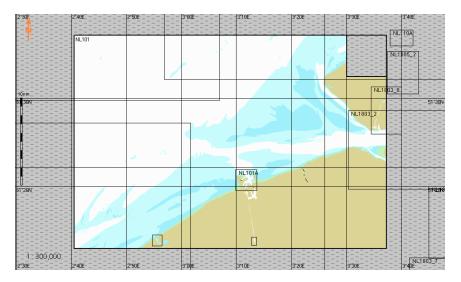
The chart autoloading mode is OFF, and the screen displays the current chart only.



In the Charts Area window of the Control panel, press button with the current chart number.

nl1805_	0 -	Autoload	OFF
nl100	TRS	1 : 75,000	
nl101	TRS	1:40,000	
nl110b	^N TRS	1:50,000	
nl116	TRS	1:40,000	
nl116a	TRS	1:25,000	
nl120	TRS	1:40,000	
nl120a	TRS	1:20,000	
nl120b	TRS	1:25.000	7

Select the necessary chart from the list. The ECDIS task screen will display the required chart.



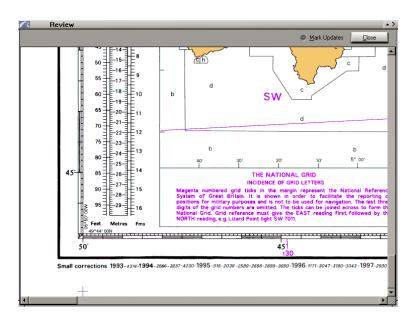
Selecting Loading Priority of Various Format Charts

Where ARCS and Seafarer format charts are available in the ship folio, you can set their loading priority. In **Chart priority** group check **HCRF** checkbox to set the loading priority for charts of ARCS and Seafarer formats.

Chart priority	Navi-Planner
None SNO	HCRF Review
ENC DNC	
• HCRF	

Note: The checking of this checkbox turns on the RCDS (Raster Chart Display System) mode. In this case, the Chart panel starts displaying important indications related to this mode (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Indications*, paragraph *Display of Important Indications*).

To view ARCS and Seafarer format charts, press HCRF Review button or button on the Chart panel toolbar. The chart is displayed in the window, which opens up.



To display the updating which may have been done, check **Mark Updates** checkbox. If necessary to set loading priority of ENC format charts, check **ENC** checkbox.

Chart priority	Navi-Planner
None	HCRF Review
• ENC	
DNC	
HCRF	

If necessary to set loading priority of DNC format charts, check DNC checkbox.

Chart priority	Navi-Planner
None	
DNC	
• DNC	
HCRF	

Chart Scaling

To automatic scaling, press ON button in Chart autoload row of buttons (if not depressed).



Press ON button in Chart autoscale row of buttons (if not depressed).



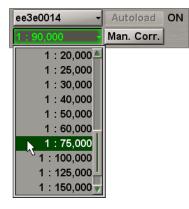
If it is necessary to turn on manual change of scale in the transfer to the next chart, use Scale ratio window to set the number of fixed values (from 1 to 5), which the scale should be increased/decreased by.

Scale ratio:	-4 -	
	-5	
	-4	
	-3 -2	
	-2	
	-1	
	0	
	1	
	2	
	2 3	
	4	
	5	

To manual scaling, press OFF button in Chart autoscale row of buttons.



Press scale button in Chart Area window on the Control panel (the button shows the current screen scale).



Select the required scale from the list, which will open up, and press the left trackball button. The ECDIS task graphic screen will display all the charts on the set scale.

There are two ways to decrease the chart display scale by the fixed scale value:

- Press 🔍 button on the Chart panel toolbar;
- Press <ZOOM OUT> key on the ES6 keyboard.

There are two ways to increase the chart display scale by the fixed scale value:

- Press

 button on the Chart panel toolbar;
- Press <ZOOM IN> key on the ES6 keyboard.

To display the chart on the original scale, press **1:1** button on the Chart panel toolbar.

Switching Chart Information Layers

Open **Charts** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config 🔨
Log Book
Man Corr
Maps 📃
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the right-hand part of **Charts** panel, which will open up, to switch to **Layers** page.



This page is intended for controlling the display of individual chart information classes by using the following controls:

- Display category to switch presentations of different display types:
 - Base to turn on presentation of objects included in the Base Display;
 - Standard to turn on presentation of objects included in the Standard Display;
 - Custom to turn on presentation of objects included in the Additional Information Display at the user discretion;
 - All to turn on presentation of all the objects included in the Additional Information Display.

According to the IEC 61174 standard the following information, has to be displayed during planning of a route and monitoring of a route:

- Display Base to be permanently shown on the ECDIS display, consisting of:
 - Coastline (high water);
 - Own ship's safety contour;
 - Isolated underwater dangers of depths less than the safety contour which lie within
 - Safe waters defined by the safety contour;
 - Isolated dangers above water which lie within the safe water defined by the safety
 - Contour such as fixed structures, overhead wires, etc;
 - Scale, range and north arrow;
 - Units of depth and height; and
 - Display mode.
- Standard Display, consisting of:
 - Display base;
 - Drying line;
 - Buoys, beacons, other aids to navigation and fixed structures;
 - Boundaries of fairways, channels, etc.;
 - Visual and radar conspicuous features;
 - Prohibited and restricted areas;
 - Chart scale boundaries;
 - Indication of cautionary notes;
 - Ship's routing systems and ferry routes;
 - Archipelagic sea lanes.
- All other information, to be displayed individually on demand, for example:
 - Spot soundings;
 - Submarine cables and pipelines;
 - Details of all isolated dangers;
 - Details of aids to navigation;
 - Contents of cautionary notes;
 - ENC edition date;
 - Most recent chart update number;
 - Magnetic variation;
 - Graticule;
 - Place names.

Press Display category button and select Standard menu item from the drop-down list:



All the checkboxes for turning on the display of the objects included in the display will be checked by default:

- Buoys, beacons, aids to navigation to turn on the display of buoys, beacons, aids to navigation;
- Boundaries and limits to turn on the display of boundaries and limits;
- Prohibited and restricted areas to turn on the display of prohibited and restricted areas;
- Ships' routeing systems and ferry routes to turn on the display of ships' routeing systems and ferry routes;
- Archipelagic sea lanes to turn on the display of archipelagic sea lanes;
- Cautionary notes to turn on the display of cautionary notes;
- Drying line to turn on the display of drying lines;
- Miscellaneous to turn on display of all not covered objects by Standard display;
- Chart scale boundaries to turn on the display of chart scale boundaries;.

Uncheck the appropriate checkboxes to turn off the display of unnecessary chart objects.

Note: If the Standard Display is selected, but some viewing group included in the Standard Display is turned off the **STD DISP is customized** important indication is displayed in the **Operational** window of the Control panel (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4,* section *Indications,* paragraph *Display of Important Indications*).

There is another way to set the necessary layer.

The Standard Display can also be set by pressing the **STD DISP** button on the Control panel.

STD DISP Event

Settings on the Layers page and on the Control panel are equalised.

When the Standard Display is set, the display of the radar overlay, ARPA and AIS targets on the ECDIS task screen is automatically turned off.

X-1 - Overlay AIS ARPA -

To set displays from the keyboard:

- Press <ALL LAYERS> key on ES6 keyboard to turn on presentation of all the objects included in the Additional Information Display;
- Press the <Standard DISPLAY> key on ES6 keyboard to set the Standard Display.

To turn on the display of the chart over the radar picture, press 🖻 button in the Display Panel toolbar. In this case:

- Base Display mode is turned on;
- radar overlay is turned off;
- no targets (AIS, RIB, ARPA) are displayed;
- no tides or currents are displayed;
- no maps objects are displayed;
- no Navtex objects are displayed.

With the use of ES6 keyboard, press the <SHOW CHART> key to activate the function.

Press Display category button and select Custom menu item from the drop-down list:

Display category:	Custom
	Base Standard
	Custom 🔪 All

Check the checkboxes for turning on the display of necessary additional chart objects:

- All objects included in the Standard display;
- All Isolated dangers to turn on the display of isolated dangers with depths over them larger than the safety depth;
- Submarine cables, pipelines to turn on the display of submerged cables and pipelines;
- All depth contours to turn on the display of all the depth contours;
- Tidal to turn on the display of tidal information;
- Depth contours tto turn on the display of depth contours with depths over them larger than the safety depth;
- Seabed to turn on the display of ground characteristics;
- Important text to turn on the display of important text;
- Other text to turn on the display of other text (Names, Light description, etc.);
- Unknown to turn on the display of objects which are not specified in S-52 standard;
- Miscellaneous STD- to turn on the display of all not covered objects by Standard display;
- Miscellaneous to turn on the display of all not covered objects by Custom display;
- Magnetic variation to turn on the magnetic variation;
- Spot soundings to to turn on the display of depth values smaller than the setting made in the relevant window (if the setting is "0", all the soundings are displayed).

If selected All menu item from the Display category drop-down list, all the checkboxes for turning on the display of the all available objects will be checked by default.

Handling ENC Format Charts

Open **Charts** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config 🔨
Log Book
Man Corr
Maps 🗌
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
🗖 Tasks

Use the tab in the right-hand part of Charts panel, which will open up, to switch to ENC page.

General Layers ENC					
Areas: Plain	-]	Four shades		
Points: Simplifie	ed 🗸	·	Shallow pattern		
			 Scale min 		
Shallow contour:	10	m	• Full light lines		
Safety contour:	10	m	 Highlight Info 		
Safety depth:	10	m	Highlight Doc		
		1	Update review		
Deep contour:	10	m	0 7		
• Danger in shallo		Accuracy			
• Contour labels			National language		
			Date dep. objects		
11.12.2015					
Highlight Date dep.					
Sh	Hide All				

This page is intended for the adjustment of ENC format chart display and handling.

From Areas drop-down list, select the style of area type object boundary display (Plain and Symbolised). From Points drop-down list, select the style of the point type object display (Paper chart and Simplified). Check the following checkboxes for turning on the display of necessary additional information classes:

- Danger in shallow water to turn on the display of isolated danger objects which are located in the unsafe waters;
- Contour labels to turn on the display of contour labels;
- Four shades to turn on the colour highlighting of the set depth areas;
- Shallow pattern to turn on the display of hatching in the presentation of areas with depths smaller than the safety contour on ENC format charts;
- Scale min to turn on the display of an object on inadmissible scales to it (generalization method selection);
- Full light lines to switch the lengths of lines delimiting the light visibility sectors;
- Highlight Info to turn on the display of highlighting for objects with "Inform" attribute;
- Highlight Doc to turn on the display of highlighting for objects with "Text and/or Picture" attribute;
- Update review to turn on colour highlighting for the objects which have undergone some modification in the process of the latest accepted correction;
- Accuracy to turn on the display of accuracy symbols for the ship positioning and sounding during seabed contour survey on ENC format charts;
- National language to turn on the display of national language text;
- Date dep. objects to turn on the display of chart objects with temporal attributes;
- Highlight Dat dep. to turn on the display of a symbol that indicates where in the chart display the objects with temporal attributes are located;

If it is necessary, press Show All button to turn on the display of all the parameters, or Hide All button to turn off them.

The following windows used for information only (these parameters are set on the **Safety Alerts** page of the **Monitoring** panel):

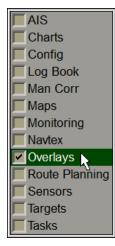
- Shallow contour in the ENC four shades mode defines the value of the shallow contour affecting colours of depth areas (dark blue for depth areas with values shallower than the shallow contour);
- Safety contour mariner-selected contour to distinguish on the display between safe and unsafe water;
- Safety depth mariner-defined depth to emphasize soundings on the display equal to or less than this value;
- **Deep contour** in the ENC four shades mode defines the value of deep contour affecting colours of depth areas (the lightest S-52 colour for depth areas deeper than the deep contour).

Handling AIO Chart

Attention! For the AIO chart to be displayed, the ENC charts which they are attached to should be installed.

Note: AIO chart is installed by using the Navi-Planner 4000 application.

Open **Overlays** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



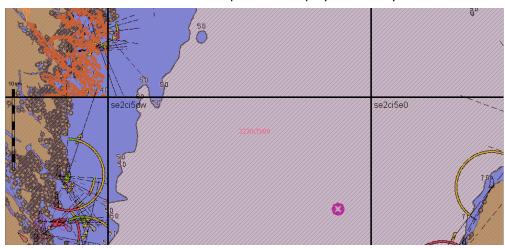
Use the tab in the top part of Overlays panel, which will open up, to switch to AIO Charts page.

IO Charts TOE	00 Charts Clearing Bearing MSI Mar	pol areas		
	Fi	nd Load		
Complete list B	/ monitoring route			
T&P Notices	Information	ENC Charts Affected	Reference	Show AIO
2692(T)/13	Depths.	JP34M56G,JP34M56I,JF	Yes	Print
3582(T)/14	Obstruction.	RU2M0UQ9,RU3M6US9	Yes	
2726(T)/13	Submarine cable. Platform. Submarine pipeline.	NO1A3000,GB2A2182,1	Yes	AIO Layer Control
4559(T)/13	LANBY.	FR276250	Yes	
2662(T)/14	Restricted area. Buoyage. Anchorage area.	DE516200	Yes	
4021(T)/13	Depths.	JP34NC8G, JP44NC8G,	Yes	
4552(T)/14	Buoy.	AU320147	Yes	
3065(T)/13	Data buoy.	FI29NBAL, FI4EIHMD	Yes	

This page is intended for the handling AIO chart available in the ship collection and NTM (Notices To Mariners) included in the AIO chart.

The page contains the following data:

- Find to activate the chart search function by the NTM number entered in the window;
- Load to load chart which the selected NTM in question refers to;
- Table of NTM;
- Show AIO to display AIO chart on the Chart panel;
- Print to print selected table rows;
- AIO Layer Control to show separately different object classes and polygon attributes.



Press the Show AIO button. The Chart panel will display the AIO layer.

Use the Info function (see *Chapter 11*, section *Obtaining Information on Vector Charts*). On the Info panel select the General Chart Information notation in GB80001: S57Ed3_AIO Chart section by positioning the cursor on it, and press the left trackball button. The page with information on the AIO chart will open up.

<u>GB800001 : S57Ed3 AIO Chart</u> <u>de110000 : S-57 ed 3.1 Chart</u>	Close
GB800001 : S57Ed3_AIO Chart to top	
<u>General Chart Information</u> <u>Area on ENC where UKHO has published a Preliminary Notice to Mariners (prelnm), area</u>	
General Chart Information to top	
Chart format: S57Ed3_ADAL original_name: GB800001 Issue date: 2015-10-8 Correction date: 2015-12-10	
Area on ENC where UKHO has published a Preliminary Notice to Mariners (prelnm), area	•
	>

To switch off AIO layer depress the Show AIO button .

Use the tab in the left part of **AIO Charts** page, which will open up, to switch to **Complete list** or **By monitoring route** page depending on which NTM is required to be found. All the functions of these pages are identical, the only difference between them being in the set of NTM available for work.

The table which will open up shows the NTM (Notices To Mariners) included in the AIO chart.

The MFD capabilities can be used for reading and printing out the current NTM.

Type the number or the first characters of NTM in the input field, and press Find button.

5229	00 Charts Tce charts Satellite charts	Find Load			
T&P Notices	Information	ENC charts affected	Reference		Show AIO
5533(T)/07	Buoyage	GB380020	Yes		Print
3287(T)/11	Fish havens.	FR574920,FR574930,FF	Yes		
1909(T)/11	Light. Buoyage. Obstruction.	PL3J3030,PL4P4515	Yes		D Layer Control 👻
2866(T)/12	Depths.	JP34NC88,JP44NC8A	Yes		
5229(T)/05	Fish traps	GB204624	Yes		
1939(T)/11	Depths.	JP5IGO6H	Yes		
2867(T)/12	Depths.	JP54RUOS	Yes		
2880(T)/13	Buoyage.	C1313100,C1313300,C	Yes		
4176(T)/09	Buoyage. Automatic Identification	KR2J1000,C1313300,C		V	

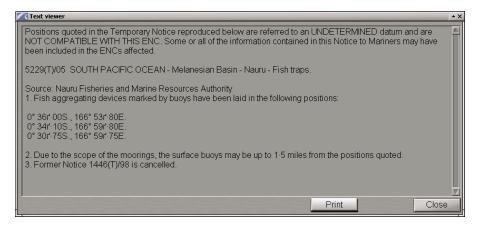
The necessary NTM will be highlighted in the table. The ENC charts affected column lists the chart which the NTM in question refers to.

Double click on this NTM: the Chart panel will display the area which this NTM is applicable to.

Press Yes button in the Reference column.

AIO Charts TOE	0 Charts Ice charts Satellite charts			
5229		Find Load		
Complete list By	/ monitoring route			
T&P Notices	Information	ENC charts affected	Reference	Show AIO
5533(T)/07	Buoyage	GB380020	Yes	Print
3287(T)/11	Fish havens.	FR574920,FR574930,FF	Yes	
1909(T)/11	Light. Buoyage. Obstruction.	PL3J3030,PL4P4515	Yes	AIO Layer Control -
2866(T)/12	Depths.	JP34NC88,JP44NC8A	Yes	
5229(T)/05	Fish traps	GB204624	Yes	
1939(T)/11	Depths.	JP5IGO6H	GB522905.TXT	
2867(T)/12	Depths.	JP54RUOS	Yes	
2880(T)/13	Buoyage.	C1313100,C1313300,C	Yes	
4176(T)/09	Buoyage. Automatic Identification	KR2J1000,C1313300,C		V

Select the *.txt file and press the left trackball button.



Read the NTM. If it is necessary to print out the NTM, press the Print button. To close the **Text viewer** window, press the **Close** button.

MFD implements a capability to show separately different object classes and polygon attributes. To do this press the AIO Layer Control button.

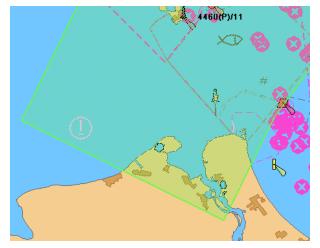
	0 Charts Ice charts Satellite charts Fi	nd Load		All AIO Objects Temporary Notice (T) Preliminary Notice (P) ENC Preliminary Notice (EP) No Information Objects
T&P Notices	Information	ENC charts affected	Reference	Text
60(T)/10	Jetty.	GB401735,GB51735B	Yes	 Pattern Fill AlO Bounding Box
2986(T)/12	Obstructions.	JP54KAJA	Yes	AIO Layer Control
2939(T)/13	Dredging area.	JP44MONA, JP5IEJPT	Yes	Alo Layer Control
4297(T)/08	Channel depths. Channel limits	AU5137X8,AU435138	Yes	
5652(T)/09	Buoy. Automatic Identification System.	KR2J1000,C1413370,C	Yes	
666(T)/11	Data buoys.	GB303171,GB202837	Yes	
2882(T)/13	Depth.	SE5HI7LB,SE6DI7LA	Yes	
5533(T)/07	Buoyage	GB380020	Yes	
3287/TV/11	Fich havene	EP57/020 EP57/030 EI	Vaa	

By default, the display of all the object classes and polygon attributes is turned on. The table below shows ways of displaying object classes on the Chart panel.

Object Class	Definition	Hatching colour on the Chart panel
Temporary Notice	Indicates an area on an ENC where UKHO has published a Temporary Notice to Mariners	Red
Preliminary Notice	Indicates an area on an ENC where UKHO has published a Preliminary Notice to Mariners, this includes (EP) NMs	Green
ENC Preliminary Notice	Indicates an additional preliminary information that is specific to ENCs, such as reported navigational hazards that are not yet charted	Blue
No Information	Indicates an area on an ENC where there is no equivalent BA chart coverage of the area	Grey

There is also a capability to display AIO geometric polygons with or without a fill and with text/boundaries turned on or off. The table below provides examples of polygon attributes display with the checkboxes checked/unchecked.

Polygon Attribute	Display On	Display Off
Text	#460(P)/11	
Pattern fill		
AIO Bounding Box		

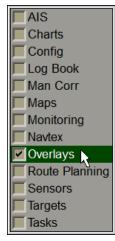


If the display of all attributes is turned on, the polygon looks as follows:

Handling TOD0 Charts

Note: TOD0 charts are installed by using the Navi-Planner 4000 application.

Open **Overlays** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of **Overlays** panel, which will open up, to switch to **TODO** page.

[AIO Charts TOD0 Charts Ice charts Satellite charts			
THE NUMBER OF		Find	Load Unload A	
A COLUMN S	Name	Scale	Issue date	Last correction date
AT MALE	tod017a	1:3100000	4-2003	
Contraction of the local distribution of the				
The second second				
THE OWNER WATCHING				
STATES OF				
Contraction of the local division of the loc				
TAXABLE IN COLUMN				
THE DESIGNATION OF THE PARTY OF				

This page is intended for the handling TODO charts available in the ship collection. The panel contains the following buttons:

- Find to activate the chart search function by the chart number entered in the window;
- Load/Unload to load/unload selected chart;
- Unload All to unload all charts;
- Focus on chart display in the center of the ECDIS task screen.

The panel contains the table with installed TOD0 charts data:

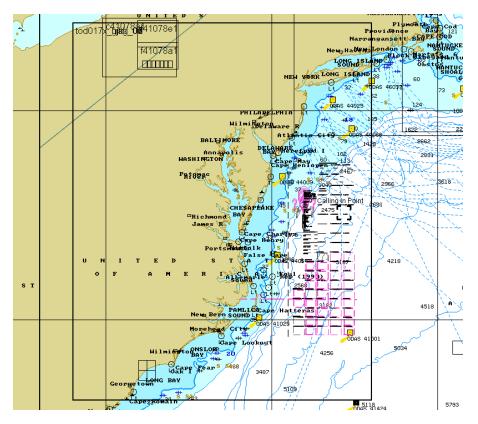
- Name TOD0 chart name;
- Scale TOD0 chart scale;
- Issue date TOD0 chart issue date;
- Last correction date latest correction date.

Type the number or the first characters of a TOD0 chart in the input field, and press Find button.

The necessary chart will be highlighted in the table.

Select the necessary TOD0 chart from the table.

Press Load button, the selected chart will be loaded in the Chart panel.



Press the Focus on chart button. The chart will display in the center of the ECDIS task screen.

Use the Info function (see *Chapter 11*, section *Obtaining Information on Vector Charts*). On the **Info** panel, select the TOD0 notation by positioning the cursor on it, and press the left trackball button. The page with information on the TOD0 chart will open up.

TOD017_1\tod017x\hjag : TOD0 Chart	<u>to top</u>		lose
General Chart Information			
Named Location (ZD040)			
General Chart Information	to top		
TOD017, Edition 1; 2003-04-30; PresLib: GeoSym4			
Source library : tod017a			
Depth units : M			
Height units : M			
Scale : 1 : 3100000		•	

To unload selected TOD0 chart press Unload button. To unload all loaded TOD0 charts press Unload All button.

Using Auto Zoom Function

Auto Zoom mode enables the automatic increase of scale as the next waypoint is approached (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 3,* section *Split Screen*). This mode is available on **Dual** panel only.

Open Config panel by selecting the appropriate line of the drop-down list Tasks List on the Control Panel.



Use the tab in the top part of Config panel, which will open up, to switch to General page.



In AutoZoom Settings group from the drop-down list, select the maximum scale as the ship is passing the current WPT on Dual panel. In Time of update input window, set the DTW analysis interval.



To turn on Auto Zoom mode, press Az button on **Dual** chart panel toolbar.

Note: The ship should be proceeding in the route monitoring mode.

In this case, as DTW is decreasing, the ECDIS task increases the scale by one fixed scale value so that the ship position remains within **Dual** panel. With the ship approaching the boundary of **Dual** panel in the process of manoeuvres, the scale may be reduced by one fixed scale value. With a change of the WPT, the scale is set so that **Dual** panel displays the ship symbol, current leg of the monitored route and the current WPT.

Using the Mooring Mode

Attention! Turning on/off Mooring Mode is available only at station with the status MASTER.

This mode is intended for mooring operations and sailing in the restricted waters with intensive maneuvering. Open **Config** panel by selecting the appropriate line of the drop-down list **Tasks List** on the Control Panel.

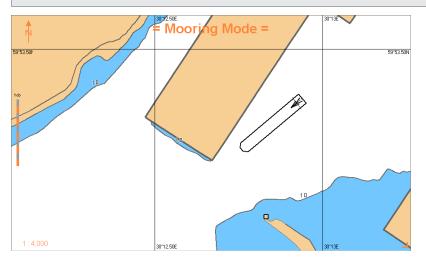


Use the tab in the top part of **Config** panel, which will open up, to switch to **General** page.

General Radar setting	s Time Zor	e License	e Info CON	1 Trace Un	its Ship Set	tings Route S	ettings		
Palette	Timer not	ification	Lucia	Chart par		AutoZoom S		Help	EXIT
Daylight -	EveryAt	16-02-20	min 16 15:16	Short DM Settir	Long ngs	1 : 5,000		Ship histor	
Skin Metallic -	o Off	,		Initial Sca 1:4,000	le: •	Time of upda	ate:	Steps: 5	s
	End of W	atch notifica min	ation	Display re	eset to	Mute alert s		Ship Condi	tion dist, m
								• Loaded	400
				Test alarn	ate alarm			Medium	300
				Gener				In Ballast	200

In Mute alert sound group press Mooring Mode button.

Note: The mooring mode cannot be enabled as long as the ownship speed exceeds 5 knots (the **Mooring Mode** button is greyed).



In this case, the **Mooring Mode** warning appears in the top part of the Chart Panel, and the sound associated with some alerts is turned off.

As the Mooring mode is turned on, a full event named "Mooring Mode ON" is entered in the log.

To turn off the Mooring Mode, press the Mooring Mode button again. In this case, a full event names "Mooring Mode OFF" is entered in the log.

Alerts disabled in Mooring mode:

Alert name	Alert name
DLOG: STW no data	POSN. integrity failed
DLOG: no input	SOG integrity failed
LOG no input	STW Integrity failed
LOG no data	

Search and Rescue Operations

Using Man Overboard (MOB) Mode

MOB mode enables the display of information on a geographic point saved at a certain time. There are three ways to turn on MOB mode:

- 1. Press 🕥 button on the Chart panel toolbar.
- 2. Press <MOB> key on the ES6 keyboard.
- 3. Press external MOB button (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Annex B,* section *Adjustment of MFD Operation with WAGO Modules,* paragraph *Connection of External MOB Button*).

As this is done, the system makes a logbook entry which contains the name of the event: "MOB ENABLED" and a full set of recorded parameters. Control panel displays a panel shown below:

Multipanel	×
мов	-
Latitude:	58° 02.268 N
Longitude:	020° 01.498 E
Elapsed time:	6 s
Bearing:	Range:
037.1°	0.0 NM
Set time	Set pos
Show seek c	ircle 0.0 kn
	,

The following parameters can be displayed:

- coordinates of MOB mode activation;
- time elapsed since MOB mode was activated;
- bearing from the ship current position to the activation point;
- distance from the ship current position to the activation point.

If you know the MOB event time, press on Set time... button.

Enter MOB time		×
Enter time (ship time):	29-07-14 10:56:00	
OK	Cancel	

In the input window, enter the MOB event time: MOB point is set in the own ship track point closest to the entered time.

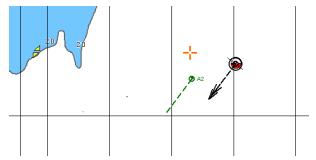
If you know the MOB event coordinates, press Set pos... button.

Enter MOB position		x
Enter position:	58°02.268' N 020°01.498' E	
	By Cursor	
OK	Cancel	

In the input box, enter the MOB coordinates: the MOB display is re-drawn to suit the entered data (e.g., upon receipt of coordinates from another ship).

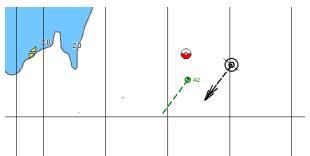
You can also use the cursor for setting the MOB coordinates. To do this, press the By Cursor button.

Move the graphic cursor, which will appear, to the MOB coordinates.



Press the left trackball button, the cursor will assume the form of a free cursor.

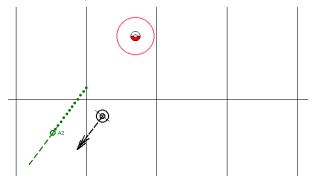
Press the OK button in the Enter MOB position window.



The MOB symbol will move to the specified coordinates.



The **Show seek circle** button is enabled by default. Use the input box to the right of the button to enter the seek circle expansion rate different from 0.



The Chart panel will display a red-coloured MOB- point-centred seek circle which will be expanding at the set rate. Turn off the seek circle display as required by releasing the button.

To turn the MOB mode off, second press Solution on the Chart panel toolbar or <MOB> key on the ES6 keyboard.

Warning			×
Do you real	ly want to complete	Man Over Board manoue	evre?
	Yes	No	

Press Yes button. Electronic log entry containing "MOB DISABLED" event name, is made.

For the operation of MOB over the AIS, see document *Multi-Functional Display (v. 3.00.340)*. Additional *Functions, Chapter 1*, section *MOB Mode with Use of RDF Rhotheta RT-202/RT-500M*.

Creating SAR Routes

Open Tasks panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

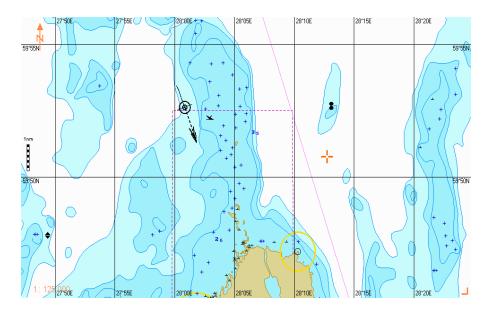
AIS
Charts
Config
Log Book
Man Corr
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
🗹 Tasks 💦

Use the tab in the top part of Tasks panel to switch to SAR page.

Commence search point				SAR route generation	
00°00.000' N 000°00.000' E	Drift:	0.0	kn	Search pattern type:	Expanding square -
	Set:	0.000	•	Search pattern heading:	000.0 *
By cursor				Turn radius:	0.10 NM
Own ship position and speed				Number of legs:	10
Current	Speed:	0.0	kn	Starting leg length:	10.00 NM
58°31.169' N 020°42.296' E					
				Route name: SAR000	Save Monitor
Rhotheta RT-202/RT	-500M sign	al process	ing settin	IS	

There are two ways to set the SAR route start point coordinates in the Commence search point group:

- 1. Enter the SAR route start point coordinates in the input window.
- 2. Press By cursor button. Move the graphic cursor, which will appear, to the SAR route start point coordinates.



Press the left trackball button.

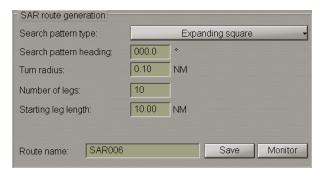
In Drift and Set input windows, set the expected drift and set at the SAR operation site.

In **Own Ship Coordinates** group, set the coordinates of the point of turn to the SAR route start point. If the current ship coordinates are obtained from the positioning system and are then updating until the route save moment, check **Current** checkbox.

In Speed set the expected speed of proceeding along the SAR route.

Expanding Square Route

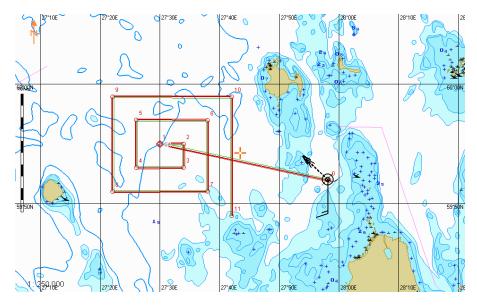
Press the button Search pattern type in SAR route generation group. In the list, which will open up, select Expending square line and press the left trackball button (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5*, section *SAR Routes*).



Set the following SAR route parameters:

- Search pattern heading search direction;
- Turn radius turn radius between the route legs;
- Number of legs number of successive route legs;
- Starting leg length start leg length.

Enter the SAR route name in the Route name line and press the Save button to save the route.



To quick load this SAR route to monitoring mode, press Monitor button.

Parallel Tracks Route

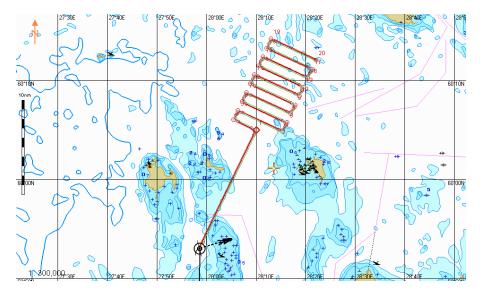
Press the button Search pattern type in SAR route generation group. In the list, which will open up, select Parallel tracks line and press the left trackball button (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5*, section *SAR Routes*).

SAR route generation							
Search pattern type:	Parallel tracks						
Search pattern heading:	000.0	•					
Turn radius:	0.10	NM					
Number of legs:	10						
Leg length:	10.00	NM					
Track spacing:	1.0	NM					
Route name: SAR006		Save Monitor					

Set the following SAR route parameters:

- Search pattern heading search direction;
- Turn radius turn radius between the route legs;
- Number of legs number of successive route legs;
- Leg length length of each leg;
- Track spacing width of zone between the parallel tracks.

Enter the SAR route name in the Route name line and press Save button to save the route.



To quick load this SAR route to monitoring mode, press Monitor button.

Sector Search Route

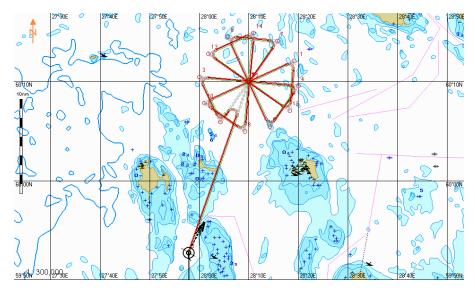
Press the button Search pattern type in SAR route generation group. In the list, which will open up, select Sector search line and press the left trackball button (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5*, section *SAR Routes*).

SAR route generation		
Search pattern type:		Sector search -
Search pattern heading:	000.0	•
Turn radius:	0.10	NM
Number of sectors:	6	
Search radius:	10.0	NM
Turn angle:	030.0	•
Route name: SAR006		Save Monitor

Set the following SAR route parameters:

- Search pattern heading search direction;
- Turn radius turn radius between the route legs;
- Number of sectors number of sectors;
- Search radius search area radius (sectors);
- Turn angle sector turn angle.

Enter the SAR route name in the Route name line and press Save button to save the route.



To quick load this SAR route to monitoring mode, press Monitor button.

Track Line Search Route

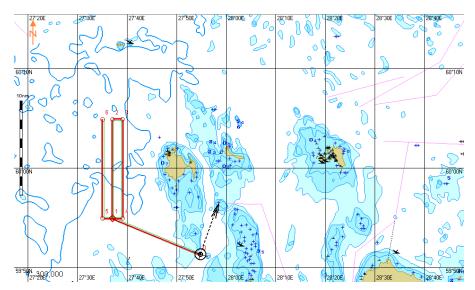
Press the button Search pattern type in SAR route generation group. In the list, which will open up, select Track line search line and press the left trackball button (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5*, section *SAR Routes*).

SAR route generation			
Search pattern type:	Track line search 🗸		
Search pattern heading:	000.0	٥	
Turn radius:	0.10	NM	
Leg length:	10.00	NM	
Track spacing:	1.0	NM	
Return to initial position			
Route name: SAR006		Save Monitor	

Set the following SAR route parameters:

- Search pattern heading search direction;
- Turn radius turn radius between the route legs;
- Leg length length of each leg;
- Track spacing width of zone between the parallel tracks;
- Return to initial position to plot the SAR route with a return to the initial position.

Enter the SAR route name in the Route name line and press Save button to save the route.



To quick load this SAR route to monitoring mode, press Monitor button.

Creeping Line Search Route

Press the button Search pattern type in SAR route generation group. In the list, which will open up, select Creeping line search line and press the left trackball button (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 5*, section *SAR Routes*).

SAR route generation	
Search pattern type:	Creeping line search 🗸
Search pattern heading:	•
Turn radius:	0.10 NM
Number of legs: 10	Aircraft speed: 0.0 kn
Leg length: 10.00	NM Ship speed 0.0 kn
Track spacing: 1.0	NM
Route name: SAR000	Save Monitor

Set the following SAR route parameters:

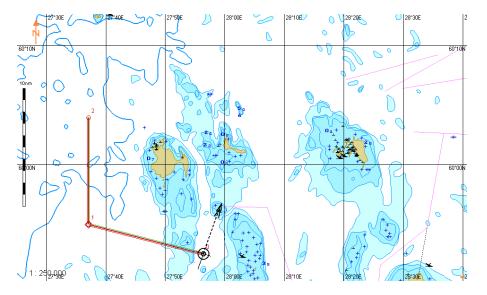
- Search pattern heading search direction;
- Turn radius turn radius between the route legs;
- Leg length length of each leg;
- Track spacing width of zone between the parallel tracks.

Select a rescue facility whose speed is known and enter it in the input box to the right:

1. If the Aircraft speed is selected, the recommended ship speed, calculated from a certain formula, will be displayed automatically in the Ship speed box:

SAR route generation						
Search pattern type	e:	Creeping line search			-	
Search pattern hea	ding:	000.0		0		
Turn radius:		0.10		NM		
Number of legs:	10		0		165.0	kn
Leg length:	10.00	NM	0	Ship speed:	15.0	kn
Track spacing:	1.0	NM				
Route name:	AR006			Save	Mo	onitor

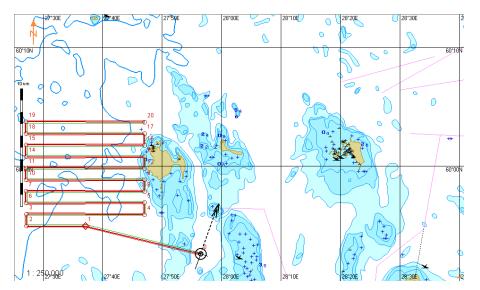
Enter the SAR route name in the **Route name** line and press **Save** button to save the route. For quick loading of this SAR route to the monitoring mode, press the **Monitor** button. In this case, the recommended route for a ship engaged in search will look like follows:



2. If the Ship speed is selected, the recommended aircraft speed, calculated from a certain formula, will be displayed automatically in the Aircraft speed box:

SAR route generation					
Search pattern type:	Creeping line search				
Search pattern heading:	° 000.0				
Turn radius:	0.10 NM				
Number of legs: 10	Aircraft speed:	165.0 kn			
Leg length: 10.00	NM • Ship speed:	15.0 kn			
Track spacing: 1.0	NM				
Route name: SAR006	Sav	e Monitor			

Enter the SAR route name in the Route name line and press the Save button to save the route.



For quick loading of this SAR route to the monitoring mode, press the **Monitor** button. In this case, the recommended route for the aircraft engaged in search will look like follows:

Using Special Purpose Objects

Attention! Work with Special Purpose Objects is only available at a station with the MASTER status.

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon 🛛 🖄
System Information
TRIAL/TGT Simulator
Targets

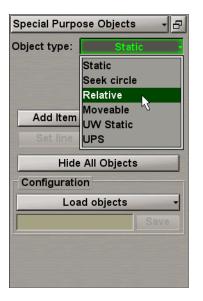
In the list, which will open up, select Special Purpose Objects line and press the left trackball button.

Special Purpose Objects 🛛 🗕 🗗					
Object type:	Static 🗸				
Add Item	Delete				
	Delete All				
Hide	All Objects				
Configuratio	on				
Loa	d objects 🚽				
	Save				
1					

This MFD functionality enables special purpose objects (SPO), mobile and fixed, with certain features to be created and referenced to an electronic chart with the purpose of their further monitoring and obtaining of auxiliary information.

SPO Creating

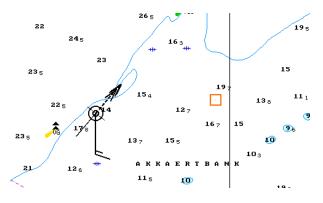
Select the type of SPO to be created. Press the **Object type** button and select the appropriate item from the drop-down list:



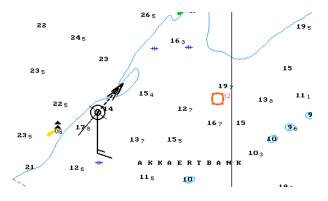
The following types of SPO are available for selection:

- Static the fixed surface object: Target with constant coordinates;
- Seek circle the search circle: Target with constant coordinates around which a circle is formed at the specified moment of time, increasing in accordance with settings made by the user;
- Relative the "satellite": Target with motion parameters identical to the own ship's course and speed;
- Moveable the mobile object: Target with arbitrary motion parameters;
- UW Static the fixed submerged object: Target with constant coordinates and depth;
- UPS the UPS: Target with constant coordinates, reference point.

Press Add Item button. Position the acquisition marker (graphics cursor) on the point where the SPO is required to be plotted.



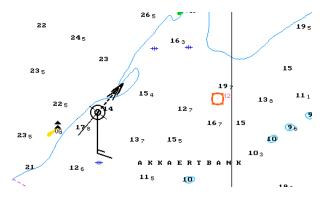
Press the left trackball button: SPO will be set in the specified coordinates.



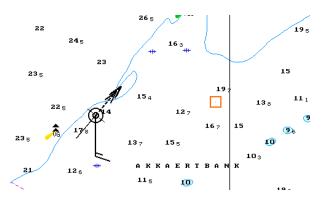
Repeat the procedure until you set the required number of SPO. After the input of the last SPO, press the right trackball button to exit from the SPO setting mode.

SPO Deleting

Press Delete button. Position the marker on the SPO is required to be deleted.



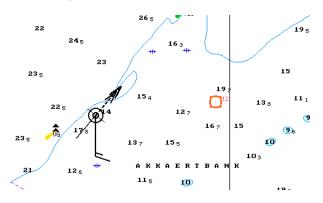
Press the left trackball button.



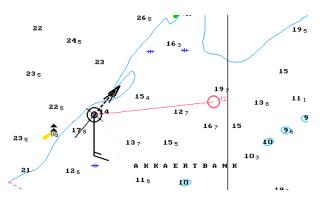
If it is necessary to delete all the previously plotted objects simultaneously, including when the SPO is not displayed on the screen, use Delete all button.

Other Functions

To plot the line connecting the own ship symbol and selected SPO, press **Set line** button. Position the marker on the required SPO.



Press the left trackball button.



To hide all the SPO, press Hide All Objects button. Repeated pressing this button results in re-appearing of all the hidden SPO.

Saving and Loading SPO Configuration

Note: SPO of the following types only can be saved: Static, UW Static and UPS.

Special Purpos	e O	bjects	
Object type:		Stat	ic 🔸
Add Item		D	elete
Set line		Delete All	
Hide /		bject	5
Configuration	1		
Load	obj	ects	-
Kiel bay			Save
The bay			Save

To save the SPO configuration, enter the configuration name in the input line of **Configuration** group and press the **Save** button, which will be enabled. SPO configuration files are accessible with the use of the Data Tool utility, in the **SPO objects** group of **SPO objects** feature, and can be imported/exported from/to another PC.

To load SPO configuration, press Load objects button in Configuration group.

Special Purpose Objects 🚽 🗗				
Object type: Static 🗸				
Add Item	Delete			
Set line	Delete All			
Hide All Objects				
Configuration				
Load objects				
Kiel bay				
1				

From the drop-down list, select the necessary configuration.

Chapter 5. Setting of Safety Parameters

This chapter describes the procedure used in the setting of safety parameters.

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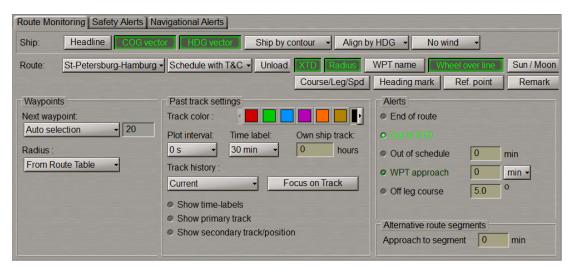
Monitoring of Sailing along the Route and by the Schedule

Attention! Setting of safety parameters in the sailing along the route and by the schedule is available only at station with the status MASTER.

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page.





Alerts group is intended for turning on/off and setting of safety parameters for the alert generation during the sailing along the route and according to the schedule:

- End of route to enable alert generation as the last WPT of the monitored route is passed;
- Out of XTD to enable alarm generation when the ship deviation from the route line is larger than the value set during the route planning;
- Out of schedule to enable and set of alerts generated when the ship is behind or ahead of the schedule;
- WPT approach to enable alert generation as a set period of time before the approach to the WPT;
- Off leg course to enable and set parameters of the alert generated if the deviation between the current course (HDG) and the route leg line direction exceeds the set value.

Check End of route checkbox in Alerts group to turn on the alert generation as the last point of the route is passed.

End of route

The parameter of tracking the ship position relative to the current route leg is set by default. XTD value is set at the time when the route is created in **Route Planning** panel. The alarm is generated when the ship sails beyond the XTD limits.

Out of XTD

Use **WPT** approach to line to enter the alert generation time value as the next WPT is approached. Check the activated **WPT** Approach checkbox to turn on the alert generated if the value of time of approach to the next WPT is less than the set one.



Use **Off leg course** line to enter the value of difference between the ship course and route leg direction. Check the activated **Off leg course** checkbox to turn on the alert generation as the difference between the courses exceeds the set value.



Use **Out of schedule** line to enter the behind-the-schedule or ahead-of-the-schedule time relative to the loaded schedule. The alert is generated when the set value is exceeded. Check the activated **Out of schedule** checkbox.



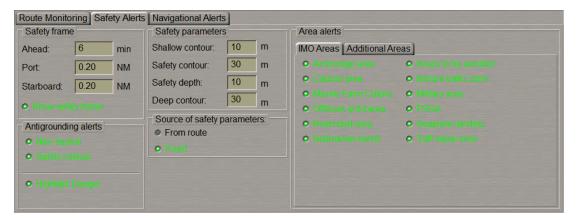
Monitoring of Safety Alerts

Attention! Setting of safety parameters for the detection objects representing danger to navigation is available only at station with the status MASTER.

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Safety Alerts page.



Setting of Safety Parameters for the Detection of Dangerous Objects

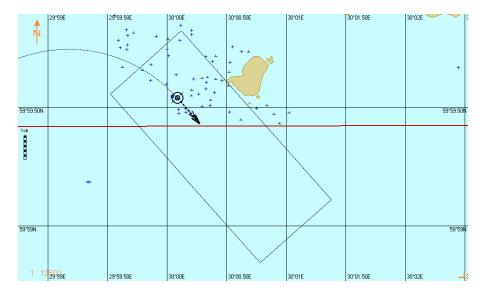
The **Safety frame** group is intended for setting the size of the frame, which will be used for the chart data analysis and for the generation of the Antigrounding alerts, Area alerts and Navigational alerts.

Safety fram	е	
Ahead:	6	min
Port:	0.20	NM
Starboard:	0.20	NM
• Show safe		

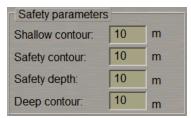
- Ahead window for the input of advance time for alert generation. The time value determines the length equal to the distance covered by the ship proceeding at the current SOG (from 1 to 20 min);
- Port to set the width of the corridor to the left of the ship (from 0.1 to 4.0 NM);
- Starboard to set the width of the corridor to the right of the ship (from 0.1 to 4.0 NM);
- Show safety frame to turn on the display of a safety frame on the ECDIS task screen.

In the Ahead, Port and Starboard input boxes, set the necessary values which will determined the shape of the safety frame.

Check the Show safety frame checkbox to show the safety frame. The safety frame is displayed with a black outlined rectangle:



Safety parameters group is intended for the setting and viewing of safety parameters in the Navigation Mode:



- Shallow contour in the ENC four shades mode defines the value of the shallow contour affecting colours of depth areas (dark blue for depth areas with values shallower than the shallow contour);
- Safety contour mariner-selected contour to distinguish on the display between safe and unsafe water;
- Safety depth mariner-defined depth to emphasize soundings on the display equal to or less than this value;
- **Deep contour** in the ENC four shades mode defines the value of deep contour affecting colours of depth areas (the lightest S-52 colour for depth areas deeper than the deep contour).



Use **Shallow contour** line to enter the value of the shallow contour affecting colours of depth areas for ENC format charts.

Safety contour: 20 m

Use Safety contour line to enter the safety contour value.

×

Press Yes button to confirm the changes you have made.

Safety depth: 20 m

Note: The alert is generated exclusively by the safety contour value, even if the shallow contour value is smaller than the safety contour value.

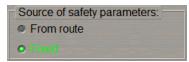
Use Safety depth line to enter the safety depth value.



Press Yes button to confirm the changes you have made.



Use **Deep contour** line to enter the value of deep contour affecting colours of depth areas for ENC format charts.



In the **Source of safety parameters** group, select the source which the safety parameters will be taken from for the route monitoring.

If the route is not loaded for monitoring, the Fixed radio button will be selected automatically, safety parameters set in the Safety parameters group are used for monitoring dangers.

As a route to be monitored is loaded, the last operator-selected From route or Fixed value is set automatically.

If the Fixed value is selected, the safety parameters set in the Safety parameters group are used (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Main Alerts Generation Principles*, paragraph *Safety Alerts*).

If the From route value is selected, safety parameters are selected by using the procedure detailed in *Chapter* 4, section *Loading of Route and Schedule in the Navigation Mode*, paragraph *Selection of Safety Parameters when Loading Monitored Route*).

Setting of Safety Parameters in the Sailing in the Vicinity of Dangerous Objects

Antigrounding alerts group contains checkboxes for enabling/disabling the following safety parameters:



- Nav. hazard to enable the caution generation upon the approach to the navigational hazards (the list of objects see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4,* section *Main Alerts Generation Principles,* paragraph *Safety Alerts*);
- Safety contour to enable the alarm generation upon the approach to the depth line less than the Safety contour value;
- Highlight Danger to turn on the highlight the dangers on the Chart panel.

Check the activated Nav. hazard checkbox to enable the caution generation when the navigational hazards turns up within the safety frame.

Check the Safety contour checkbox to turn on the alarm generation as the safety contour is crossed by the safety frame.

Check the Highlight Danger checkbox to turn on the highlighting of the dangers on the Chart panel falling within the safety frame.

Note: If at least one checkbox in the Antigrounding alerts group is unchecked, the Chart panel displays the SF CNT important indication (for details see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Indications*, paragraph *Important Indications*).

Monitoring of Crossing of Area Limits in IMO and Additional Groups

IMO Areas tab containing checkboxes for the selection (assigning danger-to-navigation status) from the main areas tracked in accordance with IEC-61174 standard.

Area alerts	
IMO Areas Additional Are	eas
• Anchorage area	• Areas to be avoided
Caution area	• Inshore traffic zone
Marine Farm Culture	• Military area
• Offshore prod.area	• PSSA
Restricted area	• Seaplane landing
Submarine transit	• Traff separ zone

Additional Areas tab containing checkboxes for the selection (assigning danger-to-navigation status) from the additional group of those areas, which will be tracked.

Area alerts	
IMO Areas Additional Are	as
Anchor prohibited	Cable area
Cargo tranship.	Deepwater route
Dredged area	Dumping ground
• ESSA	Fairway
Fishing ground	Fishing prohibited
Ice area	Incineration area
Pipeline area	Precautionary area
Recomm.traffic lane	Spoil ground
Traffic SS crossing	Traffic SS roundabout
Two-way traff.route	• Danger area
Exl.econ.zone	Explosive dumping

Select the required areas by checking the appropriate checkboxes in IMO Areas tab.

Switch to Additional Areas tab. Select the required areas by checking the appropriate checkboxes in Additional Areas tab.

For details see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 4*, section *Main Alerts Generation Principles*, paragraph *Safety Alerts*.

Safety Tools

Clearing Bearing

Clearing Bearing allows the construction of visual bearings around dangers at an appropriate distance so that they can be monitored visually.

Attention! All the Clearing Bearings are synchronized on all the network stations.

Open the **Overlays** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 🗌
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of the **Overlays** panel which will open up, to switch to the **Clearing Bearing** page.

AIO Charts To	OD0 Charts A	ML Clearing E	Bearing LDL				
Show CBs	New New	by Cursor C	onfiguration:	Load 🗸	Save www		Link to Route 👻 Delete 👻
Object	Comment	Displa	y Type	Bearing	Range from	Range to	Reference
Remove			Select by Cu	ursor	Edit by Curso	r Remo	

Press the Show CBs button to display Clearing Bearings (CBs) on the ECDIS task screen.

Note: The **Show CBs** button on the **Clearing Bearing** page is synchronized with the **Clearing Bearing** checkbox in the **Info Layers** drop-down list on the Control Panel, therefore, its status (on/off) depends on whether this checkbox is checked or not.

Creating Clearing Bearing

Press the New button.

Bearing:	000.0 °		Type:	Port	Stb
Range start:	0.0 N	М	Range end:	0.0	NM
Reference:	00°00.000' N 000°00.000' E				
Comment:					
Edit by cursor	Sn	ap	Apply		Cancel

In the window which will open up, set the following Clearing Bearing parameters:

1. Select the Clearing Bearing type: Port or Starboard. To do this, press respectively the Port or Stb button.

Note: Selection of the Clearing Bearing means which bearing to the selected reference point will be safe. When the Port button is pressed, any bearing Not More Than (NMT) the set value will be considered to be safe. When the Stb button is pressed, any bearing Not Less Than (NLT) the set value will be considered to be safe.

- 2. Use the Comment input box to enter necessary comments on the Clearing Bearing.
- 3. If the Clearing Bearing is required to be referenced to a chart object, check the **Snap** checkbox. In this case, the chart object name will automatically appear in the table **Comment** column.

Warning! It is easier to enter the parameters listed below direct on the chart with the aid of the graphic cursor called by pressing the Edit by cursor button. If their values are known in advance, this can be done in the relevant input boxes.

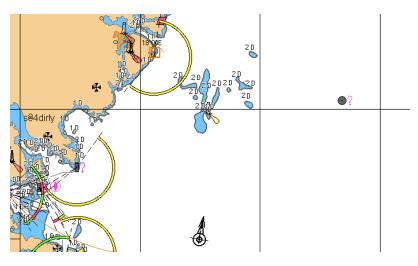
- 4. Use the Bearing input box to enter necessary comments on the Clearing Bearing.
- 5. Use the Range start input box to enter distance from the reference point to the beginning of the Clearing Bearing (cannot be larger than the next value).
- 6. Use the Range end input box to enter the distance from the reference point to the end of the Clearing Bearing.
- 7. Use the Reference input box to enter the reference point coordinates.

To plot the Clearing Bearing on the chart press Edit by cursor button.

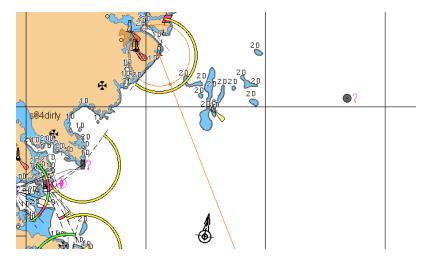
The acquisition marker will appear on the Chart Panel, whereas the right bottom part of the screen will display the Select object information window with the cursor coordinates.

Select object point						
Latitude	56°18.99	33' N				
Longitude	017°43.4	472' E				
Ship position	true	relative				
Bearing	221.9	005.5 🕨 °				
Opp. Bearing	041.9	∢ 174.5 °				
Range	4.25	NM				
	7868	m				
Press Tab to edit manually						

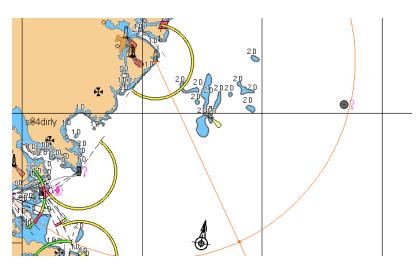
Position the acquisition marker in the reference point of the Clearing Bearing and press the left trackball button, the acquisition marker will change its form to the graphic cursor.



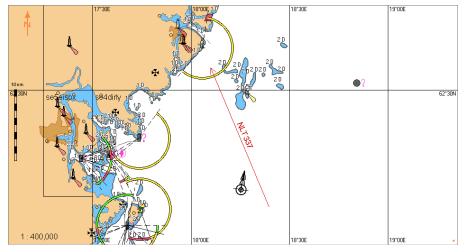
Select the Clearing Bearing reference point and press the left trackball button



Use the ERBL to set the Start point of the Clearing Bearing line and press the left trackball button.



Then set the end point of the Clearing Bearing line and press the left trackball button.



The Clearing Bearing will be set in the specified coordinates on the Chart panel.

The table on the **Clearing Bearing** page shows the Clearing Bearing and its parameters.

AIO Cha	O Charts TOD0 Charts AML Clearing Bearing LDL							
Show	Show CBs New New by Cursor Configuration:			Load 👻	Save		Link to Rou	ite 🔻 Delete 👻
Object	Comment	Display	Туре	Bearing	Range from	Range to	Refer	rence
1	Ronehamn		NLT 🚽	337.0°	3.1 NM	24.4 NM	62° 35.975 N,	018° 03.368 E
Remo	ove Focus C	lear All	Select by Cu	irsor	Edit by Curso	Remo	ve by Cursor	

You can use an alternative Clearing Bearing creation procedure by pressing the **New by Cursor** button. In this case, the acquisition marker will first appear. Use this marker to plot the Clearing Bearing on the Chart panel as described above, and after the exit from the graphic editing mode, the Clearing Bearing parameters editing window will open up.

Clearing Bearing Editing

The Clearing Bearing editing process can be divided into the editing of the Clearing Bearing and its parameters.

Select the necessary Clearing Bearing from the table. You can also choose the Clearing Bearing on the chart by pressing the **Select by Cursor** button: use the acquisition marker to select the necessary Clearing Bearing, it is then automatically selected in the table.

Edit the following Clearing Bearing parameters:

• Comment. Position the cursor on the **Comment** element cell; double click the left trackball button to activate the cell.

Enter the new comment and press the <Enter> key.

- Display. By default, the display on the Chart panel is turned on for all the Clearing Bearings. To turn off the Clearing Bearing display, uncheck the checkbox in the **Display** column.
- Type. Click on the Type element cell. From the drop-down list, select the necessary Clearing Bearing type (see the previous paragraph).
- Bearing. Position the cursor on the **Bearing** element cell; double click the left trackball button to activate the cell.

Enter the new bearing and press the <Enter> key.

• Range from. Position the cursor on the Range from element cell; double click the left trackball button to activate the cell.

Enter the new distance from the reference point to the beginning of the Clearing Bearing (cannot be larger than the next value) and press the <Enter> key.

• Range to. Position the cursor on the Range to element cell; double click the left trackball button to activate the cell.

Enter the new distance from the reference point to the Clearing Bearing end and press the <Enter> key.

• Reference. The coordinates of the Clearing Bearing reference point cannot be changed at the parameters editing stage.

To edit the Clearing Bearing graphically, press the Edit by cursor button.

Comment Ronehamn

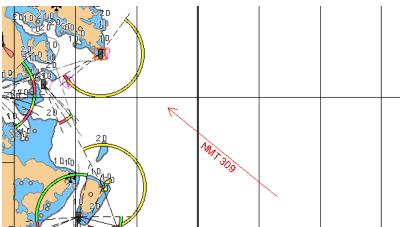




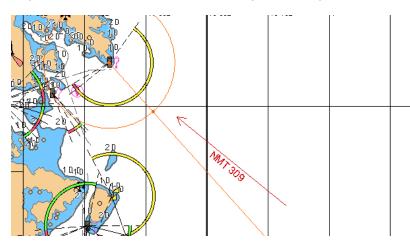
Range from
3.1 NM



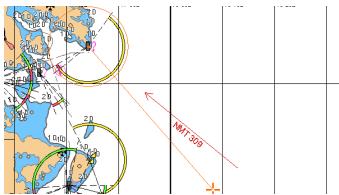
The _____ acquisition marker will appear on the Chart panel. Use the acquisition marker to select the necessary Clearing Bearing and press the left trackball button.



The acquisition marker will be automatically positioned on the Clearing Bearing reference point. Move the acquisition marker to the new reference point as required.



Press the left trackball button. The acquisition marker will turn to the ERBL; use it to set the distance from the reference point to the beginning of the Clearing Bearing line.



Press the left trackball button and use the ERBL to set the distance from the reference point to the end of the Clearing Bearing line and its new direction. Press the left trackball button.

The Clearing Bearing parameters editing window will open up.

Bearing:	319.4 °	Type: Port Stb	
Range start:	5.0 NM	Range end: 16.8 NM	
Reference:	62°23.285' N 017°44.055' E		
Comment:	Ronehamn		
Edit by cursor	Snap	Apply Cancel	

Edit the necessary Clearing Bearing parameters as described above.

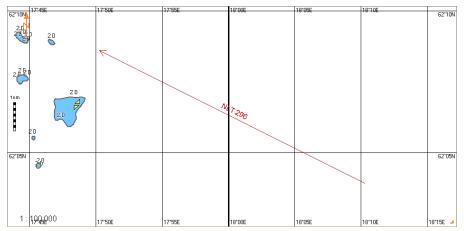
Press the Apply button to confirm the changes you have made.

Fast Clearing Bearing Search

Use the table on the **Clearing Bearing** page or the cursor (called by pressing the **Select by Cursor** button) to select the necessary object on the Chart panel.

AIO Cha	AIO Charts TOD0 Charts AML Clearing Bearing LDL						
Show CBs New New by Cursor Configuration:				Load 👻	Save		Link to Route - Delete -
Object	Comment	Displ	ay Type	Bearing	Range from	Range to	Reference
1	Ronehamn	V	NMT 🗸	319.4°	3.6 NM	16.8 NM	62° 23.292 N, 017° 44.170 E
2	Brumc		NLT 🚽	296.2°	5.2 NM	15.7 NM	62° 10.901 N, 017° 40.340 E
3			NMT 🗸	270.7°	6.5 NM	26.2 NM	62° 00.902 N, 017° 37.141 E
Dama		Close All	Salast bu C		Edithu Qurae	Dom	no bu Curror
Remo	ove Focus	Clear All	Select by Ci	ursor	Edit by Curso	r Rem	ove by Cursor

Press the Focus button which has been activated.



The Chart panel will display the selected Clearing Bearing on the suitable scale chart.

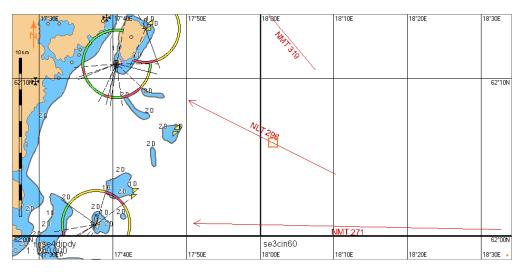
Deleting Clearing Bearing

From the table on the Clearing Bearing page select the object to be deleted.

AIO Cha	arts TOD0 Charts Al	Bearing LDL					
Show	Show CBs New New by Cursor Configuration:				Load Save Link to Route Delete		
Object	Comment	Displ	ay Type	Bearing	Range from	Range to	Reference
1	Ronehamn	✓	NMT 🗸	319.4°	3.6 NM	16.8 NM	62° 23.292 N, 017° 44.170 E
2	Brumc		NLT 🗸	296.2°	5.2 NM	15.7 NM	62° 10.901 N, 017° 40.340 E
3			NMT 🗸	270.7°	6.5 NM	26.2 NM	62° 00.902 N, 017° 37.141 E
Remo	ove Focus	Clear All	Select by Cu	Irsor	Edit by Curso	r Rem	ove by Cursor
	, ocus	Cica / II	CONSCEDY OF		Eart by Ourso		

Press the Remove button which has been activated.

To delete a Clearing Bearing with the aid of the cursor, press the Remove by Cursor button.



The acquisition marker will appear on the Chart panel. Use the marker to select the Clearing Bearing which should be deleted and press the left trackball button.

To delete all the Clearing Bearings, press the Clear All button.

Saving and Loading Configuration

There is a capability to save, load and delete configurations for Limiting Danger Line and Clearing Bearings; this operation is performed in the **Configuration** group on a relevant page.

Create the necessary configuration. To save the configuration, enter the configuration name in the input line of the Configuration group.

Configuration: Load - Save North Botnic Link to Route - Delete -

Press the Save button which will be enabled. The saved configuration will include all the objects of this page.

Configuration:	oad 🗸 Save	North Botnic	Link to Route 🗸 Delete 🗸
			MRM-Huston
			New_Orleans - Hamburg
			Norway across
			🗖 Rotterdam-Havana
			Shanghai-Hamburg
			📕 St-Petersburg-Bilbao
			St-Petersburg-Hamburg
			St-Petersburg-Hamburg1
			St-Petersburg-N.Orleans
			📕 St-Petersburg-N.Orleans1

To link a configuration to the existing route, press the Link to Route button.

From the drop-down list, select the necessary route. Press the Save button.

Note: When the route is loaded for monitoring, this configuration will be automatically loaded.

To load a configuration, press the Load button.

Configuration:	Load - Save	Link to Route 👻 Delete 👻
	North Botnic South Botnic	

From the drop-down list, select the necessary configuration.

To delete a configuration press the **Delete** button.

Configuration:	Load 👻	Save	North Botnic	Link to Route 👻	Delete 👻	
					North Botni South Botni	

From the drop-down list, select the necessary configuration.

Navi-Sailor 4100 ECDIS							
Are ye	ou sure to delete con	figuration "North Botnic"	?				
	Yes	No					

Press the Yes button to confirm the deleting.

The configuration files are accessible with the use of the Data Tool utility, in the Configs group of the Clearing Bearing feature, and can be imported/exported from/to another PC.

Monitoring of Navigational Alerts

Attention! Setting parameters for navigational alerts is available only at station with the status MASTER.

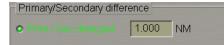
Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Navigational Alertspage.

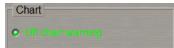
Route Monitoring Safety Alerts Navigational Alerts								
Primary/Secondary differen	се	Safety Swing Circle						
O Prim / Sec diverged	0.000 NM •			Calculate	Use from route			
Anchor watch settings				Vessel Length:	220 m			
N State	Offset	Safety ring	Alert	Cable Length:	0 m -			
1 Down	by Cursor	0 m						
2 Down	by Cursor	0 m		Depth:	0 m			
Show anchor watch rings				Safety Margin:	0 m			
Sounder				Swing Radius:	220 m			
○ Sounder depth 0	m	Use for Anchor	1 Use for Anchor 2					
• Sounder failure		Heading monitor						
				 Active 	3.0 °			

Primary/Secondary difference group is used for entering the maximum difference between the readings of positioning systems, and for turning on their monitoring.



In **Prim/Sec diverged** line, enter the divergence distance between the coordinates from the primary and secondary positioning methods. Check the activated **Prim/Sec diverged** checkbox for the warning to be generated when the set value is exceeded.

The Chart group is used for turning on the monitoring of electronic charts under the own ship.



Check the Off chart warning checkbox to enable the warning generation if the ship sails beyond the chart boundary with the Chart Autoload mode off.

Anchor watch setting group is used for setting the maximum distance (safety ring) from the anchor points. As the ship moves beyond any of the formed circles, an warning is generated.

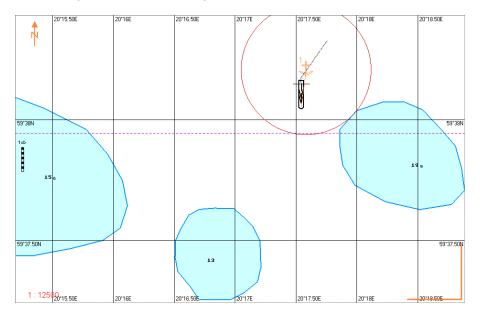
N	State	Offset	Safety ring	Alert
1	Down	by Cursor	0 m	
2	Down	by Cursor	0 m	

In Safety ring column enter the maximum distance (Safety ring radius) from the anchor points 1 and 2. Position of anchor points 1 and 2 is set on the ship contour during the installation in the System Configuration utility. (see document *Multi-Functional Display. (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration*, paragraph *MFD Settings*)

Check the checkboxes in Alert column to turn on the warning generation as the ship sails beyond the set distances.

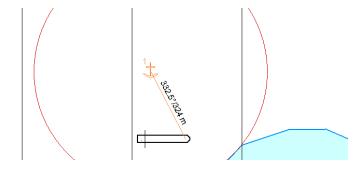
Check the **Show anchor watch rings** checkbox to show the anchor watch rings around the anchor position after the anchor drop points are set.

To set the position of 1 anchor, press the **Down** button in the row 1.

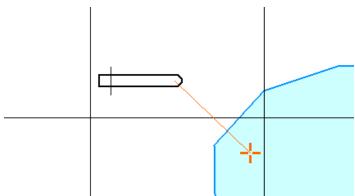


In this case, the anchor position will correspond to the position of anchor point 1 at the moment when the **Down** button is pressed. The anchor position is marked with a special symbol $\frac{1}{\sqrt{2}}$.

Along the line connecting the positions of the anchor and anchor point 1, bearing and distance between them is dynamically displayed.



To set the anchor position, use the cursor to press the **By Cursor** button in row 1. Indicate the anchor position with the cursor on the Chart Panel.



Press the left trackball button.

Use similar procedures if it is necessary to set anchor 2.

Press the left trackball button.

Sounder group is used for turning on monitoring of the echo sounder readings and contains the following checkboxes:

- Sounder depth to enable and enter the minimum depth value for an alert generated upon the reception of data from the echo sounder;
- Sounder failure to enable/disable Sounder: no input caution.

Sounder			
• Sounder depth	15	m	
• Sounder failure			

Use Sounder depth line to enter the safety depth value from the echo sounder. Check the activated Sounder depth checkbox for turning on the alert generation as a depth smaller than the set one is detected.

Monitoring of Time

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

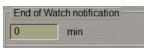
AIS
Charts
Config
🗖 Log Book 🗥
Man Corr
Maps 🗌
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
Tasks

General Radar settings	s Time Zone License Info COM	Trace Units Ship Set	tings Route Settings	
Palette Daylight Skin Metallic	Timer notification Every 1 At 16-02-2016 07:03 Off	Chart panel cursor Short Charg DM Settings Initial Scale: 1:4,000	AutoZoom Settings Maximum scale: 1 : 5,000 V Time of update: 20 s	Help EXIT Ship history Steps: 5 Interval: 2 s
	End of Watch notification	Display reset to	Mute alert sound	Ship Condition F-dist, m O Loaded 400
		Test alarm Generate alarm		Medium 300 In Ballast 200

Use the tab in the top part of Config panel, which will open up, to switch to General page.

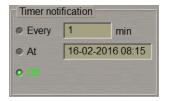
Setting of End-of-Watch Alerts

End of Watch Caution group is intended for setting the period of time before the end of the current watch when an alert will be generated. The order of watches is set in the System Configuration utility (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration,* paragraph *MFD Settings*).



Use End of Watch notification input line to enter the time before the end of the current watch when the notification should be generated.

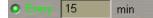
Setting of the Timer



Timer notification group is designed for the control of the timer functions:

- Every setting of the notification to be generated over the time specified in the line to the right;
- At setting of the notification to be generated at the time specified in the line to the right;
- Off to turn off timer functions.

To set the notification generation over equal time intervals, check **Every** checkbox and enter value of the notification generation time interval in the input line.



To set the notification generation at the certain time, check At checkbox and enter the notification generation time (ship time) to the right.

• At 16-02-2016 08:16

Chapter 6. Using Logging Functions

This chapter describes the procedure used for handling information archived in the course of the MFD operation.

Using Ship Logbook	178
User Accounts Creation	179
Search for Events in Ship LogBook	
Events Filtering	
Custom Events Creation	183
Event Entering and Editing	
The Ship Logbook Editing	191
Separating Voyages	
Work with Archive	194
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Own Ship Track in the ECDIS Task	204
Setting Track Display Elements	
Viewing Archive Tracks	207

Using Ship Logbook

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

Use the tab in the top part of Logbook panel, which will open up, to switch to LogBook page.

Ship LogBook Archive System Log Logbook settings										
Dates: 16-10-20	13 - Focus	Filter			Positio	on interval:	60 min	🛛 🖌 Start voyag	ge Enter	Event
Time Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 🔺
12:56:21 (04:00 E) Chart	57° 31.766 N 019° 42.958 E	J GPS1	226.4°	216.5° +0.0	216.5° +0.0	***	***	119.9° 10.0	15.2 16.3	***
12:49:06 (04:00 E) Out of XT	D 57° 32.251 N 019° 43.627 E		226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	14.6 15.8	*** 1
12:48:55 (04:00 E) New trac	57° 32.264 M 019° 43.644 E		226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	14.6 15.8	***
Comment History	list		000.01	040 50	040 50	+++	+++	140.00	44.0	
Comment History list Comment: Non official chart under the ship.										

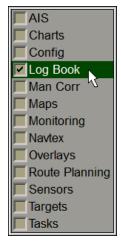
Ship LogBook page is designed for recording events which occurred during the ECDIS task operation and their synchronizing among the stations. The table is a set of rows (events) and of columns (event parameters). For the set of events which are automatically shown in the Ship Logbook, see *Multi-Functional Display (v. 3.00.340)*. *Functional Description, Chapter 6*, section *Ship Logbook*, paragraph *Ship Logbook Formation Principles*. Besides, the operator can enter events manually, edit events and enter comments on the events. The events editing and input of comments is password protected.

Note: The Ship LogBook always opens up on the current date

User Accounts Creation

Before starting work with the Ship LogBbook, it is necessary to create user accounts. Account attributes are used as a digital signature when an event is entered or edited in the Ship log book. The user who has no own account can only read the Ship LogBook.

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of **Logbook** panel, which will open up, to switch to **Logbook settings** page. On the **Logbook settings** page switch to **Logbook accounts** tab.

hip LogBook Archive System Log Lo Print Reports Logbook accounts	gbook settings	
Logbook accounts		
Rank	Name	
Create user		

This tab is intended for creating accounts for the Ship Logbook only. Accounts which are created in the System Configuration utility are only used for deleting accounts from the Ship Logbook.

To create a new user account press Create user button.

Rank:	
Name:	Captain Chief officer
Password:	2nd officer
Confirm password:	3rd officer 4th officer
Security question:	Select questions -
Answer:	
OK	Canad
OK	Cancel

In a special window the user should enter the following parameters:

- Rank. The user can select one of the offered ranks or specify his/her own (i.e., "Master");
- Name;
- Password (special symbols like space, points, etc. are not permitted. When these are entered, there is a message that unacceptable symbols have been entered);
- Password confirmation;
- Security question for restoring the forgotten password. At the account creation stage the operator can select any question and answer it in the Answer field;
- Answer for Security question.

The rank and name combination will serve as the user account.

0	Ship LogBook Archive System Log Logbook settings				
1	Print Reports Logbook accounts				
F	Logbook accounts				
	Rank	Name			
	Captain	Den Brown			
	Captain	Jack Short			
	2nd officer Jack Sparrow				
	Chief officer	Sebastian Pereira			
	3rd officer	William Kidd			
	,				
	Create user				
	Create user				

To change the user account (rank, name, password) select it from the table and press Edit user button.

🔀 Edit user			
User	Pereira		
Password:		Forgot?	
	OK C	Cancel	

Enter the "password" for the relevant currently edited user account and edit it.

To remove a user account press the **Remove user** button. The deleting password is advised by the MFD distributor upon the master's request.



In the password-protected operations, the password input box has been supplemented with the Forgot? button. This button is intended for restoring a forgotten password. Press this button to open a dialogue box in which use the Your answer field to enter an answer to the Security question (set at the account creation stage). If the reply is entered correctly, the Your password field will display a password set by the operator at the account creation stage.

User	Pereira	
Password:		Forgot?
	Security question:	Nickname of a dog
	Your answer:	Jerry Lee
	Your password:	qwerty

Press the Ok button, the password will be automatically applied to the Edit user window.

The Security question and Your password fields are not editable in this window.

Account parameters are stored on the all WS of the bridge.

Search for Events in Ship LogBook

Note: The **Ship LogBook** page stores date-by-date events for the last 90 days, whereupon the events are moved to the archive.

Press the Date button and select the date which the Ship Logbook entries will be shown for.

Start voyage	Enter Event
	Enter Event
dir. by	ST.,NM RPM yLOG, SMG
	13.9 *** 14.0
119.9° 10.0	8.9 *** 9.0
119.9° 10.0	7.0 *** 7.1
119.9°	3.9 ***
Δ	
	Edit
	dir. b ⁴ eed.m/s 119.9° 10.0 119.9° 10.0 119.9° 10.0 119.9° 10.0

When a date is selected, the drop-down list opens up showing the events which occurred within the selected 24 hour. Select the necessary event. The **Comment** tab will display the last actual comment related to this event.

Ship LogE	ook Archive	System Log Lo	ogbook setti	ings							
Dates:	14-10-2013 •	Focus	Filter			Positio	on interval:	60 min	- Start voyag	ge Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM _
10:00:00 (00:00)	Position	58° 56.631 N 019° 41.418 E	GPS1 GYRO1	198.3°	270.0° +0.0	270.0° +0.0	***	*** 18.0	119.9° 10.0	17.9 4.7	***
09:34:43 (00:00)	Loaded Route	58° 56.631 N 019° 48.766 E	GPS1 GYRO1	199.9°	270.0° +0.0	270.0° +0.0	***	*** 18.0	119.9° 10.0	14.1 0.9	***
09:34:43 (00:00)	Out of XTD	58° 56.631 N 019° 48.766 E	GPS1 GYRO1	199.9°	270.0° +0.0	270.0° +0.0	***	*** 18.0	119.9° 10.0	14.1 0.9	***
09:34:33	Loaded	58° 56.631 N	GPS1	000.0°	270.0°	270.0°	***	***	119.9°	14.1	***
Commen	t History list t Route monite	"St-Petersburg-Ha	amburg" che	ecked for	safety par	rameters	(10.10.20	12, 09:33:4	9) loaded for	Ē	idit

To display the event position, on the Chart panel press the Focus button.



The selected event mark is displayed in the centre of the Chart panel highlighted with a flashing circle for 10 seconds.

Events Filtering

To filter the display of events in the Ship Logbook, press the Filter button in the top part of the page.

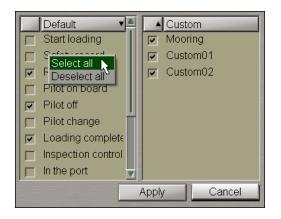
Ship LogBook Archive System Log Logbook settings 60 min - Start voyage 28-10-2013 -Dates: Focus Filter. Position interval Enter Event DIST.,NM RPM by LOG, LAT LON Event Wind Time ▲ Default ▲ Custom emp. Local dir V Pilot on board ~ Mooring a, °C speed, m/s SMG Pilot off Custom01 18:00:00 (04:00 E) 57° 26.652 119.9 357.9 019° 35.918 | Pilot change Custom02 3584.6 57° 26.834 019° 36.167 • Reporting point (04:00 E) End voyage 18.0 3584.3 10.0 **v** Start loading *** 17:51:18 (04:00 E) LOG failure 119.9° 357.1 Checks on depart 18.0 10.0 3583.8 Loading complete 17:51:18 CVDO fail *** 119.9° 357.1 *** 1 Inspection control ✓ At anchor Comment History list: Cancel Apply Comment 1 Edit V

Note: Filtering is only possible for events entered by the operator manually (default and custom).

Turned on by default is the display of all default and custom events available in the Enter Event control. When a new custom event is created it automatically becomes available in the Filter drop down list.

To turn off the display of some events, uncheck relevant checkboxes next to the names of these events.

To select all the events, press the right trackball button and choose the Select all menu item.



To cancel selection of all the previously selected events, choose the Deselect all menu item.

Events can also be sorted by alphabet which is done by pressing on the name of the Default/Custom column. Press the Apply button.

If display of some of the events was disabled, the "*" symbol appears on the button.

Dates: 18-11-2013 V Focus Filter *

Custom Events Creation

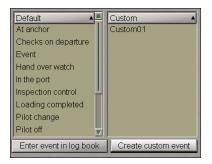
In the Ship LogBook, there is a list of default events. The user can create own custom events as required, which can be recorded in the Ship LogBook.

Note: Custom Events can only be entered on a WS with the backup-0 and backup-1 priority, see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 6*, section *Ship Logbook*, paragraph *Ship Logbook Formation Principles*.

Press the Enter Event button.

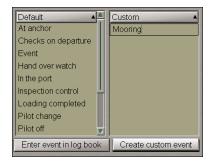
Ship Log	Book Archive	System Log	ogbook sett	ings									
Dates:	28-10-2013	Focus	Filter			Positio	on interval:	60 min	Start voyag	je	Enter Event		
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIS by	At anchor	Cu	stom 🔺
17:51:18 (04:00 E		***	***	227.4°	+0.0	+U.U *** ***	***	18.0 *** 18.0	10.0 119.9° 10.0	3	Change of command Checks on departure		
) GYRO fail	***	***	227.4°	***	***	***	*** 18.0	119.9° 10.0	3	Event Hand over watch		
17:51:18 (04:00 E) GPS failure	***	***	227.4°	***	***	***	18 N	119.9° 10 0	3 3	In the port Inspection control		
Comme	ent History list										Loading completed Pilot change	,	
Comme	ent:									Δ	Enter event in log book		Create custom event
										7	Edit		

In the window, which will open up, press Create custom event button.



The event with the name "CustomXX" will appear on the **Custom** list. The created custom event is synchronized automatically among the stations of the bridge.

Edit the event name. To do this, double click the event name.



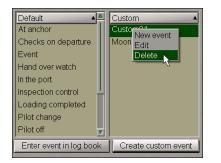
Type the necessary event name and press the left trackball button.

To add and edit a new custom event, you can also use the context menu called by clicking the right mouse button.

Default At anchor	Custom Mooring
Checks on departure Event Hand over watch In the port Inspection control Loading completed Pilot change	New event Edit Delete
Pilot off Enter event in log book	Create custom event



To delete a custom event, select it and press the right trackball button.



From the drop-down list select **DELETE** item.

RNa	vi-Sailor 4000 ECD	DIS		×
	Are you s	ure you want to de	lete the user configuration?	
		Yes	No	

Press OK button.

To exit from the window, click the cursor in the point on the ECDIS task screen.

Event Entering and Editing

The event **Position** is entered in the Ship Logbook automatically, by default the 60 min interval is set. To set the required interval, press the **Position Interval** button.

Dates: [30-10-2013 🚽	Focus	-ilter			Position	interval:	60 min -	Start voyage	Enter Ev	/ent
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	5 min 10 min 15 min	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM
12:30:04 (04:00 E)	Out of XTD	57° 32.241 N 019° 43.613 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	20 min	120.0° 10.0	202.9 16.5	***
12:29:55 (04:00 E)	New track	57° 32.250 N 019° 43.625 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	30 min 60 min	119.9° 10.0	202.9 16.5	***
12:29:54 (04:00 E)	Loaded Route	57° 32.251 N 019° 43.627 E	GPS1 GYRO2	000.0°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	367.5 3594.1	***
Commen	t History list:										
Commen	t									Edi	t

Select the necessary time period. The selected setting is synchronised automatically among the stations of the bridge.

To manually enter an event in the Ship Logbook, press the Enter Event button.

Dates:	30-10-2013 🚽	Focus	-ilter			Position	interval:	60 min -	Start voyage	Enter Event	
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	Default	Custom Custom01
12:30:04 (04:00 E)	Out of XTD	57° 32.241 N 019° 43.613 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	120.0° 10.0	Change of command Checks on departure	Custom02 Mooring
10.00.55		57° 32.250 N 019° 43.625 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	Event Hand over watch	
40.00.54	Loaded Route	57° 32.251 N 019° 43.627 E	GPS1 GYRO2	000.0°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	In the port	
										Inspection control Loading completed	
Commer	History list:									Pilot change	
Commer	nt:								1	Enter event in log book	Create custom event
										Edit	

Select the necessary event from the **Default** or **Custom** list boxing press **Enter event** in log book button. All events from these lists can be sorted in alphabetical order.

User accounts		
Comment:		
6 shackles ir	the water	
User	Captain Morgan	•
Password:		Forgot?
	OK	Cancel

In the User accounts window which will appear, in Comment input box enter the comments on the event.

Each event is recorded manually in the Ship Log Book required to enter a personal password, the rank and name of the operator who entered the event. From the User drop-down list In the User accounts window which will appear, select your user account and enter the password (user accounts and password settings are made in Logbook accounts tab of Logbook settings page see above item User Accounts Creation).

C User accounts	
Comment:	
6 shackles in	the water
User	2nd officer Sparrow
Password:	Forgot?
	OK Cancel

Press the OK button.

Ship Log	Book Archive	System Log Lo	ogbook sett	ings							
Dates:	30-10-2013	Focus	Filter			Positio	on interval	60 mir	🛛 🖌 Start voyag	ge Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 🔺
12:37:53 (04:00 E)		57° 31.686 N 019° 42.847 E	GPS1 GYRO2	226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.5 17.2	***
12:35:07 (04:00 E)		57° 31.903 N 019° 43.146 E	GPS1 GYRO2	226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.3 17.0	***
12:30:04 (04:00 E)		57° 32.241 N 019° 43.613 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	120.0° 10.0	202.9 16.5	***
12:29:55	Nowtrook	57° 32.250 N	GPS1	226.3°	216.5°	216.5°	***	***	119.9°	202.9	***
Commer	nt History list nt: 6 sha) ckles in the water.								E	Edit

The event is shown in the Ship Logbook. The data available in the table columns as of the event occurrence time are shown in the Ship Logbook automatically.

Dates: 30-10-20	13 - Focus	Filter			Positio	on interval	: 60 mir	Start voyag	ge Enter	Event
Time Ever Local	It LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM
12:37:53 (04:00 E) At anch	or 57° 31.686 019° 42.847		226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.5 17.2	***
12:35:07 (04:00 E) Chart	57° 31.903 019° 43.146		226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.3 17.0	***
12:30:04 (04:00 E) Out of X	TD 57° 32.241 019° 43.613		226.3°	216.5° +0.0	216.5° +0.0	***	***	120.0° 10.0	202.9 16.5	***
Comment Histor Created by: Capta										
	icer Jack Sparrow	[30/10/13 08:	:41:01]							
Comment: - Chane 6 shackles in the v										

To view the history of an event /comment entered for this event, switch to the History list tab.

There are some slight differences in the procedure of entering the Hand over watch event in which both navigators take part: officers going off and on the watch.

Press the Enter Event button.



Select the Hand over watch event from the Default list boxing and press Enter event in log book button.

From the User drop-down list in the Hand over watch window which will appear, the officer going off the watch selects his/her user account and enters the password.

Hand over watch									
For hand ove	er watch please specify your pa	assword.							
User	Chief officer Pereira 🔹								
Password:	****	Forgot?							
	OK Cancel]							

Press the **OK** button.

From the User drop-down list in the Hand over watch window which will appear, the officer going on the watch selects his/her user account and enters the password.

And over watch									
For hand over	er watch please specify your p	assword.							
User	2nd officer Sparrow								
Password:	****	Forgot?							
	OK Cancel								

Press the **OK** button.

Dates: 30-	-10-2013 •	Focus	Filter			Positio	on interval:	60 mir	start voyag	je Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 📮
12:45:20 (04:00 E) Ha	and over	57° 31.197 N 019° 42.174 E	GPS1 GYRO2	226.5°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	204.1 17.8	***
12:37:53 (04:00 E) At	anchor	57° 31.686 N 019° 42.847 E	GPS1 GYRO2	226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.5 17.2	***
12:35:07 (04:00 E) Cł	hart	57° 31.903 N 019° 43.146 E	GPS1 GYRO2	226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	203.3 17.0	***
Comment			Deusius kas	here also also							
Comment:		officer Sebastian F fficer Jack Sparrov								Ē	dit

The event is shown in the Ship Logbook. The **Comment** tab will display information on the person going off/on the watch.

For rules for the input and display of comments in the Ship Logbook, see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 6*, section *Ship Logbook*, paragraph *Making Corrections and Safety*.

It is in much the same way that the **Change of command event** is entered, in which both masters take part. This event serves for denoting the account of which master is currently active, i.e., who is in command of the ship at each particular moment of time.

Press the Enter Event button.

Select the Change of command event from the Default list boxing and press the Enter event in log book button.

Default At anchor	Custom
Change of command	
Checks on departure	
Event	
Hand over watch	
In the port	
Inspection control	
Loading completed	
Pilot change	
Enter event in log book	Create custom event

The master who is passing the command enters his/her password.

Edit user	ommand over please specify	vour password
User	Jack Short	
Password:	****	Forgot?
	OK Cancel	

Press the Ok button.

C Select user		
For taking cor	nmand over please specify you	r password.
User	Select user	
Password:	Captain Den Brown	Forgot?
	OK Cancel	

From the User drop-down list in the Select user window which will appear, the master assuming the command selects his/her user account and enters the password.

\land Select user								
For taking cor	mmand over please specify you	r password.						
User	Captain Den Brown							
Password:	****	Forgot?						
	OK Cancel]						

Press the Ok button.

Ship LogE	Book Archive	System Log Lo	ogbook sett	ings							
Dates:	28-10-2013	Focus	Filter			Positio	on interval:	60 mir	Start voyag	ge Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM A
16:55:47 (04:00 E)	Change of	57° 30.781 N 019° 41.601 E	GPS1 GYRO2	226.6°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	352.7 3579.4	***
16:41:00 (04:00 E)	Chart	57° 31.905 N 019° 43.150 E	GPS1 GYRO2	226.4°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	351.3 3578.0	***
16:35:50 (04:00 E)	Out of XTD	57° 32.252 N 019° 43.628 E	GPS1 GYRO2	226.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	350.9 3577.6	***
16:35:40	Nowtrock	57° 32.264 N	GPS1	226.3°	216.5°	216.5°	***	***	119.9°	350.9	***
Commer) ain Jack Short has ain Den Brown has									

The event is shown in the Ship Logbook. The **Comment** tab will display information on the person who has passed/assumed the command. Comments on this event cannot be edited, the **Edit** button is disabled.

If during the creation of the Change of command event, in the Logbook accounts tab there is not a single user with the "Captain" rank, a press on the Enter event in log book button, will display the Select user window:

🔀 Select user										
For taking comn	nand over please specify you	r password.								
User	User Create captain account -									
Password:		Forgot?								
	OK Cancel									

Press the Create captain account button. The Logbook accounts tab will open on the Logbook settings page. Use this tab to create a new captain account as described in *User Accounts Creation* paragraph (see above). Then run the procedure for creating the Change of command event anew.

Ship LogBook Archive System Lo	g Logbook settings	
Print Reports Logbook Active Oystein Ex Print Reports Logbook accounts Header Name of vessel: KOLA Call Sign: UCKB MMSI: 273501256 IMO No: 000999999 Gross tons: 18574 Net tons: 8692 DWT, tons: 22910 Master: Den Brown	Events Filter • Whole logbook • Today • Dates • Voyage From: 04-10-13 00:00 To: 28-10-13 00:00	Print Orientation Portrai Candscape Print preview Print Export to HTML Export to PDF

The name of the master who has assumed the command is automatically entered in the Master box in the **Print Settings** tab on the **Logbook settings** page of the **Logbook** panel (see section *Ship Logbook Printout*).

If the active master's account is deleted, the Change of command event with an appropriate comment will be automatically entered in the Ship Logbook:

Dates:	28-10-2013 🗸	Focus	Filter			Positio	on interval:	60 min	- Start voya	ge Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM [
19:37:02 (04:00 E)	Change of	57° 20.153 N 019° 26.994 E	GPS1 GYRO2	229.5°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	366.0 3592.7	***
19:09:43 (04:00 E)	End voyage	57° 21.983 N 019° 29.504 E	GPS1 GYRO2	228.9°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	363.7 3590.4	***
19:09:34 (04:00 E)	Start voyage	57° 21.992 N 019° 29.517 E	GPS1 GYRO2	228.9°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	363.6 3590.3	***
19:00:00	Decition	57° 22.632 N	GPS1	228.7°	216.5°	216.5°	***	***	119.9°	362.9	***
Commen	t History list:										
Commer	t: The ad	ctive captain accou	unt Den Bro	wn has be	een remov	/ed.					

The Ship Logbook Editing

The Ship Logbook enables editing of the event parameters from **Chart Track** to **RPM** columns only. Use the trackball to position the cursor on the cell which should be edited and make a double left click.

Ship LogBook	Archive	System Log Lo	ogbook sett	ings							
Dates: 28-1	0-2013 -	Focus	Filter			Positio	on interval:	60 min	▼ Start voyage	ge Enter	Event
Time I Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM .
19:00:00 (04:00 E) Pos	sition	57° 22.632 N 019° 30.395 E	GPS1 GYRO2	228.7°	216.5° +0.0	216.5° +0.0	***	18.0	119.9° 10.0	362.9 3589.6	***
18:00:00 (04:00 E) Pos	sition	57° 26.652 N 019° 35.918 E	GPS1 GYRO2	227.6°	216.5° +0.0	216.5° +0.0	750	*** 18.0	119.9° 10.0	357.9 3584.6	***
17:57:17 (04:00 E) End	d voyage	57° 26.834 N 019° 36.167 E	GPS1 GYRO2	227.5°	216.5° +0.0	216.5° +0.0	***	***	119.9° 10.0	357.6 3584.3	***
17-51-19		***	***	207 Aº	***	***	***	***	110.0°	257.1	***
Comment	listory list:]									,
Comment:											Edit

Roll the trackball or use the keyboard to enter the necessary value and press the left trackball button or the <Enter> key. To cancel input of the correction, press the right trackball button.

In the User accounts window which will appear, enter the comment (if necessary), select your user account and enter the password (user accounts and password settings are made in Logbook accounts tab of Logbook settings page see above item User Accounts Creation).

C User accounts		
Comment:		
		<u>A</u>
User	3rd officer Kidd	
Password:	****	Forgot?
	OK	Cancel

Press the OK button.

Ship LogB	ook Archive	System Log Lo	ogbook sett	ings							
Dates:	28-10-2013 🔻	Focus	Filter			Positio	on interval	60 min	🛛 🖌 Start voya	ge Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 4
19:00:00 (04:00 E)	Position	57° 22.632 N 019° 30.395 E	GPS1 GYRO2	228.7°	216.5° +0.0	216.5° +0.0	***	18.0	119.9° 10.0	362.9 3589.6	***
18:00:00 (04:00 E)	Position	57° 26.652 N 019° 35.918 E	GPS1 GYRO2	227.6°	216.5° +0.0	216.5° +0.0	750	*** 18.0	119.9° 10.0	357.9 3584.6	***
17:57:17 (04:00 E)	End voyage	57° 26.834 N 019° 36.167 E	GPS1 GYRO2	227.5°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	357.6 3584.3	***
17.51.18		***	***	227 40	***	***	***	***	110.0°	257.1	***
	t History list:]									
Commen	T										Edit

Dates: 28-	10-2013 -	Focus	Filter			Positio	on interval:	60 min	- Start voyag	je Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM .
19:00:00 (04:00 E) Po	sition	57° 22.632 N 019° 30.395 E	GPS1 GYRO2	228.7°	216.5° +0.0	216.5° +0.0	***	18.0	119.9° 10.0	362.9 3589.6	***
18:00:00 (04:00 E) Po	sition	57° 26.652 N 019° 35.918 E	GPS1 GYRO2	227.6°	216.5° +0.0	216.5° +0.0	750	*** 18.0	119.9° 10.0	357.9 3584.6	***
17:57:17 (04:00 E) En	d voyage	57° 26.834 N 019° 36.167 E	GPS1 GYRO2	227.5°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	357.6 3584.3	***
17-51-18		***	***	207.49	***	***	***	***	110.0°	957-1	***
Comment F Edited by: 3r <u>Press:</u> - Cha	d officer V	William Kidd [29/1	1/13 14:40	:42]							

To view the corrections entered for the given event, switch to the History list tab.

Separating Voyages

To differentiate the logbook events by voyages and to enable the subsequent display of events connected with a certain voyage, the capability to specify the voyage beginning and end is provided.

Ship LogBook Archive System Log Logbook settings 28-10-2013 -60 min - Start Dates: Focus Filter Position interval: Enter Event Event LAT LON GYRO (ERR) MAG Wind DIST.,NM RPM Time Source Chart Press. Temp. (ERR) by LOG, SMG Local Track hPa air, °C sea, °C dir beed, m/s 17:00:00 (04:00 E) Position *** *** 57° 30.633 N GPS1 *** 019° 41.397 E *** *** 16:55:47 30.781 N 226.6 216.5 216.5 119.9 (04:00 E) Change of. 352.7 019° 41.601 E GYRO2 +0.0 +0.0 18.0 10.0 3579.4 GPS1 *** *** *** 16:41:00 57° 31.905 N 226.4° 216.5° 216.5 119.9° 351.3 (04:00 E) Chart 019° 43.150 E GYRO2 3578.0 +0.0 +0.0 18.0 10.0 16:35:50 Out of VTD *** *** 57° 32.252 N GPS1 226.3° 216.5° 216.5° *** 119.9° 350.9 7 _ Comment History list: Comment Δ Edit

At the beginning of the voyage, press the Start voyage button.

From the User drop-down list in the User accounts window which will appear, select the user account and enter the comment and password.



Press the Ok button.

🥂 Start Voyage	×
Voyage No.:	12
From:	St-Petersburg
To:	Hamburg
OK	Cancel

Use the relevant boxes to enter the voyage number, port of departure and port of destination. Press the **Ok** button.

Ship Log	Book Archive	System Log Lo	ogbook sett	ings							
Dates:	28-10-2013 -	Focus	Filter			Positio	on interval	60 min	12	Enter	Event
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM .
17:43:33 (04:00 E)		57° 27.716 N 019° 37.381 E	GPS1 GYRO2	227.3°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	356.5 3583.2	***
17:00:00 (04:00 E)		57° 30.633 N 019° 41.397 E	GPS1 GYRO2	226.6°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	352.9 3579.6	***
16:55:47 (04:00 E)		57° 30.781 N 019° 41.601 E	GPS1 GYRO2	226.6°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	352.7 3579.4	***
16:41:00	Chart	57° 31.905 N	GPS1	226.4°	216.5°	216.5°	***	***	119.9°	351.3	***
Comme) je N: 12 From: St-I nent: Voyage from				12000 to	ns of coa				Edit

The event is shown in the Ship Logbook. The voyage number is shown on the button in the top right corner of the page. Comments on this event cannot be edited, the Edit button is disabled.

After the end of the voyage press the button with its number in the top right corner of the Ship LogBook page.

Time Event	LAT 1			1 OSILIO	on interval	60 min	1 2	Enter	Event
Local	LON		Chart GYRC Track (ERR		Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM
17:51:18 (04:00 E) LOG failure	***	*** 2	227.4° *** ***	***	***	***	119.9° 10.0	357.1 3583.8	***
17:51:18 (04:00 E) GYRO fail	***	*** 2	227.4° **** ***	***	***	*** 18.0	119.9° 10.0	357.1 3583.8	***
17:51:18 (04:00 E) GPS failure	***	*** 2	227.4° *** ***	***	***	*** 18.0	119.9° 10.0	357.1 3583.8	***
17:43:33	57° 27.716 N	GPS1 2	227.3° 216.5	° 216.5°	***	***	119.9°	356.5	***
(04:00 E) GPS failure					***				

From the User drop-down list in the User accounts window which will appear, select the user account and enter the comment and password.

C User accounts		
Comment:		
User	Captain Den Brown	
Password:	****	Forgot?
	ОК	Cancel

Press the Ok button.

Ship LogBook Archive System Log Logbook settings												
Dates:	28-10-2013 🔻	Focus	Filter			Positio	on interval	60 min	🛛 🖌 Start voyag	ge Enter	Event	
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 🗳	
17:57:17 (04:00 E)	End voyage	57° 26.834 N 019° 36.167 E	GPS1 GYRO2	227.5°	216.5° +0.0	216.5° +0.0	***	*** 18.0	119.9° 10.0	357.6 3584.3	***	
17:51:18 (04:00 E)	LOG failure	***	***	227.4°	***	***	***	*** 18.0	119.9° 10.0	357.1 3583.8	***	
17:51:18 (04:00 E)	GYRO fail	***	***	227.4°	***	***	***	*** 18.0	119.9° 10.0	357.1 3583.8	***	
17:51:18	ODS failura	***	***	227.4°	***	***	***	***	119.9°	357.1	***	
Commen	it History list nt Voyaç) ge N: 12 From: St-I	Petersburg	To: Hamb	purg						dit	

The event is shown in the Ship Logbook. Comments on this event cannot be edited, the Edit button is disabled.

The End of voyage event is just a mark to identify the voyage period (for database query, for printing purposes).

Work with Archive

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
🗹 Log Book
📕 Man Corr 🖄
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Ship LogB	ook Archive	System Log Log	book settin	gs							
Sł	nip LogBook	✓ Dates:	Jump to c	late 🚽		F	ilter				
Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM
Commen Commen	t History list										

Use the tab in the top part of Logbook panel, which will open up, to switch to Archive page.

The **Archive** page is designed for displaying archived Ship Logbooks. For the archiving rules see *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 6* document, section *Ship Logbook*, paragraph *Archiving Ship Logbook*.

Press the Ship LogBook button and select the necessary archive from the list box.

Note: In the Ship LogBook events are stored for 90 days. Then they are moved automatically to the archive. In the archive they are stored as long as there is space on the disk.

St	nip LogBook	Dates:	Jump to	o date	- Foc	us	Filter				
31 Aug 2	2012 - 31 Aug 2012 - 11 Aug 2012 - 22 Jul 2	2012 ON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM
22 Jul 20)12 - 02 Jul 2()12 - 27 Jun 2	012 3 18.789 N	GPS1 GYRO1	***	216.5° +0.0	***	***	***	120.0° 10.0	222.8 33.4	***
(00:00))12-27 JUN 2	26.827 N 019° 12.537 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	212.8 23.4	***
10:00:00 (00:00)	Position	57° 34.865 N 019° 23.611 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	202.8 13.3	***
3:00:00 (00:00)	Position	57° 35.597 N 019° 24.622 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	2.8 3562.2	***
12:41:46	LOG failure	***	***	***	***	***	***	***	***	0.0	***

The page will display records contained in the archive.

Ship LogB	ook Archive	System Log Lo	ogbook sett	ings							
Sh	nip LogBook		Jump to	o date	Foc	us	Filter				
Time Local	Event	LAT LON	08/08/12 09/08/12	\	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, °C sea, °C	Wind dir. speed, m/s	DIST.,NM by LOG, SMG	RPM 🔺
12:00:00 (00:00)	End of watch	57° 18.789 N 019° 01.503 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	222.8 33.4	***
12:00:00 (00:00)	Noon Entry	57° 18.789 N 019° 01.503 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	222.8 33.4	***
11:00:00 (00:00)	Position	57° 26.827 N 019° 12.537 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	212.8 23.4	***
10:00:00 (00:00)	Position	57° 34.865 N 019° 23.611 E	GPS1 GYRO1	***	216.5° +0.0	***	***	*** 18.0	120.0° 10.0	202.8 13.3	***
13:00:00	Position	57° 35.597 N	GPS1	***	216.5°	***	***	***	120.0°	2.8	***
Commen	History list:										
Commen	t										

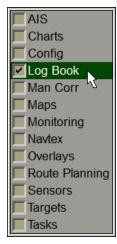
Press the Jump to date button and select the date which the Ship Logbook records will be displayed for.

The table will display Ship Logbook events starting from the first event of the selected date. It should be noted that on the **Archive** page you can only view the Ship Logbook.

To filter events on the **Archive** page you can also use a filter described in the **Events Filtering** paragraph of the **Using Ship Logbook** section.

Ship Logbook Printout

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Logbook panel, which will open up, to switch to Log Settings page. On the Logbook settings page switch to Print Settings tab.

Ship LogBook Archive System Log Logbook settings						
Print Reports Logbook accounts						
Header	Events	Print				
Name of vessel: KOLA	Filter	Orientation Portrait OLandscape				
Call Sign: UCKB	• Whole logbook					
MMSI: 273501256	 Today 	Print preview Print				
IMO No: 000999999	Dates Voyage	Export to HTML				
Gross tons: 18574	From: 04-10-13 00:00	Export to PDF				
Net tons: 8692	To: 28-10-13 00:00					
DWT, tons: 22910						
Master:						
Den Brown						

In Header group enter the following information in the input lines:

- Gross tons gross tonnage of the vessel;
- Net tons net tonnage of the vessel;
- DWT tons vessel's deadweight capacity.

The Captain's name in the Master input line is entered automatically with a change of command (see section *Using Ship Logbook*, paragraph *Event Entering and Editing*). The name of the master who assumed the command will be shown in the logbook printout.

If for some reasons the name of the person who assumed the command is not entered (or the active master's name is deleted) the Header group will look like follows:

Header				
Name of vessel:	KOLA			
Call Sign:	UCKB			
MMSI:	273501256			
IMO No:	000999999			
Gross tons:	18574			
Net tons:	8692			
DWT, tons:	22910			
Master:				
Change of command				

Press the Change of command button and determine the name of the person who assumed command as described in the *Event Entering and Editing* paragraph of the *Using Ship Logbook* section.



In the Events group select the printout range: Whole logbook, Today or Dates. In the case of Dates, use From and To input boxes to set the time interval for the printout of the Ship Logbook.

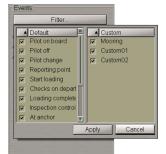
If several voyages fall within the selected time interval, during the printout they will be shown with their respective numbers. The new voyage information is started on a new page of the report.

Note: By using the Data filter you can also print out an archive Ship Logbook.

If it is necessary to print out the Ship Logbook for a certain voyage, check the Voyage checkbox.



From the drop-down list select the necessary voyage(s) and check the checkbox(es) next to its/their name(s). While printing out the Ship Logbook, it is also possible to filter events by their names. To do this, press the Filter button.

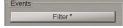


Turned on by default, is the display of all the default and custom events available in the Enter Event control (see section Using Ship Logbook, paragraph Event Entering and Editing).

To turn off the print of some events, uncheck the appropriate checkboxes next to the names of these events. You can also use a context menu for selecting/deselecting all the events, and sorting as described for the Ship logbook filter in the *Events Filtering* paragraph of *Using Ship Logbook* section.

Press the Apply button.

If display of some of the events was disabled, the "*" symbol appears on the button.



In the Orientation group select the text orientation on the page during the printout: Portrait or Landscape.

Print Orientation	
Portrait O Landscap	
Print preview Prin	it
Export to HTML	
Export to PDF	

Select the printout range: Whole logbook, Today or Dates. In the case of Dates, use From and To input boxes to set the time interval for the printout of the Ship Logbook.

Note: By using the **Data** filter you can also print out an archive Ship Logbook.

🔨 Print	Preview					* X
		I Page	1 of 62			
		SHIP LC	G BOC	к		
			No.			
	Vessel:	KOLA	Call Sign:	UCKB		
	IMO Ship Identificatio	n No.:	008013053			
	Port of Registry:					
	Gross tons:	18574 DWT, tons:	22910	Net tons:	8692	
	Length o.a.:	220	Breadth o.a.:		32	
	Following Log Book f	ragments, data sheets and/or records a	re part of this Log Bo	ook:		
	Commencing:	04 Oct. 2013	Closed:	30 Oct. 2013		

For the Ship Logbook print preview, press the Print preview button.

Data entered in the Header group is displayed on the title sheet on the Ship Logbook. On the subsequent pages, headers display the Ship name, IMO No, Voyage Data.

	12	KOLA From:		Wexand	rio.			IN To:	4 O No.: 0009 New			Date: 04 October 2013
Voyage N: Time Local	Event	LAT LON	Source	Chart Track	GYRO (ERR)	MAG (ERR)	Press. hPa	Temp. air, "C	Wind dir.	DIST.,NM by LOG, SMG	RPM	Comment
15:01:46 (00:00)	Start vovage	58° 00.861 N 020° 23.332 E	GPS1 GYR01	X3X	216.5° +0.0	216.5° +0.0	333	sea, *C *** 18.0	speed, m/s 110.0* 10.0	13.0 0.9	222	Voyage N: 12 From: Alexandria To: New-York Comment: Fron Alexandia to New-York
15:04:24 (00:00)	End voyage	58° 00.685 N 020° 23.086 E	GPS1 GYR01	XXX	216.5° +0.0	216.5° +0.0	823	*** 18.0	119.9° 10.0	14.1 1.1	23.8	Created by: Captain James Cook Voyage N: 12: From: Alexandria To: Neve-Yosk Created by: Captain James Cook
15:04:40 (00:00)	Change of command	58° 00.642 N 020° 23.027 E	GPS1 GYR01	APX .	216.5° +0.0	216.5° +0.0	323	*** 18.0	110.0° 10.0	14.2 1.2	XXE	Created by: Captain Sames Cook Captain James Cook has handed over command. Captain Den Brown has tak en over command. Created by: Captain Den Brown

If voyages are selected for printing out, the Ship Logbook looks as follows:

In this case all the events are sorted by voyages, and events of every new voyage start to be displayed on a new page.

Close the Print Preview window and press the Print button.

To convert the Ship Logbook to the *.pdf file, press the Export to PDF button.

To convert the Ship Logbook to the *.html file, press the Export to HTML button.

Files has names in the Logbook (DD-Month-YYYY - DD-Month-YYYY) . * format, dates in the name show the time interval whose data was included in the file.

Files can be copied by using the Data Tool utility (Track feature, Ship's Logbook (PDF) and Ship's Logbook (HTML) file groups) for subsequent use.

Using Electronic System Logbook

Attention! The Electronic System log is not synchronised in the net among WS's.

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
📕 Man Corr 🧏
Maps
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Continue	-	1	1	
Settings	Date	14-10-12	14-10-12	
14-10-2012 -	Time	00:00:00(UTC)	00:00:00(UTC)	01:00
Fields - Filter -	Event	ON HOUR	WATCH	
Reset Dist.	Primary Sensor	GPS 1	GPS 1	
Print	Secondary Sensor	None	None	
1 1111	L/L	58°56'630 N, 019°06'645 E	58°56'630 N, 019°06'645 E	58°56'630 N, 019
	Offset L/L	00°00'000 N, 000°00'000 E	00°00'000 N, 000°00'000 E	00°00'000 N, 000
	Prim/Sec Diverge			
	COG - SOG	270.0°-9.0 kn	270.0°-9.0 kn	27(
	HDG - LOG	270.0°-9.0 kn	270.0°-9.0 kn	27(
	Average speed	0.0 kn	0.0 kn	
	WatchDist-Log	0.0 nm-36.0 nm	0.0 nm-36.0 nm	0.0.2

Use the tab in the top part of Logbook panel, which will open up, to switch to System Log page.

System Log page is designed for the recording of events, which occurred during the ECDIS task operation. The table is a set of columns (events) and of rows (event parameters). By default, the table reflects the following event parameters:

- Date date of the event;
- Time time of the event (UTC);
- Event name of the event;
- Primary Sensor primary positioning system;
- Secondary Sensor secondary positioning system;
- L/L event latitude/longitude coordinate;
- Offset L/L event latitude/longitude offset;
- Prim/Sec Diverge distance and direction to the secondary positioning system (large distance exceeding the limit set in the safety parameters);
- COG SOG course and speed values received from the positioning system;
- HDG LOG course and speed values received from the compass and log;
- Average speed average speed in the last 10 minutes;
- WatchDist-Log distance covered during the watch (by chart by log);
- DAY DIST-LOG distance covered in 24 hours (by chart by log);
- VOY DIST-LOG summary distance passed (by chart by log);
- Echo Sounder depth from the sounder or entered manually if the sounder is not connected in the System Configuration utility;
- Charts displayed charts loaded for proceeding in Navigation Mode, the source specified (ARCS, BSB BSB/NDI, ENC, TRS TX-97, SRF Seafarer);
- Wind direction true wind direction;
- Wind speed true wind speed;
- Water temperature water temperature.

- Voice comment voice comment. The table cell has a control panel containing the following buttons:
 - It rewind to the start;
 - **I** to play back a voice comment;
 - **I** to stop the playback.

The following system log fields are filled in by the operator manually:

- Remarks operator notes;
- Wave direction wave direction value entered by the operator;
- Wave Height wave height value entered by the operator;
- Air temperature air temperature value entered by the operator;
- Pressure atmospheric pressure value entered by the operator;
- Visibility visibility range value entered by the operator;
- Engine RPM main engine rpm value entered by the operator.

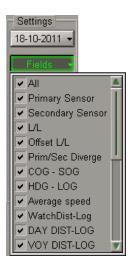
To do this, position the free cursor on the necessary cell and press the left trackball button. Type the necessary message and press the left trackball button or the <Enter> key:

Remarks	The drifting container is found
Wave direction	120.0°
Wave Height	2.0 m

In Settings group select the necessary date (current date is set by default):

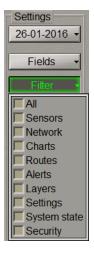


To change contents of the electronic system logbook (delete unnecessary event parameters), press Fields button:



Uncheck checkboxes of the unnecessary event parameters.

By default, it is only Main group of events which is displayed in the system log (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 6,* section *Electronic System Logbook,* paragraph *Electronic System Logbook Formations Principles*). To display other groups of events in the system log, press Filter button in Settings group.



Check checkboxes of the necessary parameter groups.

To set the value of the total covered distance to zero, press Reset Dist. button in Settings group.

To print out the electronic system logbook, press Print button in Settings group.

Note: The printer is required to be connected to the one of WS's. For the printer to be used as a network printer, the printer settings should be made.

	Settings					
L	18-10-2011 👻					
C	Fields 👻					
C	Filter 👻					
١	Reset Dist.					
٥	Print					
ľ	From:					
	00:00					
	To:					
	23:59					
	Print					

Use From and To input boxes to set the time interval for the printout of the electronic system logbook events, and press Print button.

Own Ship Track in the ECDIS Task

Setting Track Display Elements

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Route Monitoring Safety Alerts Navigational Alerts Ship: Headline COG vector Ship by contour - Align by HDG r HDG No wind St-Petersburg-Hamburg - Schedule with T&C - Unload XTD WPT name Sun / Moon Route Course/Leg/Spd Heading mark Ref. point Remark Waypoints Past track settings Alerts Next waypoint: Track color End of route - 20 Auto selection Plot interval: Time label: Own ship track: • Out of XTD 0 Radius 0 s 30 min hours Out of schedule 0 min From Route Table -Track history WPT approach 0 min 🗸 Focus on Track Current 0 Off leg course 5.0 Show time-labels Show primary track Alternative route segments Show secondary track/position Approach to segment 0 min

Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page.

In Past track settings group of Route Monitoring page, which will open up, set the colour of the track segment, which is being formed, by selecting it from the offered Track colour palette.

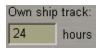


Press Plot interval button.

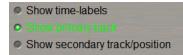


In the list, which will open up, select the track plot interval and press the left trackball button.

Use **Own ship track** input line to enter the time value which the length of the displayed own ship track will correspond to.



Show primary track checkbox is checked by default.



If its necessary to turn off the display of a track from the primary positioning system, uncheck this checkbox. If it is necessary to turn on the display of a track and ship symbol from the secondary positioning system on the Chart panel, check the **Show secondary track/position** checkbox.



If it is necessary to turn on the display of a time labels on the primary and secondary tracks check the **Showtime-labels** checkbox.

Show time-labels
Show primary track
Show secondary track/position

Press Plot interval button.



In the list, which will open up, select the track plot interval and press the left trackball button.

Open Logbook panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
📕 Man Corr 🖄
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of **Logbook** panel, which will open up, to switch to **System Log** page. In the left-hand part of **System Log** page, press **Filter** button.

Ship LogBook Archive System Log Logbook settings						
Settings	Date	14-10-12	14-10-12	<u>A</u>		
14-10-2012 -	Time	00:00:00(UTC)	00:00:00(UTC)	01:00		
Fields -	Event	ON HOUR	WATCH			
Reset Dist.	Primary Sensor	GPS 1	GPS 1			
Print	Secondary Sensor	None	None			
	L/L	58°56'630 N, 019°06'645 E	58°56'630 N, 019°06'645 E	58°56'630 N, 019		
	Offset L/L	00°00'000 N, 000°00'000 E	00°00'000 N, 000°00'000 E	00°00'000 N, 000		
	Prim/Sec Diverge					
	COG - SOG	270.0°-9.0 kn	270.0°-9.0 kn	27(
	HDG - LOG	270.0°-9.0 kn	270.0°-9.0 kn	27(
	Average speed	0.0 kn	0.0 kn			
	WatchDist-Log	0.0 nm-36.0 nm	0.0 nm-36.0 nm	nn 🗹		

Check the checkboxes of the event groups, which are required to be displayed on the track.



These events will be shown in the form of time tags on the set own ship track

Viewing Archive Tracks

Open **Monitoring** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Monitoring panel, which will open up, to switch to Route Monitoring page.

Route Monitoring Safety Alerts Navigational Alerts					
Ship: Headline COG vector HDG vector Ship by contour Align by HDG No wind					
Route: St-Petersburg-Hamburg	Schedule with T&C Unload XTD Radius Course/Leg/Spd	WPT name Wheel over line Sun / Moon Heading mark Ref. point Remark			
Waypoints Next waypoint: Auto selection Radius : From Route Table	Past track settings Track color : Plot interval: Time label: Own ship track: 0 s 30 min Current Show time-labels Show primary track Show secondary track/position	Alerts • End of route • Out of XTD • Out of Schedule 0 • WPT approach 0 • Off leg course 5.0 • Alternative route segments Approach to segment 0 min			

In Past track settings group of Route Monitoring page, which will open up, press Plot interval button:



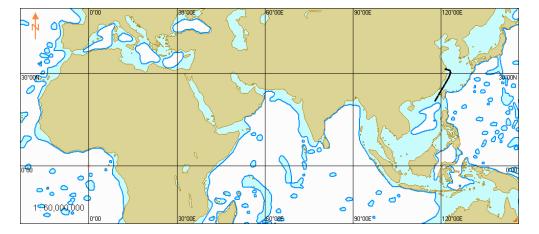
In the list, which will open up, select the track plot interval and press the left trackball button.

Press Track history button:



In the list, which will open up, select the date of the track required to be displayed, and press the left trackball button. The selected date track is displayed on the Chart panel.

To display the entire own ship track for the selected date on the Chart panel, press Focus on Track button.



Chapter 7. Manual Updating

This chapter describes the procedure used in the handling of updating objects.

Turning On/Off the Display of Updating Objects and Their Attributes	
Creating and Plotting Updating Objects	
Plotting Point Type Objects	
Plotting Circles and Circumferences	
Plotting Lines and Areas	
Plotting Text Object	
Plotting Depth Object	
Assigning "Attached File" Attribute	
Editing Updating Objects	
Editing Updating Objects Attributes	
Editing Object Coordinates	
Deleting Updating Object	
Restore the Deleted Object	
Search for Updating Objects	

Turning On/Off the Display of Updating Objects and Their Attributes

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List in the tabs zone of the ECDIS task screen.



						_
ON 🛕 Symbols 😵	Circles 🥻 Lines	T Texts	14 ₂ Depths	Edit objects 👻	A Save	

To turn on/off the display of updating objects on the ECDIS task screen press ON button.

ON	A Symbols	Circles	/ Lines	T Texts	142 Depths	Edit objects 👻	A Save		1
----	-----------	---------	---------	----------------	------------	----------------	--------	--	---

To open the Manual Correction panel completely press button.

l s						Longitude
	Symbol	No	10-12-09 15:22	Normal		
I s	Symbol	No	10-12-09 15:22	Normal		
l s	Symbol	No	10-12-09 15:22	Normal		
L	.ine	No	04-02-10 08:16	Normal		

To turn on/off the display of updating objects attributes on the ECDIS task screen, on **Display options** page press the following buttons:

- Attachments to turn on highlighting of objects with attached files;
- Deleted to turn on highlighting of deleted objects;
- Colored to turn on orange coloured highlighting of updating objects;
- Timed objects to turn on the display of temporary updating objects until the time when they become effective.

Display options			
Attachments	▶ Deleted	Colored	Timed objects

Creating and Plotting Updating Objects

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List in the tabs zone of the ECDIS task screen.



ON A Symbols	Circles	/ Lines	T Texts	142 Depths	Edit objects 👻	A Save	
--------------	---------	---------	---------	------------	----------------	--------	--

To turn on/off the display of updating objects on the ECDIS task screen press ON button.

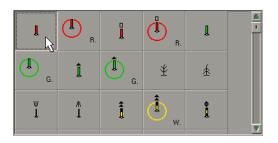
The updating object creating and plotting procedure consists of four stages:

- selection of the object category and type;
- assigning of attributes to the object (except attached files);
- plotting of an object;
- assigning of "attached file" attribute.

Plotting Point Type Objects

Symbols Press Symbols button. New object Modified: Author: • End: 🔺 👁 Start: (\mathbf{I}) **(**İ) ĩ Text: Info T) Î ¥ ¥ Danger m Depth: î Î Î Color Clear for new object.

Press the button with point type object in the table:



Select the type of updating object symbol from the table and press the left trackball button.

Set the updating display time ("Temporary updating" attribute). To do this, check Start checkbox. By trackball set the start date and time of the updating object display and press the right trackball button.

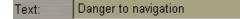
Ê

Modified:			
• Start:	26- <mark>05</mark> -11 15:50	Apply	26-05-11 15:50
		Cancel	

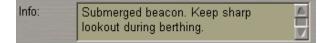
Press Apply button to confirm the changes you have made.

Check End checkbox and set the updating object display end date and time.

Enter the required text ("Text" attribute) in Text input line (information will be displayed on the chart).



Enter the required information ("Object information" attribute) in Info field (information will not be displayed unless Info function is used).



Check Danger checkbox ("Danger to navigation" attribute) as required.



Set the required depth value ("Object depth" attribute) in Depth line.

Depth: 3.2 m

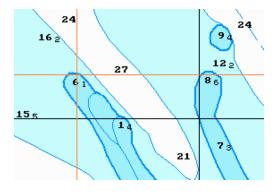
Files are attached ("Attached file" attribute) after the plotting of the updating object.

To plot the updating object on the chart, press New object button.

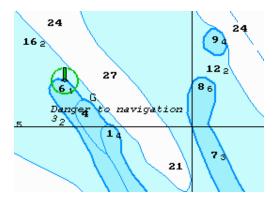
Graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display Add Symbol information window with cursor coordinates.

Add Symbol								
Latitude	60°22.840' N							
Longitude	027°35.423' E							
Ship position	true	relative						
Bearing	290.8	0.000	,					
Opp. Bearing	110.8	4 180.0 °	,					
Range	2.86	NM						
	5291	m						
Press Tab to edit manually								

Position the cursor in the required coordinates.



Press the left trackball button: the point type object will be set in the specified coordinates.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Information on the plotted updating object will be displayed in the table on Manual Correction panel.

ON	A Symbo	ols 😵 Ci	rcles	Line	s 7	Texts 142	Depths	Edit o	bjects 🖌 📔	Save
	Туре	Danger	Modified	ł	State	Start time (UTC)	End tim	ie (UTC)	Latitude	Longitude
ł	Symbol	No	26-05-11	1 16:26	Normal	26-05-11 15:50	26-06-1	1 15:50	60° 22.261 N	027° 35.066 E
Display	options									
Ø Att	achments	🎽 Deletec		Colore	d	Timed objects	;			

Press Save button.

Plotting Circles and Circumferences

Press Circles button.

Select the type of circle updating object from the table.

New object	Modified:	Author:	
	Start:	🗢 End:	
·	Text:		
	Info:		<u> </u>
	Danger	Depth:	0.0 m
	Color:		
	Clear fo	r new object	

Set the updating object colour ("Object colour" attribute). Select it from the Color palette.

Color:

Set the updating object display time ("Temporary updating" attribute), text ("Text" attribute), required information ("Object information" attribute), "Danger to navigation" attribute and required depth value ("Object depth" attribute) (see paragraph *Plotting Point Type Object*).

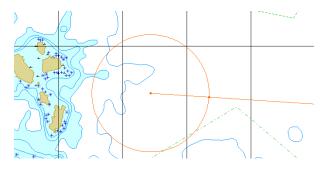
Files are attached ("Attached file" attribute) after the plotting of the updating object.

To plot the updating object on the chart, press New object button.

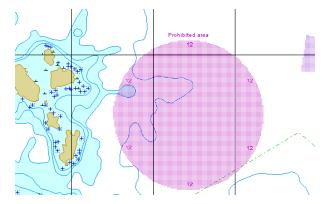
Graphic cursor ⁺ will appear on the Chart Panel, whereas the right bottom part of the screen will display Add Circle information window with cursor coordinates.

Add Circle								
Latitude	60°21.685' N							
Longitude 027°35.237' E								
Ship position	true relative							
Bearing	111.U ∢ 179.8							
Opp. Bearing	291.0 000.2 • °							
Range	303.66 NM							
Press Tab to edit manually								

Position the cursor in the central point and press the left trackball button.



After that move the cursor to the necessary radius and press the left trackball button again.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

ON	A Symbo	ols 😵 Ci	ircles 🥻 Line	es T	Texts 14 ₂ De	epths Edit o	objects 🖌 🔄 Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude
ł	Symbol	No	26-05-11 16:26	Normal	26-05-11 15:50	26-06-11 15:50	60° 24.637 N 027° 31.430 E
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11 15:50	
Display	options						
🖉 Att	achments	La Deleter	d 🛛 🔁 Colore	ed	🛃 Timed objects		

Information on the plotted updating object will be displayed in the table on Manual Correction panel.

Press Save button.

Plotting Lines and Areas

/ Lines Press Lines button. New object Modified: Author: Start: End: Text: Info: Depth: Danger m Color Clear for new object

Set the updating object colour ("Object colour" attribute). Select it from the Color palette.

Color:

Set the updating object display time ("Temporary updating" attribute), text ("Text" attribute), required information ("Object information" attribute), "Danger to navigation" attribute and required depth value ("Object depth" attribute) (see paragraph *Plotting Point Type Object*).

Files are attached ("Attached file" attribute) after the plotting of the updating object.

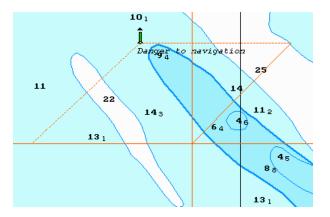
To plot the updating object on the chart, press New object button.

Graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display Add Line information window with cursor coordinates.

Add Line							
Latitude	60°22.259' N						
Longitude	027°35.045' E						
Ship position	true relative						
Bearing	110.9 <179.9 °						
Opp. Bearing	290.9 000.1 • *						
Range	304.38 NM						
Press Tab to edit manually							

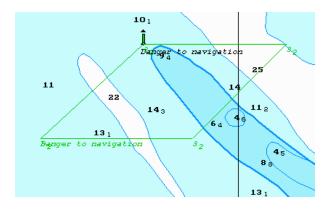
Position the cursor in the initial point and press the left trackball button.

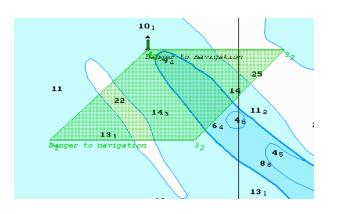
To set lines and areas, after the plotting of the initial point, move the cursor to the next point and press the left button again. Repeat the procedure until you set the required number of point.



After the input of the last point of the line or area, press the right trackball button: the cursor will change its form, and the object will be set in the specified coordinates:

• line by the specified points;





• area by the points, the first and the last of them connected.

Information on the plotted updating object will be displayed in the table on Manual Correction panel.

ON 🛓 Symbols 😳 Circles 💉 Lines T Texts 14, Depths Edit objects 🗸 🔛 Save								
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude	Longitude
Ĩ	Symbol	No	26-05-11 16:26	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.260 N 60° 22.257 N	027° 35.066 E 027° 36.830 E
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11 15:50	60° 21.864 N	027° 36.134 E
	Line	No	27-05-11 12:40	Normal			60° 21.864 N	027° 34.330 E
Display options								
g A	ttachments	👔 Delete	ed 📔 Colore	ed	🛃 Timed objects			

Press Save button.

Plotting Text Object

Press Texts T Texts

New	object		
Modified:		Author:	
Start:		End:	
Text:			
Info:			A
Danger		Depth:	0.0 m
Color:			
Clear for	r new object		

In the Text input window enter the necessary text.

button.

Set the updating object colour ("Object colour" attribute). Select it from the Color palette.

Color:				
--------	--	--	--	--

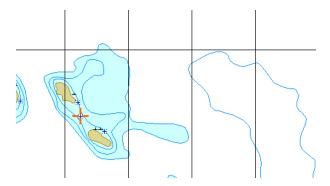
Set the updating object display time ("Temporary updating" attribute), required information ("Object information" attribute), "Danger to navigation" attribute and required depth value ("Object depth" attribute) (see paragraph *Plotting Point Type Object*).

Files are attached ("Attached file" attribute) after the plotting of the updating object.

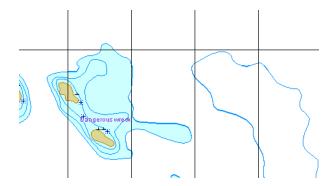
To plot the updating object on the chart, press New object button.

Add Text							
Latitude	60°22.742' N						
Longitude	027°32.124' E						
Ship position	true relative						
Bearing	110.9 4 179.9 *						
Opp. Bearing	290.9 000.1 * *						
Range	304.52 NM						
Press Tab to edit manually							

Position the cursor in the required coordinates.



Press the left trackball button: the text type updating object will be set in the specified coordinates.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Information on the plotted updating object will be displayed in the table on Manual Correction panel.

ON	A Symb	ols 😵 C	ircles 🥻 Line	es T	Texts 14 ₂ D	epths Edit o	bjects 🗸 🖪	Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude	Longitude
l	Symbol	No	26-05-11 16:26	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.742 N	027° 32.101 E
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11 15:50		
	Line	No	27-05-11 12:40	Normal				
	Text	Yes	27-05-11 13:03	Normal				
Display	v options])	
Ø At	tachments	👔 Delete	ed 🛛 🔁 Colore	ed	d Timed objects			

Press Save button.

Plotting Depth Object

Press De	pths 142	Depths	button.	
New	object			
Modified:		Author	:	
Start:		End	:	
Text:				
Info:				
Danger		Depth:	0.0	m
Color:				
Clear for	r new object			

In the Depth input window, enter the necessary depth.

Set the updating object colour ("Object colour" attribute). Select it from the Color palette.

Color:

Set the updating object display time ("Temporary updating" attribute), text ("Text" attribute), required information ("Object information" attribute), "Danger to navigation" attribute and required depth value ("Object depth" attribute) (see paragraph *Plotting Point Type Object*).

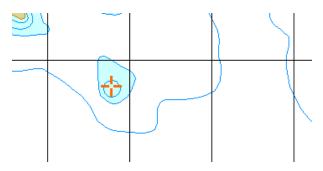
Files are attached ("Attached file" attribute) after the plotting of the updating object.

To plot the updating object on the chart, press New object button.

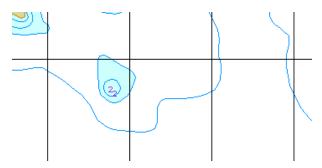
Graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display Add Depth information window with cursor coordinates.

Add Depth							
Latitude 60°22.422' N							
Longitude 027°32.889' E							
Ship position	true relative						
Bearing	111.0 (179.8 °						
Opp. Bearing	291.0 000.2 * *						
Range	308.03 NM						
Press Tab to edit manually							

Position the cursor in the required coordinates.



Press the left trackball button: the depth type updating object will be set in the specified coordinates.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

ON	A Symbo	ols 😵 C	ircles 🥻 Line	es T	Texts 142 D	epths Edit	objects 👻 🖪 Save		
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude Longitude		
ł	Symbol	No	26-05-11 16:26	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.422 N 027° 32.874 E		
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11 15:50			
	Line	No	27-05-11 12:40	Normal					
	Text	Yes	27-05-11 13:03	Normal					
	Depth	No	27-05-11 13:13	Normal					
Display options									
Ø Att	Attachments Teleted Colored								

Information on the plotted updating object will be displayed in the table on Manual Correction panel.

Press Save button.

Assigning "Attached File" Attribute

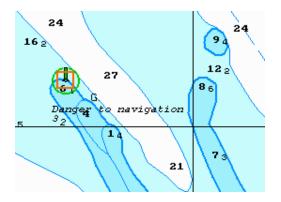
To assign "Attached file" attribute, the selected object should be plotted on chart.

To attach files (*.txt, *.rtf, *.bmp, *.doc, *gif, *.jpg, *.tif, *.pdf) press the Edit objects button in the right-hand part of the panel.

From the drop-down list select Attach. item.

ON	A Symb	ols 😵 C	Circles	es T	Texts 142 De	epths	Edit object	s 🗸 🔄 Save
	Туре	Danger	Modified	State	Start time (UTC)	End time	A Edit	ude
ł	Symbol	No	26-05-11 16:26	Normal	26-05-11 15:50	26-06-11		22.261 N 027° 35.066 E
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11		
	Line	No	27-05-11 12:40	Normal			A Shift All	
	Text	Yes	27-05-11 13:03	Normal			🔆 Delete	
	Depth	No	27-05-11 13:13	Normal				
							Restore	
Display options								
At At	tachments	📗 🌋 Delete	ed 🛛 🔁 Color	ed	🛃 Timed objects			

Position the acquisition marker 🤄, which will appear, on the object and press the left trackball button.



The screen will display a window with lists of all the files available for attaching (to view the contents of the selected file, press View button on the appropriate panel). The list of files available for attaching is formed in the Data Tool utility.

Attachment			×
Available files		Attached files	
Bornholm. Pilot book.doc Entry to N.Orleans.jpg	Attach >>		<< Detach
St-Petersburg-N.Orleans.pdf			View
NAVAREA 241.bd			
			Cancel

To attach a file (group of files) to the updating object, select it in Available files group and press Attach >> button.

Attachment		×
Available files	Attached files	
Bornholm. Pilot book.doc St-Petersburg-N.Orleans.pdf	NAVAREA 241.bt	<< Detach
	Line to Konouns jpg	View
	Apply	Cancel

The file (group of files) will move to Attached files group.

To view the file contents select it and press View button.

NAVAREA 241 - Notepad	
<u>File Edit Format View H</u> elp	
THE RACON ON LIGHTBUOY TANGO-1 IN PSN 5747,2 N 01046,1 E IS INOPERATIVE	K

Press Apply button to confirm the changes you have made.

To detach a file (group of files), select the necessary files in Attached files group and press << Detach button. The file (group of files) will move to Available files group. Press Apply button to confirm the changes you have made.

Press Save button.

Editing Updating Objects

Editing Updating Objects Attributes

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List in the tabs zone of the ECDIS task screen.

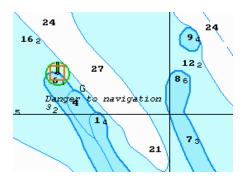
AIS Charts				
Config				
Log Book				
Man Corr				
🗖 Maps 🛛 🖄				
Monitoring				
Navtex				
Cverlays				
Route Planning				
Sensors				
Targets				
Tasks				
ON 🛔 Symbols 📿	Circles Lines	T Texts 14, Dept	hs Edit objects 🗸	Save

To turn on/off the display of updating objects on the ECDIS task screen press **ON** button.

Press the Edit objects button in the right-hand part of the panel. From the drop-down list select Edit item.

	Туре	Danger	Modified	State	Start time (UTC)	End time (L	🚺 🧪 Edit 🔤	e Longitude
ĩ	Symbol	No	27-05-11 13:48	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11	A Shift All	
	Line	No	27-05-11 12:40	Normal			🗴 Delete	
	Text	Yes	27-05-11 13:03	Normal			🕈 Delete	
	Depth	No	27-05-11 13:13	Normal			🐴 Restore	
opla	options)							
spia	y options j						🎒 Attach. 🚽	

Position the acquisition marker , which will appear, on the object (in case of text objects, the acquisition point is the first character) and press the left trackball button.





The bottom part of the screen will display a window for editing updating objects.

Edit the updating object parameters so as display time ("Temporary updating" attribute), text ("Text" attribute), required information ("Object information" attribute), "Danger to navigation" attribute and required depth value ("Object depth" attribute) (see paragraph *Plotting Point Type Object*).

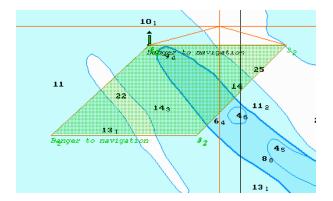
Set the updating object colour ("Object colour" attribute). Select it from the **Color** palette (except for the point type objects).

Press Edit button in edition window to confirm the changes you have made.

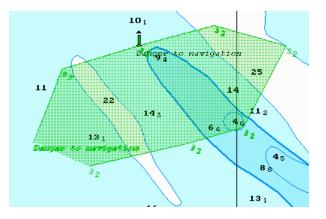
Parameters of the line and circle type objects are edited in much the same way. To resize line or circle type objects select this object as described above and press **Resize** button in edition window.



The graphic cursor + will appear on the first point of the seslected line object.



Move the cursor to the required coordinates. Press the left trackball button. Graphic cursor will change own form to acquisition marker.



Repeat this operation for other updating object boundaries until the necessary configuration is set.

Press the right trackball button ,all changes will be accepted.

Edit all necessary updating objects.

To exit from the editing mode press the right trackball button.

To attach/detach files to the updating object, see paragraph Assigning "Attached File" Attribute.

Press Save button.

The procedure of editing the updating object is completed.

Editing Object Coordinates

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List in the tabs zone of the ECDIS task screen.

AIS	
Charts	
Config	
Log Book	
Man Corr	
, mape	
Monitoring	
Navtex	
Cverlays	
Route Planning	
Sensors	
Targets	
Tasks	

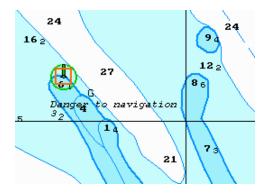
ON A Symbols Circles Lines T Texts 14, Depths Edit objects - A Save

To turn on/off the display of updating objects on the ECDIS task screen press ON button.

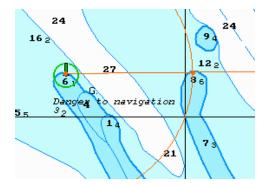
	Туре	Danger	Modified	State	Start time (UTC)	End time (L	🛕 🖉 Edit	ide Longitude
ĩ	Symbol	No	27-05-11 13:48	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11	A Shift All	
	Line	No	27-05-11 12:40				📩 Delete	
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal			Restore	
splay	options						Attach.	

Press the Edit objects button in the right-hand part of the panel. From the drop-down list select Shiht item.

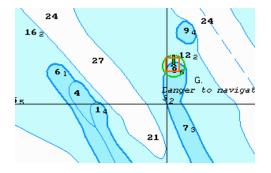
Position the acquisition marker which will appear, on the object to be shifted (the first character of a text object or a point in a line or area type object).



Press the left trackball button. Position the marker, which will appear, in the new object coordinates within the displayed Chart panel.



Press the left trackball button: the object will move to the specified coordinates.



Press the right trackball button to exit from the editing mode of the updating object coordinates.

Press Save button.

You can use a similar procedure to change coordinates of all the updating objects by selecting the Shift All item from the drop-down list (to do this, it is necessary to enter the password).

Attention! In this case, all the updating objects of the layer will be shifted to the same distance and in the same direction as the object which is being edited.

Deleting Updating Object

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

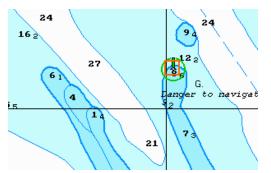
AIS 📃						
Charts						
Config						
Log Book						
Man Corr						
Maps 🔨						
Monitoring						
Navtex						
Cverlays						
Route Planning						
Sensors						
Targets						
Tasks						
	-					
		16				
ON 🛔 Symbols 🤇	Circles	🖉 Lines	T Texts	14 ₂ Depths	Edit objects 👻	A Save

Press ON button.

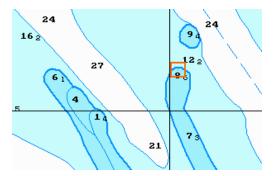
Press the Edit objects button in the right-hand part of the panel. From the drop-down list select Delete item.

ON	A Symb	ols 😵 C	Circles	s T	* Texts 14,2 [Depths	Edit objects	🗸 🔛 Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (L	A Edit	Ide Longitude
I	Symbol	No	27-05-11 13:48	Normal	26-05-11 15:50	26-06-11	A Shift	
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11	A Shift All	
	Line	No	27-05-11 12:40	Normal			👗 Delete	
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal			Restore	
Display	v options]						Attach.	
@ At	tachments	🎽 Delete	ed 🔁 Colore	ed	🛃 Timed objects			

Position the acquisition marker, which will appear, on the object to be deleted (the first character of a text object or a point in a line or area type object).



Press the left trackball button: the presentation of the object will be removed from the Chart panel.



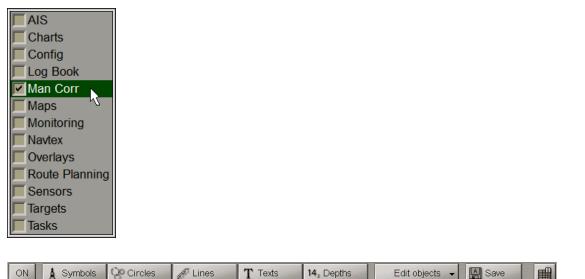
Press the right trackball button to exit from the updating object deleting mode.

Press Save button.

Restore the Deleted Object

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

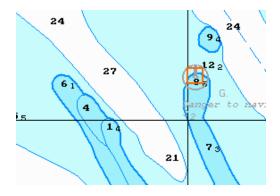
Open Manual Correction panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.



ON	A Symb	ols 😵 C	ircles 🥻 Line	es T	Texts 14 ₂ D	epths Edit o	bjects 👻	A Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude	Longitude
l	Symbol	No	27-05-11 13:48	Deleted	26-05-11 15:50	26-06-11 15:50		
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11 15:50		
	Line	No	27-05-11 12:40	Normal				
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal				
Display	/ options							
I At	tachments	👔 Delete	d 🛛 🔁 Color	ed	🛃 Timed objects			

To turn on/off the display of updating objects on the ECDIS task screen press **ON** button.

Press **Deleted** button in the **Display option** page. The screen will display all the previously deleted objects shown in the grey colour.



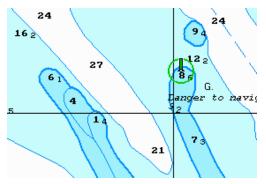
Press the Edit objects button in the right-hand part of the panel. From the drop-down list select Restore item.

ON	A Symb	ols 😵 C	Circles	es 1	Texts 142 De	epths	Edit objects	✓ A Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (l	🛕 🖉 Edit	ide Longitude
I	Symbol	No	27-05-11 13:48	Normal	26-05-11 15:50	26-06-11	A Shift	
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11		
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11	A Shift All	
	Line	No	27-05-11 12:40	Normal			👗 Delete	
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal			Restore	
	/ options tachments	🎽 Delete	ed 🛛 🕞 Colore	ed	🛃 Timed objects		Attach.	

Position the acquisition marker, which will appear, on the deleted object (the first character of a text object or a corner point of a line or area type object).



Press the left trackball button: "Deleted object" attribute is removed, and the object is highlighted in accordance with the previously made settings.



Press the right trackball button to exit from the deleted object restore mode.

Press Save button.

Search for Updating Objects

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Open Manual Correction panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS							
Charts							
Config							
Log Book							
Man Corr							
Maps 🔨							
Monitoring							
Navtex							
Cverlays							
Route Planning							
Sensors							
Targets							
Tasks							
	1	_					
ON A Symbols	Circles	Lines	T Texts	14 ₂ Depths	Edit objects 👻	Save	

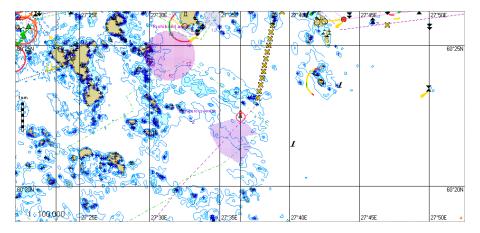
Press ON button.

ON	A Symb	ols 😵 C	ircles 🥻 Line	es T	Texts 14 ₂ D	epths Edit of	objects 👻	Save
	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude	Longitude
ł	Symbol	No	27-05-11 13:48	Deleted	26-05-11 15:50	26-06-11 15:50		
	Circles	Yes	27-05-11 12:20	Normal	26-05-11 15:50	26-06-11 15:50		
	Line	No	27-05-11 12:40	Normal				
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal			1	
Display	options							
I At	tachments	👔 Delete	d 🔁 Color	ed	🛃 Timed objects			

Select the required updating object in the left-hand part of the page and press the left trackball button. Coordinates of the selected object will be displayed in the right-hand part of the page.

0000	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude	Longitude
I	Symbol	No	30-05-11 12:33	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.462 N	027° 36.494 E
	Circles	Yes	30-05-11 11:49	Normal	26-05-11 15:50	26-06-11 15:50		
	Line	No	30-05-11 11:49	Normal				
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal				
) isnlav	options)							

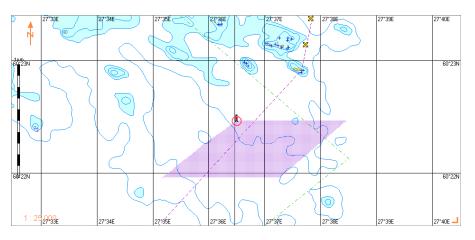
A double click of the left trackball button on the selected object line or its coordinates displays this object in the centre of the Chart panel highlighted with a flashing circle for 10 seconds.



With the selection of line or area type objects, the right-hand part of the page displays coordinates of all the points, which the line/area type object consists of.

	Туре	Danger	Modified	State	Start time (UTC)	End time (UTC)	Latitude 60° 22.233 N	Longitude 027° 35.847 E
ĩ	Symbol	No	30-05-11 12:33	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.233 N 60° 22.462 N	027° 35.847 E
	Circles	Yes	30-05-11 11:49	Normal	26-05-11 15:50	26-06-11 15:50	60° 22.464 N	027° 37.220 E
	Circles	Yes	27-05-11 12:15	Deleted	26-05-11 15:50	26-05-11 15:50	60° 22.464 N	027° 38.454 E
	Line	No	30-05-11 12:45	Normal				
	Text	Yes	27-05-11 13:03	Normal				
	Depth	No	27-05-11 13:13	Normal				
]	
play	options)							

A double click of the left trackball button on the coordinates of any point which the line/area type object consists of, displays this point in the centre of the Chart panel highlighted with a flashing circle for 10 seconds.



Chapter 8. Handling of Maps

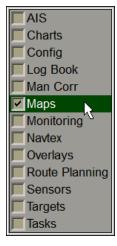
This chapter describes the procedure used in the handling of maps.

Creating and Saving Maps	
Creating and Plotting Map Objects	238
Saving Map	
Turning On/Off Display of Map Objects and Their Attributes	
Map Loading and Unloading for Editing	
Map Loading and Unloading for Monitoring	
Editing Map Objects	
Editing Map Object Attributes	
Editing Map Object Coordinates	
Deleting Map Object	
Restoring Deleted Map Object	
Merging Maps	
Deleting Maps	
Search for Map Objects	
Map Handling in Network Configuration	

Creating and Saving Maps

Attention! Symbol type objects cannot be displayed on scales smaller than 1:600,000.

Open the Maps panel by selecting the appropriate line of the Tasks List menu in the tabs zone of the ECDIS task screen.



In **Maps** panel which will open up, press the 🔟 button in the top left part of the panel to turn on the maps display on the ECDIS task screen.

Image: Load map Add objects Edit objects Image: Edit objects Maps Find Object Display Options Tracks	Monitoring
I Name Info	🔲 💿 Monitoring
	Load
	Delete
Select / Clear all	

The map creating procedure consists of following stages:

- creation of map objects:
 - selection of the object category and type;
 - assigning of attributes to the object (except the "Attached files");
 - plotting of an object;
 - assigning of the file "Attached file"; attribute
- saving the map.

Maps Find Object Display Option	Add objects Edit objects ons Tracks	▼ Asve	Monitoring
1 Name	Info		Monitoring Load Delete
		Select / Clear all	

Press the Loaded Maps button.

The drop-down list displays all the loaded maps.

Create new map			
Load map	Add objects 👻 Edit objects 👻	A Save) Monitoring
Maps Find Object Display Options	Tracks		
I Name	Info		Monitoring
			Load
			Delete
		Select / Clear all	

In the drop-down list press the Create new map button.

Maps Find Object Display O	Add objects Edit objects ptions Tracks	Save	Monitoring
I Name	jinfo		Monitoring Load Delete
		Select / Clear all	

The map under the "NEWMAPXX*" name will be loaded.

Note: Next to the map name there is a "*" symbol which means that the map is edited but not saved. The unsaved maps are not synchronized with other WS's.

It is then necessary to plot on the map the map objects which may be of the following types:

- Symbol;
- Line;
- Text;
- Depth;
- Shapes.

Creating and Plotting Map Objects

Plotting Symbol Type Objects

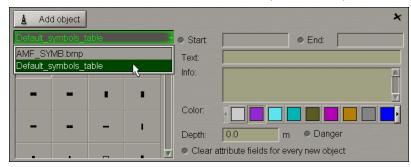
Press the Add objects button.

	Add objects	▼ Edit objects ▼ Area Save	🐌 Monitoring
Maps Find Object Display Options Trac	🛓 Symbol		
I Name	/// Line		🕼 Monitoring
	T Text		🕼 Load
	14 ₂ Depth		Delete
	🔗 Shapes		
	-	1	
		 Select / Clear all 	

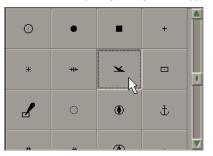
From the drop-down list select the Symbol item.

Note: In this case the map editing mode is automatically switched on, the **Monitoring** button in the top right corner switched to the **Editor** position.

Press the button with the name of current symbol library. From the drop-down list, select the symbol library:



Select the map object symbol type from the table and press the left trackball button.



Set the display time ("Temporary") attribute. To do this, check the **Start** checkbox. Use the trackball to set the start date and time of the map object display and press the right trackball button.



Press the "Apply" button to confirm the changes you have made.

Check the End checkbox and set the map object display end date and time.

Set the map object colour ("Object colour" attribute). Select it from the Color palette.

Color:						
--------	--	--	--	--	--	--

Enter the required text ("Text" attribute) in the Text input line (information will be displayed on the map).

Text: Dangerous wreck

Enter the required information ("Object information" attribute) in the Info field (information will not be displayed unless the Info function is used).



Set the required depth value (the "Object depth" attribute) in the Depth line.

Depth: 1.1 m

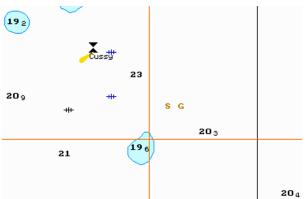
Check the Danger checkbox (the "Danger to navigation" attribute) as required.

• Danger

Files are attached (the "Attached file" attribute) after the plotting of map object.

To plot a map object on the chart, press the Add object button.

Add Symbol						
Latitude	51°22.169' N					
Longitude	001°51.802' E					
Ship position						
	true relative					
Bearing	225.4 4 115.1 °					
Opp. Bearing	045.4 064.9 > °					
Range	485.05 NM					
Press Tab	to edit manually					



Position the cursor, which will appear on the graphic screen in the required coordinates.

Press the left trackball button: the symbol type object will be set in the specified coordinates.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Switch to the **Find Object** page. Information on the plotted map object will be displayed in the table on this page.

	EVVMAP01*		- Edit		▼ A Si	ave	Editor
Туре	! Text	Info	Depth	×	Start time	Stop time	Points
Symbol	! Dangerous wreck	Submerged wreck.	1.1 m		08-05-14 17:34	13-05-14 17:34	

Plotting Lines

NEWMAP01* 🔊 Edit 1 Q Add objects 👻 -A Save 💓 Edit =0 Maps Find Object Display Options Trac 🛔 Symbol 1 Name Line 💦 **(T**) T Text **6**. 142 Depth 🐼 Shapes Select / Clear all

Press the Add objects button.

From the drop-down list select the Line item.

Select the type of line type map object from the table.

Add object					*
Line:	Start:		End:		
	Text:				
<u></u>	Info:				Δ
	Color:				
	Depth:	0.0	m 🔍 Dang	ger	
\rightarrow	Clear a	ttribute fields fo	or every new ob	ject	

Set the map object colour (the "Object colour" attribute), the map object display time (the "Temporary" attribute), the map object text (the "Text" attribute), the necessary information (the "Object information" attribute), the "Danger to navigation" attribute and the required depth value (the "Object depth" attribute) (see item *Plotting Symbol Type Objects*).

Files are attached (the "Attached file" attribute) after the plotting of the map object.

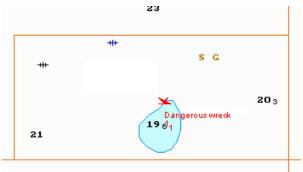
To plot a map object on the chart, press the Add object button.

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Line information window with cursor coordinates.

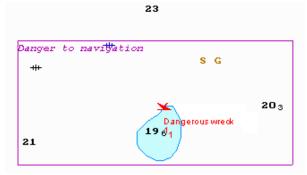
Add Line						
Latitude	51°22.362' N					
Longitude	001°38.266' E					
Ship position	true relative					
Bearing	225.0 4 115.5 °					
Opp. Bearing	045.0 064.5 *					
Range	493.27 NM					
Press Tab to edit manually						

Position the cursor in the initial point and press the left trackball button.

To set lines and areas, after the plotting of the initial point, move the cursor to the next point and press the left button again. Repeat the procedure until you set the required number of point.



After the input of the last point of a line or area, press the right trackball button: the cursor will change its form, and the object will be set in the specified coordinates:



Switch to the **Find Object** page. Information on the plotted user map object will be displayed in the table on this page.

Image: NEWMAP01* Image: Line Edit objects Image: Line Maps Find Object Display Options Tracks							
Туре	I Text	Info	Depth	Х	Start time	Stop time	Points
Symbol	I Dangerous wreck	Submerged wreck.	1.1 m		08-05-14 17:34	13-05-14 17:34	
Line	! Danger to navigatic				14-05-14 17:34	20-05-14 17:34	

Plotting Text Object

Press the Add objects button.

NEWMAP01*	Add objects 🗸	Edit 🗸 🔄 Save	Editor
Maps Find Object Display Options Trac	🛔 Symbol		
I Name	/// Line fo		(1) Monitoring
	T Text		Load
	14 ₂ Depth		Delete
	🐼 Shapes		
		 Select / Clear all 	

From the drop-down list select the **Text** item.

In the Text input window enter the necessary text.

T Add	object 🗙
• Start	04-05-14 13:34 • End 08-07-14 13:34
Text:	Dangerous wreck
Info:	
Color:	
Depth:	0.0 m • Danger
 Clear at 	ttribute fields for every new object

Set the map object colour (the "Object colour" attribute), the map object display time (the "Temporary" attribute), required information (the "Object information" attribute), the "Danger to navigation" attribute and the required depth value (the "Object depth" attribute) (see item *Plotting Symbol Type Objects*).

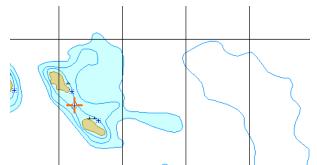
Files are attached (the "Attached file" attribute) after the plotting of a map object.

To plot a map object on the chart, press the Add object button.

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Text information window with cursor coordinates.

Add Text						
Latitude	51°20.012' N	51°20.012' N				
Longitude	001°28.227' E	001°28.227' E				
Ship position	true relative					
Bearing	224.8 4 115.7	°				
Opp. Bearing	044.8 064.3)	°				
Range	500.55 NM					
Press Tab to edit manually						

Position the cursor in the required coordinates.



Press the left trackball button: the text type map object will be set in the specified coordinates.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Switch to the **Find Object** page. Information on the plotted map object will be displayed in the table on this page.

	NE\		T Text	- Edit		- 🖪 S	ave	Editor
Maps Find	Obje	ect Display Options	Tracks					
Туре	1	Text	Info	Depth	Х	Start time	Stop time	Points
Symbol	1	Dangerous wreck	Submerged wreck.	1.1 m		08-05-14 17:34	13-05-14 17:34	
Text	ļ	Dangerous wreck				04-05-14 17:34	08-07-14 17:34	
Line	ļ	Danger to navigatic				14-05-14 17:34	20-05-14 17:34	

Plotting Depth Object

Press the Add objects button.

	Add objects	▪ Edit ▪ Asve	Editor
Maps Find Object Display Options Trac	🛔 Symbol		
I Name	/// Line	o I	(1) Monitoring
	T Text		💕 Load
	14, Depth		Delete
	🔗 Shapes		
		Select / Clear all	

From the drop-down list select the **Depth** item.

× 142 Add object 06-05-14 13:34 14-07-14 13:34 Start • End: Text: Info: 1 Color: Dangel Depth: 2.2 m Clear attribute fields for every new object

In the Depth input window enter the necessary depth.

Set the map object colour (the "Object colour" attribute), the map object display time (the "Temporary" attribute), map object text (the "Text" attribute), required information (the "Object information" attribute), the "Danger to navigation" attribute and the required depth value (the "Object depth" attribute) (see item *Plotting Symbol Type Objects*).

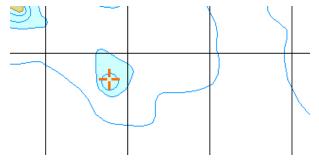
Files are attached (the "Attached file" attribute) after the plotting of a map object. Files are attached (the "Attached file" attribute) after the plotting of the map object.

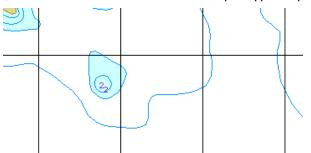
To plot a map object on the chart, press the Add object button.

The graphic cursor ⁺ will appear on the Chart Panel, whereas the right bottom part of the screen will display Add Depth information window with cursor coordinates.

Add Depth						
Latitude 60°22.422' N						
Longitude	027°32.889' E					
Ship position	true relative					
Bearing	111.0 ◀ 179.8 ° 291.0 000.2 *					
Opp. Bearing Range	308.03 NM					
Press Tab	to edit manually					

Position the cursor in the required coordinates.





Press the left trackball button: the depth type map object will be set in the specified coordinates.

Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Switch to the **Find object** page. Information on the plotted map object will be displayed in the table on this page.

уре	1	Text	Info	Depth	Х	Start time	Stop time	Points
Symbol	ļ	Dangerous wreck	Submerged wreck.	1.1 m		08-05-14 17:34	13-05-14 17:34	
)epth	ļ			2.2 m		06-05-14 17:34	14-07-14 17:34	
'ext	!	Dangerous wreck				04-05-14 17:34	08-07-14 17:34	
ine	1	Danger to navigatic				14-05-14 17:34	20-05-14 17:34	

Plotting Shapes

Press the Add objects button.

NEWMAP01*	Add objects	▼ Edit ▼ Aave	🕅 Editor
Maps Find Object Display Options Trac	🛔 Symbol		
. Name	/// Line	io	💿 Monitoring
	T Text		🕼 Load
	14 ₂ Depth		Delete
	Shapes		
		Select / Clear all	

From the drop-down list select the Shapes item.

Select from the table the type of the line (Line) delineating the shape and of the shape infill (Fill):

Delygon -				*
Line:	• Start	13-05-14 10:00	• End:	14-05-14 10:00
	Text:		Area:	Select area 👻
	Info:			Ā
	Color:			
	Depth:	0.0	m 🗢 Dang	jer
	Clear at	ttribute fields for e	every new obj	ect

Set the map object colour ("Object colour" attribute), the map object display time ("Temporary" attribute), map object text (the "Text" attribute), required information (the "Object information" attribute), the "Danger to navigation" attribute and the required depth value (the "Object depth" attribute) (see item *Plotting Symbol Type Objects*).

Files are attached (the "Attached file" attribute) after the plotting of the map object

Press the button in the top left corner to select the form of a shape to be plotted.

🗘 Polygon 👻					×
CEllipse		• Start	13-05-14 10:0	0 • End:	14-05-14 10:00
Rectangle	î	Text:		Area:	Select area
Sector		Info:			Ā
Polygon	V				
Circle	<u>A</u>	Color:			
		Depth:	0.0	m 🗢 Dang	jer
	y	Clear at	ttribute fields for	every new obj	ject

Select the necessary shape from the list. Press the same button again.

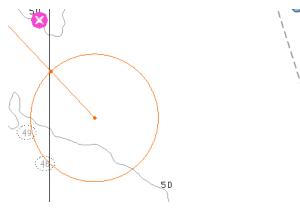
Depending on the selected shape, plot the shape type map object making additional settings as required:

• Ellipse:

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display theAdd Ellipse information window with cursor coordinates.

Add Ellipse						
Latitude	57°03.2	7°03.201' N				
Longitude	018°34.685' E					
Ship position	true	relative				
Bearing	227.8	011.3) *				
Opp. Bearing	047.8	4 168.7 °				
Range	1.75	NM				
	3246	m				
Press Tab to edit manually						

Position the cursor in the central point and press the left trackball button.



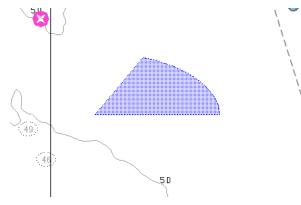
After this, by moving the cursor set the necessary length of the major axis and press the left trackball button again.

Ellipse parameters	
Position:	58°08.055' N 021°09.021' E
Major axis:	3.000
Minor axis:	1.500
Start angle:	40
End angle:	90
Rotation angle:	0
Apply	

Make (correct) additional settings:

- Major axis length of the ellipse major axis;
- Minor axis length of the ellipse minor axis;
- Start angle initial angle of the ellipse display sector relative to the minor axis;
- End angle final angle of the ellipse display sector relative to the minor axis;
- Rotation angle ellipse turn angle relative to the north.

Press the Apply button.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

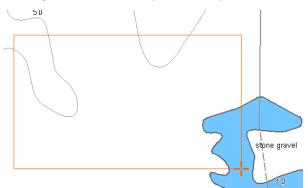
• Rectangle:

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Rectangle information window with cursor coordinates.

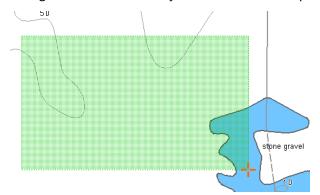
Add Rectangle		
Latitude	57°03.741' N	
Longitude	018°31.900' E	
Ship position	true	relative
Bearing	267.8	051.3 >
Opp. Bearing	087.8	4 128.7 °
Range	2.41	NM
	4472	m
Press Tab to edit manually		

Position the cursor in the initial point and press the left trackball button.

To set the rectangle shape, after the plotting of the initial point, move the cursor so as to construct a rectangle of the necessary form and press the left button again.



After the input of the last point of the rectangle shape, press the right trackball button: the cursor will change its form and the object will be set in the specified coordinates:



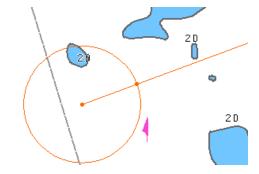
Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

• Sector:

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Sector information window with cursor coordinates.

Add Sector		
Latitude	57°05.769' N	
Longitude	018°30.709' E	
Ship position	true	relative
Bearing	317.8	101.3 > °
Opp. Bearing	137.8	∢ 078.7 °
Range	3.69	NM
	6828	m
Press Tab to edit manually		

Position the cursor in the central point of the sector and press the left trackball button.

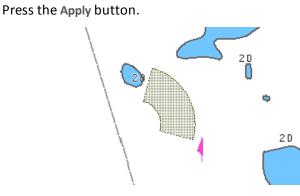


After this, by moving the cursor set the necessary radius and press the left trackball button again.

Sector parameters	×
Position:	58°12.103' N 021°27.012' E
Internal radius:	0.059
External radius:	1.468
Start angle:	0
End angle:	90
Apply	

Make (correct) the necessary settings:

- Internal radius length of the sector internal radius;
- External radius length of the sector external radius;
- Start angle initial angle of the display sector relative to the North;
- End angle final angle of the display sector relative to North.



Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

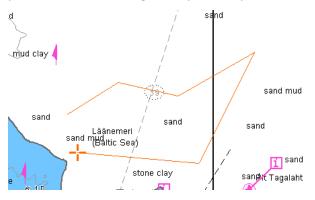
• Polygon:

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Polygon information window with the cursor coordinates.

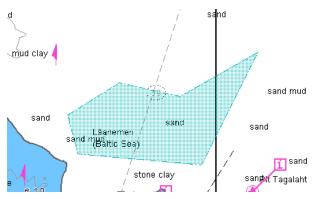
Add Polygon		
Latitude	57°08.3	09' N
Longitude	018°24.4	477' E
Ship position	true	relative
Bearing	315.8	099.3 > °
Opp. Bearing	135.8	∢ 080.7 °
Range	7.97	NM
	14755	m
Press Tab to edit manually		

Position the cursor in the initial point of the polygon shape and press the left trackball button.

To set the polygon shape, after the plotting of the initial point, move the cursor to the next point and press the left button again. Repeat the procedure until you set the required number of point.



After the input of the last point of the polygon shape, press the right trackball button: the cursor will change its form and the object will be set in the specified coordinates, the first and the last point of the plotted polygon connected automatically:



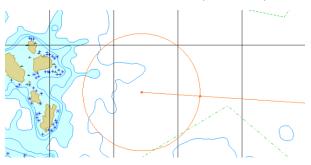
Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

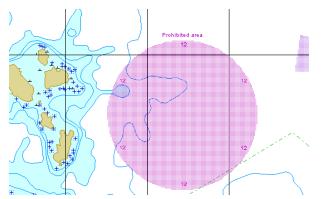
• Circle:

The graphic cursor + will appear on the Chart Panel, whereas the right bottom part of the screen will display the Add Circle information window with the cursor coordinates.

Add Circle	
Latitude	51°29.389' N
Longitude	001°26.835' E
Ship position	true relative
Opp. Bearing	046.6 066.1 °
Range	491.56 NM
Press Tab to edit manually	

Position the cursor in the central point and press the left trackball button.





After this, move the cursor to the necessary radius and press the left trackball button again.

Press the right trackball button to exit from the editing mode. The cursor will assume the shape of the ECDIS task free cursor.

Switch to the **Find object** page. Information on the plotted map objects will be displayed in the table on this page.

	٧E١		142 Depth	- Edit		▼ A S	ave	Editor
Maps Find C)bje	ect Display Options	Tracks					
Туре	!	Text	Info	Depth	X	Start time	Stop time	Points
Symbol	Ī	Dangerous wreck	Submerged wreck.	1.1 m		08-05-14 17:34	13-05-14 17:34	
Depth	ļ			2.2 m		06-05-14 17:34	14-07-14 17:34	
Text	ļ	Dangerous wreck				04-05-14 17:34	08-07-14 17:34	
Line	ļ	Danger to navigatic				14-05-14 17:34	20-05-14 17:34	
Polygon	ļ					14-05-14 14:00	15-05-14 14:00	
Circle	!					14-05-14 14:00	15-05-14 14:00	
Ellipse	ļ		Danger for navigati			14-05-14 14:00	15-05-14 14:00	
Sector	ļ					14-05-14 14:00	15-05-14 14:00	
Rectangle	ļ		Danger for navigati			14-05-14 14:00	15-05-14 14:00	
J								

Assigning "Attached File" Attribute

Press the button. Switch to the **Find object** page. Double click on the necessary map object. To be assigned with the "Attached file" attribute, the selected object should be plotted on the chart.

To attach files (*.txt, *.rtf, *.bmp, *.doc, *gif, *.jpg, *.tif, *.pdf), press the Edit objects button in the right-hand part of the panel.

From the drop-down list select the Attach item.

Maps Find Obje				Edit objects	▼ 🖪 S	ave	🕅 Editor
ind obje	ect Display Options	Tracks		💓 Edit			
Type !	Text	Info			art time	Stop time	Points
Symbol !	Danger to navigatic		1.1 n	🛔 Delete	-05-14 16:00	15-05-14 16:00	
Depth !	Dangerous wreck		1.1 n				
Text !		Danger		🔠 Restore			
Line !				🕼 Attach			
Polygon !					-05-14 14:00	15-05-14 14:00	
Circle !				A Shift all	-05-14 14:00	15-05-14 14:00	
Ellipse !		Danger for navigati		🔗 Merge	-05-14 14:00	15-05-14 14:00	
Sector !					-05-14 14:00	15-05-14 14:00	
Rectangle !		Danger for navigati		14	-05-14 14:00	15-05-14 14:00	

Position the acquisition marker, which will appear, on the object and press the left trackball button.



The screen will display a window with lists of all the files available for attaching (to view the contents of the selected file, press the View button on the appropriate panel).

The list of files available for attaching is formed in the Data Tool utility.

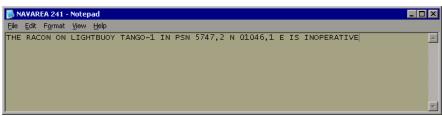
Attachment			>
Available files		Attached files	
Bornholm. Pilot book.doc Entry to N.Orleans.jpg	Attach >>		
St-Petersburg-N.Orleans.pdf			
NAVAREA 241.bt			
			Cancel

To attach a file (group of files) to the map object, select it in the Available files group and press the Attach >> button.

🔀 Attachment		×
Available files	Attached files	
Bornholm. Pilot book.doc St-Petersburg-N.Orleans.pdf	NAVAREA 241.bt	
		View
	Apply	Cancel

The file (group of files) will move to the Attached files group.

To view the file contents select it and press the View button.



Press the Apply button to confirm the changes you have made.

To detach a file (group of files), select the necessary files in the Attached files group and press the << Detach button. The file (group of files) will move to the Available files group. Press the Apply button to confirm the changes you have made.

Saving Map

Use the procedure detailed above to create and plot the required number of map objects.

Press the Save button.

Maps Find C	Dbje	ct Display Options	Tracks				Map r	name:	Fire	exercises zone
Туре	11	Text	Info	Depth	1×	Start tim	Comr	nent:	Upda	ated 14-05-2014
Symbol	T	Danger to navigatic		1.1 m		14-05-14		_		
Depth	1	Dangerous wreck		1.1 m					Save	Cancel
Text	1		Danger							
Line	ļ									
Polygon	1					14-05-14	14:00	15-05-14	- 14:00	
Circle	1					14-05-14	14:00	15-05-14	- 14:00	
Ellipse	1		Danger for navigati			14-05-14	14:00	15-05-14	- 14:00	
Sector	1					14-05-14	14:00	15-05-14	- 14:00	
Rectangle	1		Danger for navigati			14-05-14	14:00	15-05-14	- 14:00	

In the window, which will open up, in the Chart name input line enter the map name. In the Comment input line enter comments on the created map as required. Press Save button in the window, the map will be saved.

Turning On/Off Display of Map Objects and Their Attributes

To turn on/off the display of map object categories on the ECDIS task screen, switch to the **Display options** page.

The exercises a lag lag lag lag lag lag lag lag lag l
Maps Find Object Display Options Tracks
Objects:
C Attributes:
At Text At Depth
Display Options
Attachments 🔁 Colored
C Tracks
Transparency: 0 % -

By default, all buttons are depressed.

To turn on/off the display of various map object categories on the ECDIS task screen, press the following buttons in the **Objects** group:

- Lambda to turn on the display of all the "Symbol" category objects;
- to turn on the display of all the "Line" category objects;
- T to turn on the display of all the "Text" category objects;
- 14₂ to turn on the display of all the "Depth" category objects;

- to turn on the display of all the "Circle" category objects;
- Lun on the display of all the "Polygon" category objects;
- Lun on the display of all the "Rectangle" category objects;
 - to turn on the display of all the "Sector" category objects;
- Lot turn on the display of all the "Ellipse" category objects.

To turn on/off the display of various map object attributes on the ECDIS task screen, press the following buttons in the Attributes group:

- Texts to turn on the display of the "Text" attributes;
- Depths to turn on the display of the "Depth" attributes.

To turn on/off the display of other map object attributes on the ECDIS task screen, press the following buttons in the **Display options** group:

- Attachments to turn on the highlighting of objects with attached files;
- Colored to turn on the display of the map object colour. With the button disabled, all the map objects are shown in orange;
- Timed objects to turn on the display of temporarily appearing objects, if the button is depressed these objects are always visible, if it is released, they are not visible until they become effective;
- Deleted to turn on the highlighting of a deleted object.

Map Loading and Unloading for Editing

Attention! In this mode, maps are loaded for editing only. In the editing mode, there is no tracking of map objects with the "Danger" attribute. This is what the monitoring mode is intended for (see the next paragraph).

Open the **Maps** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.



Maps Find Object Display Options Tracks	▼ Mttach ▼ Save	🕅 Ed	itor
T 6-bis polygon I Fire exer ! Fire exercises zone NEVWMAP01 Shark Rocks	Info Aircraft exercises cemetery of targets		Load
	Select / Clear all		

Use the tab in the top part of the Maps panel which will open up, to switch to the Maps page.

Check checkboxes in the right hand column of the table next to those maps which should be loaded in the editing mode. For maps selection you can also use the Select/Clear all checkbox.

Maps Find Object Display	Options Tracks	🗧 🖌 🏄 Attach 👻 🤮 Save	Monitoring
Name Solver State State Solver State Stat		Info Aircraft exercises cemetery of targets	Monitoring
		Select / Clear all	

Press the Load button.

You can use an alternative method of loading maps in the editing mode via the context right button menu:

Loaded map 🔍 Add object	s 👻 Edit objects 👻 🎑 Save	Monitoring
Maps Find Object Display Options Tracks		
Name	Info Aircraft exercises	Monitoring
I Fire ever		
NEW Load map		
Shari Delete map		
Swallow rock	cemetery of targets	
	 Select / Clear all 	

Names of maps from the table on the **Maps** page (all the available maps are displayed) will move to the list of maps available for editing.

onitoring
Delete

Press the button in the top left corner of the panel. The drop-down list displays all the maps available for editing. The button shows the name of the active map whose objects will be displayed in the table on the **Find Object** page (in the drop-down list, the name of this map is highlighted).

Press the solution to display the active map. The button in the top right corner will switch automatically to the Editor position.

For the objects from the loaded maps to be displayed on the on the ECDIS task screen, press the button in the top right corner of the panel.

🚹 🚯 6-bis polygon 🔍 🐼 Shape	s 🗸 🎉 Attach 🖌 🔄 Save	Monitoring
Maps Find Object Display Options Tracks		(3) Monitoring
I Name	Info	🛃 Editor 📐 📊
NEWMAP01 Shark Rocks		Load
Swallow rock	cemetery of targets	🗖 📓 Delete
	 Select / Clear all 	

From the drop-down list select the Editor option.

To unload maps from the editing mode, press the button in the top left corner of the panel.

Create new map		
6-bis polygon		
Fire exer		
🗋 🐼 6-bis polygon 🕼	Shapes 🗸 🔐 Attach 🗸 🔝	Save
Maps Find Object Display Options	Tracks	
maps in ma object. Display options	i i doka	
Name	Info	Monitoring
Name NEWMAP01		Monitoring
Name NEWMAP01 Shark Rocks	Info	Load
Name NEWMAP01		
Name NEWMAP01 Shark Rocks	Info	Load
Name NEWMAP01 Shark Rocks	cernetery of targets	Load

In the right hand column, next to the name of the map which should be unloaded, press the 📩 button.

Maps Find Object Display Options Tracks	s 🗸 🎻 Attach 🗸 📑 Save	C Editor
	Info	Monitoring
I Fire exer NEWMAP01		
Shark Rocks Swallow rock	cemetery of targets	Delete
	e Outurt Olympik	
	Select / Clear all	

The map will be unloaded, and its name will move to the table of available maps on the Maps page.

Map Loading and Unloading for Monitoring

Attention! In this mode, maps are loaded exclusively for tracking map objects with the "Danger" attribute and targets in the assigned zones. Maps can be loaded/unloaded in/from the monitoring mode on the WS with the Navigational MASTER status only.

Open the **Maps** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of the Maps panel, which will open up, to switch to the Maps page.

M	aps Find Object Display Options Tracks	Attach 🗸 🔝 Save	Editor	
	Name 6-bis polygon Fire exer Fire exercises zone NEWMAP01 Shark Rocks Swallow rock	Info Aircraft exercises cemetery of targets	Monitoring Load	
		Select / Clear all		

Check the checkboxes in the right hand column of the table next to those maps which should be loaded in the monitoring mode. For maps selection you can also use the Select/Clear all checkbox.

Note: Maps containing objects with the "Danger" attribute are marked with the "!" symbol in the table's first column to the left of the map name.

Name	Info	Monitoring
6-bis polygon	Aircraft exercises	- <u>N</u>
Fire exer		Load
Fire exercises zone		Delete
NEWMAP01		
Shark Rocks		
Swallow rock	cemetery of targets	

Press Monitoring button.

You can use an alternative method of loading maps in the monitoring mode via the context right button menu:

🚹 🐼 Loaded map 🔍 🐼 Shapes	s 👻 Edit objects 👻 🎒 Save	Editor
Maps Find Object Display Options Tracks		
I Name	Info	🔲 💿 Monitoring
1 6-bis poly I Fire exer	Aircraft exercises	Load
I Fire exer Load map		
NEWMAR Delete map		
Shark Rocks		
Swallow rock	cemetery of targets	
	Select / Clear all	

The marked maps will be loaded in the monitoring mode. This means that when these maps objects with the "Danger" attribute turn up within the safety frame, the Navigational hazard caution will be triggered off (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4,* section *Main Alerts Generation Principles,* paragraph *Safety Alerts*).

At the same time, names of maps from the table on Maps page will move to the list of maps available for editing.

Create new map		
Fire exercises zone		
Shark Rocks ×		
Loaded map	Shapes - Mattach - Attach -	Monitoring
Maps Find Object Display Options	Tracks	
I Name	Info	Monitoring
9 febis polygon	Aircraft exercises	
I Fire exer		
NEWMAP01		Delete
Swallow rock	cemetery of targets	
	Select / C	Noor oll

Press the button in the top left corner of the panel. In the drop-down list, maps loaded in the monitoring mode are marked with the is symbol to the left of the map name. Maps containing objects with the "Danger" attribute are shown in red.

As maps are loaded in the monitoring mode, their display on the ECDIS task screen is turned on automatically. The button in the top right corner of the panel switches to the **Monitoring** option.

Maps loaded in the monitoring mode are at the same time loaded in the editing mode as well. As this is done, it will be only objects of the saved maps which will be monitored. I.e., while the editing process is running/ no changes made before the map saving are taken into account.

To unload a map from the monitoring mode, press on the 🞯 sign to the left of the map name.

	Create new map		
	 Fire exercises zone Shark Rocks 		
	Loaded map	Shapes 🗸 🎻 Attach 👻 🔛 Save	(1) Monitoring
M	1aps Find Object Display Options Tr	racks	
	Name	Info	💼 🐨 Monitoring
	I Name I 6-bis polygon	Info Aircraft exercises	Monitoring
	6-bis polygon Fire exer		Load
!	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load
	6-bis polygon Fire exer		Load
	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load
	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load
	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load
	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load
	I 6-bis polygon I Fire exer NEWMAP01	Aircraft exercises	Load Load

The map will be unloaded from the monitoring mode but will remain in the editing mode.

To unload a monitoring mode map from the editing mode, press the 🔀 button in the right hand column next to the name of the chart which should be unloaded.

Create new map Fire exercises zone Shark Rocks		
Loaded map	Shapes - Attach - Attach	Monitoring
Maps Find Object Display Options Tra	oks	
IName	Info	Monitoring
! 6-bis polygon	Aircraft exercises	Load
I Fire exer		
NEWMAP01		
Swallow rock	cemetery of targets	
	Selec	t / Clear all

As this is done, a relevant warning is provided:



Press the Yes button.

Editing Map Objects

Attention! Symbol type objects cannot be displayed on scales smaller than 1:600,000.

Load the map containing the object you are going to edit (see section *Map Loading and Unloading for Editing* or section *Map Loading and Unloading for Monitoring*).

With several maps loaded simultaneously, for editing you can select any object out of those visible on the screen: the necessary chart will automatically become active.

Editing Map Object Attributes

Press the Edit objects button in the right-hand part of the panel.

🚹 🚯 Fire exer 🔍 🐼 Shapes	5 -	Edit objects	✓ A Save	🕅 Editor
Maps Find Object Display Options Tracks		🕅 Edit		
1 Name	Info	A Shift		Monitoring
I 6-bis polygon I Fire exercises zone	Aircraft e	🛔 Delete		Load
NEWMAP01		🔠 Restore		Delete
Shark Rocks Swallow rock	cemeter	🔊 Attach		
		Ag: Shift all		
		😸 Merge		
			,	
			Select / Clear all	

From the drop-down list select the Edit item.

Position the acquisition marker which will appear, on the object (in case of text objects, the acquisition point is the first character) and press the left trackball button.

192	\sim		
	Cussy		
		23	
20 9	+++ +++	s G	
	21	20 3 1915 1915	
			204

× Å Apply Default_symbols_table 14-05-14 10:00 • End: 15-05-14 10:00 • Start Dangerous wreck Text: \Box . Info: Submerged wreck. See NAVAREA 241 \odot Color Depth: 2.2 m • Dance

The bottom part of the screen will display a window for editing map objects.

If necessary, edit the map object symbol, colour (the "Object colour" attribute), the map object display time (the "Temporary" attribute), map object text (the "Text" attribute), required information (the "Object information" attribute), the "Danger to navigation" attribute and the required depth value (the "Object depth" attribute) (see section *Creating and Saving Maps*, paragraph *Creating and Plotting Map Objects*, item *Plotting Symbol Type Objects*).

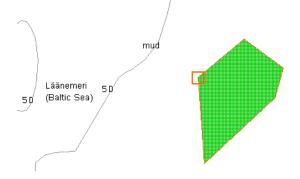
Press the Apply button in the editing window to confirm the changes you have made.

Attributes of the line, text, depth and shape type objects are edited in much the same way.

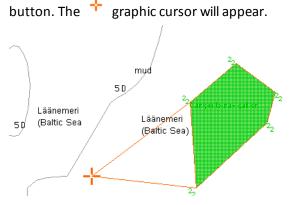
To resize line or shape type objects, select this object as described above and press the **Resize** button in edition window.



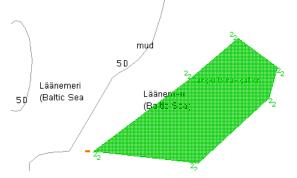
The acquisition marker will appear on the first point of the selected line object.



Use the acquisition marker to select a point on the line which should be changed, and press the left trackball



Move the cursor to the required coordinates. Press the left trackball button. The graphic cursor will change its form to acquisition marker. Repeat this operation for other map object boundaries until the necessary configuration is set.



Press the right trackball button, all changes will be accepted.

Edit all the necessary map objects.

To exit from the editing mode press the right trackball button.

To attach/detach files to/from the map object, see section *Creating and Saving Maps*, paragraph *Creating and Plotting Map Objects*, item *Assigning "Attached File" Attribute*.

Editing Map Object Coordinates

Press the Edit objects button in the right-hand part of the panel.

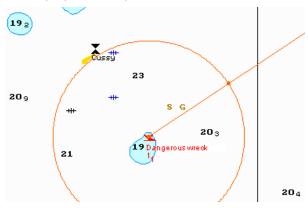
Tire exer	-	Edit objects	✓ A Save	Editor
Maps Find Object Display Options Tracks		🕅 Edit		
I Name	Info	🛃 Shift		Monitoring
6-bis polygon Fire exercises zone	Aircraft e	A Delete		Load
NEWMAP01		🔠 Restore		Delete
Shark Rocks Swallow rock	cemetery	🔊 Attach		
		A Shift all		
		S Merge		
			Select / Clear all	

From the drop-down list select the Shift item.

Position the calculation marker which will appear, on the object to be shifted (the first character of a text object or a point in a line or area type object).



Press the left trackball button. Position the marker which will appear, in the new object coordinates within the displayed Chart panel.



Press the left trackball button: the object will move to the specified coordinates.



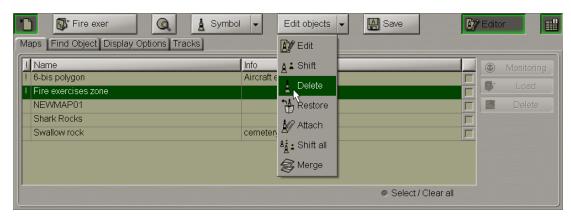
Press the right trackball button to exit from the mode of editing of the map object coordinates.

You can use a similar procedure to change coordinates of all the map objects by selecting the Shift All item from the drop-down list (to do this, it is necessary to enter the password).

Attention! In this case, all the map objects of the layer will be shifted to the same distance and in the same direction as the object which is being edited.

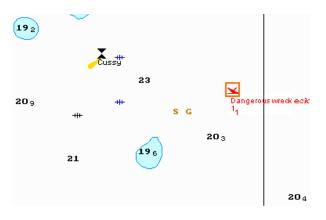
Deleting Map Object

Press the Edit objects button in the right-hand part of the panel.



From the drop-down list select the **Delete** item.

Position the calculation marker which will appear, on the object to be deleted (the first character of a text object or a point in a line or area type object).



Press the left trackball button: the presentation of the object will be removed from the Chart panel.



Press the right trackball button to exit from the map object deleting mode.

Restoring Deleted Map Object

Switch to the Display **Options** page.

The exercises Q 14, Depth - Attach - Attach - C C Editor
Maps Find Object Display Options Tracks
_ Attributes:
AT Text At Depth
Display Options
Attachments 🔁 Colored
C Tracks
Transparency. 0%

Press the Deleted button in the Display Options group. The screen will display all the previously deleted objects shown in the grey colour.

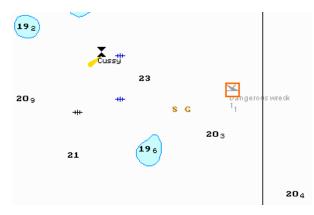


Press the Edit objects button in the right-hand part of the panel.

Fire exer	-	Edit objects	✓ A Save	Editor
Maps Find Object Display Options Tracks		🕅 Edit		
	Info	≜ ≟ Shift		🔲 💿 Monitoring
6-bis polygon Fire exercises zone	Aircraft e	🛔 Delete		Load
NEWMAP01		Restore		Delete
Shark Rocks Swallow rock	cemeter	Attach		
Swallow Tock	cemeter	Ag Shift all		
		A Merge		
			Select / Clear all	

From the drop-down list select **Restore** item.

Position the acquisition marker , which will appear, on the deleted object (the first character of a text object or a corner point of a line or area type object).



Press the left trackball button: the "Deleted object" attribute is removed, and the object is highlighted in accordance with the previously made settings.



Press the right trackball button to exit from the deleted map object restore mode.

Merging Maps

Open the **Maps** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.

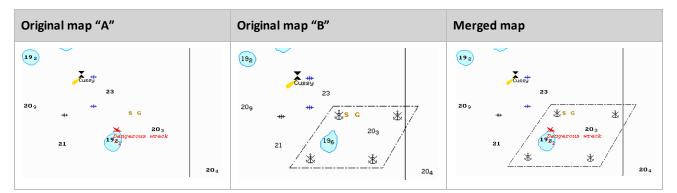
AIS
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Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of the Maps panel which will open up, to switch to the Maps page.

Load the map containing the object you are going to merge (see section *Map Loading and Unloading for Editing*).

Maps Find Object Display Options Tracks	s 🔻 🌌 Attach 👻 🔛 Save	Editor
)
I Name	Info	Monitoring
I 6-bis polygon	Aircraft exercises	
I Fire exer		Load
I Fire exercises zone		💌 🖄 Delete
NEWMAP01		
Shark Rocks		
Swallow rock	cemetery of targets	
	Select / Clear all	

The merging of maps implies that a newly created map will contain map objects from all the merged maps:



Press the Edit objects button in the right-hand part of the panel.

The Shark Rocks 🔍 🛓 Symbol	-	Edit objects	✓ A Save	B⁄	Editor
Maps Find Object Display Options Tracks		💓 Edit			
I Name II NEWMAP01	nfo	🛔 🛓 Shift			Monitoring
	emetery	A Delete			🕼 Load
		🔠 Restore			Delete
		🔊 Attach			
		A Shift all			
		🍣 Merge 🔪			
			Select / Clear all		

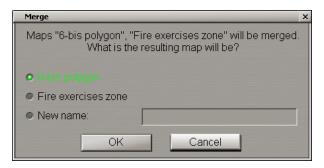
From the drop-down list select the Merge item.



In the window which will open up, check the checkboxes next to the maps which should be merged.

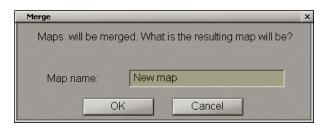
Press the Merge button.

If 2 maps are selected for merging, the Merge window which will open up will have the following form:



Select the name under which the merged map will be saved (under one of the source map names, or under a new name).

If more than two maps are selected for merging, the **Merge** window which will open up has the following form:



Enter the new map name.

Press the OK button.

Deleting Maps

Open the Maps panel by selecting the appropriate line of the Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
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Config
Log Book
Man Corr
Maps 💦
Monitoring 🗥
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of the Maps panel which will open up, to switch to the Maps page.

Check the checkboxes in the right hand column of the table next to the maps which should be deleted. For maps selection you can also use the Select/Clear all checkbox.

P	🗋 🚯 Loaded map 🔍 🛓 Symbo	B⁄	Editor	
1	Maps Find Object Display Options Tracks			
	I Name	Info		Monitoring
Ш	! 6-bis polygon	Aircraft exercises		-
	I Fire exer			Load
	Fire exercises zone			📓 📐 Delete
	NEWMAP01			
Ш	Shark Rocks			
	Swallow rock	cemetery of targets		
Ш				
		Select / Clear all		

Press the Delete button.

You can use an alternative map deleting method by using the context right button menu:

Maps Find Object Display Options Tracks	es 🗸 🚳 Merge 🗸 🔝 Save	Editor
I Name I 6-bis polygon I Fire exer I Fire exer I Fire exercises zone NEVVMAP01 Delete map Shark Rocks Swallow rock	Info Aircraft exercises	 Monitoring Load Delete
	Select / Clear all	

In the window which will appear, press the **OK** button to confirm the deleting of the maps:

Navi-Sailor 4	100 ECDIS	×
	Selected maps will be deleted	ed. Continue?
	ОК	Cancel

The selected maps will be deleted.

Search for Map Objects

Attention! Symbol type objects cannot be displayed on scales smaller than 1:600,000.

Open the **Maps** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
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Monitoring 🔍
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

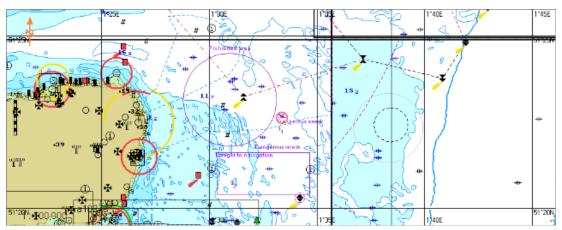
Load the map containing the object you are going to search for and select this map as active (see section *Map Loading and Unloading for Editing*).

Switch to the Find object page.

Select the required map object in the left-hand part of the page and press the left trackball button. Coordinates of the selected object will be displayed in the right-hand part of the page.

Tuna	1.1	Taxt	Info	Depth	1 1	Ctart times	1 Ctan times	Points
Туре		Text	Info	Depth	(\land)	Start time	Stop time	
Symbol	ļ	Danger to navigatic		1.1 m				58° 37.944 N 021° 53
Depth	İ	Dangerous wreck		1.1 m				
Text	ļ		Danger					
Line	ļ							
Polygon	İ							
Circle	ļ				1			
Ellipse	ļ		Danger for navigati					
Sector	ļ							
Rectangle	1		Danger for navigati					

A double click of the left trackball button on the selected object line or its coordinates displays this object in the centre of the Chart panel highlighted with a flashing circle for 10 seconds.



With the selection of line or area type objects, the right-hand part of the page displays coordinates of all the points which the line/area type object consists of.

	Fire	exercises	Shapes	- S Mer	ge	👻 🖪 S	ave	😥 Editor	
Maps Find Object Display Options Tracks									
Туре	11	Text	Info	Depth	X	Start time	Stop time	Points	
Symbol	1	Danger to navigatic		1.1 m				58° 36.597 N 021° 53	
Depth	!	Dangerous wreck		1.1 m				58° 37.549 N 021° 51.	
Text	ļ		Danger					58° 36.704 N 021° 51.	
Line	ļ							58° 36.502 N 021° 53.	
Polygon	!								
Circle	ļ								
Ellipse	ļ		Danger for navigati						
Sector	İ								
Rectangle	1		Danger for navigati						

A double click of the left trackball button on the coordinates of any point which the line/area type object consists of, displays this point in the centre of the Chart panel highlighted with a flashing circle for 10 seconds.

Map Handling in Network Configuration

In the case of network configuration map handing varies on stations with different navigation status. Maps can be loaded in the editing mode independently on different WS's with both, the MASTER and SLAVE status. Maps are not synchronized with other WS's until you save them on your WS by using the Save button. After the synchronizing, saving is done resulting in that identical maps will be stored in all the WS's included in the network. If at the saving moment some of the WS's were turned off or disconnected from the network. Synchronizing will occur as they are turned on or join the network.

If a map with one and the same name is edited simultaneously on different WS's (e.g., on WS1, WS2 and WS4), after the Save button is pressed on any of these WS's (e.g., WS1), the map will be saved on this WS and on all the WS's of the network on which no its editing was done (e.g., all the WS's except WS 2 and WS4).

After an attempt to save maps on the WS's on which the map was edited (e.g., WS 2 or WS4), the following warning will be displayed:

Save as	×						
Map "NEWMAP01" was modified on another station. Do you want to save or discard changes you made?							
Map name: NEWMAP01							
Comment:							
Save Discard							

If the Ignore button is pressed, all the changes made on this WS (e.g., WS2) will be ignored, and the map will be synchronized with the rest of WS's (e.g., except for WS4).

When the Save button is pressed, the map is saved on the WS (e.g., WS2) with all the changes and is synchronized with the rest of WS's (e.g., except for WS 4).

Note: If a map is saved under another name, it is synchronized immediately on all the WS's.

Such algorithm is in action until the chart is saved on the rest of WS's (e.g., WS 4) where it was edited.

Attention! Maps can be loaded (unloaded) in the monitoring mode on the WS's with the MASTER status only.

If an attempt is made to unload such map from the editing mode on a WS with the SLAVE status, the following warning will be provided:

Ì	Navi-Sailor 4100 ECDIS	×
	Map "MAP01" is now monitored. Use ECDIS MASTER station to unloa it.	id
	ОК	

And you will only be able to carry out such operation on the WS with the MASTER status.

Chapter 9. Handling of Routes

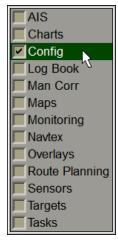
This chapter describes the procedure used in the handling of routes and schedules.

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Work with Route

Default Route Settings

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Config panel, which will open up, to switch to Route Settings page.

Safety Contour	30	m	Anchor:			
Safety Depth	30	m	Cable Length	0	m	-
XTD	0.10	NM	Safety Margin	180	m	
Turn radius	0.10	NM				

This page is intended for setting the default values of route elements. Set the following values which will be used during the route plotting on the **Route Planning**:

- Safety Contour safety contour value for the route legs;
- Safety Depth afety depth value for the route legs;
- XTD cross track distance values (simultaneously for the port and starboard sides) for the route legs;
- Turn radius turn radius value for a WPT.

These values for route elements can subsequently be changed in the course of route editing on the **Route Planning** panel (see below the *Entering Additional Data* item).

In the Anchor group, use the Cable Length and Safety Margin input fields to set the default values for respective parameters that will be used for the anchoring operations (see below the Anchoring Operations paragraph).

Creating a Route

Open **Route Planning** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

Γ	AIS
	Charts
	Config
	Log Book
	Man Corr
	Maps
	Monitoring
	Navtex
	Overlays
	Route Planning
	Sensors
	Targets
	Tasks

New 🛛	🛛 📝 WPT Editor 🔒 Ref. Points	C Focus	E Show	🔹 📔 Monit	oring		
🔊 Load 🗸	Save						
VPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn Radius
A							
					* 5 4 6		
Advanced Cur	Schedule Calculation Check Route V	Operations	ection contro		ault Route Se stance Calculat		
	90.0 1 (0.10 NM	Reverse	Shift	From WI	PT:		
+ +	270.0 💉 99.9 NM	≳ Link 🗸	Delete	e To WPT: Distance			

Selecting Cursor Form

Switch to Edit Options page.

Edit Options Anchor Check Route Schedule Calculation Voyage plan Protection control											
Advanced Cursors	Operations	Quick Distance Calculator									
	Reverse 💥 Shift	From WPT:									
270.0 × 99.9 NM	🔿 Link 🗸 🗴 Delete 🗸	To WPT:									
		Distance:									

The graphics cursor is used during the operation of some functions and represents an intersection of lines corresponding to the latitude and longitude of the given point, but the form of the graphics cursor can be changed as required.

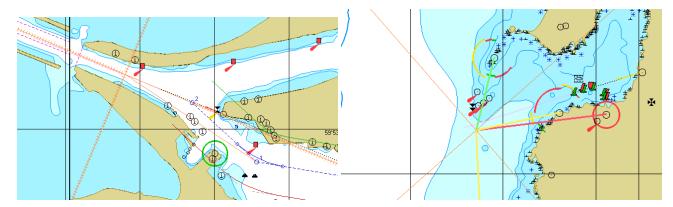
By default, the Standard cursor mode is set. To turn on additional graphic cursor tools, press the appropriate buttons of the Advanced Cursors group:

- To display the line (Heading Mark) ahead of the cursor position in the direction of the plotted route leg;
- To display a line opposite to the Heading Mark from a waypoint;
- To display two additional lines setting their angles relative to Heading Mark line;
- To display range marks on the cursor lines in the form of notches or concentric circles, set the distance between them in the box to the right.

Note: For the notches to be displayed, at least one advanced cursor display button should be enabled). This is not required for the display of circles. (i.e..

- To plot waypoints taking into account the WOL and F dist;
- To plot waypoints taking into account the lighthouse visibility range which is set in the box to the right.

The advanced capabilities of the graphic cursor prove to be useful in, e.g. planning a route along the lead lines.





1.00

1





Plotting Route

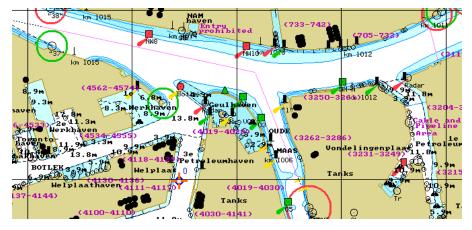
Press New button in the top left part of the panel to display a blank table for the generation of a new route.

🖹 New 📐	🕅 WPT Editor 🔒 Ref. Points	C Focus	Show	👻 📔 Monit	oring		
🔊 Load 🛛 🗸	Save						
L MPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn Radius
3							
1							
Edit Options A	nchor Check Route Schedule Calcu	lation Voyage pla	an Protect	ion control			
Advanced Curso	rs	Operations		Quick Di	stance Calculat	or	
+ +	90.0 1 (0.10 NM	Reverse	🔆 Shift	From W	PT:	•	
	270.0 💉 😥 99.9 NM	≳Link -	> Delet	To WPT:			
			- Dolot	Distance	9:		

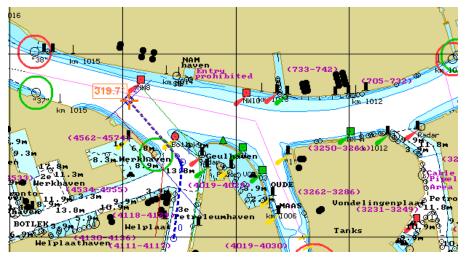
Graphic cursor will appear on the Chart Panel, whereas the right bottom part of the screen will display Place First Point information window.



Set the cursor in the start point coordinates by moving the trackball/mouse, using the data in **Place First Point** window, and press the left trackball/mouse button.

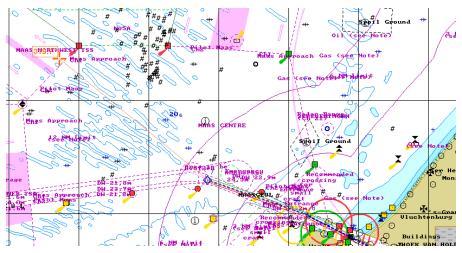


The symbol of the start point with its number ("0") will appear on the Chart Panel. Position the cursor in the coordinates of the next point. At this stage, a route leg line will be drawn between the cursor and the start point. Press the left trackball/mouse button: the Chart Panel will display the next point symbol with "1" for number and the plotted route leg. By default, XTD lines are also shown. To turn off their display, use **Display** button (see below).

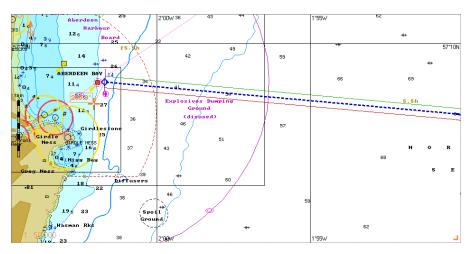


If it is necessary to set several waypoints, repeat the mouse moving and left button pressing operation as many times as there are WPT's required to be set.

If the cursor is positioned beyond the Chart Panel boundaries, it will be re-drawn automatically so that there is always a chart from the chart folio under the cursor.



After the setting of the last point of the planned route, double click the right trackball/mouse button: the cursor will exit from the route planning and editing mode and will assume the form of the free cursor.



The generation of the route is completed.

Entering Additional Data

The display of the table is turned on/off by using the Show tables button.

In the left part of the **Route Planning** panel, press the button to display the corresponding table.

🖹 Ne	ew	WPT Editor	1 Ref. Points	s Q Focus	E Show	v 👻 🛃 Mo	Monitoring						
🕲 Lo	oad 👻	Save			NO	NAME01*		×					
11	WPT	Name	Э	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn ARadius				
3	0			51° 53.659 N 004° 18.420 E	XX	XXX.X XXX.X	XXX.X	XXX.X					
4	1			51° 54.865 N 004° 14.838 E	RL	298.6° 2.27 NM	2.27 NM	0.10 NM 0.10 NM	0.50 NM				
	2			51° 56.571 N 004° 11.176 E	RL	307.0° 2.84 NM			0.50 NM				
	3			51° 59.480 N 004° 02.548 E	RL	298.6° 6.09 NM	11.21 NM	0.10 NM 0.10 NM	0.50 NM				
Edit (Options A	nchor Check Rou	te Schedule C	alculation Voyage p	lan Prote	ection control							
Adv	anced Curso	ors		Operations		Quick	Distance Calcu	lator					
		90.0 1 270.0		MM Reverse	Sh 🔆 De	To WI		 ▼ 398.35 	NM				

Waypoints table consists of the following data (by columns):

- WPT WPT number;
- Name WPT name;
- Position WPT latitude and longitude coordinate;
- Leg Type route leg type (RL or GC) from the previous to the current WPT, set by the operator; all route leg calculations are referred to the WGS-84 reference datum;
- Leg course and distance from the previous to the current WPT;
- Total Distance summary distance between the initial (0) and current WPT by the route legs;
- X PORT/X STBD safe zone to the left and to the right of the route leg;
- Turn Radius- operator-set radius of the arc for the display of an approximate ship track on the turn.



For input of the additional data, perform the procedures detailed below:

- position the cursor on Name element cell; double click the left trackball/mouse button to activate the cell;
- enter the WPT name; press <Enter> key;
- position the cursor on Leg Type element cell; double click the left trackball/mouse button to activate the cell;
- press the button in the right-hand part of the cell and select the sailing type from the list which will open up;
- press the left trackball/mouse button to confirm the changes you have made;
- position the cursor on **X PORT/X STBD** element cell; double click the left trackball/mouse button to activate the cell;
- edit XTD value to the left of the route leg; press the left trackball/mouse button;
- edit XTD value to the right of the route leg; press the left trackball/mouse button;
- position the cursor on Turn Radius element cell; double click the left trackball/mouse button to activate the cell;
- enter the radius for the arc of the suitable ship track on the turning circle; press the left trackball/mouse button.

When filling in the table you can use the context menu called by the right trackball/mouse button:

- Clear cell to delete a value in the selected cell;
- Fill cells down to fill in all the cells below with a value entered in the selected cell;
- Fill cells up to fill in all the cells above with a value entered in the selected cell.





Leg type

RL



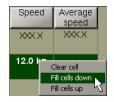












In the left part of the **Route Planning** panel, press the **Extra Data** button to display the corresponding table.

No.	ew	WPT Editor	Ref. Points	🕽 Focu	s 📕	Show -	Monitoring				
Ø: Lo	oad 👻	Save			St-Pet	ersburg-Ha	mburg*				
2P	WPT	Name	Remarks		Draught	UKC	Ref. Point	BRG/Dist	Safet		
٢	0				XXX.X	XXX.X			XXXX.2		
Å	1				Undefined	Undefined			20 m		
	2				Undefined	Undefined			20 m		
					Undefined	Undefined			20 m 🗸		
Edit	Options A	Anchor Check Route	Schedule Calcula	ation	oyage plan	Protection co	ontrol				
Adv	anced Curso	ors		Opera	tions		Quick Distance Calculate	or			
-		90.0	0.10 NM	R	everse 🔀	Shift	From WPT: 0				
		270.0	99.9 NM		int. 9	f. Dalata	To WPT: 88				
		270.0) 99.9 NM	2	ink 🚽 🤇	Delete -	Distance:	1374.50 NM	1		

For input of the additional route data, perform the procedures detailed below:

- position the cursor on **Remarks** element cell; double click the left trackball/mouse button to activate the cell;
- enter the remark; press <Enter> key;
- position the cursor on Safety contour element cell; double click the left trackball/mouse button to activate the cell;
- edit safety contour value to the current route leg; press the left trackball/mouse button (by default, and also for all the routes created in the earlier versions, the 30 m value is set);
- position the cursor on Safety depth element cell; double click the left trackball/mouse button to activate the cell;
- edit safety depth value to the current route leg; press the left trackball/mouse button (by default, and also for all the routes created in the earlier versions, the 30 m value is set).

When filling in the table you can use the context menu called by the right trackball/mouse button:

- Clear cell to delete a value in the selected cell;
- Fill cells down to fill in all the cells below with a value entered in the selected cell;
- Fill cells up to fill in all the cells above with a value entered in the selected cell.





contour





🖹 Ne	ew	WPT Editor	1 Ref. Poi	nts (C Focus	E Show	v 🗸	👌 Mon	itoring		
🕲 : Lo	ad 👻	Save			S		point nam	ies			×
11	WPT	Name)		Position		✓ Turns ¹ √ ✓ Cross track distances			X PORT X STBD	Turn A
	0 St-I	Petersburg		59° 53.844 N 030° 13.508 E	Vhe Whe	rence poi el over lin	ints	Distance XXX.X	XXX.X XXX.X	XXX.X	
1	1			59° 53.292 N 030° 12.754 E		& Sets		0.44 NM	0.10 NM 0.10 NM	0.50 NM	
	2				59° 53.236 N 030° 11.608 E	Anchor rings 0.74 NM			1.18 NM	0.10 NM 0.10 NM	0.50 NM
Edit C	Dptions Ar	chor Check Rou	te Schedule	Calcul	ation Voyage p	an Prote	ection co		1 50 101		
Adva	anced Cursor	s		-	Operations			Quick D	istance Calcu	lator —	
+		90.0	0.10	NM	Reverse	Sh	ift	From V	VPT: 0	✓ St-Pete	rsburg
		270.0	(*) 99.9	-		To WPT: 86 - Hambu				- Hambur	g
1		270.0 ×	NM	Link - Delete -			Distance: 1398.29 NM			9 NM	

Press Show button in the top part of the panel.

The following checkboxes in drop-down list for turning on the display of route options on the ECDIS task screen are checked by default:

- Waypoints names to display on the electronic chart WPT names;
- Turns to display on the electronic chart the turn radius arc for the active route;
- Cross track distances to display on the electronic chart safety lines for the active route;
- Reference points to display Reference points;
- Wheel over lines to display on the electronic chart WOL marks;
- Remarks to display remarks;
- Rises & Sets to display sun and moon rises and sets symbols;
- Anchor rings to display anchor rings.

If necessary, uncheck Waypoints names checkbox to turn off the display of waypoints' names on the ECDIS task screen.

To save the route, enter its name in the name input field and press Save button.

Save Atnwerpen-Aberdeen

Route Loading and Unloading

In the top left part of the **Route Planning** panel, press **Load** button.

New VVPT	Editor	🛔 Ref. Poi	nts	Rocus			🕶 📑 Mc	nitoring		
🕲 Load 🛛 🖌 🔝 Save										
221 Antwerpen-Aberdeen		ETA	Sta	ay Time	Zone	ETD	TTG	Total Time	Speed	Average Speed
Got North channel										
Goteborg-Kiel										
Goteborg-Kiel1										
Liverpool-Barcelona										
NONAME01										
Oteborg-Kiel										
South path	eck Route	Schedule	e Calcu	lation Voya	ge plan	Protection	n control			
South path12				Operations			Quick	Distance Calculate	or —	
St-Petersburg-Hamburg	11 6	0.10	NM	Reven		Shift	From	WPT:		
St-Petersburg-Hamburg1	1 4		INIVI	Thever.			To WI	DT		
St-Petersburg-N.Orleans1	×G	99.9	NM	2 Link	- 3	Delete	-		1	
STCC						0	_ Dista	nce:		

In the list, which will open up, select the route required to be loaded in edition mode, and press the left trackball\mouse button.

2 Ne	ew	WPT Editor	L Ref. Points	Q Focus	Show V Monitoring							
Ø: Lo	ad ·	- Save		St	-Petersb	urg-N.Orleans1	I	×				
11	WPT	Name		Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn A			
٢	0	St-Petersburg		59° 53.635 N 030° 13.243 E	XX	XXX.X XXX.X	XXX.X	XXX.X XXX.X	XXX.X			
14	1			59° 53.292 N 030° 12.754 E	RL	215.6° 0.06 NM	0.06 NM	0.10 NM 0.10 NM	0.30 NM			
	2			59° 53.281 N 030° 11.957 E	RL	268.4° 0.55 NM 0.49 NM		0.10 NM 0.10 NM	0.30 NM			
	3			59° 53.119 N 030° 10.756 E	RL	255.0° 0.56 NM	1.11 NM	0.10 NM 0.10 NM	0.30 NM			
Edit (Options	Anchor Check Rout	te Schedule Calo	culation Voyage p	lan Prote	ection control						
Adv	anced Cu	rsors		Operations		Quick	Distance Calcu	lator				
-	-	90.0	(0.10 NM	Reverse	Shi	ft From	WPT: 0	▼ St-Pete	rsburg			
		270.0	€ 99.9 NM			To WF	PT: 93	Miss. Ri	ver Grain Ele			
		210.0	(*) 99.9 NM		> Del	Distar	nce:	6293.00) NM			

Several routes can be loaded simultaneously in the editing mode. As a button with route name is pressed, the route becomes active and can be edited on the screen by using the graphic editor.

New 2	💓 WPT Editor	1 Ref. points	Q Focus	E Show	- 1	🕈 Monitoring		
🕲 Load 👻	Save	Shanghai-Hamb	ourg 🗙	St-Petersburg	Hambur	g 🗙 S	t-Petersburg-N.Orleans1	×

To quick load the necessary route to monitoring mode, select it from the routes loaded in edition mode and press Monitoring button (see also *Multi-Functional Display (v. 3.00.340)*. *ECDIS User Manual* document, *Chapter 4, Loading of Route and Schedule in the Navigation Mode* section and section *What is Different in Route Monitoring in the Route Planning* of this document):

New 1	WPT Editor	L Ref. points	Q Focus	E Show	Monitaring	
🔊 Load 🛛 🗸	Save	St-Petersburg-Hamburg				×

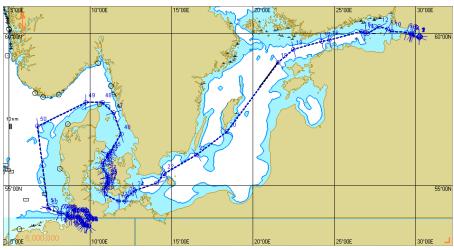
To unload the route, press the **X** button to the right of the route name.

Fast Route Search

Load the necessary route (see item Route Loading and Unloading).

In the top part of the Route Planning panel, press Focus button.





The Chart Panel will display the entire route on the suitable scale chart.

Anchoring Operations

Anchorage Planning in Route Plotting

Plot the route by using one of the procedures described above, or load the plotted route (see paragraph *Creating a Route*).

Open the **Route Planning** panel by selecting the appropriate line of the **Tasks List** menu in the tabs zone of the ECDIS task screen.



New	WPT Editor	L Ref. Points	Q Focus	Show	v 👻 🛃 Mo	nitoring			
🕲 Load 🗸	Save		St-Petersburg-Hamburg						
VPT WPT	Name		Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn A Radius	
49			009° 43.162 E	RL	32.73 NM	NM	0.10 NM		
50			57° 01.761 N 006° 45.564 E	RL	243.6° 106.95 NM	1118.99 NM	0.10 NM 0.10 NM	0.50 NM	
	horage		54° 13.117 N 007° 24.357 E		172.6° 170.59 NM	1289.58 NM	0.10 NM 0.10 NM	0.50 NM	
52			54° 09.112 N 007° 27.304 E	RL	156.7° 4.24 NM	1293.81 NM	0.10 NM 0.10 NM	0.50 NM	
Edit Options An	chor Check Rou	te Schedule Ca	culation Voyage p	lan Prote	ection control				
Anchor									
Show anchor	Show anchor rings Drop Radius: 0 m Vessel Length: 220 m Depth: 0 m Save								
Select way	point Cable	e Length: 230	m - Saf	ety Margin	180 m	Swing Ra	adius: 630	m	

Use the tab in the top part of the Route Planning panel which will open up, to switch to the Anchor page.

During the route planning it is possible to set safe anchorage parameters in a selected WP. To this end, the own ship length (Ship Length) specified in the System Configuration utility is used (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration,* paragraph *MFD Settings*) along with the following parameters:

- Drop Radius the "inner" circle radius within which the anchor may turn up during the dropping. The zero settings assumes that the anchor will get exactly in the WP position;
- Cable Length anchoring cable length, cannot be lower than the Depth value;
- Safety Margin additional range to ensure safe anchorage, can be set to zero;
- Depth estimated depth value in the anchoring position;
- Swing Radius radius of the "outer" circle calculated from the following formula:

Swing	Radius = Ship	Length	+ SafetyMar	gin -	+√CableLength	$h^2 - Depth^2$
Edit Options Anchor Che	eck Route Schedule Cal	culation Voy	age plan Protection co	ontrol		
Anchor				_		
Show anchor rings	Drop Radius: 170	m	Vessel Length: 220	m	Depth: 50 m S	ave
Select waypoint	Cable Length: 200	m 👻	Safety Margin: 180	m	Swing Radius: 594	m

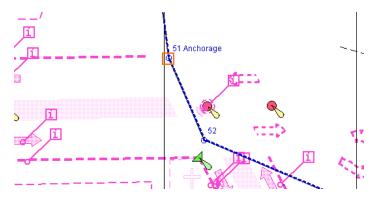
Use the Anchor group to set the necessary values for the parameters listed above. For the Cable Length you can use both, metres and shackles (the length of one shackle is equal to 27.5 m).

Press the Select waypoint button.

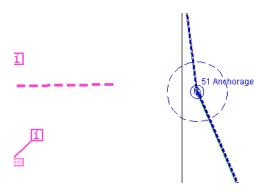
An acquisition marker will appear in the Chart Panel whereas the right bottom part of the screen will display the Select waypoint information window.

Select waypoint					
Latitude	54°13.073' N				
Longitude	007°24.315' E				
Ship position					
	true relative				
Bearing	250.1 033.7 *				
Opp. Bearing	070.1 4146.3 *				
Range	375.16 NM				
Press Tab to edit manually					

Select waypoint window displays marker coordinates. Position the acquisition marker on the anchoring WPT:



Press the left trackball button.



The ECDIS task screen will display the Drop Circle (a solid circle if set) and the Swing Circle (dashed circle).

Note: To this end, it is necessary to check the Anchor rings checkbox in the Show drop-down list (see section Work with Route, paragraph Creating a Route, item Entering Additional Data).

The settings made for the WP in question will be entered in the route, its status will be changed to edited, and the "*" symbol will be added to its name.

New 🛛	🛷 WPT Editor	🎍 Ref. Points	Q Focus	📕 Show 👻	💐 Monitoring	
🔊 Load 🛛 👻	😭 Save			St-Petersburg-Ha	amburg*	×

After the end of editing, the route should be saved.

Note: If some parameters have already been set for the selected WP, they will be automatically restored in the **Anchor** group. After changing, save them by pressing the **Save** button which will be enabled.

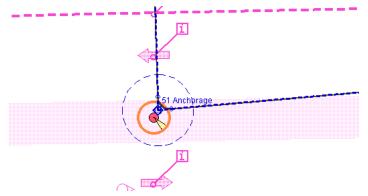
At the same time, the Chart Objects display will open up in the Control Panel:



The display shows all the dangers which happen to be within the anchorage zone (Swing Circle). The following chart objects should be considered as dangerous during the anchorage:

- Obstructions, Wrecks, Underwater rocks, Isolated dangers, Nav Aids;
- Depth contours smaller than the ship's Safety Contour;
- All objects with the "Anchorage Restricted" and "Anchorage Prohibited" attributes;
- New objects (NEWOBJ) containing dangerous object references.

Click on the dangerous object name: it will be highlighted in orange on the ECDIS task screen:

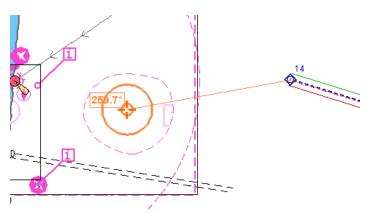


To remove the highlighting from all the dangerous objects, press the Unmark all Objects button.

For the user convenience sake, the graphic route plotting mode implements the display of a Drop Circle and Swing Circle on the ECDIS task screen. To this end, check the Show anchor rings checkbox in the Anchor group:

Edit Options Anchor Che	ck Route Schedule Calcula	ation Voyage plan Protection cc	ontrol	
• Show anchor rings	Drop Radius: 170 m	Vessel Length: 220	m Depth: 90 m	Save
Select waypoint	Cable Length: 200 m	Safety Margin: 180	m Swing Radius: 579	m

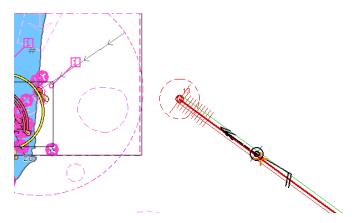
Enter the route graphic editor mode (see section *Work with Route*, paragraph *Editing the Route*, item *Graphic Route Editing Method*).



During the route plotting, the Drop Circle and Swing Circle will be shown on the ECDIS task screen in the form of solid circles.

Anchoring in Route Monitoring Mode

In the route monitoring mode, the route leg has 10 cable marks to the anchoring point. The Drop Circle (a solid circle) and the Swing Circle (a dashed circle) are shown in red, just as the monitored route.



Open the Monitoring panel by selecting the appropriate line of the Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps
Monitoring
Navtex 🔨
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of the Monitoring panel which will open up, to switch to the **Navigational Alerts** page.

Route Monitoring Safety Al	erts Navigational Alerts	5		
Primary/Secondary differen	се	Chart		Safety Swing Circle
O Prim / Sec diverged	.000 NM •			Calculate O Use from route
Anchor watch settings				Vessel Length: 220 m
N State	Offset	Safety ring	Alert	Cable Length: 200 m -
1 Down	by Cursor	0 m		Deaths 00
2 Down	by Cursor	0 m		Depth: 90 m
• Show anchor watch rings				Safety Margin: 180 m
Sounder				Swing Radius: 579 m
• Sounder depth 1	5 m			Use for Anchor 1 Use for Anchor 2
• Sounder failure				Heading monitor
				• Active 3.0 °

In the Safety Swing Circle group select the data source. If data is taken from the monitored route, select the Use from route radio button. If the user wishes to set new anchorage parameters (or if the data was not set before) select the Calculate radio button and set the necessary data (see also paragraph Anchorage Planning in Route Plotting).

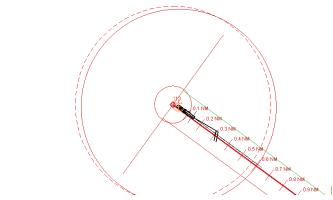
Press the Use for Anchor 1 (2) button, the calculated value for the Swing Radius will be entered in the Safety ring column of the Anchor watch settings table.

Route Monitoring Safety Alerts N	avigational Alerts			
Primary/Secondary difference		hart		Safety Swing Circle
O Prim / Sec diverged 0.000	NM			Calculate O Use from route
Anchor watch settings				Vessel Length: 220 m
N State	Offset	Safety ring	Alert	Cable Length: 200 m -
1 Down	by Cursor	579 m		Denth: 00 m
2 Down	by Cursor	579 m		Depth: 90 m
• Show anchor watch rings				Safety Margin: 180 m
Sounder				Swing Radius: 579 m
• Sounder depth 15	m			Use for Anchor 1 Use for Anchor 2
• Sounder failure				Heading monitor
				• Active 3.0 °

Check the checkboxes in the Alert column to turn on the alert generation as the ship sails beyond the set distances.

Check the Show anchor watch rings checkbox to show the anchor watch rings around the anchor position after the anchor drop points are set.

To set the position of 1 anchor, press the **Down** button in the row 1.



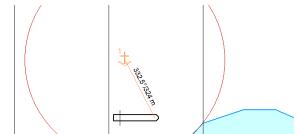
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In this case, the anchor position will correspond to the position of anchor point 1 at the moment when the **Down** button is pressed. The anchor position is marked with the special symbol specifying the anchor number.

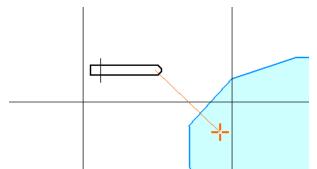
At the same time the **Chart Objects** display will open up on the Control Panel:



The display shows all the danger which happen to be within the anchorage zone (Swing Circle). At this time it is advisable to unload the monitored route for decluttering the ECDIS task screen. Along the line connecting the positions of the anchor and anchor point 1, bearing and distance between them is dynamically displayed.



To set the anchor position, use the cursor to press the **By Cursor** button in row 1. Indicate the anchor position with the cursor on the Chart Panel.



Press the left trackball button. Use similar procedures if it is necessary to set anchor 2.

Editing the Route

Graphic Route Editing Method

Load the necessary route (see Route Loading and Unloading item).

In the top part of the Route Planning panel, press WP Editor button.



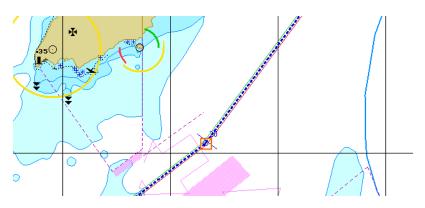
An acquisition marker will appear in the Chart Panel whereas the right bottom part of the screen will display **Edit route** information window.

Edit route						
Latitude	57°08.659' N					
Longitude	019°18.006' E					
Ship position	true relative					
Bearing	097.6 4 159.6 °					
Opp. Bearing	277.6 020.4 > °					
Range	244.27 NM					
Press Tab to edit manually						

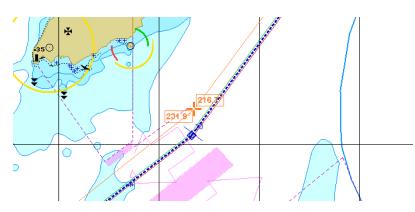
Edit route window displays marker coordinates.

1. Changing Coordinates of an Existing WPT:

Position the acquisition marker on the WPT to be edited.

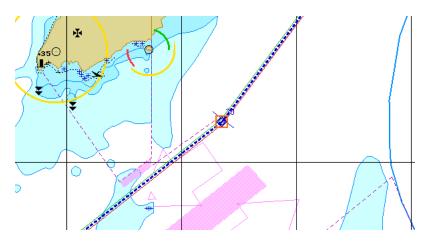


Press the left trackball/mouse button: the marker will acquire the WPT and change own form.



Move the acquired WPT to the required place. As the WPT coordinates change, the adjacent route legs will change, too.

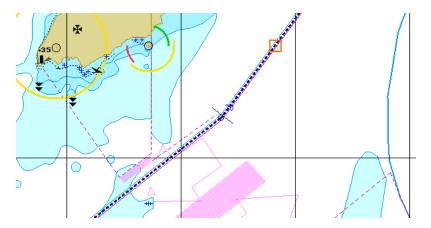
Press the left trackball/mouse button.



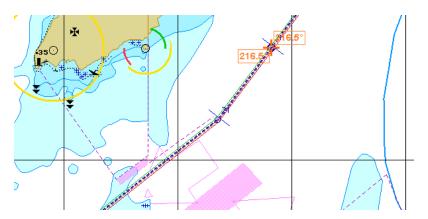
The WPT will be set in the new coordinates.

2. Setting a New WPT:

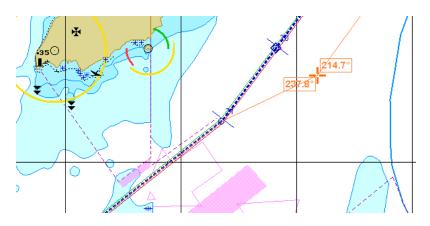
Position the acquisition marker on the route leg where a new WPT is required to be set.



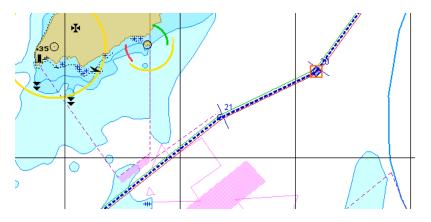
Press the left trackball/mouse button: a new WPT will be set. The marker will acquire the new WPT and change own form.



Move the acquired WPT to the necessary place.



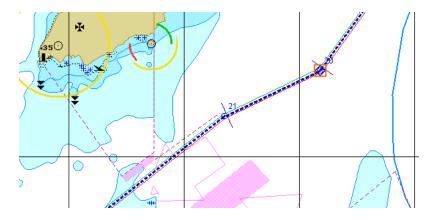
As the WPT coordinates change, the adjacent route legs will change, too.



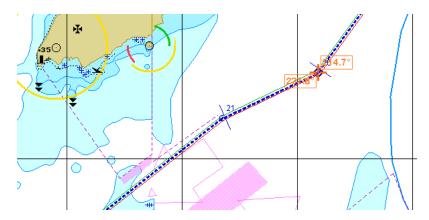
Press the left trackball/mouse button. The new WPT will be set in the specified coordinates.

3. Deleting a WPT:

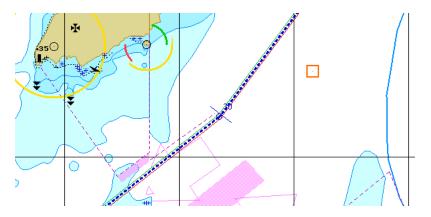
Position the acquisition marker on the WPT to be deleted.



Press the left trackball/mouse button: the marker will acquire the WPT and change own form.



Press the right trackball/mouse button.



The point will be deleted, and the adjacent route legs will be combined to form one.

Press the right trackball/mouse button to exit from the editing mode. The marker will assume the shape of the free cursor.

Save the route as required (see Creating a Route paragraph).

Tabular Route Editing Method

Load the necessary route (see Route Loading and Unloading item).

The display of the table is turned on/off by using the Show tables button.

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In the left part of the **Route Planning** panel, press the button to display the corresponding table.

🖹 Ne	ew	WPT Editor	L Ref. Points	Q Focus	Show	v 👻 🛃 Mo	nitoring		
Ø: Lo	ad	✓ Save		St-Petersburg-N.Orleans1					×
11	WPT	Name	9	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn A
٢	0	St-Petersburg		59° 53.635 N 030° 13.243 E	XX	XXX.X XXX.X	XXX.X	XXX.X XXX.X	XXX.X
14	1			59° 53.292 N 030° 12.754 E	RL	215.6° 0.06 NM	0.06 NM	0.10 NM 0.10 NM	0.30 NM
	2			59° 53.281 N 030° 11.957 E	RL	268.4° 0.49 NM	0.55 NM	0.10 NM 0.10 NM	0.30 NM
	3			59° 53.119 N 030° 10.756 E	RL	255.0° 0.56 NM	1.11 NM	0.10 NM 0.10 NM	0.30 NM
Edit (Options	Anchor Check Rou	te Schedule Cal	culation Voyage p	lan Prote	ection control			
Adv	anced Cu	irsors		Operations		Quick	Distance Calcu	lator	
-1		90.0	(0.10 NN	A Reverse	Shi	ift From	WPT: 0	- St-Peter	rsburg
		270.0	(* 99.9 NI			To WF	PT: 93	Miss. Ri	ver Grain Ele
			(*) 99.9 NN		ð De	Dista	nce:	6293.00	NM

Edit the existing route by using the following procedures.

- 1. Edit coordinates and route elements for an existing WPT as described in item *Creating a Route*.
- 2. Setting a New WPT:

Position the cursor on the cell with the number of the WPT before which a new WPT is required to be added, press the left trackball/mouse button. This WPT line will be highlighted in colour.

WPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn ARadius
9		60° 01.736 N 029° 25.785 E	RL	287.7° 7.97 NM	25.74 NM	0.10 NM 0.10 NM	0.50 NM
10	Copy waypoints	60° 03.242 N 028° 31.410 E	RL	273.2° 27.25 NM	52.98 NM	0.10 NM 0.10 NM	0.50 NM
11	Cut waypoints Delete waypoints	60° 07.832 N 028° 16.433 E	RL	301.5° 8.85 NM	61.84 NM	0.10 NM 0.10 NM	0.50 NM
12	Insert waypoint	60° 12.302 N 027° 45 312 F	RL	286.1° 16.03 NM	77.87 NM	0.10 NM 0.10 NM	0.50 NM

Press the <Insert> key of the computer keyboard, or press the right trackball/mouse button and select the Insert waypoint context menu item. A new line containing the same number and coordinates corresponding to the middle

of the leg, which it is set on, will appear. The old line will be assigned the next number.

WPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn A Radius
9		60° 01.736 N 029° 25.785 E	RL	287.7° 7.97 NM	25.74 NM	0.10 NM 0.10 NM	0.50 NM
10		60° 02.489 N 028° 58.603 E		273.2° 13.72 NM	39.45 NM	0.10 NM 0.10 NM	0.50 NM
11		60° 03.242 N 028° 31.410 E	RL	273.2° 13.53 NM	52.98 NM	0.10 NM 0.10 NM	0.50 NM
12		60° 07.832 N 028° 16 433 F	RL	301.5° 8.85 NM	61.84 NM	0.10 NM 0.10 NM	0.50 NM

Edit the route element value.

3. Deleting a WPT:

Position the cursor on the cell with the number of the WPT required to be deleted, press the left trackball/mouse button. This WPT line will be highlighted in colour.

WPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn ARadius
9		60° 01.736 N 029° 25.785 E	RL	287.7° 7.97 NM	25.74 NM	0.10 NM 0.10 NM	0.50 NM
10	Copy waypoints	60° 02.489 N '8° 58.603 E	RL	273.2° 13.72 NM	39.45 NM	0.10 NM 0.10 NM	0.50 NM
11	Cut waypoints Delete waypoint	0° 03.242 N 8° 31.410 E	RL	273.2° 13.53 NM	52.98 NM	0.10 NM 0.10 NM	0.50 NM
12	Insert waypoint	0° 07.832 N	RL	301.5° 8.85 NM	61.84 NM	0.10 NM 0.10 NM	0.50 NM

Press <Delete> key on the computer keyboard, or press the right trackball/mouse button and select **Delete waypoints** context menu item.

Navi-Sailor 4000 ECDIS			×
	Delete selecte	ed waypoints?	
	Yes	No	

Press Yes button to confirm the WPT deleting.

The selected line will be deleted, those following it will be re-numbered.

WPT	Name	Position	Leg Type	Leg	Total Distance	X PORT X STBD	Turn Radius
9		60° 01.736 N 029° 25.785 E	RL	287.7° 7.97 NM	25.74 NM	0.10 NM 0.10 NM	0.50 NM
10		60° 03.242 N 028° 31.410 E	RL	273.2° 27.25 NM	52.98 NM	0.10 NM 0.10 NM	0.50 NM
11		60° 07.832 N 028° 16.433 E	RL	301.5° 8.85 NM	61.84 NM	0.10 NM 0.10 NM	0.50 NM
12		60° 12.302 N 027° 45 312 F	RL	286.1° 16.03 NM	77.87 NM	0.10 NM 0.10 NM	0.50 NM

All the changes in the table will be reflected accordingly on the graphic screen.

Save the route as required by pressing Save button in the top right part of the panel.

Shifting a Route

Load the necessary route (see Route Loading and Unloading item).

Switch to Edit Options page. Press Shift button in Operations group.

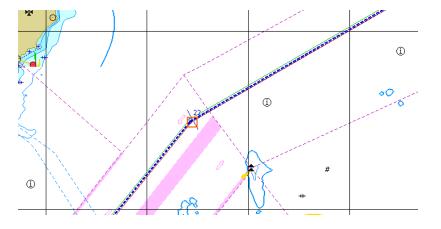
Edit Options Anchor Check Route Schedule Calculation Voyage plan Protection control						
Advanced Cursors	Operations	Quick Distance Calculator				
↓ → 90.0	Reverse 🔀 Shift 📐	From WPT: 0 St-Petersburg				
+ 270.0 ↔ 99.9 NM	≳ Link - > Delete -	To WPT: 86 • Hamburg				
(, 55.5 NM		Distance: 1398.29 NM				

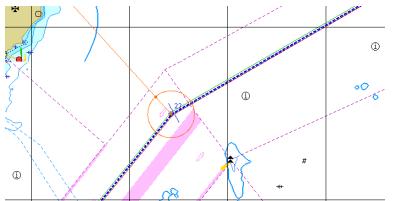
An acquisition marker will appear in the Chart Panel whereas the right bottom part of the screen will display **Edit Route** information window.

Edit route					
Latitude 57°08.659' N					
Longitude	019°18.006' E				
- Ship position Bearing	true relative				
Opp. Bearing Range	277.6 020.4 • ° 244.27 NM				
Press Tab to edit manually					

Edit route window displays marker coordinates.

Position the acquisition marker on any point of the route which should be moved.



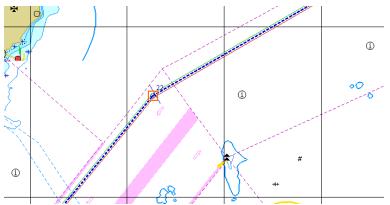


Press the left trackball/mouse button: the marker will change own form.

Move the route to the required place. The shift bearing and distance will be displayed in the **Shift Route** information window in the right bottom part of the screen.

Shift					
Latitude 1	57°08.659	9' N			
Longitude 1 019°18.006' E					
Latitude 2 57°59.659' N					
Longitude 2	019°06.006' E				
From point 1					
Bearing	299.3	•			
Opp. Bearing	119.3	°			
Range	2.31	NM			
	3761	m			
Press Tab to edit manually					

Press the left trackball/mouse button.



The route will be shifted.

Note: All the WPT's of the selected route will be shifted by the selected distance and bearing.

Press the right trackball/mouse button to exit from the editing mode. The marker will assume the shape of the free cursor.

Save the route as required (see Creating a Route item).

Creating Reversed Route

Load the necessary route (see Route Loading and Unloading item).

Switch to Edit Options page. Press Reverse button in Operations group.

Edit Options Anchor Check Route Schedule Calculation Voyage plan Protection control

Advanced Cursors		Operations	Quick Distance Calculator	·
90.0	11 ⊕ 0.10 NM	Reverse Shift	From WPT: 0 -	Hamburg
270.0	99.9 NM	CLink ▼ ★ Delete	To WPT: 86 -	St-Petersburg
270.0	299.9 NM		Distance:	1398.30 NM

A route will be created with the WPT order inverse to that in the active route.

All the changes in the table will be shown accordingly on the Chart Panel.

Save the route as required (see *Creating a Route* item).

Merging Routes

Load the necessary route (see Route Loading and Unloading item).

Switch to Edit Options page. Press Link button in Operations group.

	Antwerpen-Aberdeen	
	Got North channel	
Edit Options Anchor Check Route Schedule Calculat	Goteborg-Kiel	n control
Advanced Cursors	Hamburg-Bilbao	Quick Distance Calculator
	St-Petersburg-Hamburg1	From WPT: 0 - St-Petersburg
	St-Petersburg-N.Orleans1	To WPT: 86 V Hamburg
270.0 💉 99.9 NM	≳ Link 👻 🎽 Delete	▼ IIIIIIIIIIII
	•	Distance: 1398.29 NM

In the list, which will open up, select the route, which will be connected to the last point of the loaded route. Press the left trackball/mouse button.

WPT's of the connected route will be added to the table of route elements.

All the changes in the table will be shown accordingly on the Chart Panel.

Save the route as required (see Creating a Route item).

Deleting a Route

Switch to Edit Options page. Press Delete button in Operations group.

	Antwerpen-Aberdeen Got North channel
	Goteborg-Kiel
	Hamburg-Bilbao
Edit Options Anchor Check Route Schedule Calculation Voyage p	la Liverpool-Barcelona
Advanced Cursors Operations	NONAME01 ance Calculator
	St-Petersburg-Hamburg1 St-Petersburg-N.Orleans1
+ 270.0 x 199.9 NM	Delete VIII. 86 Hamburg
→ 270.0 x 99.9 NM 2Link	Distance: 1398.29 NM

Select the route, which should be deleted, from the list and press the left trackball/mouse button.

Navi-Sailor 4000 E	CDIS			>
Rou	te "NONAME01	" will be	e deleted. Continue?	
	Yes		No	

In the window which will appear, press Yes button to confirm the deleting. The route will be deleted.

Attention! The route cannot be deleted until it is loaded into monitoring or editing mode.

Checking and Editing the Route Taking into Account Dangers to Navigation

Load the route, which should be checked for the availability of dangers to navigation (see *Route Loading and Unloading* item).

Switch to Check route page.

Edit Options Anchor	Check Route Schedule Calculation Voyage plan Protection control	
Check Route		Safety Options
Track control mode		Objects to check 🗸
		Safety contour: 10 m

In the Safety options group select which charts should be used for the check:only charts with Best scale or all charts (All scales) under the checked route (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4*, section *Main Alerts Generation Principles*, paragraph *Safety Alerts*).

Press button in Check route group: the route will be checked.

Check Route		
Track control mode		

The list of chart objects and safety contour value, which are used in the route check displayed in the Safety options group.



The check process is shown in the display window.

Check Route Track control mode	
-	Check WP 16, Dangers:425

Press button if necessary to interrupt manually the check of the entire active route for the availability of dangers to navigation.

Check Route Track control mode	
	Check WP 12, Dangers:401
▶	

The route check will be interrupted. It can be resumes after the necessary time without exiting from the route checking mode. To do this, press the button.

Check route		
	nterrupted. Would you like start the check from the b	
Continu	Restart	

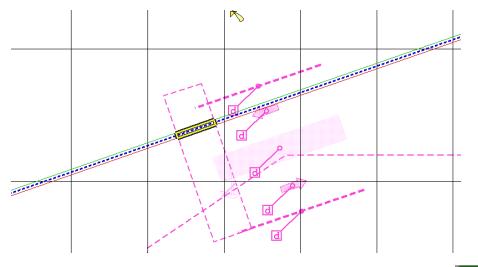
Select the necessary option, the route check will be resumed.

After the end of check, **Check route** group will display a message about detected dangers or about no dangers having been found.



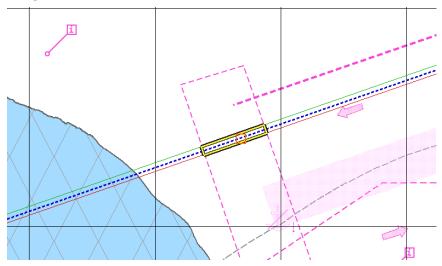
To view the detected dangers to navigation, use 🚺 and 🕩 buttons to select the danger you are

interested in. Press Subtron. The danger to navigation will be indicated by highlighting on the Chart Panel. In this case the best chart of the original scale will be loaded.

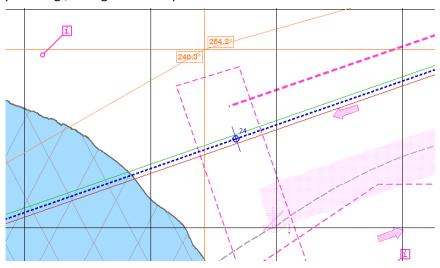


To edit route to take into account the detected dangers to navigation, use and buttons to select the required danger and press WPT Editor button.

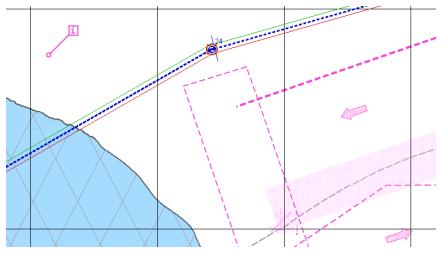
An acquisition marker will appear on the Chart panel in the point with coordinates of the detected danger to navigation.



Edit the route leg according to the editing rules so that the route leg does not pass through the dangerous place. E.g., change the WPT position.



After the route leg editing is completed, press the left trackball button. After the change of the WPT position, two legs before the changed point and two legs after it will be automatically checked.



Perform the editing until the end of the route (see also section *Route Editor*, paragraph *Graphic Route Editing Method*).

If there are no dangers to navigation on the route, Check route group will display an appropriate message.

Track con	trol mode	2
< >	Q	Route checking complete
V	×	

To accept the route checking results and exit from the checking mode press button . The "checked" attribute will be assigned to the route. Check results will be entered in the voyage plan, the following window will open up.

5	_		×
leck the voya	ige plan	report?	
Yes		No	
			neck the voyage plan report? Yes No

To view check results, press the Yes button.

/oyage	No.: Ship's Name:KOLA FROM:			TO:			Master	's Name:	
royage	no. anpis name, rock i nom.	WAY	(POINTS	10.			in as te i	s reine.	
VVPT	Name	Position	Leg	Total Distance	X PORT X STBD	Turn Radius	Draught	Squat	икс
0	St Peterabulg	59* 53.844 N 030* 13.508 E	XXX.X XXX.X	XXX.X	XXX.X XXX.X	XXX.X	XXX.X	XXX.X	XXXX.X
1		59* 53.292 N 030* 12.754 E	214.5* 0.22 NM	0.22 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
2		59* 53.236 N 030* 11.608 E	264.4* 0.74 NM	0.96 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
3		59*53.119 N 030* 10.756 E	254.7* 0.32 NM	1.28 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
4		59° 56.852 N 029° 52.510 E	292.2* 10.07 NM	11.35 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
5	Pilot buoy	59* 57.756 N 029* 47.762 E	290.8* 2.46 NM	13.81 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
6		59* 58.845 N 029* 45.408 E	312.7* 1.59 NM	15.40 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
7		59* 59.094 N 029* 43.732 E	286.5* 0.96 NM	16.36 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
8		59* 59.309 N 029* 40.950 E	278.8* 1.41 NM	17.77 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
9		60° 01.736 N 029° 25.785 E	287.7* 7.97 NM	25.74 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate
10		60* 03.242 N 028* 31.410 E	273.2* 27.25 NM	52.98 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
11		60° 07.832 N 028° 16.433 E	301.5* 8.85 NM	61.84 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
12		60* 12.302 N 027* 45.312 E	286.1* 16.03 NM	77.87 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
13		59* 59.628 N 027* 02.751 E	239.2* 24.85 NM	102.72 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
14		59* 59.961 N 026* 52.897 E	273.9* 5.00 NM	107.72 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
15		60° 03.238 N 026° 40.046 E	297.0* 7.15 NM	114.87 NM	0.10 NM 0.10 NM	0.50 NM	10.0 m	0.5 m	9.5 m
		59* 47.940 N	255.6*	176.77 NM	0.10 NM	0.50 NM	10.0 m	0.5 m	Shallow wate

The Voyage Plan table on the Safety Parameters page specifies safety parameters which were used for checking each route leg. The List of Accepted Alerts column lists dangers which were found during the route check but were ignored by the user. If no dangers were found on these legs, cells of the List of Accepted Alerts column will be empty. Specified in the brackets are charts on which dangers were detected, as well as danger depths for the safety contour and safety depth. The Voyage Plan footer displays: Check for safety: 07.10.12 13:25 (date and time of the check).

To save check results, export the voyage plan in one of the formats (*.pdf, *.html, *.xls) by pressing the respective button in the left top corner (PDF, HTML, Excel) of the **Print Preview** window.

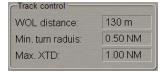
Hitention! As the route is unloaded, data in the List of Accepted Alerts column is not saved.

The saved files have the Route_name_(DD.MM.YY, HH-MM_checked) .* format specifying the status (checked), check time and date.

To exit from checking mode without the results of the route checking acception and press button. For checking route geometry for compliance with Track Control Mode, press Track control mode radio button.



For the reference purpose, in the Track control group specifies limitations for the route elements required for Track Control mode operation.



Use the same procedure to check the route as described above for safety parameters.

Route Approval and Protection

Protecting Route from Editing

Plot the route by using one of the procedures described above, or load the plotted route (see *Creating a Route* paragraph).

Use the tab in the top part of the **Route Planning** panel which will open up, to switch to the Protection **control** page.

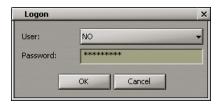
🔁 Ne	9W	WPT Editor	💄 Ref. Poi	nts 🔍 🔍 Fo	cus	Show	👻 🔍 Mon	itoring		
🔊 Lo	ad 👻	Save	St-Petersburg-Hamburg							
2P	WPT	Name	ETA	Stay	Time Zone	ETD	TTG	Total Time	Speed	Average A Speed
*	0 St	-Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX	00:00	23-12-13 22:00	XX-XX-XX	XX-XX-XX	XXXX.X	XXXX.X
1	1		23-12-13 22:01		00:00	23-12-13 22:01	00 d 00 h 01 m	00 d 00 h 01 m	12.0 kn	12.0 kn
	2		23-12-13 22:03		00:00	23-12-13 22:03	00 d 00 h 02 m	00 d 00 h 03 m	12.0 kn	12.0 kn
	3		23-12-13 22:06		00:00	23-12-13 22:06	00 d 00 h 02 m	00 d 00 h 06 m	12.0 kn	12.0 kn
Edit	Options A	Anchor Check Rout	te Schedule	Calculation	Voyage plan	Protection	n control			
Prot	ection contr	rol								
	Protect	Approve								

Press the Protect button in the Protection control group.

If NS 4100 logon had a low access level which does not allow route protection (see document *Navi-Sailor 4100 ECDIS (v. 2.00.348). Special Functions*, chapter *NS 4100 Security Access System*, section *Levels/Passwords Page*, paragraph *Assigning Access Levels*), a special warning will appear:



Press the **OK** button, a request to enter a password will appear:

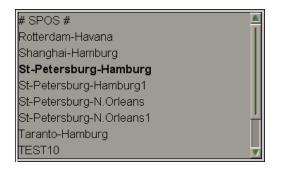


Enter the password for the appropriate access level. Press the **OK** button. The route will be protected from editing, and the letter "[P]" will be added to its name.

🔁 N	ew	WPT Editor	🌡 Ref. Poi	nts 🔍 Fo	cus	Show	👻 💐 Mon	itoring		
🔊 La	bad	 Save 			St-P	etersburg-	Hamburg[P]		×
22	WPT	Name	ETA	Stay	Time Zone	ETD	TTG	Total Time	Speed	Average A
	0	St-Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX	00:00	23-12-13 22:00	XX-XX-XX	XX-XX-XX	XXXX.X	XXX.X
4	1		23-12-13 22:01		00:00	23-12-13 22:01	00 d 00 h 01 m	00 d 00 h 01 m	12.0 kn	12.0 kn
	2		23-12-13 22:03		00:00	23-12-13 22:03	00 d 00 h 02 m	00 d 00 h 03 m	12.0 kn	12.0 kn
	3		23-12-13 22:06		00:00	23-12-13 22:06	00 d 00 h 02 m	00 d 00 h 06 m	12.0 kn	12.0 kn 🗾
Edit	Options	Anchor Check Rout	te Schedule	Calculation	Voyage plar	Protection	n control			
Prot	Protec									

The protected route can neither be saved under the previous name, nor deleted. If saved under an altered name, the route loses its "Protected" status.

In the list of routes, the protected route is marked off with bold type:



Route Approval

Attention! This feature is available for Navi-Sailor 4100 software only.

Plot the route by using one of the procedures described above, or load the plotted route (see paragraph *Creating a Route*).

Use the tab in the top part of the Route Planning panel which will open up, to switch to Protection control page.

🔁 Nei	W	WPT Editor	🎍 Ref. Poi	1 Ref. Points 🔍 Focus								
🔊 Loa	ad 👻	Save			St	-Petersburg	g-Hamburg			×		
BB	WPT	Name	ETA	Stay	Time Zone	ETD	TTG	Total Time	Speed	Average Average		
	0 St-	Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX	00:00	23-12-13 22:00	XX-XX-XX	XX-XX-XX	XXXX.X	XXXX.X		
4	1		23-12-13 22:01		00:00	23-12-13 22:01	00 d 00 h 01 m	00 d 00 h 01 m	12.0 kn	12.0 kn		
	2		23-12-13 22:03		00:00	23-12-13 22:03	00 d 00 h 02 m	00 d 00 h 03 m	12.0 kn	12.0 kn		
Ī	3		23-12-13 22:06		00:00	23-12-13 22:06	00 d 00 h 02 m	00 d 00 h 06 m	12.0 kn	12.0 kn		
Edit O	ptions	nchor Check Rou	te Schedule	Calculation	Voyage plan	Protection	n control					
Prote	ection contro	ol										
F	Protect	Approve										

Attention! For the route to be approved, it should be checked for dangers to navigation on the **Check Route** page of the **Route Planning** panel.

If the route has not been checked for dangers, the following warning will be displayed after a press on the **Approve** button:



Check the route for the availability of dangers to navigation (see paragraph *Checking and Editing the Route Taking into Account Dangers to Navigation*). After the check, press the enabled Approve button in the Protection control group. If NS 4100 logon had a low access level which does not allow route protection (see document *Navi-Sailor 4100 ECDIS (v. 2.00.348). Special Functions*, chapter *NS 4100 Security Access System*, section *Levels/Passwords Page*, paragraph *Assigning Access Levels*), a special warning will appear:



Press the **OK** button, a request to enter a password will appear:

Logon		×
User:	NO	1
Password:	*****	1
	OK Cancel	

Enter the password for the appropriate access level. Press the **OK** button.

New 🔁	🛛 🍞 WPT Editor	🎍 Ref. Poi	nts 🔍 🔍 Fo	cus	Show	👻 💐 Mon	itoring		
🔊 Load 🛛 👻	Save			St-F	etersburg-	Hamburg[A]		×
PR WPT	Name	ETA	Stay	Time Zone	ETD	TTG	Total Time	Speed	Average Speed
🛞 0 St	-Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX	00:00	23-12-13 22:00	XX-XX-XX	XX-XX-XX	XXXX.X	XXXX.X
1		23-12-13 22:01		00:00	23-12-13 22:01	00 d 00 h 01 m	00 d 00 h 01 m	12.0 kn	12.0 kn
2		23-12-13 22:03		00:00	23-12-13 22:03	00 d 00 h 02 m	00 d 00 h 03 m	12.0 kn	12.0 kn
3		23-12-13 22:06		00:00	23-12-13 22:06	00 d 00 h 02 m	00 d 00 h 06 m	12.0 kn	12.0 kn
Edit Options A	nchor Check Rou	te Schedule	Calculation	Voyage plan	Protection	n control			
Protection contr	ol Approve								

The route will be approved, and the letter "[A]" will be added to its name.

The approved route only can be loaded for monitoring, if the appropriated checkbox is cheched (by defaul the checkbox is unchecked) on the **Permissions** page of **Security** panel in the System Configuration utility (see documents *Multi-Functional Display (v. 3.00.340)*. *Installation Guide part I, Chapter 2*, section *MFD Configuration*, paragraph *Security Settings for NS 4100* and *Multi-Functional Display (v. 3.00.340)*. *Special Functions*, chapter *NS 4100 Security Access System*, section *Permissions Page*). Only SAR routes created on the **SAR** page of the **Tasks** panel (see document *Multi-Functional Display (v. 3.00.340)*. *ECDIS User Manual, Chapter 4*, section *Search and Rescue Operations*, paragraph *Creating SAR Routes*) can be loaded for monitoring from that page without approval.

In the list of route, the approved routes are marked off with colour:

# SPOS #	<u> </u>
Rotterdam-Havana	
Shanghai-Hamburg	
St-Petersburg-Hamburg	
St-Petersburg-Hamburg1	
St-Petersburg-N.Orleans	
St-Petersburg-N.Orleans1	-
Taranto-Hamburg	
TEST10	V

Routes Exchange with SPOS

When a voyage plan created, it is possible to supplement the voyage plan with weather data by using the external SW – SPOS, the official Meteo Consult's product.

The SPOS program can exchange routes with the MFD as well as to process the routes created in the MFD taking the weather conditions into account.

Load the route intended for the joint use with the SPOS utility (see paragraph *Work with Route*, item *Route Loading and Unloading*).

Switch to Voyage plan page.

Edit Options Anchor Check Route Schedule Calculation	on Voyage plan Pro	tection control			
Data Collection	Print	Export		Export Route status	SPOS
UKC Rises & Sets Ref. Points	Print	Excel	HTML		Request
	Review	DF	🔄 Upload 👻		Receive

Press Request button in SPOS group.



Create the SPOS route (see document Multi-Functional Display (v. 3.00.340). Utilities, Chapter 7).

In the MFD, switch to Voyage plan page.

Edit Options Anchor Check Route Schedule Calculation	Voyage plan Prot	tection control			
C Data Collection	Print	Export		Export Route status	SPOS
UKC Rises & Sets Ref Points	Print	Excel	HTML		Request
	Review	DF	🔄 Upload 👻		Receive

To import a route processed by using the SPOS utility, press the Receive button in SPOS group.



The message contains information about route extension by SPOS weather data will be displayed:

💦 Warning		×
Route "St-Petersburg-N.Orleans" o	contents wil be replaced by SPOS exchange route! Continue	e operation?

Press OK button.

The route imported from the SPOS program will contain the route time schedule with forecasted weather conditions taken into account.

Note: The routes calculated in the SPOS program by pressing the **Great Circle**, **Rhumb line** and **Composite** buttons will contain original waypoints created in the Navi-Sailor 4000 application only; their names and coordinates will not be changed. Routes calculated by pressing the **Optimum** button, will contain the above-mentioned waypoints plus intermediate waypoints created by the SPOS program during calculation. These waypoints will be named "Spos xx".

Work with Schedule

Drawing a Schedule

Load the route for which the schedule will be drawn for (see paragraph *Work with Route*, item *Route Loading* and *Unloading*).

The display of the table is turned on/off by using the Show tables button.



In the left part of the **Route Planning** panel, press the button to display the corresponding table.

🔁 Ne	ew	WPT Editor	🇘 Ref. po	ints 🔍 🔍 Fo	ocus	E Show	👻 📓 Mor	nitoring		
🕲 Lo	ad	▼ Save			St	-Petersburg	g-Hamburg			×
22	WPT	Name	ETA	Stay	Time zone	ETD	ΠG	Total time	Speed	Average speed
	0	St-Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX			XX-XX-XX	XX-XX-XX	XXX.X	XXX.X
1	1									
	2									
	3									
Edit (Options	Anchor Check Rou	ite Schedul	e Calculation	Voyage pla	an Protectio	on control			
Adv	anced C	ursors			perations		Quick	Distance Calcul	lator	
-	-	90.0	0.10	NM 🕺	Reverse	Shift	From	WPT: 0	▼ St-Peter	rsburg
		270.0	(99.9		Link	> Delete	To VVF	PT: 86	- Hambur	g
1		270.0	(*) 99.9		Link 🗸	₹ Delete	Distar	ice:	1398.25	5 NM

To draw a new schedule, switch to Schedule calculation page.

Edit Options Anchor Check Route Schedule Ca	Iculation Voyage plan	Protection control		
Schedule calculation		Schedule		
	 Tidal currents Surface currents 	Create Schedule	Clear Schedule	Delete Schedule

Press Create Schedule button in Schedule group.



Enter the schedule elements for the WPT's to the table. To do this, perform the procedures detailed below:

- position the cursor on ETA element cell (not set for the route start point). Double click the left trackball/mouse button to activate the cell;
- enter ETA for this WPT and press the right trackball/mouse button;
- press Apply button to confirm the changes you have made;
- position the cursor on Stay element cell; double click the left trackball/mouse button to activate the cell;
- enter the time of stay at this WPT and press the right trackball/mouse button;
- press Apply button to confirm the changes you have made;
- position the cursor on Time zone element cell; double click the left trackball/mouse button to activate the cell;
- enter the time zone at this WPT and press the right trackball/mouse button;
- press "Apply" button to confirm the changes you have made;
- position the cursor on ETD element cell (not set for the route end point); double click the left trackball/mouse button to activate the cell;
- enter ETD for the WPT and press the right trackball/mouse button;
- press Apply button to confirm the changes you have made;
- position the cursor on Speed element cell; double click the left trackball/mouse button to activate the cell;
- enter the speed value on the route leg; press the left trackball/mouse button.





























Note: There is no editing of TTG, Total Time or Average Speed cells.

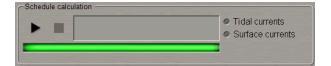
When filling in the table you can use the context menu called by the right trackball/mouse button:

- Clear cell to delete a value in the selected cell;
- Fill cells down to fill in all the cells below with a value entered in the selected cell;
- Fill cells up to fill in all the cells above with a value entered in the selected cell.

Attention! For the route start point, ETD value should always be specified. For the end point, it is necessary to specify ETA or speed of proceeding along the route legs.

In Schedule calculation group if necessary the current conditions to be taken into account in the schedule calculations, check Tidal currents and Surface currents checkboxes.

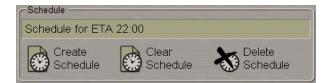
Press **button in Schedule Calculation group:** the schedule will be calculated.



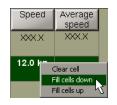
The schedule calculation process is reflected in the display window. In the table, empty cells will be filled in with the calculated schedule elements.

🔁 Ne	ew	WPT Editor	1 Ref. po	ints 🛛 🔍 Fo	ocus	E Show	- 🛃 Moi	nitoring		
🔊 Lo	ad 🗸	Save			St	-Petersburg	g-Hamburg*			×
22	WPT	Name	ETA	Stay	Time zone	ETD	TTG	Total time	Speed	Average speed
	0		XX-XX-XX XX:XX	XX-XX-XX XX:XX	03:00 E	04-10-12 22:00	XX-XX-XX	XX-XX-XX	XXXX.X	XXX.X
Á	1		04-10-12 19:03			04-10-12 19:03	00 d 00 h 03 m	00 d 00 h 03 m	12.0 kn	12.0 kn
	2		04-10-12 19:05			04-10-12 19:05	00 d 00 h 02 m	00 d 00 h 05 m	12.0 kn	12.0 kn
	3		04-10-12 19:10			04-10-12 19:10	00 d 00 h 04 m	00 d 00 h 10 m	12.0 kn	12.0 kn
Edit	Options /	Anchor Check Rou	ite Schedule	e Calculation	Voyage pla	n Protectio	on control			
Sche	edule calcul	lation				Schedu	le			
Calculation completed Tidal currents Schedule 1										
	Surface currents Create Clear Clear Clear Schedule Schedule									

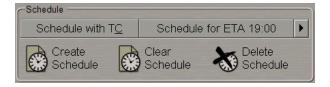
A schedule has been created. To save the schedule, enter its name in the name input field of Schedule group.



Press <Enter> button.



You can simultaneously create several schedules with different data for one and the same route. As a button with schedule name is pressed, the schedule becomes active and can be edited in the schedule Table. The active schedule can be selected in the string of **Schedule** group:



Editing a Schedule

Load the route for which the schedule will be drawn for (see paragraph *Work with Route*, item *Route Loading* and Unloading).

The display of the table is turned on/off by using the Show tables button.

In the left part of the **Route Planning** panel, press the button to display the corresponding table.

	ЭW	WPT Editor	🧘 Ref. po	ints Q F	ocus	E Show	- 🕈 Mo	nitoring			
🕲 La	ad 🗸	Save		St-Petersburg-Hamburg							
PP	WPT	Name	ETA	Stay	Time zone	ETD	ΠG	Total time	Speed	Average speed	
	0 St	t-Petersburg	XX-XX-XX XX:XX	XX-XX-XX XX:XX	03:00 E	24-09-12 22:00	XX-XX-XX	XX-XX-XX	XXX.X	XXXX.X	
4	1		24-09-12 22:01		03:00 E	24-09-12 22:01	00 d 00 h 01 m	00 d 00 h 01 m	12.0 kn	12.0 kn	
	2		24-09-12 22:03		03:00 E	24-09-12 22:03	00 d 00 h 02 m	00 d 00 h 03 m	12.0 kn	12.0 kn	
	3		24-09-12 22:06		03:00 E	24-09-12 22:06	00 d 00 h 02 m	00 d 00 h 06 m	12.0 kn	12.0 kn	
Edit (Options A	Anchor Check Rou	ite Schedul	e Calculation	Voyage pla	n Protectio	on control				
Sch	edule calcul	lation				Schedu	ule				
Tidal currents Schedule with TC						T <u>C</u>	Schedule	1125 🕨			
				 Surf: 	ace currents		Create Schedule	Clear Schedu	ule 🚯	Delete Schedule	

Switch to Schedule calculation page.

In the Schedules group, press the button with the name of the schedule which should be edited.

Schedule		
Schedule with T <u>C</u>	Schedule for ETA 19:00	
Create Schedule	Clear Delete Schedule Schedule	

To edit schedule elements, perform the procedures detailed in previous section.

Attention! For the route start point, ETD value should always be specified. For the end point, it is necessary to specify ETA or speed of proceeding along the route legs.

In Schedule calculation group if necessary the current conditions to be taken into account in the schedule calculations, check/uncheck Tidal currents and Surface currents checkboxes.

To clear schedule table, press Clear Schedule button.



Schedule				
Schedule with T	2	Schedule	for ETA 19:00	►
Create Schedule		Clear Schedule ि	Delete Schedule	

Create the schedule anew and save it as detailed in the previous section.

Deleting a Schedule

Load the route for which the schedule will be deleted (see paragraph *Work with Route*, item *Route Loading and Unloading*).

Press Delete Schedule button in Schedule group.

Schedule		Schedule with T&C		
		Schedule for ETA 19	9:00	
Schedule with T <u>C</u>	Schedule f	Schedule 1125 🛛 🖄		
Create Schedule	Clear Schedule	Delete Schedule		

Select the schedule which should be deleted from the list, and press the left trackball button. In the window, which will appear, confirm the deleting.

📉 Navi-Sailor 4000 E	CDIS		×
Are you sure yo	u want to delete the	schedule 'Schedule for E	TA 19:00'?
	Yes	No	

The schedule will be deleted.

Voyage Plan Creation

There is the possibility of automatic voyage creation using the chart extractions, UKC calculation, tides, currents and charts (crossed by the route) collection.

Load the route for which the schedule will be drawn for (see paragraph *Work with Route*, item *Route Loading* and Unloading).

Data Collection

The display of the table is turned on/off by using the Show tables button.



In the left part of the **Route Planning** panel, press the button to display the corresponding table.

🖹 Ne	ew	WPT Editor	Ref. Points 🛛 🔍 Focu	s 📕	Show -	💐 Monitor	ing	
🕲 Lo	ad 🗸	Save		St-P	etersburg-H	lamburg		×
22	WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
	0 8	t-Petersburg		XXX.X	XXX.X	XXXXX		
4	1			10.0 m	0.8 m	Undefined		
	2		Pilot on board	10.0 m	0.8 m	Undefined		
				10.0 m	0.8 m	Undefined		V
Edit 0	Options	Anchor Check Route	Schedule Calculation V	oyage plan	Protection of	ontrol		
Adv	anced Curs	sors	Opera	tions		Quick Dista	nce Calculator	
-	-	90.0		V	Shift	From WP1	C 0 St-Petersb	urg
1		270.0	99.9 NM	ink 👻 🕇	Delete 👻	Distance:	1398.25 N	M

For input of the draught, perform the procedures detailed below:

- position the cursor on Draught element cell; double click the left trackball/mouse button to activate the cell;
- enter the draught value on the route leg; press the left trackball/mouse button;
- position the cursor on Squat element cell; double click the left trackball/mouse button to activate the cell;
- enter the squat value on the route leg; press the left trackball/mouse button.

To perform the automatic data collection, switch to Voyage plan page.

Edit Options Anchor Check Route Schedule Calculatio	n Voyage plan Pro	tection control		
Data Collection	Print	Export	Export Route status	SPOS
UKC Rises & Sets Ref. Points	Print	Excel Direction HTML		Request
	Review	DF 🖓 Upload 🗸		Receive

In the Data Collection group, check checkboxes of those data categories which should be included in the Voyage Plan.

-Data Collection	• UKC • Ref. Points	• Rises & Sets

Press button in Data Collection group: the selected data will be collected.

If necessary to interrupt manually the data collection, press 🛄 button.











WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
50			9.5 m	0.8 m	9.7 m		
51			9.5 m	0.8 m	Shallow water	Light house	143.5° 3.17 NM
52			9.5 m	0.8 m	19.7 m	Light house	010.7° 1.41 NN
	Pilot buoy		9.5 m	0.8 m	9.7 m	Light house	170.7° 🔽

After the data collection, the voyage plan data will be available in the Extra data table.

Obtaining Information on Sun/Moon on the Route

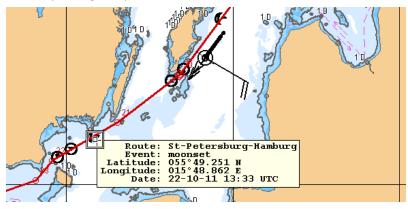
For this functionality to operate it is necessary that a schedule be drawn for the route and that during the voyage plan creating the **Rises&Sets** checkbox be checked (see the previous paragraph).

After the voyage plan has been created, the Chart panel will show the route with symbols of the sunrise/sunset and moonrise/moonset.

Note: To this end, it is necessary to turn on the display of these symbols in the Show drop-down list in the top part of the Route Planning panel (see section *Work with Route*, paragraph *Creating a Route*, item *Entering Additional Data*).



Position the free View cursor on the necessary symbol; the cursor will change its form. Press the left trackball button: the data card will display the calculated data: sunrise/sunset and moonrise/moonset, coordinates, date of passing this point on the route.



Voyage Plan Data Edition

The display of the table is turned on/off by using the Show tables button.

In the left part of the **Route Planning** panel, press the button to display the corresponding table.

🔁 Ne	ew	WPT Editor	Ref. Points 🔍 🔍 Focu	s 📒	Show -	🔍 Monito	💐 Monitoring			
🕲 Lo	🕲 Load 🗸 📓 Save				etersburg-H	lamburg*		×		
2A	WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis		
3	0	St-Petersburg		XXXXX	XXX.X	XXXX.X				
Â	1			10.0 m	0.8 m	Shallow water	Light house	007.7° 1.38 N№		
	2		Pilot on board	10.0 m	0.8 m	Shallow water	Light house	021.4° 1.67 NN		
	2			10.0 m	0.8 m	Shallow	Light house	034.5° 🗸		
Edit	Options	Anchor Check Route	Schedule Calculation V	oyage plan	Protection c	ontrol				
Adv	anced C	ursors	Opera	tions		Quick Dist	tance Calculator			
-	-	90.0		everse 🏹	Shift	From WP	PT: 0 - St-Petersb	urg		
		270.0) 99.9 NM	ink 👻 🎽	Delete 👻	Distance:	name arg	м		

The Extra data table contains the following data (columns) on reference points:

- **Ref. point** reference point name taken from the chart object (if the object has no name, the cell is empty);
- BRG/Dist bearing and distance to the reference point.

Reference points are set automatically during the data collection, if **Ref. points** checkbox is checked in **Data Collection** group of **Voyage plan** page (see previous item).

Setting and Changing Reference Points

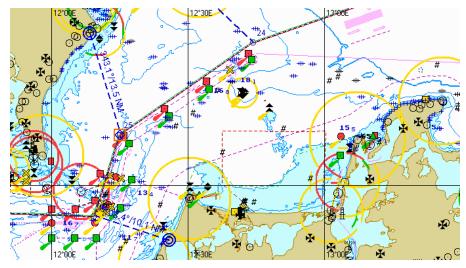
To set or change a reference point, position the cursor on the necessary WPT in the Extra data table and click the left trackball/mouse button on the required point.

WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
24			6.0 m	0.8 m	8.2 m	Light house	192.8° 6.51 NN
25			6.0 m	0.8 m	5.2 m	Light house	255.1° 10.44 Ni
26			6.0 m	0.8 m	6.1 m	Light house	329.8° 3.44 NN
			6.0 m	0.8 m	8.5 m	Light house	002.8°

To set reference points on the Chart Panel, press Ref.pts. button in the top part of the Route Planning panel.

New 3	WPT Editor	1 Ref. prints	Q Focus	E Show 🗸	Monitoring	
🕲 Load 🛛 🖌	Save		s	t-Petersburg-Ha	mburg	×



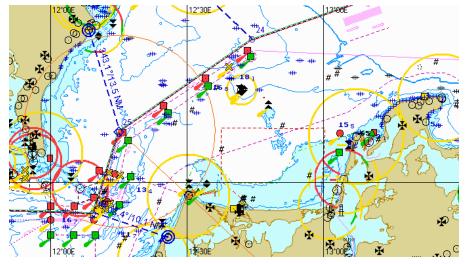


An acquisition marker will appear on the Chart Panel at the selected WPT.

The right-hand part of the screen will display the **Select waypoint** information window showing the acquisition marker coordinates and bearing/distance relative to the WPT WOL.



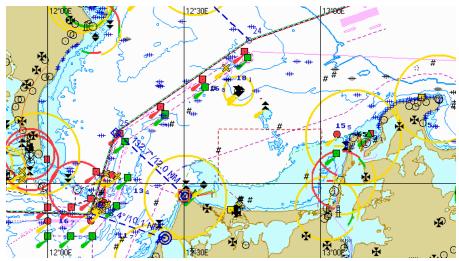
Press the left trackball/mouse button: the marker will acquire the WPT and change own form. Position the marker in the new reference point within the displayed Chart Panel.



The Select waypoint information window showing the acquisition marker coordinates and bearing/distance relative to the WPT WOL.

Select waypo	int						
Latitude 1	54°36.503	3' N					
Longitude 1	012°15.04	48'E					
Bearing	134.5	•					
Opp. Bearing	314.5	•					
Range	11.86	NM					
Latitude 2	54°28.207	7'N					
Longitude 2	012*29.56	67'E					
Press Tab to edit manually							

Press the left trackball/mouse button.



The reference point will be shown on the Chart Panel in the form of two blue circles. The blue dashed line connects the WPT WOL and its corresponding reference point.

The values of bearing/distance to the reference point from the WPT WOL are shown over the line.

The same values are displayed in the table's BRG/Dist column.

WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
24			6.0 m	0.8 m	8.2 m	Light house	192.8° 6.51 NN
25			6.0 m	0.8 m	5.2 m	Light house	133.0° 11.98 Ni
26			6.0 m	0.8 m	6.1 m	Light house	329.8° 3.44 NN
			6.0 m	0.8 m	8.5 m	Light house	002.8°

Press the right trackball/mouse button to exit from the editing mode. The marker will assume the shape of the free cursor.

Deleting Reference Points

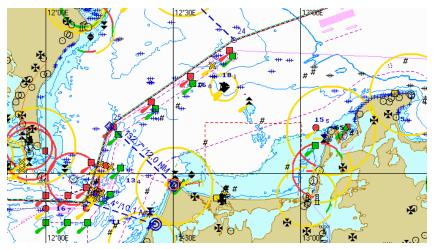
To delete a reference point, position the cursor on the necessary WPT in the Extra data table and press the left trackball/mouse button.

WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
24			6.0 m	0.8 m	8.2 m	Light house	192.8° 6.51 NM
25			6.0 m	0.8 m	5.2 m	Light house	255.1° 10.44 Ni
26			6.0 m	0.8 m	6.1 m	Light house	329.8° 3.44 NN
77			6.0 m	0.8 m	8.5 m	Light house	002.8° 🗸

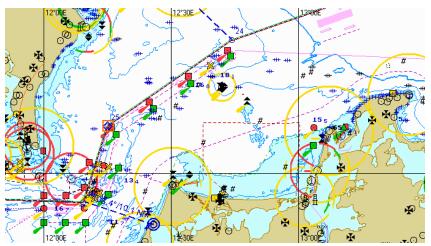
To set reference points on the Chart Panel, press Ref.pts. button in the top part of Route Planning panel.

New 🔁	WPT Editor	L Ref. prints Q Focus	Show -	St Monitoring	
🔊 Load			St-Petersburg-Ha	amburg	×

An acquisition marker will appear on the Chart Panel at the selected WPT.



Press the left trackball/mouse button: the marker will acquire the WPT and change own form. Press the right trackball/mouse button: the reference point has been deleted.



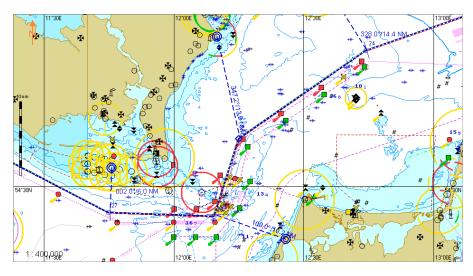
Press the right trackball/mouse button to exit from the editing mode. The marker will assume the shape of the free cursor.

Search for Reference Point

To view a reference point on the Chart Panel, position the cursor on the necessary WPT in the Extra data table and press the left trackball/mouse button.

WPT	Name	Remarks	Draught	Squat	UKC	Ref. Point	BRG/Dis
24			6.0 m	0.8 m	8.2 m	Light house	192.8° 6.51 NM
25			6.0 m	0.8 m	5.2 m	Light house	255.1° 10.44 Ni
26			6.0 m	0.8 m	6.1 m	Light house	329.8° 3.44 NN
			6.0 m	0.8 m	8.5 m	Light house	002.8°

Reference point is displayed in the centre of the Chart Panel:



Voyage Plan Print Preview and Printing

Load the route, which should be printed (see paragraph Work with Route, item Route Loading and Unloading).

Create Voyage plan (see Voyage Plan Creation paragraph).

Switch to Voyage plan page.



Press Preview button in Print group.



Voyage No.:	Ship's Name: KOLA	FROM:			TO:				Master's I	Name:	
WAYPOINTS											
WPT	Name	Pos	ition	Leg Total distance X		XTD port/stbd	Turnradius	Draught	UKC	Masthead	Overhead earance
0 St-Petersbu	ng		9°53,635 N 0°13,243 E	XXXX XXXX	XXXX	XXXXX XXXXX	XXXX	XXXX	XXXX	XXXX X	X.XXX
1		51 D31	9°53.292 N 0°12.754 E	215.6° 0.20 NM	0.20 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
2		51 D31	9°53.281 N 0°11.957 E	268.4° 0.49 NM	0.70 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
3			9°53.119 N 0°10.756 E	255.0° 0.56 NM	1.26 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
4		5: 02:	9°56,852 N 9°52,510 E	292.2° 10.01 NM	11.27 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
5 Pilot buoy			9°57.756 N 9°47.762 E	290.8* 2.50 NM	13.77 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
6			9°58,845 N 9°45,408 E	312.7° 1.60 NM	15.36 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
7			9°59.094 N 9°43.732 E	286.5" 0.93 NM	16.29 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
8		50 025	9°59,309 N 9°40,950 E	278.8* 1.41 NM	17.70 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
9		6) 025	0°01.736 N 9°25.785 E	287.7* 7.98 NM	25.68 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
10		6i 02:	0°03.242 N 8°31.410 E	273.2° 27.27 NM	52.95 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
11			0°07,832 N 8°16,433 E	301.5° 8.83 NM	61.78 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
12			0°12.302 N 7°45.312 E	286.1° 16.09 NM	77.88 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
13			9°59.628 N 7°02.751 E	239.2° 24.83 NM	102.71 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
14		5: 02	9°59,961 N 6°52,897 E	273.9* 4.99 NM	107.69 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	10.0 m	Undefined	Undefined
15		61 021	0°03.238 N 6°40.046 E	297.0* 7.18 NM	114.88 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
16			9°47,940 N 4°41.208 E	255.6° 61.84 NM	176.71 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
17			9°45.150 N 4°12.611 E	259.0° 14.72 NM	191.44 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
18			9°30.197 N 2°28.925 E	254.1° 54.69 NM	246.13 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined
19			9°06.225 N 1°32.243 E	230.4° 37.73 NM	283.86 NM	0.01 NM 0.01 NM	0.30 NM	10.0 m	10.0 m	Undefined	Undefined
20		50	6°50,508 N 8°23,220 E	216.5° 169.20 NM	453.06 NM	DD1 NM DD1 NM	0.30 NM	10.0 m	Shallow wat er	Undefined	Undefined

The Print Preview window will display a printed version of the Voyage Plan.

For the preview of the Voyage Plan pages, use the following buttons:

 Image 2 of 6
 Image 2

Attention! Check that the printer is connected to the computer on which the NS4000 is installed.

Press Print button in Print group.



The voyage plan will be printed.

Exporting Voyage Plan

Load the route, which should be converted to any formats listed below (see paragraph Work with Route, Route Loading and Unloadingitem).

Switch to Voyage plan page.

Edit Options Anchor Check Route Schedule Calculation	on Voyage plan Prot	tection control		
Data Collection	Print	Export	Export Route status	SPOS
UKC Rises & Sets Ref. Points	A Print	Excel Difference		Request
	Review	PDF 🛛 🖓 Upload 👻		Receive
		,		

Press appropriate button in Export group.



Voyage plan will be exported.

Navi-Sailor 4000 ECDIS		×
Export	completed successfully!	
	ОК	

Press OK button.

Access to the file is by using the Data Tool utility, in the Route group of Route export feature.

Chapter 10. Handling Radar Information and Target Designation Units

This chapter describes the procedure used in the handling of radar information and target designation units.

Radar Overlay	
Work with Radar Overlay	
Distance and Bearing Offset	
ARPA	
Target Display	
Turning On/Off External ARPA Tools	
ARPA Settings	
<u>AIS</u>	
Handling AIS Targets	
Setting of Voyage Data	
Transmission of Messages in AIS System	
Reception of Messages in AIS System	
Using AIS Safety Messages Database	
Handling Targets	
Setting of Safety Parameters in the Tracking of Targets	355
Handling Target Table	
Prompt Target Search	
Turning On Mode of Associating AIS and ARPA Targets	
Turning On DR Mode for AIS Targets	
Filtering Lost Targets	
Filtering AIS Targets	
Obtaining Information on Target	

Radar Overlay

Work with Radar Overlay

To select a scanner, press the scanner selection button arrow in the Sensors window of the Control panel.

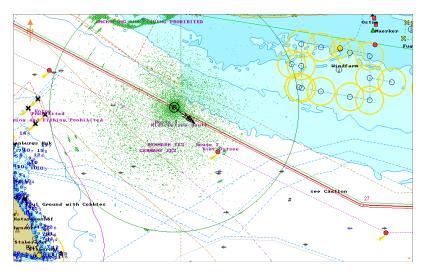


Select the necessary scanner (the button name corresponds to the selected scanner).

To turn on the radar picture, press Overlay button.

TX X1 - Overlay AIS ARPA -

A radar picture will appear on the Chart panel.



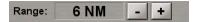
Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings 📐
Route Data 👋
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

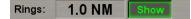
Radar Set	ttings	_	- 8				
Range:	12 N	M	- +				
Rings:	2.0 N	IM	Show				
Bright:	▲	_					
Gain:	▲						
Rain:			•				
Sea:	_	-	•				
Transpar	ency:	0 1	2 3				
Overlay v	vindow	Set	Clear				
Accumula	ation:		50 🗸				
Echo col	or:						
• Auto adjust range by scale							
			X-1				

In the list, which will open up, select Radar Settings line and press the left trackball button.

In **Radar Settings** display which will open up, set the range scale. To do this, use the buttons to the right of **Range** input window.



Turn on display of range rings as required. To do this, press Show button to the right of Rings window.



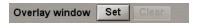
Set the required brightness, gain, suppression of rain and sea clutter by using the buttons on the sides of level indicators.

Bright:	
Gain:	
Rain:	
Sea:	

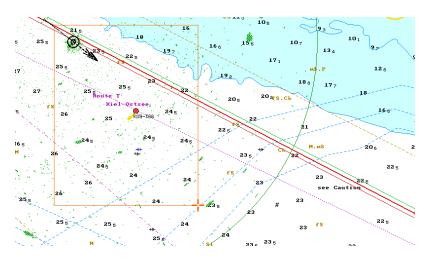
To enter the required "transparency" value, use the buttons (from 0 – opaque to 3 – almost transparent) in Transparency group.



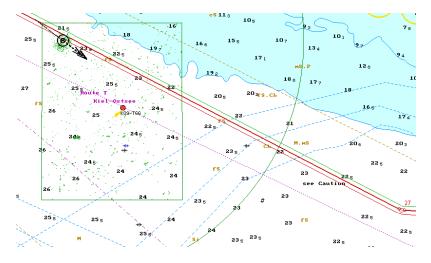
To set the required rectangular area of the radar picture display, press Set button in Overlay window group.



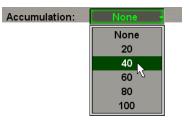
A graphic cursor will appear in the chart screen area. Position the cursor in the initial point of the area and press the left trackball button. Set the required radar picture area by moving the cursor, keeping the left trackball button depressed.



Press the trackball button again. The area will be set.



Turn on and adjust the scan-to-scan correlation function as required. To do this, press the button in **Accumulation** group.



In the list, which will open up, select the necessary value (from 20 to 100) or **None** to switch the function off. Press the left trackball button to confirm selection.

Press the required colour button in Echo colour button group to set the colour of the radar picture.



Check the Auto adjust range by scale checkbox if it is necessary, to automatically switch the scanner scale with a switch of the ECDIS task screen scale.

• Auto adjust range by scale

The adjustment of the radar picture is completed.

```
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```

RADAR MASTER X-1 - status of selected radar picture source (see above) on this WS (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 10,* section *Network Configuration,* paragraph *Interswitch*).

Distance and Bearing Offset

Attention! Distance and Bearing Offset is only made on the WS with RADAR MASTER status.

Introduction

Adjustment of the RIB in azimuth, i.e. an offset to the fixed azimuth errors of the radar antenna. The magnitude of the offset is determined as the difference between the bearing value of a clearly observed and uniquely identified stationary radar object measured on the chart or by using other measurement method, and a mean value of several bearing measurements made for the same object by using the RIB. The offset corresponds to the value of an angle, which the picture should be turned to in the clockwise direction for it to match the actual situation. The offset is entered with an accuracy of up to one tenth of a degree.

Adjustment of the RIB in range, i.e. an offset to the delays in the radar and RIB circuits. The magnitude of the offset is determined by comparing the results of range measurements made for clearly observed and uniquely identified stationary radar objects by using the RIB radar picture, and measurements made on the chart or by using other methods. The offset is entered with an accuracy of up to 1 m.

Distance and Bearing Offset Setting

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
🔲 Log Book 🗥
Man Corr
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of Config panel, which will open up, to switch to Radar settings page.

General	Radar settings Time Zone License Info COM Trace Units Ship Settings Route Settings	
Bearing	/ Distance Offset	
• Read		
Bearing:	000.0 • Change	
Distance	E 0 m Apply	

Uncheck Read only checkbox and enter a password:



Press OK.

Press Change button.

1	General Radar settings Time Zone License Info COM Trace Units Ship Settings Route Settings	
	Bearing / Distance Offset	
	Read only	
	Bearing: 000.0 • Cancel	
	Distance: 0 m Apply	

Use EBL 1 to measure the bearing to the electronic chart object used for the adjustment purposes. Use EBL 2 to measure the bearing to the echo of the object used for the adjustment purposes.

Calculate the Bearing Offset value as the difference between the EBL 1 and EBL 2 readouts, and enter it in Bearing box.

Use VRM1 to measure the distance to the electronic chart object used for the adjustment purposes. Use VRM2 to measure the distance to the echo of the object used for the adjustment purposes. Calculate the Distance Offset value as the difference between the VRM1 and VRM2 readouts, and enter it in Distance box.

General Radar settings Time Zone	License Info COM Trace Units	Ship Settings Route Settings	
Bearing / Distance Offset			
Read only			
Bearing: 010.0 • Cancel			
Distance: 90 m Apply			

Press Apply button.

Make several iterations as required, achieving the maximum possible alignment of the radar picture and chart information.

Attention! In making the adjustment, use the differential positioning mode in order to obtain the required accuracy.

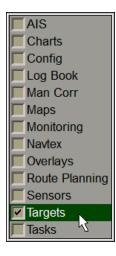
The adjustment is made by using the radar observed conspicuous features whose polar coordinates are known with accuracy not inferior to 0.1° in azimuth and 2 m in range.

ARPA

Target Display

There are three ways to turn on/off the display of ARPA targets on the ECDIS task screen:

1. Open Targets panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

Target Table AI	S color ti	racks														
Show Target	Show Target							AIS Target identification Alarm								
ARPAA Own AIS			Tracks By ID -				- CP	CPA 1.00			NM					
ARPA B	Cursors		RBL		N	lax. range	e 🔽	18 nm	TCI	PA 1	.0 r	nin				
Name 🔺	40	41	42	43	44	37	47	48	49	50	51	52	53	54		
Alias																
CPA (NM)	2.88	5.87	7.32	6.81	7.74	5.81	4.09	4.53	5.86	8.23	1.25	6.76	8.07	5.62		
TCPA (min)	-9.7	-8.4	-6.9	-14.5	-9.3	-21.2	-21.2	-21.2	10.4	12.8	21.8	-16.4	-16.6	-19.2		
SOG (kn)	45.3	43.5	29.4	26.8	33.1	11.3	15.0	13.1	22.4	12.3	16.8	19.5	15.8	12.8		
COG ()	14.5°	295.9°	65.7°	287.1°	281.1°	30.0°	5.9°	36.4°	84.2°	170.7°	81.6°	348.7°	358.2°	29.6°		
Range (NM)	8.94	8.33	8.43	9.10	9.05	8.79	8.67	8.57	7.63	8.46	8.44	9.59	10.11	8.56		
Bearing ()	359.3°	350.7°	0.3°	351.7°	352.5°	352.7°	45.2°	5.8°	203.4°	236.6°	257.5°	317.5°	318.4°	352.4°		
Bow X (NM)	7.7	-5.9	-20.9	-6.9	-8.1	55.4	-10.5	112.1	10.6	8.2	-2.6	11.1	16.8	49.3		
TBow X (min)	-17.9	-9.0	25.4	-16.5	-13.8	-197.9	5.6	-346.8	-8.4	15.6	27.7	-37.6	-56.9	-164.8		
									_							

In Show Target group press the following button:

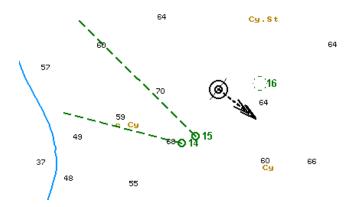
- ARPA A(B) to turn on the display of ARPA A(B) targets. Connection is made in the System Configuration utility (see document *Multi-Functional Display (v. 3.00.340)*. *Installation Guide Part I, Chapter* 2, section *MFD Configuration*, paragraph *Sensors Settings*);
- Own to turn on the display of ARPA targets processes by the ARPA built into the program.

2. In the **Sensors** window of the Control panel select the necessary source of ARPA targets and press **ARPA** button. From the drop-down list select the necessary ARPA source.



3. Press the <Target> key on the ES6 keyboard (the display of all the ARPA targets from all the available sources is turned on).

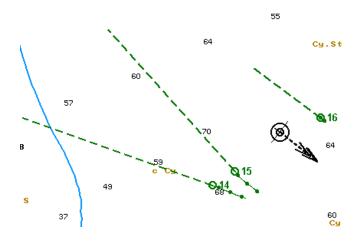
If there are some ARPA tracked targets, they will appear on the Chart panel, whereas their motion parameters will be shown in the target table.



Turn on, as required, the display of target tracks. To do this, press Tracks button in Show Target group.

Show Target			
ARPAA	Own	AIS	Tracks
ARPA B	Cursors	ERBL	

Target tracks will be displayed on the Chart panel.



Turning On/Off External ARPA Tools

Attention! The tools are not available unless the external ARPA-A are connected and provides relevant sentences.

Open **Targets** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

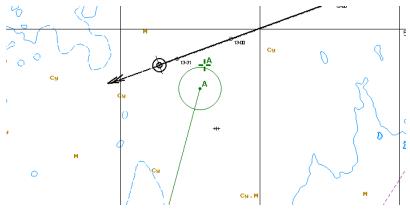


Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

Target Table AIS	color track	S								
Show Target				AIS Target	dentificat	tion	Alarm			
ARPAA	Own	AIS	Tracks	В	y ID	-	CPA	1.00	NM	
ARPAB	Cursors	ERBL		Max. range	48	nm	TCPA	1.0	min	
Name	A2	T001								
Alias										
CPA (NM)	1.90	3.24								
TCPA (min)	XXXX	-59.2								
SOG (kn)	12.0	9.0								
COG ()	216.5°	210.0°								
Range (NM)	2.39	4.54								
Bearing ()	228.1°	100.4°								
Bow X (NM)	XXXX	10.2								
TBow X (min)	XXXX	-240.2								

In Show Target group of Targets panel, which will open up, press ARPA A button.

To turn on the display of tools on the Chart panel, press the Cursors and/or ERBL buttons in the Show Target group.



ARPA Settings

To turn on the display of targets, press Overlay and ARPA button in the Sensors window of the Control panel.

TX X1 - Overlay AIS ARPA-

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets 📐

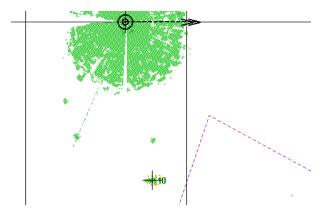
In the list, which will open up, select Targets line and press the left trackball button.



To Acquire Targets for Tracking

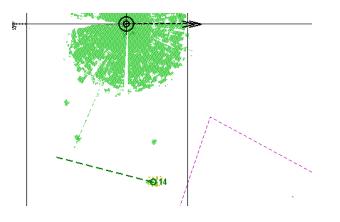
To switch the cursor to target acquisition mode, press Acquire button in Targets group.





Position the cursor on the target and press the left trackball button.

In a minute, the acquired target will be displayed as a green coloured circle with pre-calculated motion vector.



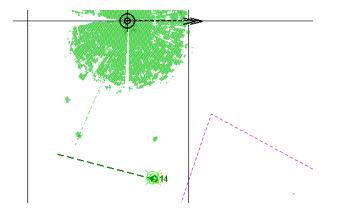
The target has been acquired for tracking. If you press the right trackball button, the cursor exits from the target acquisition mode.

To Cancel Tracked Targets

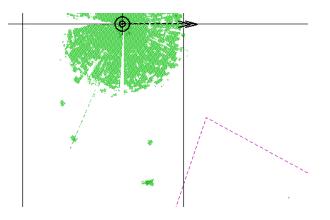
To switch the cursor to the target tracking cancelling mode, press Cancel button in Targets group.



Position the cursor on the tracked target and press the left trackball button.



The target tracking will be cancelled.



If you press the right trackball button, the cursor exits from the tracking cancelling mode.

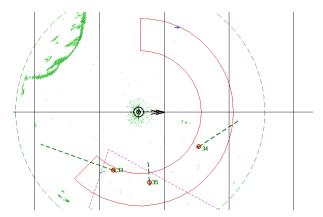
To cancel tracking of all the previously acquired targets, press Cancel All button in Targets group.

To Turn on Ring Shaped Guard Zones

To set the Guard Zone manually, press Guard Zone 1 or Guard Zone 2 buttons.



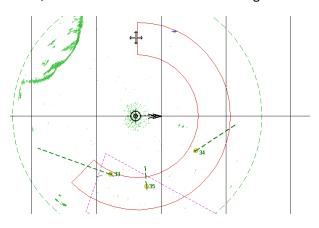
The ring shaped guard zone will be displayed on the ECDIS task screen. Targets getting within the guard zone will be displayed in the form of flickering circles.



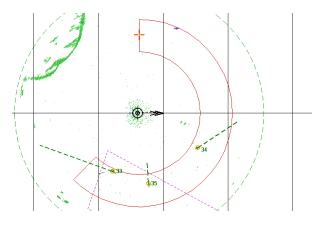
At the same time, **GZ Tgt ID** warning will be triggered off. Acknowledge this warning. After the processing, targets will be displayed in the form of yellow coloured circles with pre-calculated motion vectors.

To Set Guard Zone Limits

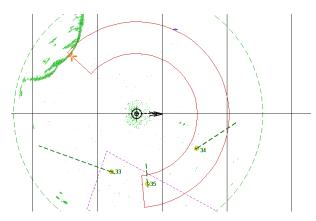
To set guard zone limits, position the free cursor on the left-hand boundary of the guard zone. As this is done, the cursor will assume the following form:



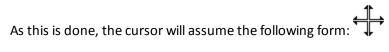
Press the left trackball button. The cursor will assume the form of a graphic cursor.

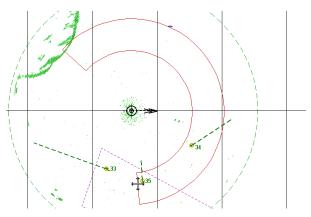


Move the ring shaped zone along the circle relative to the own ship symbol in the required direction.

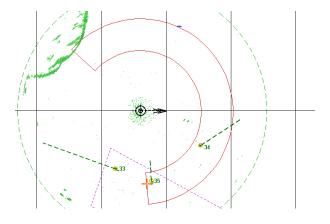


Press the left trackball button to set the new position of the zone and to exit from the graphic cursor mode. Position the free cursor on the right-hand boundary of the guard zone.

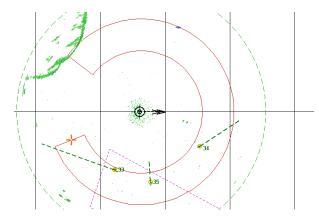




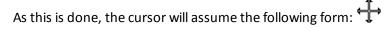
Press the left trackball button. The cursor will assume the form of a graphic cursor.

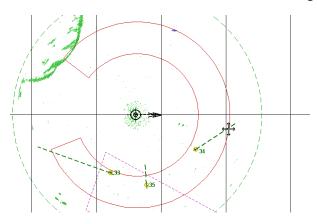


Move the right-hand limit of the ring shaped zone setting the necessary coverage angle.

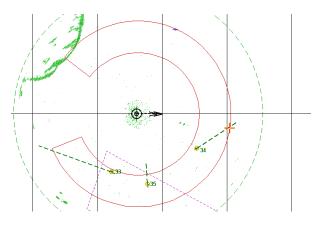


Press the left trackball button to set the new position of the zone and to exit from the graphic cursor mode. Position the free cursor on one of the arcs delimiting the guard zone.



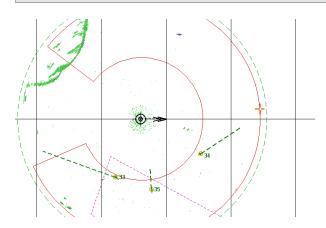


Press the left trackball button. The cursor will assume the form of a graphic cursor.



Move the zone limit to the required distance.

Note: If the zone's closer limit crosses its farther limit in the process of zone shift, they exchange their places.



Press the left trackball button to set the new zone position and exit from the graphic cursor mode.

To Turn Off Guard Zones

To turn off a guard zone, release the appropriate button.

AIS

Handling AIS Targets

AIS Target Display

There are three ways to turn on/off the display of AIS targets on the ECDIS task screen:

1. Open Targets panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
🗖 Tasks 🛛 🖄

Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

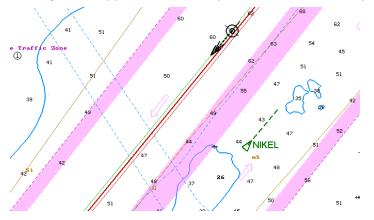
Target Table Al	S color ti	racks												
Show Target						AIS Targ	et identi	fication	Ala	rm				
ARPAA	Own		AIS	Trac	ks		By ID		- CP/	A 1	۸ 00.	IM		
ARPA B	Cursors		RBL		N	lax. range	e 4	18 nm	TCI	PA 1	.0 r	nin		
Name 🔺	40	41	42	43	44	37	47	48	49	50	51	52	53	54
Alias														
CPA (NM)	2.88	5.87	7.32	6.81	7.74	5.81	4.09	4.53	5.86	8.23	1.25	6.76	8.07	5.62
TCPA (min)	-9.7	-8.4	-6.9	-14.5	-9.3	-21.2	-21.2	-21.2	10.4	12.8	21.8	-16.4	-16.6	-19.2
SOG (kn)	45.3	43.5	29.4	26.8	33.1	11.3	15.0	13.1	22.4	12.3	16.8	19.5	15.8	12.8
COG ()	14.5°	295.9°	65.7°	287.1°	281.1°	30.0°	5.9°	36.4°	84.2°	170.7°	81.6°	348.7°	358.2°	29.6°
Range (NM)	8.94	8.33	8.43	9.10	9.05	8.79	8.67	8.57	7.63	8.46	8.44	9.59	10.11	8.56
Bearing ()	359.3°	350.7°	0.3°	351.7°	352.5°	352.7°	45.2°	5.8°	203.4°	236.6°	257.5°	317.5°	318.4°	352.4°
Bow X (NM)	7.7	-5.9	-20.9	-6.9	-8.1	55.4	-10.5	112.1	10.6	8.2	-2.6	11.1	16.8	49.3
TBow X (min)	-17.9	-9.0	25.4	-16.5	-13.8	-197.9	5.6	-346.8	-8.4	15.6	27.7	-37.6	-56.9	-164.8
									_					

In Show Target group press AIS button.

2. Press AIS button in the Sensors window of the Control panel.

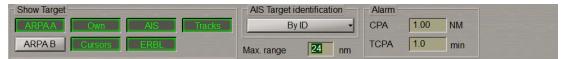
TX X1 - Overlay AIS ARPA -

3. Press <Target> key on the ES6 keyboard.



AIS targets will appear in the Chart panel, and their motion parameters will be displayed in the Targets Table.

By default in Max. Range input box set the value 48 nm, that is the radius of an area within which the AIS targets are processed and displayed.



Set the necessary radius (up to 100 NM) of processing AIS targets area.

Display of AIS Target Identifiers

Press AIS Target identification button to select the AIS targets identifier.



In the list, which will open up, select the necessary identifier or **None** to declutter the Chart panel. Press the left trackball button. Targets will be displayed on the Chart panel with the selected identifier, and its name will be shown on the button.

Position the cursor on the target identifier in the Targets Table.

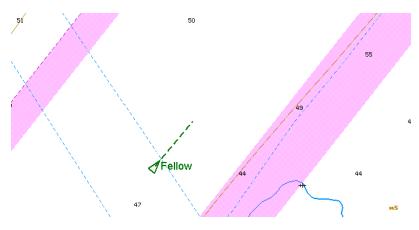
Target Table Al	S color trac	ks										
Show Target					AIS Ta	rget ic	lentificat	ion	Alarm			
ARPA A	RIB	AIS	Trac	ks		By Na	ame	-	CPA	2.00	NM	
ARPA B					Max. ran	ge	48	nm	TCPA	12.0	min	
Name 🔺	000316044	ALGOVILLE	316001696									
Alias	1	12										
CPA (NM)	3.6	2.6	32.5									
TCPA (min)	-545.5	9.5	-259.1									
COG (°)	0.0°	163.8°	79.0°									
SOG (kn)	0.0	9.1	4.6									
Range (NM)	45.52	4.00	45.27									
Bearing (°)	164.5°	19.8°	167.4°									
Bow X (NM)	XXXX	2.4	-52.2									
TBow X (min)	XXXX	29.2	76.6									

The hint will display the name of the AIS object if it is contained in the messages transmitted by the AIS object.

Enter as required identifier "Alias" (up to 8 characters) for an AIS object in Alias row of the Targets Table.

Name	A2	273002414	671641000
Alias		Fellow	
CPA (NM)	1.90	3.24	1.95
TCPA (min)	XXXX	-79.8	XXXX

On the Chart panel, the target will be displayed with the entered "Alias" identifier regardless of settings made in AIS Target identification group. This identifier is displayed on the Chart panel only and is not transmitted in messages.

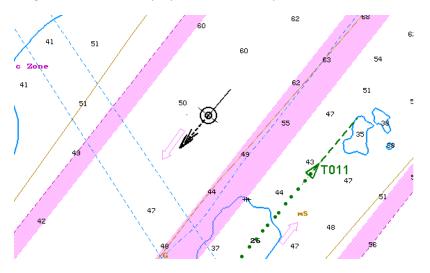


Display of Target Tracks

Turn on, as required, the display of target tracks. To do this, press Tracks button in Show Target group.



Target tracks will be displayed on the Chart panel.

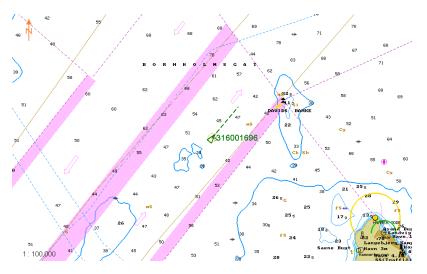


Prompt Target Search

Press the button with the target identifier in Name line of the Targets Table, e.g. 316001696.

Name 273002414 316001696 671641000

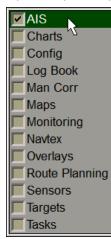
The selected target will be displayed in the centre of the Chart panel highlighted with a flashing circle.



Setting of Voyage Data

Attention! Setting of voyage data is available only at station with the status MASTER.

Open AIS panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.



Navigational status:	Destination:	Static Data:	Restore
Under way using engine	ETA:	Name: KOLA Call Sign: UCKB	
Other type of ship Cargo: No information	30-11 00:00 UTC	MMSI: IMO Number:	273501256 008405729
Mean draught: 0.0 m	Persons on board: 0		

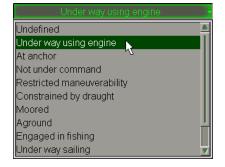
Use the tab in the top left part of **AIS** panel to switch to **Voyage and Static Data** page. Press **Edit** button.

If the AIS class B is selected during the installation (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration,* paragraph *Sensors Settings*) the **AIS** panel looks like follows:

Voyage and Static Data Messaging IMO special	messages				
Type of ship:	Static Data:			Restore	Edit
Other type of ship 🗸	Name:	KOLA			
Cargo:	Call Sign:	UCKB			
No information	MMSI:		273501256		
	IMO Numbe	er:	008405729		

Note: In this case, the set of possible settings is limited.

In the left-hand part of Voyage and Static Data page, press Navigational status button.



In the list, which will open up, select the own ship navigation status and press the left trackball button.

Press Type of ship button in the left-hand part of the page.



In the list, which will open up, select the own ship type and press the left trackball button.

Press Cargo button in the left-hand part of the page (for ships carrying cargoes only).



In the list, which will open up, select the dangerous cargo category as required and press the left trackball button.

Use Mean draught input line to enter the own ship mean draught value and press the left trackball button.



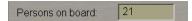
Use Destination input line to enter the own ship port of destination (not more than 20 symbols) and press the left trackball button.



Use ETA line to enter the ETA (UTC) in the port of destination specified in Destination line, and press <Enter> key. If the system (UTC) time value is larger than the entered ETA value, "Undefined" will be automatically set in ETA input line.



In Persons on board input line, enter the number of persons on board and press the left trackball button.



Press Apply button.

Attention! Static Data group always displays own ship data, which is set on **Ship settings** page of **INS** panel of the System Configuration utility and cannot be changed in the ECDIS task. Where the transponder settings do no match those in the ECDIS task, the own ship name and Call Sign are shown in orange colour.

Static Data:			Restore
Name:			
Call Sign:			
MMSI:		27313050	0
IMO Numbe	r:	00801305	3

As other devices are connected to the AIS transponder in addition to the MFD (e.g. MKD or pilot software), the own ship name and call sign in the transponder can be changed by these users. The operator is notified about these changes by **Check AIS Ship Name** and **Check AIS Call Sign**cautions, which will remain active until the own ship data is restored in the transponder. To restore the own ship data settings in the transponder as per the settings in the System Configuration utility, press **Restore** button.

The setting of own ship parameters transmitted in the AIS system is completed.

Transmission of Messages in AIS System

Turn on the display of AIS targets (see paragraph Handling AIS Targets).

Open AIS panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts 🗥
Config
Log Book
Man Corr
Maps
Monitoring
Navtex
Overlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the left-hand part of AIS panel to switch to Messaging page.

Cre	eate Message	-			From:	273002413	THE RACON ON LIGHTBUOY TANGO-1
N	Sent to	Date/Time (UTC)	Туре	Status	To:	All stations	IN PSN 5747.2 N 01046.1 E IS INOPERATIVE
3	316001696	20-04-2006 10:04:49	Safety Text	Waiting	Type:		
2	273002413	20-04-2006 10:04:27	Safety Text	Delivered	Type.		
1	ALL	20-04-2006 10:01:43	Safety Text	Sent	AIS n		

To prepare and transmit a text message, press Create Message button on Messaging page in Send message group and select Safety Text.

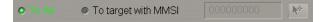
Note: If the AIS class B is selected during the installation, the capability to send messages with the "Safety Text" and/or "Normal Text" status is set in the System Configuration utility. (see *Multi-Functional Display (v. 3.00.340)*. *Installation Guide Part I, Chapter 2*, section *MFD Configuration*, paragraph *Sensors Settings*).



Press the left trackball button. Send Message window will open up, specifying the type of the selected message.



Set the identifier of the addressee of the message to be sent. To transmit a message to all the ships in the radio coverage area, check **To All** checkbox.

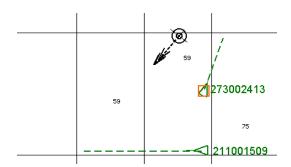


To transmit a message to a certain ship, use one of the three procedures:

1. Check **To target with MMSI** checkbox and enter the MMSI of the addressee in the input line which will be activated.

To All	• To target with MMSI	273002413	N *

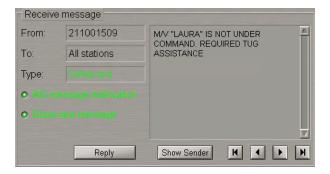
2. Check **To target with MMSI** checkbox and press button to the right of the input line. Position the acquisition marker, which will appear on the Chart panel, on the target, which is the addressee of the message.



Press the left trackball button. The input line will display the MMSI of the specified target.

To All
 To target with MMSI 273002413

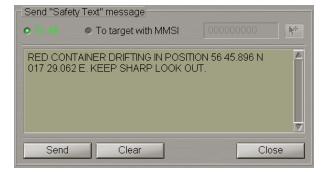
3. To send a reply message, press Reply button in Receive Message group.



With the use of **Reply** function, **Send message** window opens up for a message, which has the same type as the message received from an AIS object, "Safety Text" in this case. The input line will automatically display MMSI of the AIS object, which the message has been received from.



Use the text input window in Send Message group to enter the text of the message, which should be sent.



Press Send button.

The NS 4100, provided the SAAB R4 transponder is used and the relevant option is available, has a capability to transmit messages via the protected channel.

MFD NS4000 ECDIS	MFD NS 4100 ECDIS (SAAB R4)
Send "Safety Text" message To All To target with MMSI 273002413 RED CONTEINER DRIFTING IN POSITION 56 45.896 N Auto Send on channel A Send on channel B Send on channels A & B Send Clear Close	 Send "Safety Text" message To All To target with MMSI 273002413 RED CONTAINER DRIFTING IN POSITION 56 45.896 N Auto Send on channel A Send on channel B Send on channel C Send Clear Close

In this case, the following messages are displayed when the respective channel is selected:

Channels A and B	Channel C (Secure)
Navi-Sailor 4100 ECDIS × Message will be sent on the Standard channel. OK Cancel	Navi-Sailor 4100 ECDIS × Message will be sent on the Secure channel. OK

Select the message despatch channel (Auto is generally recommended). The compiled message will be sent. Press Close button.

Check the sent message status in the table in Send message group. The message status may be one of the following:

- Waiting the message has been transmitted by the MFD, but no confirmation of its relay has been received from the transponder;
- Sent the message has been sent by the transponder, but no confirmation of its delivery to the addressee has been received or confirmation is not expected if the message was sent to all the AIS objects ("All" identifier);
- Delivered the message has been delivered to the addressee;
- Failed the message, for some reasons, cannot be sent by the transponder.

The text of sent "Safety Text" messages, as well as their status (except "Waiting") is recorded in the ship's electronic logbook.

Reception of Messages in AIS System

Attention! The default setting implies generation of **AIS message** notification upon the receipt of messages from AIS objects.

As the notification is accepted by the operator, the received messages is shown on **AIS Messages** display of the Control panel and in **Receive message** group on **Messaging** page of **AIS** panel.

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

AIS Messages Checklist Environment Data lce charts Manually Fix Position Monitoring and Advisor Navigator Parallel Index Lines Precision Instruments Radar Settings Route Data Sensor Data/Status Special Purpose Objects Sun / Moon Svstem Information TRIAL/TGT Simulator Targets

In the list, which will open up, select AIS Messages line and press the left trackball button.

AIS Messag	es • 문
From:	273002413
To:	All stations
Туре:	Safety Text
TANGO-1 IN	N ON LIGHTBUOY
Show Send	ler H I F H

In AIS Messages display, which will open up, read the received message. Use buttons to view the received messages.

Attention! Control buttons in AIS Messages display of the Control panel and in Receive Message group on Messaging page of AIS panel are synchronised.

Open AIS panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

AIS
Charts 🗥
Config
Log Book
Man Corr
Maps
Monitoring
Navtex
Cverlays
🥅 Route Planning
Sensors
Targets
Tasks

end message				Receiv	e message					
Create Message					273002413	THE RACON ON LIGHTBUOY TANGO-1				
Sent to	Date/Time (UTC)	Туре	Status] То:	All stations	IN PSN 5747.2 N 01046.1 E IS INOPERATIVE				
316001696	20-04-2006 10:04:49	Safety Text	Waiting	Tuno						
273002413	20-04-2006 10:04:27	Safety Text	Delivered	Type:						
ALL	20-04-2006 10:01:43	Safety Text	Sent	AIS n						

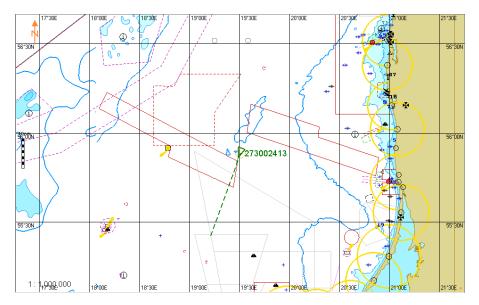
Use the tab in the left-hand part of AIS panel to switch to Messaging page.

In Receive message group, read the received message. Use buttons to view the received messages. AIS message checkbox is checked by default, arrival of a message, therefore, triggers off AIS Message notification. Uncheck this checkbox to disable the notification generation upon the receipt of AIS messages.

Show new message checkbox is checked by default; upon the receipt of a new message it will, therefore, be shown in AIS Messages display of the Control panel and in Receive group on Messaging page of AIS panel. Uncheck this Show new message checkbox to save an image of the viewed message upon the receipt of a new message.

Turn on the display of AIS targets (see paragraph *Handling AIS Targets*). AIS targets will appear on the Chart panel.

To display the message sender target, press Show Sender button.



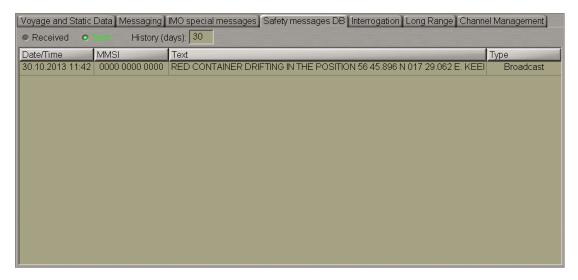
The target will be shown in the centre of the Chart panel, highlighted with a flashing circle.

Using AIS Safety Messages Database

Open AIS panel by selecting the appropriate line of Tasks List menu in the tabs zone of the ECDIS task screen.

Charts Config Config Log Book Man Corr Maps Monitoring Navtex Overlays Route Planning Sensors Targets Tasks	
 Log Book Man Corr Maps Monitoring Navtex Overlays Route Planning Sensors Targets 	Charts 🔨
Man Corr Maps Monitoring Navtex Overlays Route Planning Sensors Targets	Config
Maps Monitoring Navtex Overlays Route Planning Sensors Targets	📕 Log Book
Monitoring Navtex Overlays Route Planning Sensors Targets	Man Corr
Navtex Overlays Route Planning Sensors Targets	Maps
 Overlays Route Planning Sensors Targets 	Monitoring
Route Planning Sensors Targets	Navtex
Sensors Targets	Cverlays
Targets	Route Planning
	Sensors
Tasks	Targets
	Tasks

Use the tab in the left-hand part of AIS panel to switch to Safety Messages DB page.



The **Safety Messages DB** page is intended for displaying database-stored AIS messages with the "Safety" status over a certain time interval. The page includes the following items:

- Received to turn on the display of received messages in the table;
- Sent to turn on the display of sent messages in the table;
- History time interval over which messages from the database are displayed (from 1 to 30 days);
- Messages table which contains the following columns:
 - Data/Time message receive/send time and date;
 - MMSI addressee's MMSI;
 - Text text of the message;
 - Type message sending method (Broadcast/Addressed).

Use the Received / Sent radio buttons to select the type of messages to be displayed in the table. In the History input window set the necessary time interval. To display full text of the message, position the cursor on this message.

	IMO special messages Safety messages DB Interrogation Long Range Channe days): 30	Management
Date/Time MMSI		Туре
30.10.2013 11:42 0000 0000 0000		Broadcast
30.10.2013 12:02 0273 0005 0482	MAN OVER BOARD IN THE POSITION 57 13.415 N 019 20.275 E. KEEP SHARF	LOOKOUT. ^{2d}
	24	

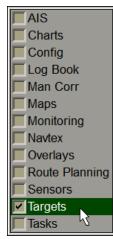
Safety AIS messages files are accessible with the use of the Data Tool utility, in the AIS safety messages group of AIS Data feature, and can be imported/exported from/to another PC.

The System Configuration utility features a capability to set the safety messages storage period up to 100 days (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration,* paragraph *MFD Settings,* item 10).

Handling Targets

Setting of Safety Parameters in the Tracking of Targets

Open **Targets** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Target Table Al	S color ti	racks												
Show Target						AIS Targ	et identi	fication	Ala	Irm				
ARPAA	Own		AIS	Trac	ks		By ID	_	- CP	A 1	.00	M		
ARPA B	Cursors		RBL		N	lax. range	e 🔽	48 nn	TCI	PA 1	.0 r	nin		
Name 🔺	40	41	42	43	44	37	47	48	49	50	51	52	53	54
Alias														
CPA (NM)	2.88	5.87	7.32	6.81	7.74	5.81	4.09	4.53	5.86	8.23	1.25	6.76	8.07	5.62
TCPA (min)	-9.7	-8.4	-6.9	-14.5	-9.3	-21.2	-21.2	-21.2	10.4	12.8	21.8	-16.4	-16.6	-19.2
SOG (kn)	45.3	43.5	29.4	26.8	33.1	11.3	15.0	13.1	22.4	12.3	16.8	19.5	15.8	12.8
COG ()	14.5°	295.9°	65.7°	287.1°	281.1°	30.0°	5.9°	36.4°	84.2°	170.7°	81.6°	348.7°	358.2°	29.6°
Range (NM)	8.94	8.33	8.43	9.10	9.05	8.79	8.67	8.57	7.63	8.46	8.44	9.59	10.11	8.56
Bearing ()	359.3°	350.7°	0.3°	351.7°	352.5°	352.7°	45.2°	5.8°	203.4°	236.6°	257.5°	317.5°	318.4°	352.4°
Bow X (NM)	7.7	-5.9	-20.9	-6.9	-8.1	55.4	-10.5	112.1	10.6	8.2	-2.6	11.1	16.8	49.3
TBow X (min)	-17.9	-9.0	25.4	-16.5	-13.8	-197.9	5.6	-346.8	-8.4	15.6	27.7	-37.6	-56.9	-164.8
									_					Þ

Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

In the top of **Targets** panel, which will open up, turn on the display of targets from the required sources by pressing the appropriate buttons: **ARPA A(B),Own** or **AIS**.

Alarm		
CPA	1.00	NM
TCPA	3.0	min

Alarm group contains windows for enter values of CPA/TCPA.

The CPA/TCPA Tgt ID alarm generation is turning on when both CPA and TCPA values of the target are smaller than the set values:

- CPA to enter the minimum closest point of approach distance;
- TCPA to enter the minimum time to the closest point of approach.

Handling Target Table

Open **Targets** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks 🔨

Name 🔺	71	74	75	77	78	79	80	91	92	93	95	100	138	
Alias	Fellow													
CPA (nm)	3.08	2.39	2.01	1.04	0.74	0.07	1.94	3.29	3.70	3.67	1.49	1.33	3.45	0.64
TCPA (min)	-2.5	11.5	1.1	-3.1	-2.3	1.3	3.7	0.8	0.5	-0.3	-1.9	1.4	1.3	8.9
COG (°)	223.6°	335.2°	354.1°	202.5°	219.0°	340.8°	222.2°	268.9°	264.1°	244.8°	292.1°	23.1°	336.6°	336.7
SOG (kn)	91.7	8.5	32.6	13.6	9.5	9.3	5.3	37.1	42.2	51.0	39.5	22.9	37.5	19.1
Range (nm)	5.18	3.82	2.11	1.46	1.00	0.34	2.12	3.35	3.72	3.68	2.16	1.41	3.57	3.75
Bearing (°)	264.4°	158.2°	85.4°	185.3°	197.6°	135.9°	140.1°	10.3°	2.0°	334.9°	331.3°	107.4°	68.9°	144.8
Bow X (nm)	-4.6	-4.8	2.2	1.6	1.8	-0.1	7.0	-213.1	-44.4	-10.2	4.9	1.3	4.3	-0.9
TBow X (min)	-0.5	27.6	-0.3	-7.0	-7.7	1.7	-25.0	272.3	51.4	9.2	-7.7	1.2	-2.2	10.5
<														

Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

Target Table contains columns (ARPA and AIS targets) and rows with the targets information with availability of sorting by the relevant parameter:

- Name target identifier;
- Alias target identifier (up to 8 characters) assigned by the operator (the target is displayed on the Chart panel with this identifier regardless of settings in AIS Target Identification group);
- CPA closest point of approach distance;
- TCPA time to the closest point of approach;
- COG target course over the ground;
- SOG target speed over the ground;
- Range distance to the target;
- Bearing bearing to the target;
- Bow X distance to the point where the target crosses the own ship course;
- **TBow X** time to the point where the target crosses the own ship course.

Prompt Target Search

Open **Targets** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 📃
Monitoring
Navtex
Cverlays
🔲 Route Planning
Sensors
Targets
🗖 Tasks 🛛 🕅

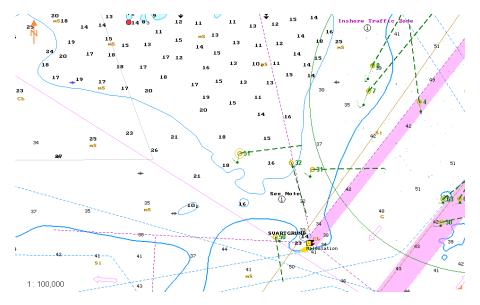
Target Table Al	S color tr	acks												
Show Target						AIS Targ	get ident	ification	We	arning				
ARPA A	RIB		AIS	Trac	ks	E	By Name)	CP.	A O	۱ <u>00.</u>	IM		
ARPA B					N	Aax. range	e 🔽	18 nm		PA 0	.0 r	nin		
Name 🔺	40	41	42	43	44	37	47	48	49	50	51	52	53	54
Alias														
CPA (NM)	2.88	5.87	7.32	6.81	7.74	5.81	4.09	4.53	5.86	8.23	1.25	6.76	8.07	5.62
TCPA (min)	-9.7	-8.4	-6.9	-14.5	-9.3	-21.2	-21.2	-21.2	10.4	12.8	21.8	-16.4	-16.6	-19.2
COG (°)	14.5°	295.9°	65.7°	287.1°	281.1°	30.0°	5.9°	36.4°	84.2°	170.7°	81.6°	348.7°	358.2°	29.6°
SOG (kn)	45.3	43.5	29.4	26.8	33.1	11.3	15.0	13.1	22.4	12.3	16.8	19.5	15.8	12.8
Range (NM)	8.94	8.33	8.43	9.10	9.05	8.79	8.67	8.57	7.63	8.46	8.44	9.59	10.11	8.56
Bearing (°)	359.3°	350.7°	0.3°	351.7°	352.5°	352.7°	45.2°	5.8°	203.4°	236.6°	257.5°	317.5°	318.4°	352.4°
Bow X (NM)	7.7	-5.9	-20.9	-6.9	-8.1	55.4	-10.5	112.1	10.6	8.2	-2.6	11.1	16.8	49.3
TBow X (min)	-17.9	-9.0	25.4	-16.5	-13.8	-197.9	5.6	-346.8	-8.4	15.6	27.7	-37.6	-56.9	-164.8
<									_					

Use the tab in the top part of Targets panel, which will open up, to switch to Target Table page:

Turn on the display of targets (see section AIS, paragraph Handling AIS Targets and section ARPA, paragraph Target Display).

Press the button with the target identifier in Name line of the Targets Table, e.g. "51".

The selected target will be displayed in the centre of the Chart panel highlighted with a flashing circle.



Turning On Mode of Associating AIS and ARPA Targets

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

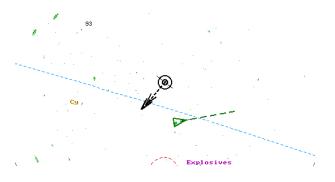
System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets 📐

In the list, which will open up, select Targets line and press the left trackball button.

Targets	- 8
Acquisition AIS TgtLrA	IS
DR for AIS tgts > 5.0	kn
AIS target filter	
Sleeping targets	
• RNG • CPA • TO	PA
6.00 NM 0.25 NM 0.0	min
Display by type	
o Class A o Base sta	
o Class B o SAR airc	
o AtoN o SART	
• AIS LR • Virtual A	
Association OF	F .
OFF	
ARPA	
AIS 📐	

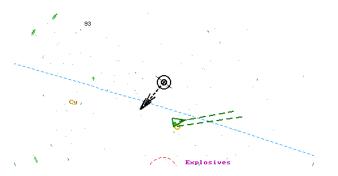
Select from the Assotiation drop-down list the targets which will be displayed after the association on the ECDIS task screen (e.g. AIS).

If association conditions are fulfil, the ARPA target continues to be tracked but is not displayed on the ECDIS task screen any more.



The data card of such AIS target displays bearing and distance to its associated ARPA target in the bottom line.

If association conditions exceeds the set limits, the ARPA target is automatically displayed on the screen.



Turning On DR Mode for AIS Targets

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Targets line and press the left trackball button. Open AIS page.

Targets	- ₽
Acquisition	AIS TgtLrAIS
DR for AIS t	gts > 5.0 kn
AIS target fil	Iter
Sleeping ta	irgets
O RNG @	СРА 💿 ТСРА
6.00 NM 0.	.25 NM 0.0 min
Display by ty	pe
o Class A	• Base station
o Class B	o SAR aircraft
o AtoN	o SART
O AIS LR	Virtual AtoN
Association	OFF -

In the input line to the right of the DR for AIS tgts button, set the minimum speed of AIS targets for the DR mode.

To turn on the DR mode for AIS targets whose speed is equal to and higher than the set value, press the DR for AIS tgts button.

Targets		-	- 8
Acquisition	AIS	「gtLrAl	S
DR for AIS t	gts 3	> 5.0	kn
AIS target fil	ter		
Sleeping ta	rgets		
O RNG O (CPA		PA
6.00 NM 0.	25 NM	0.0	min
Display by typ	be		
o Class A	o Ba		
o Class B	o SA		
o AtoN	o SA		
O AIS LR	o Vir		
Association		OFF	-

Filtering Lost Targets

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Targets line and press the left trackball button.

Open Acquisition page. Check the Enable "Lost tgt" warning checkbox.

Targets -
Acquisition AIS TgtLrAIS
Targets
Acquire Cancel Cancel All
Guard Zones
Guard Zone 1 Guard Zone 2
o Enable "Lost tgt" warning
• Enable "Lost tgt" warning
O Enable "Lost tgt" warning Range: 12.00 NM
O Enable "Lost tgt" warning Range: 12.00 NM Activate AIS targets
• Enable "Lost tgt" warning Range: 12.00 NM • Activate AIS targets • RNG • CPA • TCPA

Use the **Range** input box to set the distance within which the **Lost Tgt** warning will be generated when the ARPA or AIS loses a target. Beyond the set distance the lost targets are not at all displayed on the ECDIS task screen any more without warning.

Filtering AIS Targets

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets 📐

In the list, which will open up, select Targets line and press the left trackball button.

Open the AIS page.

Targets	
Acquisition	AIS TgtLrAIS
DR for AIS to	jts > 5.0 kn
AIS target filt	er
Sleeping tar	gets
● RNG ● C	PA 🔹 TCPA
6.00 NM 0.2	25 NM 0.0 min
Display by typ	e
o Class A	• Base station
o Class B	o SAR aircraft
O AtoN	o SART
O AIS LR	Virtual AtoN
Association	OFF -

Check the Sleeping targets checkbox to turn on filtering of sleeping AIS targets by one of the following criteria:

- Check the **RNG** checkbox and enter the necessary range in the input window to set the distance beyond which the sleeping AIS targets will not be displayed;
- Check the **CPA** checkbox and enter the necessary CPA for sleeping AIS targets. No sleeping AIS targets whose CPA is larger than the set value will be displayed;
- Check the **TCPA** checkbox and enter the necessary TCPA for sleeping AIS targets. No sleeping AIS targets whose TCPA is larger than the set value will be displayed.

By default, the display of all the AIS target types is enabled:

- Class A; Base station;
- Class B; SAR aircraft;
- AtoN; SART;
- AIS LR; Virtual AtoN.

Uncheck as required the relevant checkboxes to turn off the display of certain types of AIS targets on the ECDIS task screen.

Note: If the sleeping AIS targets filtering is enabled, or the display of some AIS targets type it turned off, the AIS filter important indication is displayed in the **Vectors** window of the Control Panel (see also document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 4,* section *Indications,* paragraph *Display of Important Indications*).

AIS filter VECT: T GND Fixed -

Open the Acquisition page.

By default, the Activate AIS targets filter is turned off.

Targets 🔹 🗗
Acquisition AIS TgtLrAIS
Targets
Acquire Cancel Cancel All
Guard Zones
Guard Zone 1 Guard Zone 2
Enable "Lost tgt" warning
Range: 12.00 NM
Range: 12.00 NM
Range: 12.00 NM o Activate AIS targets
Range: 12.00 NM O Activate AIS targets O RNG O CPA TCPA

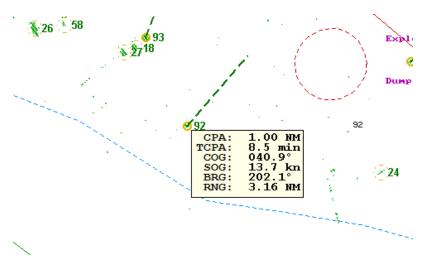
Check the Activate AIS targets checkbox for the automatic activation of sleeping AIS targets by one of the following criteria:

- Check the **RNG** checkbox and enter the necessary range in the input window to set the distance. All the AIS targets closer than the set range will be activated automatically;
- Check the CPA checkbox and enter the necessary CPA for the sleeping AIS targets. All the sleeping AIS targets whose CPA is smaller than the set value will be activated automatically;
- Check the TCPA checkbox and enter the necessary TCPA for the sleeping AIS targets. All the sleeping AIS targets whose TCPA is smaller than the set value will be activated automatically.

Obtaining Information on Target

Turn on the display of targets (see section AIS, paragraph Handling AIS Targets and section ARPA, paragraph Target Display).

Position free View cursor on the necessary target; the cursor will change its form. Press the left trackball button: the target data card with its parameters will be displayed next to the target:



Chapter 11. Obtaining of Information in the ECDIS Task

This chapter describes the procedure used in the reception of all kinds of information in the ECDIS task.

Obtaining Information on Vector Chart Objects	
Obtaining Information on Point Type Objects	
Obtaining Information on Line and Area Type Objects	
Obtaining Information on Vector Charts	
Obtaining Information on Updating Objects	
Obtaining Information on Map Objects	
Obtaining Information on Tides and Currents	
Obtaining Information on the Change of Tidal Heights	
Display of Tidal Heights on the Chart Panel	
Obtaining Information on Tidal Currents	
Obtaining Information on Surface Currents	
Use of Animation	
Obtaining Information on Sun/Moon	
Obtaining Current System Information	
Obtaining Information on Ports	
Obtaining Information by Port Name	
Obtaining Information by the Region Name	
Obtaining Information by the Country Name	
Obtaining Information by the Cursor Position on the Chart Panel	
Quick Search for Selected Port	
Obtaining NAVTEX Information	
Work with NAVTEX Message Database	
Work with Messages	
Obtaining Information on Own Ship AIS Data	
Obtaining Information on Currently License	

Obtaining Information on Input/Output Messages	403
Display of Data Flow Between the MFD and Different External Devices	404
COM Trace Record	405

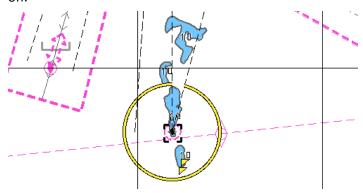
Obtaining Information on Vector Chart Objects

Obtaining Information on Point Type Objects

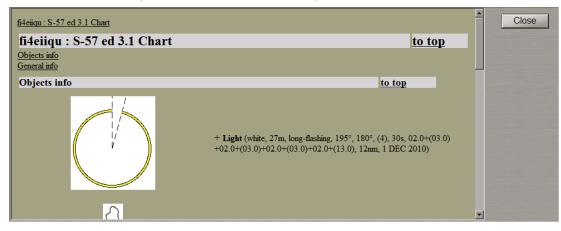
Set the display of the required area by using Scaling and Review functions.

Press *button on the Control panel*: **Info** panel will open up in the bottom part of the screen.

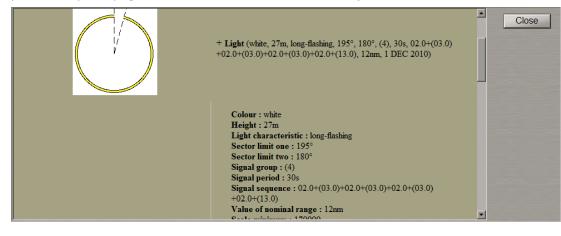
Position the acquisition cursor, which will appear, on the object which information is required to be obtained on.



Press the left trackball button. **Info** panel will display (under the chart name) the list of pages with available information on the objects, which fall within the acquisition cursor outline.



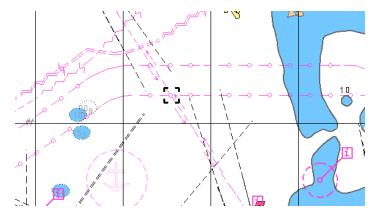
Select the necessary notation by positioning the cursor on the name and press the left trackball button: **Info** panel will open a page with information on the selected objects:



Obtaining Information on Line and Area Type Objects

Set the display of the required area by using Scaling and Review functions. Press *i* button on the Control panel. **Info** panel will open up in the bottom part of the screen.

Position the acquisition cursor, which will appear, on the boundary of an area type object or any part of a line type object which information is required to be obtained on.



Press the left trackball button. **Info** panel will display (under the chart name) the list of pages with available information on the objects, which fall within the acquisition cursor outline.

<u>se2bhs0w : S-57 ed 3.1 Chart</u> <u>dk2stobl : S-57 ed 3.1 Chart</u>		Close
se2bhs0w : S-57 ed 3.1 Chart	to top	
Objects info General info		
Objects info	to top	
+ Coverage (no coverage available)		
General info	to top	
Presentation Library: edition 4.0.0 Producing Agency Code: SE (Sjofartsverket, Swedish Maritime Administration) Producing Country Code: SE (Sweden) Compilation scale: 1:180000 Edition Number: 12; Update Number: 0 Issue Date: 14 Aug 2015		¥

Select the necessary notation by positioning the cursor on the name and press the left trackball button: **Info** panel will open a page with information on the selected objects.

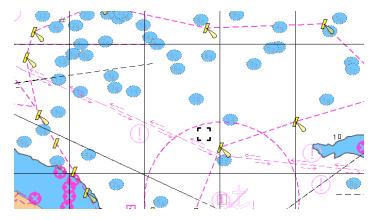
1 M		▲ Close
	+ Pipeline, submarine/on land (supply pipe, gas)	
	+ Navigational system of marks (IALA A)	
	+ Depth area (20m, 50m)	
	+ Coverage (coverage available)	
General info	to top	
Presentation Library: edition 4.0.0 Producing Agones: Code: DK (Kort Og Matrikalstore)	(ran)	-

Obtaining Information on Vector Charts

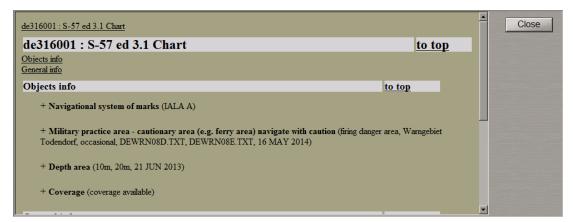
Set the display of the required area by using Scaling and Review functions.

Press *i* button on the Control panel. **Info** panel will open up in the bottom part of the screen.

Position the acquisition cursor, which will appear, on point of the chart which information is required to be obtained on.



Press the left trackball button. **Info** panel will display (under the chart name) the list of pages with available information on the objects which fall within the acquisition cursor outline.



Select General Chart Information notation by positioning the cursor on it, and press the left trackball button. The page with information on the vector chart will open up.



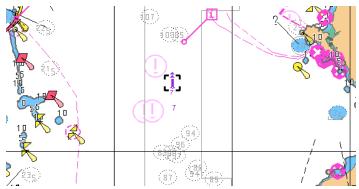
Obtaining Information on Updating Objects

Set the display of the required area by using Scaling and Review functions.

Press *i* button on the Control panel. **Info** panel will open up in the bottom part of the screen.

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Position the acquisition cursor, which will appear, on the updating object which information is required to be obtained on.



Press the left trackball button. **Info** panel will display (above the chart name) the list of pages with available information on the updating objects and navigation chart which fall within the acquisition cursor outline.

Manual correction User charts layer A Manual correction ManCor gb301411 : S-57 ed 3.1 Chart		Close
Manual correction to top		
Symbol objects		
Symbol objects to top		
Symbol Danger!!! 53.09.880'N 05.15.332'W		
Depth: 7.0 m Creation Date: 04-12-15 13:16 Modification Date: 04-12-15 13:18		
	-	

Select Manual correction by positioning the cursor on this notation and press the left trackball button. Info panel will display the page with information on the categories of updating objects, which fall within the acquisition marker outline.

Select the required object category by positioning the cursor on it and press the left trackball button. The window will display the page with information on the objects of this category.

Manual correc	tion ManCor	<u>to top</u>	Close
Symbol objects			
Symbol objects		to top	
	53.09.880'N 05.15.332'W 7.0 m 2015-Dec-04 13:16:00 2015-Dec-04 13:18:00		
gb301411 : S-5	7 ed 3.1 Chart	to top	
Objects info General info			T

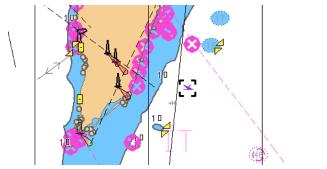
Obtaining Information on Map Objects

Set the display of the required area by using Scaling and Review functions. Press *i* button on the Control panel. **Info** panel will open up in the bottom part of the screen.

Attention! Point type objects cannot be displayed on scales smaller than 1:600,000.

Position the acquisition cursor, which will appear, on the map object which information is required to be obtained on.

+++



Press the left trackball button. **Info** panel will display (above the chart name) the list of pages with available information on the map objects and navigation chart, which fall within the acquisition cursor outline.

<u>User map Swallow rock</u> se3ci0xs : S-57 ed 3.1 C			Close
User map Swa	llow rock	to top	
Symbol objects			
Symbol objects		to top	
	Default_symbols_table 56.13.898'N 16.33.459'E 2014-Apr-08 09:58:00 2014-Apr-08 09:58:00		
se3ci0xs : S-57	ed 3.1 Chart	<u>to top</u>	
Objects info			•

Select User charts layer A (B) by positioning the cursor on this notation and press the left trackball button. Info panel will display the page with information on the categories of map objects which fall within the acquisition marker outline.

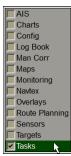
Select the required object category by positioning the cursor on it and press the left trackball button. The window will display the page with information on the objects of this category.

Symbol objects		to top	 Close
Creation Date:	Default_symbols_table 56.13.898'N 16.33.459'E 2014-Apr-08 09:58:00 2014-Apr-08 09:58:00		
se3ci0xs : S-57	ed 3.1 Chart	to top	
<u>Objects info</u> <u>General info</u>			
Objects info		<u>to top</u>	
+ Inshore traffic :	zone - area of inshore traffic (IMO - adopted)		×

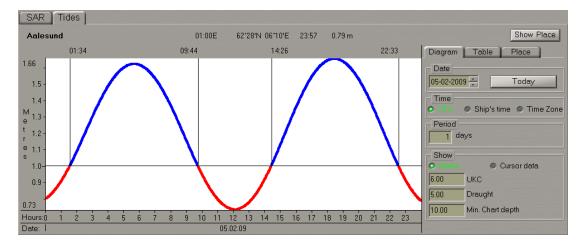
Obtaining Information on Tides and Currents

Obtaining Information on the Change of Tidal Heights

Open **Tasks** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Tasks panel to switch to Tides page.



Use the tab in the top right part of Tides page, which will open up, to switch to Place tab.

Aalesund	01:00E 62*28'N 06*10'E		Set Active Show Place
Place	Coordinates	Time Zone	Diagram Table Place
Aalesund	62*28'N 06*10'E	01:00E	- Find place
Abaiang Atoll	01*49'N 173*02'E	12:00E	By name
Abashiri Ko	44°01'N 144°17'E	09:00E	
Abbot Point	19°53'S 148°05'E	10:00E	Aalesund
Abemama	00°29'N 173°52'E	12:00E	
Aber Benoit	48°35'N 04°37'W	01:00E	All Places
Aberdaron	52*48'N 04*43'W	00:00	By cursor
Aberdeen	46*58'N 123*51'W	08:00W	
ABERDEEN	57°09'N 02°05'W	00:00	
Aberdovey	52*32'N 04*03'W	00:00	
Aberporth	52*08'N 04*33'W	00:00	
Aberystwyth	52*24'N 04*05'W	00:00	
Abidjan Entrance	05°15'N 03°60'W	00:00	
Ablation Lake	70*50*5_68*2554	03:00\//	V

In the right-hand part of **Place** tab, which will open up, select the reference point by using one of the following procedures:

- Enter the reference point name in By name input line and press <Enter> key;
- Check All Places checkbox.

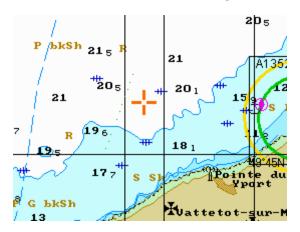
Find place
By name
Aalesund
O All Places
By cursor

In the list in the left-hand part of the page, which will open up, select the reference point and double click the left trackball button.

• Check By cursor checkbox; enter the radius of the area coverage circle in Distance input line, which will open up.



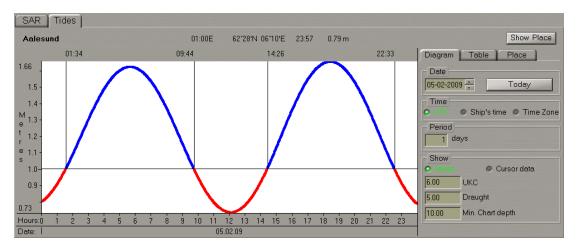
Press Find button. Position the graphic cursor, which will appear, on the point within the Chart panel which will be the centre of the area coverage circle.



Press the left trackball button. In the list of reference points, which fall within the coverage area in the lefthand part of the page, select the reference point and double click the left trackball button.

Information Displayed Graphically

After the selection of the reference point, **Diagram** tab will open up, displaying the tidal curve for the selected reference point.



In Date line of Diagram tab, select the date starting from which the tidal heights will be calculated. Use Period input line to enter the period which tidal heights are required to be calculated for.

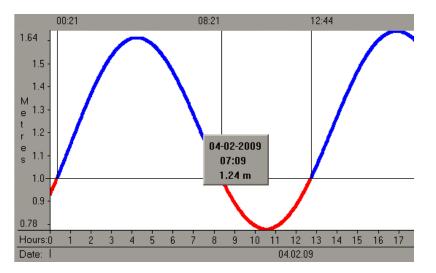
The following parameters can be set:

- UKC under keel clearance;
- Draught ship's draught;
- Min. Chart depth the minimum depth on the chart.

Check Marks checkbox to show the time marks on the diagram.

On the graph, blue is used for showing the time periods when the actual depth is safe, and red for showing the time intervals with dangerous depths.

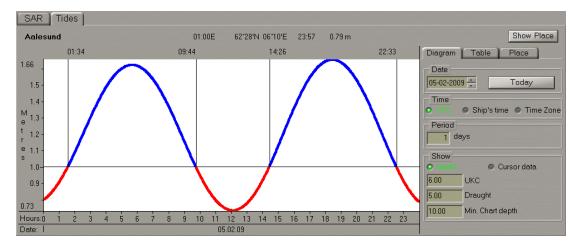
Check **Cursor Data** checkbox. Position the cursor on the tidal curve and by moving the cursor with the trackball, set the necessary time value in the cursor information window.



Read the tidal height value in the cursor information window.

Information Displayed in a Tabular Form

After the selection of the reference point, **Diagram** tab will open up displaying the tidal curve for the selected reference point.



Use the tab in the top right part of the page to switch to **Table** tab.

SAR Tides		
Aalesund	01:00E 62"28"N 06"10'E	Show Place
4 February 2009 04:15 1.62 10:33 0.78 16:55 1.64 23:23 0.78	Heights of water in Metres for high and low waters Aalesund 62°28'N 06°10'E UTC TIME	Diagram Table Place Date Date D402-2009 - Today Time OTC Ship's time Time Zone Period days Table Properties Show high/low water Time step
		2

In Date line of **Table** tab, select the date starting from which the tidal heights will be calculated. Use **Period** input line to enter the period which tidal heights are required to be calculated for.

To calculate tidal tables, use one of the following procedures:

• In Table Properties group, check Show high/low water checkbox.

Table Properties Show high/low water	
Time step	

The left-hand part of the page will display a table of high and low water.

	Heights of water in Metres for high and low waters Aalesund 62°28'N 06°10'E	
	UTC TIME	
4 February 2009		
04:15 1.62 10:33 0.78 16:55 1.64 23:23 0.78		

• In Table Properties group, check Time step checkbox; press 🖬 button in the activated line for the input of the tidal height calculations discretion.

 Table Properti Show high/log 		
 Time step 	60 Min 👻	
	1 Min	
	6 Min	
	10 Min	
	15 Min	
	30 Min 📐	
	60 Min 🔨	

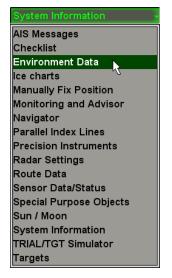
In the list, which will open up, select the necessary tidal height calculation discretion and press the left trackball button. The left-hand part of the page will display the tidal height table calculated with the set discretion.

			Height	s of wat		Aalesund	-	ar interva	ls			
4 F	ebruary	2009				UTC TIME						
00:00 00:30 01:00 01:30 02:00 02:30 03:00 03:30	0.93 1.03 1.15 1.26 1.37 1.46 1.54 1.59	04:00 04:30 05:00 06:00 06:30 07:00 07:30	1.61 1.59 1.54 1.46 1.38 1.28 1.17	08:00 08:30 09:00 10:00 10:30 11:00 11:30	1.07 0.97 0.89 0.83 0.79 0.78 0.79 0.82	12:00 12:30 13:00 13:30 14:00 14:30 15:00 15:30	0.88 0.96 1.05 1.16 1.27 1.37 1.47 1.55	16:00 16:30 17:00 17:30 18:00 18:30 19:00 19:30	1.60 1.64 1.63 1.59 1.52 1.44 1.34	20:00 20:30 21:00 21:30 22:00 22:30 23:00 23:30	1.24 1.13 1.03 0.94 0.87 0.81 0.78 0.78	

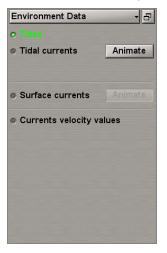
Take the necessary readings in the calculated tables.

Display of Tidal Heights on the Chart Panel

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

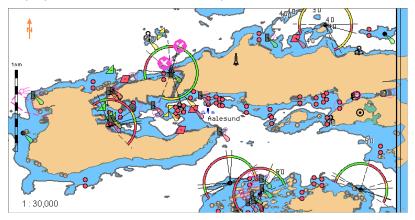


In the list, which will open up, select Environment Data line and press the left trackball button.



In **Environment Data** display, which will open up, check **Tides** checkbox. The Chart panel displays tidal heights in the reference points as of the current time.

Press **Show place** button in the top right part of **Tides** page on **Tasks** panel. The selected reference point is displayed in the centre of the Chart panel.

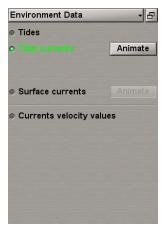


Obtaining Information on Tidal Currents

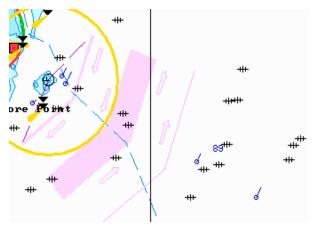
Set the display of the area within the chart screen boundary by using Scaling and Review functions. Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data 📐
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

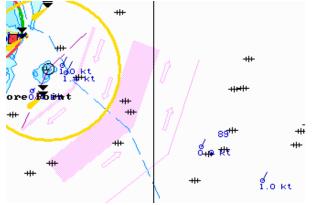
In the list, which will open up, select Environment Data line and press the left trackball button.



In **Environment Data** display, which will open up, check **Tidal currents** checkbox. The Chart panel displays tidal current vectors as of the current time.



Check Currents velocity values checkbox. The Chart panel will display digitally the values of tidal current speed.

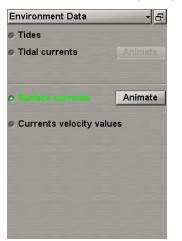


Obtaining Information on Surface Currents

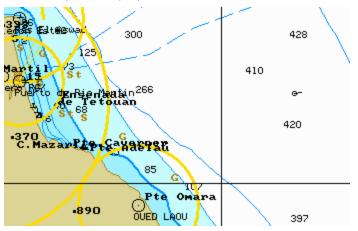
Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Environment Data line and press the left trackball button.

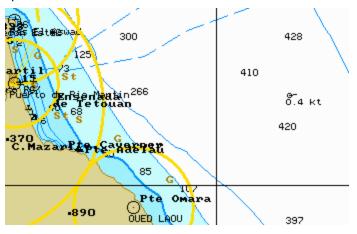


In Environment Data display, which will open up, check Surface currents checkbox.



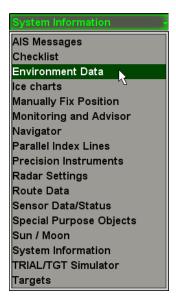
The Chart panel displays surface currents vectors as of the current time.

Check Currents velocity values checkbox. The Chart panel will display digitally the values of surface current speed.

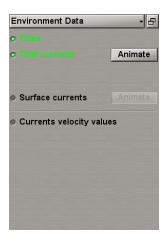


Use of Animation

Set the display of the area within the chart screen boundaries by using Scaling and Review functions. Press the button with the name of the set display in the **Display Panel** window of the Control panel.



In the list, which will open up, select Environment Data line and press the left trackball button.



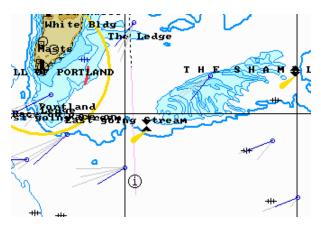
In **Environment Data** display, check the checkboxes of the parameters whose value change dynamics is required to be viewed. Press the activated **Animate** button to the right of the names of parameters.



In Date and Ship time input lines of Animate group, which will open up, enter the required viewing start date and time.

Use Step input line to enter the discretion of the parameter value change.

View the changes in the parameter values by using 🛋 🔽 buttons.



On the Chart panel, the selected parameters will change with the set discretion.

For the automatic change of parameters with the set discretion, press Auto button.

Obtaining Information on Sun/Moon

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
Ice charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon 📐
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Sun/Moon line and press the left trackball button.

Sun / Moon	- ₽
Set point	
Date:	27-07-14
Time zone:	00:00
Sunrise:	
Sunset:	
Moonrise:	
Moonset:	
Nautical twiligh	t
Morning start:	
Evening end:	
Moonphase:	

The **Sun/Moon** display is intended for calculating and displaying data on sunrise/sunset and moonrise/moonset in any set point for a certain date.

In the Date input box enter the date by rolling the trackball, or enter it from the keyboard.

Sun / Moon		- 8
Set point		
Date:	23-1	Apply
Time zone:	00:00	Apply Cancel
Sunrise:		
Sunset:		
Moonrise:		
Moonset:		
Nautical twiligh	t	
Morning start:		
Evening end:		
Moonphase:		

Press the right trackball button and select Apply.

In the Time zone input box enter the time zone by rolling the trackball, or enter it from the keyboard.

Sun / Moon		- 8
Set point		
Date:	23-10	0-13
Time zone:	01:00 E	Apply
		Cancel
Sunrise:		
Sunset:		
Moonrise:		
Moonset:		
Nautical twilight		
Morning start:		
Evening end:		
Moonphase:		

Press the right trackball button and select Apply.

Press Set point button.

Position the graphic cursor which will appear in the required point on the Chart panel.



The graphic cursor coordinates are displayed in the Set point information window in the bottom part of the Control panel.

Set point				
Latitude	56°47.04	56°47.045' N		
Longitude	018°08.8	805' E		
Ship position	true	relative		
Bearing	232.5	016.0 •		
Opp. Bearing	052.5	◀ 164.0 °		
Range	53.05	NM		
	98247	m		
Press Tab	to edit m	anually		

Press the activated Calculate button.

Sun / Moon	→ B
Set point	56° 47.045 N 018° 10.492 E
Date:	23-10-13
Time zone:	01:00 E
Calculate	
Sunrise:	06:37
Sunset:	16:24
Moonrise:	19:08
Moonset:	11:12
Nautical twilight	
Morning start:	05:13
Evening end:	17:48
Moonphase:	Last quarter

The Sun/Moon display will show the following data:

- Sunrise sunrise time;
- Sunset sunset time;
- Moonrise moonrise time;
- Moonset moonset time;
- Nautical twilight nautical twilight time:
 - Morning start morning twilight start;
 - Evening end evening twilight end;
- Moonphase moon phase.

Obtaining Current System Information

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

AIS Messages
AIS Messages
Checklist
Environment Data
Far Sounder
Manually Fix Position
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select System Information line and press the left trackball button.

System Information 🔹 🗗				
Drift	135.0° - 0.0 kn			
Current	354.0° - 0.0 kn			
SF CNT	50 m			
True wind	119.9° - 10.0 m/s 075.7°(P) - 9.5 m/s 18.0 °C 28.0 m			
Rel. wind				
Water t°				
Depth ECHOSOUNDER 1				
1	līde height			
5.1 m	Sandettie Bank			

System Information display is intended for presenting the following data:

- Drift drift direction and speed;
- Current summary value of the surface and tidal currents calculated for the current time at the current ship position;
- SF CNT current safety contour value determined by the ECDIS task;
- True wind true wind direction and speed (from the wind sensor data);
- Rel. wind relative wind direction and speed (from the wind sensor data);
- Water t° water temperature value from the temperature sensor data;
- Depth value of water depth under the keel (from the sounder data);
- Tide height expected tidal height value calculated for the current time at the reference point closest to the ship position, and the name of this reference point.

To select the true wind vector display mode on the ECDIS task screen, open the **Monitoring** panel by selecting the appropriate item of the **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
🗖 Maps
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

Use the tab in the top part of **Monitoring** panel, which will open up, to switch to the **Route Monitoring** page.

Route Monitoring Safety Alerts Navigational Alerts							
Ship: Headline COG vect	G vector HDG vector Ship by contour Align by HDG No wind						
Route: Load route	Set schedule - Unload XTD Radius	WPT name Wheel over line Sun / Moon					
	Course/Leg/Spd	Heading mark Ref. point Remark					
Waypoints Next waypoint: Auto selection Radius : From Route Table	Past track settings Track color : Plot interval: Time label: Own ship track: 0 s 30 min O hours Track history : Current Focus on Track Show time-labels Show primary track Show secondary track/position	Alerts End of route Out of XTD Out of Schedule WPT approach WPT approach Omin Alternative route segments Approach to segment min					

Press the Wind vector button:

Ship:	Headline COG vector	HDG vector Sh	ip by contour 👻	Align by HDG	-	Wind vector 🔸
						Wind vector Wind card No wind

Select the necessary display mode (see document *Multi-Functional Display (v. 3.00.340)*. *Functional Description*, *Chapter 2*, section *Other Sensors*, paragraph *Wind Interface*).

Obtaining Information on Ports

Open **Tasks** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.

AIS
Charts
Config
Log Book
Man Corr
Maps 📃
Monitoring
Navtex
Cverlays
Route Planning
Sensors
Targets
Tasks

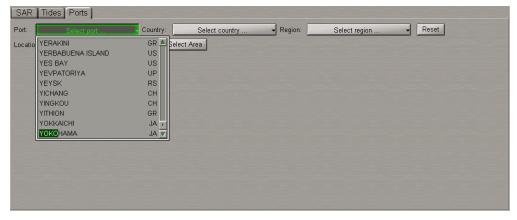
Use the tab in the top part of Tasks panel to switch to Ports page:

SAR Tides	Ports					
Port:	Select port	- Country:	Select country	Region:	Select region 👻	Reset
Location:		Highlight Select /	Area			

To obtain information on the required port, use the following procedure.

Obtaining Information by Port Name

Press Port button. Type the first letters of port name or select the port from list by the cursor.



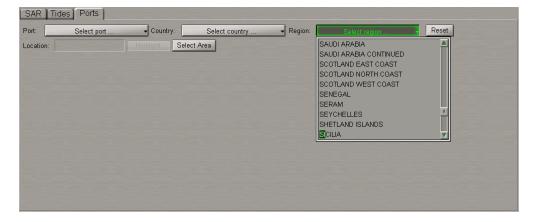
Press left trackball button or <Enter> key. The information on the selected port will be displayed on the page.

YOKOHAMA ion: 35°27 N 139°35 E	Country: J: Highlight Select Area	apan	Region:	JAPAN Reset
neral info Facilities & services				
Harbour	Entrance restrictions		Formalities	Quarantine
ype: coastal breakwater	Depths:	O Tide	• ETA message	O Derat certificate
Size: large	Main channel: 12.4 m - 13.7	Swell	• 1st port of entry	Pratique
Shelter: good	Cargo piers: 15.5 m - 16.7	lce	Load/offload	Tugs
Pilotage	Oil terminal: 18.5 m - 19.8	Other	Wharves	○ Salvage
O Compulsory	Anchorage: 17.0 m - 18.2	O Ovhd. Lts.	C Anchor	• Assist
O Available			C Med moor	
Advisable	Mean level of tide: 1.2 m		C Beach moor	
🔿 Local assistance	Max. size vessel: over 152 r	n in length	O Ice moor	

Read the necessary information (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7,* section *Ports*). For obtaining information on other port, press Reset button and repeat procedure.

Obtaining Information by the Region Name

Press Region button. Type the first letters of required region or select it from list by the cursor.



Press left trackball button or <Enter> key. Press **Port** button. In this case, the list displays ports belonging to selected region. Type the first letters of port name or select the port from list by the cursor.

SAR	Tides Ports						
Port:	Select port	Country:	lta	ly	Region:	SICILIA	Reset
Locatio	AUGUSTA CATANIA FAVIGNANA GELA GIOIA TAURO LICATA MARSALA MAZARA DEL VALLO MESSINA MILAZZO		ect Area				

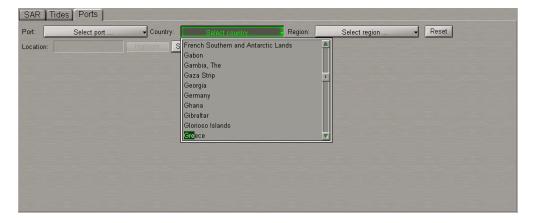
Press left trackball button or <Enter> key. The information on the selected port will be displayed on the page.

MESSINA	Country: Italy		Region: S	SICILIA Reset						
ation: 38°12 N 015°34 E	Highlight Select Area									
General info Facilities & services										
Harbour	Entrance restrictions		Formalities	Quarantine						
Type: coastal natural	Depths:	Tide	• ETA message	O Derat certificate						
Size: medium	Main channel: 22.8 m - over	Swell	• 1st port of entry	Pratique						
Shelter: good	Cargo piers: 22.8 m - over	lce	Load/offload	Tugs						
Pilotage	Oil terminal: 20.1 m - 21.3	Other	Wharves	C Salvage						
Compulsory	Anchorage: 10.9 m - 12.1	Ovhd. Lts.	Anchor	Assist						
O Available			C Med moor							
O Advisable	Mean level of tide: unknown		C Beach moor							
○ Local assistance	Max. size vessel: over 152 m in	length	C Ice moor							

Read the necessary information (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7*, section *Ports*). For obtaining information on other port, press Reset button and repeat procedure.

Obtaining Information by the Country Name

Press Country button. Type the first letters of required country or select it from list by the cursor.



Press the left trackball button or <Enter> key. Press **Port** button. In this case, the list displays ports belonging to selected country. Type the first letters of port name or select the port from list by the cursor.

rt: Select port	Country:	Greece	Region:	Select region 🗸	Reset
catio ORMOS VATHI	GR 🔺 nt 🛛 Select	Area			
OROPOS	GR				
PACHI OIL TERMINAL	GR				
PALIOURION	GR				
PARALION ASTROS	GR				
PAROS	GR				
PATRAI	GR				
PERAMA	GR 💾				
PILION	GR				
PIRAIEVS	GR 🔽				

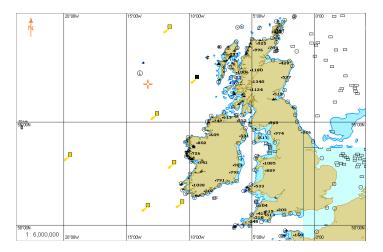
Press left trackball button or <Enter> key. The information on the selected port will be displayed on the page.

ort: PIRAIEVS	Country: Gre	ece	Region: GREECE	EAST COAST Reset	
ocation: 37°56 N 023°39 E	Highlight Select Area				
General info Facilities & services					
Harbour	Entrance restrictions		Formalities	Quarantine	
Type: coastal breakwater	Depths:	Tide	• ETA message	O Derat certificate	
Size: large	Main channel: 22.8 m - over	Swell	• 1st port of entry	O Pratique	
Shelter: excellent	Cargo piers: 9.4 m - 10.6 m	Ice	Load/offload	Tugs	
Pilotage	Oil terminal: 9.4 m - 10.6 m	Other	Wharves	Salvage	
Compulsory	Anchorage: 10.9 m - 12.1	O Ovhd. Lts.	C Anchor	Assist	
Available			Med moor		
Advisable	Mean level of tide: unknown		C Beach moor		
C Local assistance	Max. size vessel: over 152 m	in length	C Ice moor		

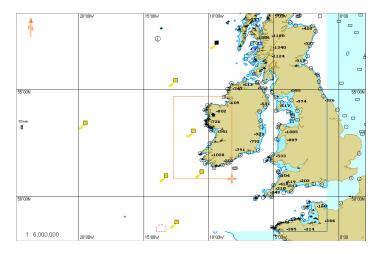
Read the necessary information (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7*, section *Ports*). For obtaining information on other port, press Reset button and repeat procedure.

Obtaining Information by the Cursor Position on the Chart Panel

Press Select Area button. Position the graphic cursor, which will appear, in the corner of the required chart area.



Press the left trackball button. Select the required chart fragment by moving the cursor with the trackball.



Press the left trackball button to exit from the graphic cursor mode. Press **Port** button. In this case, the list displays ports belonging to selected area. Type the first letters of port name or select the port from list by the cursor.

SAR	Tides Ports						
Port:	Select port		Country:	Ireland	Region:	IRELAND	Reset
Locatio	CORK	EI 🔺	N 007°50 W				
	CROOKHAVEN	EI					
	FENIT	EI					
	FOYNES	ELT					
	GALWAY	EI					
	GLANDORE	EI					
	GLENGARIFF	EI					
	KINSALE	EI					
	LIMERICK	EI					
	SKULL	EI 🔽					

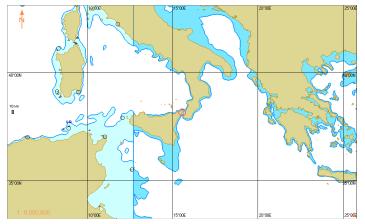
Press left trackball button or <Enter> key. The information on the selected port will be displayed on the page.

t: LIMERICK	Country:	eland	Region: IF	RELAND Reset
ocation: 52°40 N 008°38 W	Highlight Select Area			
General info Facilities & servi	ces			
Harbour	Entrance restrictions		Formalities	Quarantine
Type: river tide gate	Depths:	O Tide	• ETA message	O Derat certificate
Size: medium	Main channel: 1.8 m - 3.0 m	Swell	• 1st port of entry	Pratique
Shelter: good	Cargo piers: 1.8 m - 3.0 m	Ice	- Load/offload	Tugs
Pilotage	Oil terminal: 12.4 m - 13.7	O Other	• Wharves	○ Salvage
Compulsory	Anchorage: 6.4 m - 7.6 m	Ovhd. Lts.	C Anchor	O Assist
Available			O Med moor	
O Advisable	Mean level of tide: 4.3 m		O Beach moor	
C Local assistance	Max. size vessel: over 152	m in length	C Ice moor	

Read the necessary information (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7,* section *Ports*). For obtaining information on other port, press Reset button and repeat procedure.

Quick Search for Selected Port

Select the necessary port as described above. Press Highlight button.



The selected target will be displayed in the center of the Chart panel highlighted with a flashing circle.

Obtaining NAVTEX Information

Open the Navtex panel by selecting the appropriate item of the Tasks List menu in the tabs zone of the ECDIS

task screen.



See document Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7, section NAVTEX Messages.

Co	mmands:				Navtex Out Monitor Delete Delete till: 12	2-12-15 11:27		Print			
Filt	er:	ON	St	ations	✓ Subjects ✓ Max error rate = 100% ✓			Find			
	Date Time	Stn	Subj	Serial Num.	Text	Text Err Rate					
!	07.09.11 21:23:30	Т	в	84	071800 UTC SEP BALTIC SEA HETEO WARNINGS						
!	09.09.11 05:24:25	I.	Α	30	090340 UTC SEP DAN*SH NAV WARN 297						
1	09.09.11 05:25:11	1	Α	29	1919 U*C SEP 1 %						
-	09 09 11				250*00 LITC ALIG						
	eceived: 09. bject: A -		tional w	arning	Station: I	,0	xamined rotected				
Subject A - navigational warning Station: I O Danger Protected 090340 UTC SEP DAN*SH NAV WARN 297 Latitude Longitude THE SOUND THE LIGHT MIDDELGRUNDS FORT W IS UNLIT. **N 55-43.3 N 012-39.9 E 1 55° 43.300 N 012° 39.900											

Work with NAVTEX Message Database

NAVTEX messages from the database are shown in the Message Table, filter settings taken into account.

С	ommands:	Upda	ite Data	abase	Nav	tex Out Monitor Delete Delete till: 10-12-06 08:18		Print	
Fi	ilter. ON Stations Subjects Max error rate = 100% -								
	Date Time	Stn	Subj	Freq	Serial Num.	Text	Err. Rate	Status 🔺	
!	22.11.06 11:29:24	с	L	490	34	131730 UTC NOV 06 UKRAINE COASTAL WARNING 613/06 ODESA	0%	T T	
Γ	22.11.06 11:29:34	с	L	490	30	101520 UTC NOV 06 *UKRAINE*COASTAL WARNING 609/06 ODESA	14 %	ļ	
1	22.11.06 11:29:44	с	L	490	15	031430 UTC NOV 06 UKRAINE COASTAL WARNING *TIJ**EZ**ZESA	1%		
	22.11.06 11:29:44	С	L	490	7	*****-*75: ,9= 06 UKRAINE COASTAL WARNING 575/06 ODESA	3%		
	22.11.06	с	L	490	6		2%		

The Message Table contains the following message parameters fields:

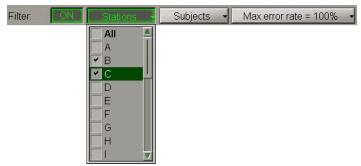
- !- "Danger" message attribute or empty field (set automatically on the messages containing coordinates);
- Date/Time message reception date/time (UTC from MFD);
- Subj message subject (identifiers are taken from the message);
- Freq frequency (kHz) which the message was received on (for the NMEA NAVTEX only);
- Serial Num. message number from the NAVTEX message;
- Text the first two lines of a NAVTEX message;
- Err. Rate message reception error transmitted by the NAVTEX receiver for NMEA NAVTEX or calculated by MFD for ASCII NAVTEX;
- Status message status ("Protected" or empty field).

For the message sorting by one of parameters, press the appropriate button with the column name in the Message Table (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7*, section *NAVTEX Messages*).

To turn on the filter, press the ON button in the Filter row:

```
Filter: ON Stations - Subjects - Max error rate = 100% -
```

To make the filter settings, press the **Stations** button. The **All** checkbox is checked by default, and the Message Table shows messages from all the stations. Check the checkboxes of stations, whose messages should be displayed in the Message Table. The Message Table will display NAVTEX messages from the specified stations regardless of the NAVAREA area:

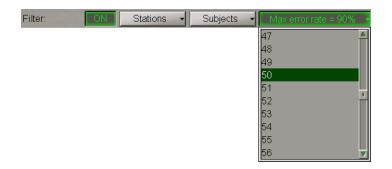


Use a similar procedure to make settings for messages filtration by the following parameters:

 Subjects – if message subjects from the offered list are checked, messages with these subjects are displayed. In this case, it is impossible to turn off displays with message subjects A, B, D and L (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7*, section *NAVTEX Messages*, paragraph *NAVTEX Messages Database*);

Filter: ON Stations -	Subjects - Max error rate = 100% -
	All 🔺
	C - ice report
	E - meteorological forecast
	F - pilot service message
	G - AIS messages
	H - LORAN-C message
	I- OMEGA message
	J- SATNAV messages
	K - others electronic navaid messages
	V - special services - allocation by NAVTEX panel

• Max error rate – messages whose reception error rate exceeds the set value are not displayed. Setting of the maximum error rate at 100% means the display of all the messages.

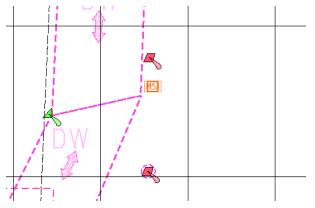


The Message Table will display messages to match all the three settings (see document *Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7,* section *NAVTEX Messages*).

To promptly find a message in the NAVTEX message table, corresponding to the NAVTEX message symbol on the Chart panel, press the Find button in the top right corner of the panel.

Со	mmands:		te Data		Navtex Out Monitor Delete Delete till: 17-11-13 09:06		Print		
Filt		Find							
	Date Time	Stn	Subj	Serial Num.	Text	Err Rate	Status 🔺		
	09.12.09 08:24:43	с	L	0 %					
1	09.12.09 08:28:47	с	А		090820 UTC DEC 09	0 %			
!	20.05.09 13:44:02	L	А	37	090150 NAVTEX-HAMBURG (NCC) NAUTISCHE WARNNACHRICHTEN FUER DIE WESTLICHE UND SUED	-			
	18 12 07				081930 LITC OCT				
		.05.09 naviga	tional v	varning		amined otected			
NÆ	D90150 NAVTEX-HAMBURG (NCC) NAUTISCHE WARNNACHRICHTEN FUER DIE WESTLICHE UND SUEDLICHE OSTSEI 2 55° 00.400 N 011° 12.400 E 2 55° 00.400 N 013° 09.300 E								
NZ	01115 UTC AUTISCHE	WARNN	ACHRI	CHT NF			0 00.000 L		
	JEBECKER INTTTONSF		-	PETS 1	70N D 5 SM IM 54-03 ON 011-12 4R Add Dele				

Position the acquisition marker which will appear on the Chart panel on the necessary NAVTEX message symbol.



Press the left trackball button.

Со	mmands:	Upda	te Data	base	Navtex Out Monitor Delete Delete till: 17-11-13 09:06		Print
Filt	er:	ON	St	ations	✓ Subjects ✓ Max error rate = 100% ✓		Find
	Date Time	Stn	Subj	Serial Num.	Text	Err Rate	Status
!	11.09.11 05:24:56	I	А	34	091349 UTC SEP DANISH NAV WARN 3*1	3%	
!	18.01.09 20:53:18	J	Α	90	301158 UTC NOV	0 %	
!	20.05.09 13:44:24	D	A	31	2809 1315UTC SPTEMBER 06 ISTANBUL TURK RADIO	0 %	Protected
		01.09 naviga	tional v	varning		amined	Apply
301158 UTC NOV Image: Construct of the image: Construct							
	NGEROUS 2				Add Dele		Highlight

The NAVTEX message corresponding to this symbol will be shown in the table with appropriate highlighting.

To update the NAVTEX message database, press the Update Database button.

Note: The database is updated automatically at a rate (5 to 60 minutes) set in the System Configuration utility at the time of installation (see document *Multi-Functional Display (v. 3.00.340)*. *Installation Guide Part I, Chapter 2,* section *MFD Configuration*, paragraph *MFD Settings*).

Press Navtex Out Monitor to receive messages from the NAVTEX receiver without taking into account the filter set in the receiver.

Attention! The Navtex Out Monitor button should always be depressed. As filter settings are changed in the NAVTEX receiver, the button will be released, and it is necessary to press it again.

To delete one or several messages from the database, select them with the cursor in the Message Table. To select several messages required to be deleted, select them keeping <Ctrl> key depressed. To select several messages in a row, specify the first and the last message keeping <Shift> key depressed.

	Date Time	Stn	Subj	Freq	Serial Num.	Text	Err. Rate	Status 🔺	-
	21.11.06 08:28:23	A	A	490	47	311822 LMT EKIM 06 SAMSUN TURK RADIO	1%		
	21.11.06 08:28:48	A	А	490	36	090800 HAZ/06 SAMSUN TURK RADIO	1%	<u> </u>	
	21.11.06 08:28:58	A	A	490	30	091729 LMT EKIM 06 SAMSUN TURK RADIO	1%		
	21.11.06 08:28:58	в	L	490	68	260900 UTC OCT 06 *7(4-8,3 :9-'5-) 2-4,8, 566/06 KERCH*	11 %		
- 6	21 11 06					131845 UTC NOV 06			1

Press the Delete button: messages will be deleted.

To delete messages received before some certain moment of time, position the cursor in the input window to the right of the **Delete till** button and make a double click on the left trackball button.

Commands:	Update Databa	e Navtex Out Monit	or Delete	Delete till:	10-12-06 10:11	Print
Filter:	ON Static	is 🖣 Subjects 🗸	Max error rate = 1	00% 🗸		

Set the required value by rolling the trackball, or enter it from the keyboard. Press the right trackball button and select **Apply**.

Commands:	Update	e Database	Nav	ex Out Mo	nitor	Delete	Delete till:	22-11-06 11: <mark>28</mark>	Apply	Print
Filter:	ON	Stations	-	Subjects	- N	/lax error rate = 1	100% 🚽		Cancel	

Press the Yes button to confirm the deleting of messages.



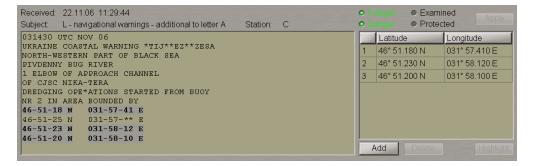
Messages will be deleted.

Note: If a message has the "Protected" status, the **Delete** button will be inactive, and you will not be able to delete the message from the database. When several messages are deleted, messages with the "Protected" status will not be deleted.

To print out one or several messages from the database, select them with the cursor in the Message Table in the manner specified above, and press the **Print** button.

Work with Messages

To work with messages, use the bottom part of the **Navtex** panel. Use the cursor to select the necessary message in the Message Table, the text of the message will be shown in the bottom part of the **Navtex** panel.



Setting NAVTEX Message Status and Attributes

Check the Examined Examined checkbox to change the message status to "Examined". This means that the user has read the NAVTEX message. NAVTEX message symbols from a message with the "Examined"

status will be displayed on the ECDIS task screen in the following form: MSI.

Check the **Protected** Checkbox to change the message status to "Protected". This means that the user will not be able to delete this NAVTEX message.

The "Danger" Danger attribute is set by default if there is at least one pair of valid coordinates in the NAVTEX message.

Check the **Polygon Polygon** checkbox to set the "Polygon" attribute. This is only possible for the messages in which more than one pair of valid coordinates is available.

After making all the settings, press the activating Apply button (see document

Multi-Functional Display (v. 3.00.340). Functional Description, Chapter 7, section NAVTEX Messages).

Editing Coordinates in NAVTEX Message

1. Position the cursor on the coordinates which should be edited, in the right bottom box of the **Navtex** panel and make a double click on the left trackball button.

	Latitude	Longitude
1	46°51. <mark>180</mark> ' N	031° 57.410 E
2	46° 51.230 N	031° 58.120 E
3	46° 51.200 N	031° 58.100 E

Set the required value by rolling the trackball, or enter it from the keyboard. Press the right trackball button and select **Apply**.

90' N 🛛 🖌	0	
	Apply	10 E
30 N 🛛 🕻		20 E
00 N 0	31° 58.1	00 E

Press the left trackball button again: the edited value will be set. The coordinate value in the window is shown in italic indicating that the field has been edited by the user.

	Latitude	Longitude
1	46° 51.190 N	031° 57.410 E
2	46° 51.230 N	031° 58.120 E
3	46° 51.200 N	031° 58.100 E

2. To add a new NAVTEX message symbol, position the cursor on the symbol coordinates, which will be followed by the new symbol coordinates in the table (this is important for the subsequent setting of the "Polygon" attribute) and press the left trackball button. Press the Add button. A new line containing the same coordinates as the old ones will be displayed.

1 4		Longitude
	46° 51.190 N	031° 57.410 E
2 4	46° 51.190 N	031° 57.410 E
3 4	46° 51.230 N	031° 58.120 E
4 4	46° 51.200 N	031° 58.100 E

Edit the coordinates as described above. The new coordinate values in the window are shown in italic indicating that the field has been edited by the user.

3. To delete a NAVTEX message symbol, position the cursor on its coordinates and press the left trackball button.

	Latitude	Longitude
1	46° 51.190 N	031° 57.410 E
2	46° 51.190 N	031° 57.410 E
3	46° 51.230 N	031° 58.120 E
4	46° 51.200 N	031° 58.100 E

Press Delete button.

	Latitude	Longitude
1	46° 51.190 N	031° 57.410 E
2	46° 51.230 N	031° 58.120 E
3	46° 51.200 N	031° 58.100 E

The NAVTEX message symbol coordinates will be deleted from the table.

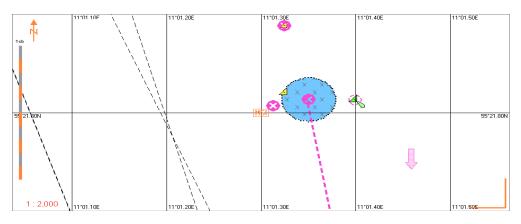
After making the changes, press the Apply button which will be activated.

Fast Search for NAVTEX Message Symbol on the Chart Panel

Position the cursor on the coordinates of the NAVTEX message symbol which should be found and press the left trackball button.

	Latitude	Longitude
1	46° 51.180 N	031° 57.410 E
2	46° 51.230 N	031° 58.120 E
3	46° 51.200 N	031° 58.100 E

Press Highlight button.



The selected target will be displayed in the centre of the Chart panel, highlighted with a flashing circle.

Obtaining Information on Own Ship AIS Data

Press the button with the name of the set display in the **Display Panel** window of the Control panel.

System Information
AIS Messages
Checklist
Environment Data
lce charts
Manually Fix Position
Monitoring and Advisor
Navigator
Parallel Index Lines
Precision Instruments
Radar Settings
Route Data
Sensor Data/Status
Special Purpose Objects ^V
Sun / Moon
System Information
TRIAL/TGT Simulator
Targets

In the list, which will open up, select Sensor Data/Status line and press the left trackball button.

Use the tab in the top part of the **Sensor Data/Status** display panel which will open up, to switch to the **AIS VDL Data** page.

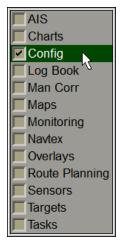
Sensor Data/Status 🛛 🚽 🗗					
Primary Stat	us AIS VDL Data				
Source	Int (D-GPS)				
UTC	Status OK				
Latitude	50° 01.092 N				
Longitude	000° 59.656 E				
COG	035.4°				
SOG	12.0 kn				
HDG	035.0°				
ROT	12º /min port				

AIS VDL Data display is intended for the display of data broadcast by the transponder. The display contains the following data:

- Source current positioning system used by the transponder: Internal Int or External Ext (D-GPS); the display of the positioning system indicator in the green colour means that the RAIM (Receiver Autonomous Integrity Monitoring) GNSS receiver is in use;
- UTC UTC synchronising status in the AIS transponder; it is determined strictly by the Internal GPS;
- Latitude latitude value supplied by the positioning system used by the transponder;
- Longitude longitude value supplied by the positioning system used by the transponder;
- COG value of course over the ground supplied by the positioning system used by the transponder;
- SOG value of speed over the ground supplied by the positioning system used by the transponder;
- HDG heading value supplied to the transponder by the course detection (gyro) system;
- ROT values of direction and rate of turn supplied to the transponder by the Rate-of-Turn sensor.

Obtaining Information on Currently License

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



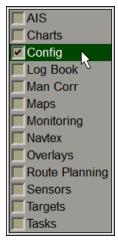
Use the tab in the top part of Config panel, which will open up, to switch to License Info page.

General Time Zone License Info PRODUCT LICENSE INFORMATI	COM Trace Units Ship Settings ON	
License expiration date: Copy registration number: Dongle number: ARCS USER PERMIT:	DFA5-5010-0000-0B40 1700601	
ARCS chart format DNC chart format Raster Seafarer chart for	- Enabled - Enabled mat - Enabled	

License Info page is intended for the display of data on the MFD software product license and the functions allowed to be used (licensed). This page also specifies the installed MFD version. For update license see document *Multi-Functional Display (v. 3.00.340)*. Utilities, Chapter 8.

Obtaining Information on Input/Output Messages

Open **Config** panel by selecting the appropriate line of **Tasks List** menu in the tabs zone of the ECDIS task screen.



Use the tab in the top part of Config panel, which will open up, to switch to COM Trace page.

General Radar settings Ti	me Zone License Info COM Tra	e Units
Connected sensors:	Port:	Trace:
POS1 gps1	WS2 COM 6	Sensor Data
POS1 gps1	WS1 COM 6	
POS1 gps1	WS4 COM 6	
POS2 gps2	WS2 COM 7	
POS2 gps2	WS1 COM 7	
POS2 gps2	WS4 COM 7	
LOG1 log	WS2 COM 11	
LOG1 log	WS1 COM 11	
LOG1 log	WS4 COM 11	Clear trace • Input filter Record COM trace

This page is intended for displaying and recording of the IEC 61162-1, 61993-2, and proprietary formats and similar text messages/sentences provided to the MFD from the external sensors and displaying of the sentences transmitted by the MFD to the external devices.

The page contains the following elements:

- Connected sensors group of buttons corresponding to the external devices connected via the System Configuration utility (see document *Multi-Functional Display (v. 3.00.340). Installation Guide Part I, Chapter 2,* section *MFD Configuration*, paragraph *Sensors Settings*); the buttons allow selection of a sensor or external device, which the exchange of messages with is shown on the data display window;
- Port group of indicators of the MFD COM ports, which the sensors and external devices are connected to;
- Clear trace to clear display window;
- Input filter to turn on the display of messages supplied to the MFD from the external sensors;
- Output filter to turn on the display of messages transmitted by the MFD to the external devices;
- Record COM trace recording of the message stream from all the WS COM ports to comtrace. ______file;
- Data display window:
 - Sensor direction and source of the message stream;
 - Data messages.

Display of Data Flow Between the MFD and Different External Devices

To display the traffic between the MFD and the necessary external device, press the button with the name of this device in the **Connected sensors** column.

POS1 (pp1) WS2 COM 6 P Percor Dota POS1 (pp1) WS1 COM 6 > POS1 (pp1) \$42465,19156.73,00.00.0.0,00,0,"*60 > <t< th=""><th>Connected sensors:</th><th>Port:</th><th></th><th>Trace:</th><th></th></t<>	Connected sensors:	Port:		Trace:	
POS1 gps1 >POS1 gps1 \$POS1 gp	POS1 and	WS2 COM 6		Sensor	Data
POS1 gps1 WS4 COM 6 POS2 gps2 WS2 COM 7 POS2 gps2 WS4 COM 7 POS2 gps2 WS4 COM 7 POS2 gps2 WS4 COM 7 POS2 gps2 WS4 COM 7 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1 WS4 COM 7 \$POS1 gps1 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1 POS1 gps1 \$POS1 gps1 POS2 gps2 WS4 COM 7 POS1 gps1 \$POS1 gps1	roargpsi	1102 0011 0		> POS1 gps1	\$GPGB5,134516.73,00.0,00.0,,02,,,*6D
POS1 gps1 >POS1 gps1 \$POS1 gp	POS1 gps1	WS1 COM 6		> POS1 gps1	\$GPGGA,134516.73,2655.31024,5,05334.66520,E,1,04,1.0,,,,,10.0,0000*5D
Wise CoM 7 > Post gps1 \$ePrifs,059,6,7,17,8,N,32,9,K,A*4C Pos2 gps2 WS1 COM 7 > Post gps1 \$ePrifs,157,30,0,00,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	01			> POS1 gps1	\$GPGLL,2655.31024,5,05334.66520,E,134516.73,A,A*72
POS2 gps2 WS2 COM 7 > POS1 gps1 \$GP685,134517,73,000,00,0,04,,,*6A POS2 gps2 WS1 COM 7 > POS1 gps1 \$GP646,1265,30779,06334,67021,6,1,04,1,0,,,,10,0000*57 POS2 gps2 WS4 COM 7 > POS1 gps1 \$GP641,2655,30779,06334,67021,6,1,04,1,0,,,,10,0000*57 POS2 gps2 WS4 COM 7 > POS1 gps1 \$GP641,2655,30779,0,0334,67021,6,1,04,1,0,,,,10,0,000*57 POS2 gps2 WS4 COM 7 > POS1 gps1 \$GP641,2655,30779,0,0334,47021,6,1,041,73,0,4*78 POS2 gps2 WS4 COM 7 > POS1 gps1 \$GP641,2455,30779,0,00,00,,07,,,766 POS2 gps2 WS2 COM 11 > POS1 gps1 \$GP6451,134517,3,00,00,00,,07,,766 POS2 gps2 WS2 COM 11 > POS1 gps1 \$GP6451,134517,3,00,00,00,,07,,766	POS1 gps1	WS4 COM 6		> POS1 gps1	\$GPDTM,W84,,,,,,W84*4A
Notes gene WS1 COM 7 Second gene			- +	> POS1 gps1	\$GPVTG,059.6,T,,,17.8,N,32.9,K,A*4C
POS2 gps2 WS1 COM 7 > POS1 gps1 \$ dePGL1,2655,30779,5,08334,67021,E,134517.73,A,A*78 POS2 gps2 WS4 COM 7 > POS1 gps1 \$ dePOI1,West,Max,West,A7021,E,134517.73,A,A*78 LOG1 log WS2 COM 11 > POS1 gps1 \$ dePOI1,000,000,07,,766 > POS1 gps1 \$ dePoils,134518.73,00,000,0,07,,766 > POS1 gps1 \$ dePoils,134518.73,00,000,0,07,,766	POS2 gps2	WS2 COM 7		> POS1 gps1	\$GPGB5,134517.73,00.0,00.0,,04,,,*6A
POS2 gps2 WS4 COM 7 >POS3 gps1 >Post gps1 (%) Post gp1 (%) Post gp1 (%) Post gp1 (%) Post gp1 (%) Post gp1 (%) Post gp1	0000 0	W01 00M 7		> POS1 gps1	\$GPGGA,134517.73,2655.30779,5,05334.67021,E,1,04,1.0,,,,,10.0,0000*57
POS2 gps2 WS4 COM 7 > POS1 gps1 \$GPVTG,060.2,7,,17.8,N,32.9,K,A^42 LOG1 log WS2 COM 11 > POS1 gps1 \$GPVTG,060.2,7,,17.8,N,32.9,K,A^42 > POS1 gps1 \$GPVTG,060.2,7,,17.8,N,32.9,K,A^42 > POS1 gps1 \$GPVTG,060.2,7,,17.8,N,32.9,K,A^42	PUSZ gpsz	WST COM 7		> POS1 gps1	\$GPGLL,2655.30779,5,05334.67021,E,134517.73,A,A*78
>POS1 gpc1 \$POS1 gpc1 \$SPORT_000,00,0,0,7,768 LOG1 log WS2 COM 11 \$POS1 gpc1 \$SPORT_000,00,0,0,7,766 >POS1 gpc1 \$SPORT_0108,1873,2585,30539,47524,51,104,1,0,,,,10,0,000*5F	DOC2 app2	WS4 COM 7		> POS1 gps1	\$GPDTM,W84,,,,,,W84*4A
LUGI 10g WS2 COM 11 > POSt gs1 #5PG61,1837,3285,3558,5334,6754,6,1,04,1,,10,0,000%9	POSE gpse	1134 COM 7			\$GPVTG,060.2,T,,,17.8,N,32.9,K,A*42
	LOG1 log	WS2 COM 11			
LOGT log WS1 COM 11 >POS1 gps1 \$GPGLL2655.00538,5,05334.67524,E,134518.73,A,A*70					
	LOG1 log	WS1 COM 11		> POS1 gps1	\$GPGLL,2655.30538,5,05334.67524,E,134518.73,A,A*70

The data flow will be shown in the Trace window. The Input filter and Output filter checkboxes are turned on by default, so the Trace window shows the flow of both incoming and outgoing MFD data. To display the data flow in one direction only, turn off the pertinent filter.

Note: You can simultaneously monitor the data flow from several external devices by pressing the appropriate buttons.

To clear the Trace window, press the Clear trace button.

COM Trace Record

Attention! For each WS, a comtrace. _____ file can be recorded for the COM ports of this WS only.

Press the Record COM trace button.

💑 COM Trac	e				•×
Ports list: COM1 COM2 COM5 COM6 COM7 COM8 COM9 COM10	Map to:	Port Data			
COM1	Null -				
COM2	Null -				
COM5	Null -				
COM6	Null -				
COM7	Null -				
COM8	Null -				
СОМ9	Null -				
COM10	Null -				
COM11	Null -	Clear	Duration (hh:mm:ss): 00:30:00	Start record	Close
				Settings	

In the **COM Trace** window which will open up, the **Ports** list column contains all the connected COM ports of the WS in question. Next to the port which the message stream should be recorded to **comtrace**.______ file for, press the button in the **Map** to column.

🖧 COM Trac	e				▲ ×
Ports list:	Map to:	Port Data			
	Null				
COM2	Null VIRT1				
COM5	VIRT2				
COM6					
COM7	VIRT5 VIRT6				
COM8					
СОМ9					
COM10	Null				
COM11	Null -	Clear	Duration (hh:mm:ss): 00:30:00	Start record	Close
				Settings	

From the pull-down list, select the virtual VIRTX port for the given COM port.

Note: For each COM port, an individual VIRT port should be selected.

For each COM port which the comtrace._____ file will be recorded for (e.g. COM1, COM5 and COM8), set the corresponding virtual port (VIRT1, VIRT2 and VIRT3).

In the Ports list column, press the buttons with the names of the ports which the comtrace._____ file will be recorded for: the data flow will be shown in the data display window. Press the Start record button.

COM Trac	e	_				-
Ports list:	Map to:		Port	Data		A
	VIDTA		< COM1	\$NSLED,0102081,0002000*58		
COMI	VIRT1	-	> COM8	\$HEROT,036.7,A*29		
COM2	Null	-	> COM8	\$HEHDM,322.05,M*19		
0.0.1112			> COM8	\$HEHDT,321.40,T*1B		
COM5	VIRT2	-	< COM1	\$NSLED,0102081,0002000*58		
			< COM1	\$N5LED,0102081,0002000*58		
COM6	Null		> COM8	\$HEROT,036.7,A*29		
COM7	Null	_	> COM8	\$HEHDM,322.12,M*1F		
COMM	INUII		> COM5	\$NVDPT,45.0,0.0*69		
COM8	VIRT3	-	> COM8	\$HEHDT,321.46,T*1D		
	-		> COM8	\$HEROT,036.7,A*29		
COM9	Null	-	> COM8	\$HEHDM,322.17,M*1A		1
001410	N. II					
COM10	Null	7				
COM11	Null	-	Clear	Duration (hh:mm:ss): 00:30:00	Start record	Close

The comtrace._____ file recording will be made from all the turned on COM ports during the time specified in the **Duration** window (30 minutes by default). If it is necessary to interrupt the recording, press the **Start record** button again. After the end of the recording, the **Start record** button will be automatically disabled.

For the further use, copy the comtrace. ______ file from the C:\Transas\ComTrace.FA directory onto the external carrier by using the Data Tool utility (see document *Multi-Functional Display (v. 3.00.340). Utilities, Chapter 2*, section *Software Description*, paragraph *Data Tool Utility Window*, under *Internal Group*).

Note: When a new comtrace._____ file is recorded, the old file in the *C*:*Transas**ComTrace.FA* directory will be rewritten.

To cleat the data display window, press the Clear button.

To close the COM Trace window, press the Close button.

For additional settings of the comtrace._____ file recording, press the Settings button.



Press the OK button.

CServer	x
Wrong passwore	4!
ОК	

Note: With the use of the password by the service engineer, more advanced settings of the comtrace.______ file recording can be made, normally unavailable to the ordinary user remaining grayed.

Press the **OK** button.

Comtrace output			ОК
"First Aid" Mode			Cancel
Writing To Folder:			
Additional settings			
Show Input / Output Checkboxes			
O Unlimited	Set duration (hh:mm:ss):	30:00	

To record the file direct to onto the external carrier, press the Writing To Folder button and specify the path to the external carrier.

To display the buttons for turning on the filter for the input/output messages when recording the comtrace._____ file, in the **Options** window check the **Show Input/Output Checkboxes**.

In the Set duration input window, set the duration of recording the comtrace._____ file (not more than 30 min).

Multi-Functional Display ECDIS User Manual

Version: 3.00.340 Transas MIP Ltd. Phone: +46 31 769 56 00. E-mail: info@transas.com 24/7 Support: +46 771 460 100 WEB: www.transas.com

