

TRANSAS ECDIS WORKBOOK

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Note: The information contained herein is subject to change without notice. Some information contained in this manual may also be inaccurate due to the changes in the product since this version of the manual was completed. As a reference for the correct handling of the product the original documentation of the product should be used.

Table of Contents

Transas Navi-Sailor 4000 & ECDIS Demo	5
Introduction	5
Types of electronic charts	6
Questions 1	7
Basic Functions.....	8
Monitor & Keyboard	8
Display Modes	9
Cursor Modes	10
Numerical Entries	11
Exercise 1.....	12
Control Panel.....	13
Display Mode Panel Dropdown Menu	14
Setting Safety Parameters.....	15
Exercise 2.....	17
Alarms and Warnings	18
Customize the Display	21
Four shades vs. Two shade.....	23
Basic Navigational Functions.....	24
Questions 2.....	26
Route Planning	27
Questions 3	30
Exercise 3.....	31
Exercise 4.....	32
Exercise 5.....	33
Exercise 6.....	34
Route Monitoring.....	35
.....	37
Questions 4.....	37
Maps.....	38
Exercise 7.....	42
Risk of Overreliance	43
Questions 5.....	49
Chart Assistant	50

Introduction	50
How to do your settings	51
Install your Chart & License.....	53
Order Chart Licenses by Route.....	57
Update via CD.....	63
Obtaining Chart Correction	66
How to use the official chart corrections.....	68
Update via Email	69
Answers to Exercises and Questions.....	74
Questions 1	74
Exercise 1.....	74
Exercise 2.....	75
Questions 2	76
Questions 3	76
Exercise 5.....	77
Exercise 6.....	77
Questions 4	78
Questions 5	78

Transas Navi-Sailor 4000 & ECDIS Demo

Introduction

Purpose:

The main goal of this ECDIS Demo Workbook is to provide the vessel's crew with knowledge, understanding and proficiency in the use of Navi-Sailor 4000 ECDIS and Chart Assistant Utility. It is designed for getting started with the Basic Functions of Navi-Sailor 4000 Software and train usage with the Try ECDIS Demo software.

Entry Standards:

The workbook is designated for nautical officers and other persons with responsible duties in navigation work.

Those wishing to work with this material should have experience in performing chart and radar work and should be able to practice all usual tasks concerning standard navigational procedures and equipment. They should be familiar with standard computer, including elements such as windows, trackballs, etc.

Types of electronic charts

There are different principal types of electronic charts on the market.

Raster (ARCS, Seafarer, BSB, NOS Geo):

A scanned paper chart is similar to a photograph (what you see is what you get).

Advantages:

- *Inexpensive to produce for the hydrographic offices*
- *Similar to paper charts in lookalike and presentation*

Disadvantages:

- *"Dead charts"*
- *Limited zoom-options*
- *Requires large memory capacity*
- *Expensive to correct. Correction of a chart requires the whole chart to be replaced(a lot data)*

Vector (TX-97, ENC, C-Map93, DNC, VPF):

Digitalized paper charts: every object is defined and grouped in layers that can be selected in ECDIS within set safety parameters.

Advantages:

- *Optional information (customized settings)*
- *Good zoom options*
- *Easy to correct. Only the actual corrected object needs to be sent / received.*
- *Requires little memory capacity (quick loading)*
- *Information can be added (files, pictures etc.)*

Disadvantages:

- *Expensive and time demanding production*
- *Layout can be a bit different from paper charts*

ENC-charts (Vector Charts):

The only approved chart type for an ECDIS system.

Official chart data supplied from the national hydrographic office in each country.

Distributed, validated and encrypted to S-63 by a few approved institutes (RENC).

The chart distributor (Transas) receives ENC data from the approved institute.

In return, the Hydrographic Office (HO) receives a royalty based on the number of sold charts.

The chart distributor must be certified by RENC.

There is a good coverage of ENC-charts today with the primary and important areas covered and the majority of the world will be covered within the next or the following years.

SENC (System ENC):

SENC is an internal system format of ENC's that is unique for each ECDIS vendor (e.g. Transas, Furuno, Kelvin Hughes) and has its own SENC format.

Transas SENC can only be used in a Transas ECDIS just as Furuno's SENC only can be used in a Furuno ECDIS, etc.

Onboard conversion from ENC to SENC is very time-demanding and no errors can be corrected.

Transas converts the ENC data to Transas own SENC format and corrects occurred errors already before it reaches the end-user. From an end-user's point of view the distribution of official data in a SENC format has the major advantage that there is no compilation of data required onboard when installing the data in the ECDIS system.

Not only does this save time (reduces the installation and correction time due to a 40% reduction of data volume) but it also means that the navigator on the bridge is never faced with the problem of handling errors that may arise in a compilation process.

The Transas SENC distribution is type approved by the DNV and IC-ENC.

The SENC collections include the same ENC data as PRIMAR Stavanger and IC-ENC.

TX-97 is a Transas own chart format.

TX-97 charts are not official charts, even though the TX-97 is made of ENC-data and has the same accuracy, and cannot be used for paperless navigation.

Questions 1

1. Which chart type is similar to the traditional paper chart?
2. Which chart type is capable of activating chart based alarms?
3. It is stated as advantage of vectorized charts to have good zoom option! Think about possible disadvantages.

[Answers to the questions can be found on page 74](#)

Basic Functions

Monitor & Keyboard

The Monitor is divided in several parts which may be shown or disabled on the users' behalf. On 27" Wide Screen displays the Conning Panel is shown on the left side as default setting.

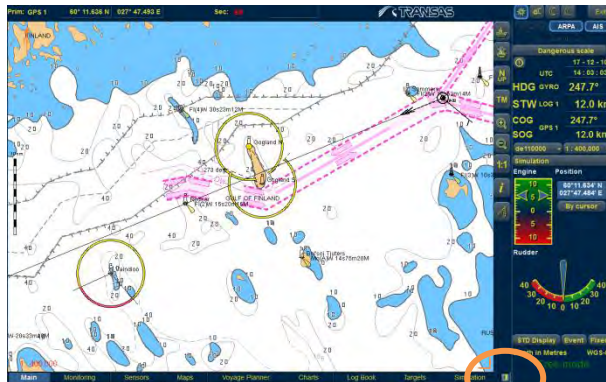
Conning Panel	Chart Panel Main	Control Panel	Chart Panel Main	Control Panel
	Chart Panel Dual or Functional panels		Chart Panel Dual or Functional panels	
	Tabs of Panels Switch		Tabs for Panels Switch	

The system has a keyboard and a trackball with left and right mouse button to operate the different functionalities. There are different short keys to access several major functions or ease the operators' tasks.

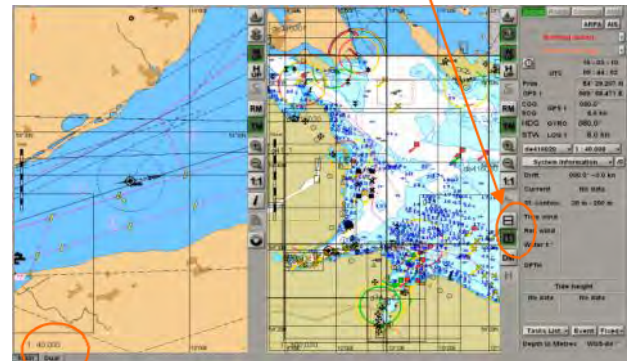
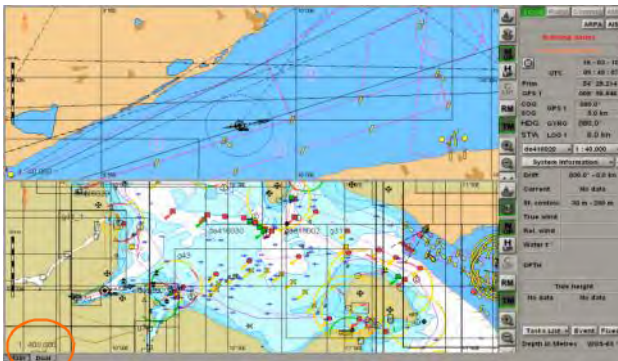


Display Modes

The look of the Display can be modified and should be customized due to the navigational status of the vessel and the intention of the operator.



To hide the Control Panel activate the field in the lower right corner of your display. Via the “Show Button” the Control Panel will be accessible again.

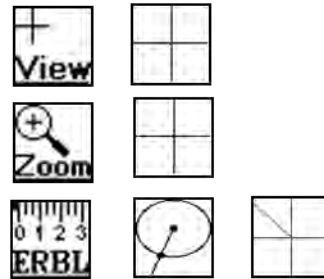


If working with a live running system the screen may be divided into two separate windows, by pressing the Dual Button on the left the chart panel.

Cursor Modes

To operate the Chart panel we have three different cursors forms with specific Functions.

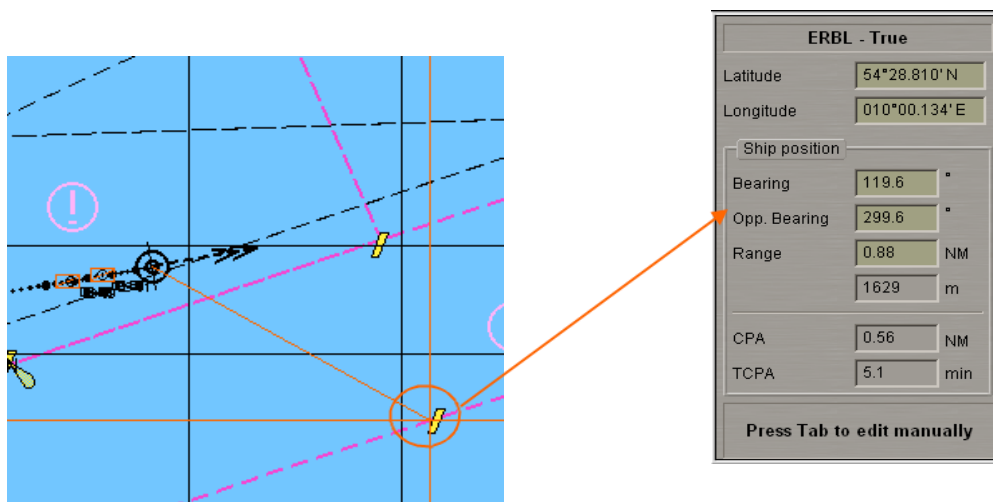
1. View Cursor
2. ZOOM Cursor
3. ERLB Cursor



To switch between the functionalities press the right mouse button. To activate the specific task in the chart panel push the left mouse button in the Chart panel.

Activated, the cursor will change its color and presentation. The cursor is now caught in the chart panel area. To leave the functionality, push the right mouse button and the cursor is free again.

When a special cursor is activated simultaneously the Information Window will appear on the lower right side of the ECDIS screen. This window gives the geographical Position of the cursor, Bearing and opposite Bearing and the Range as a minimum. Depending which functionality is activated there are more fields to operate. By pressing the TAB-Button you can type in values for the specific field.

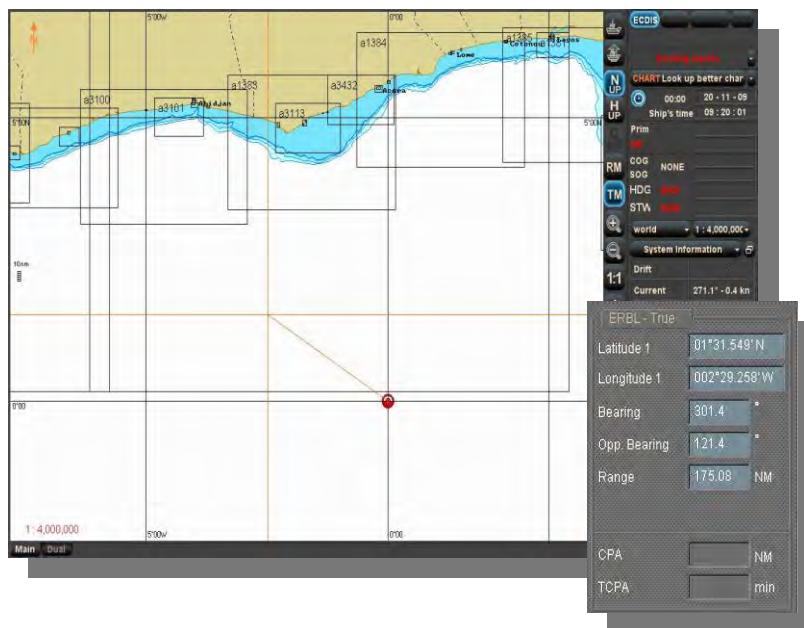
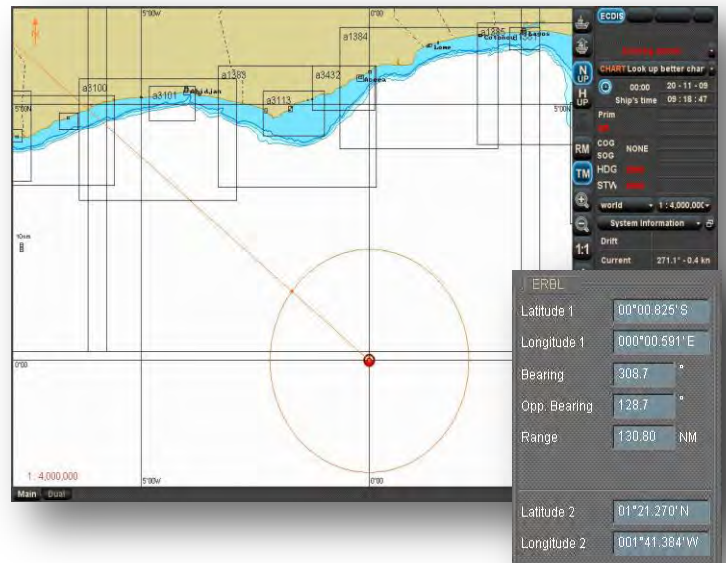


Numerical Entries

Whenever the Cursor is displayed orange coloured, there is the Information window opened on the right side.

The User is able to get access to that window by pressing the TAB key of the keyboard.

Now you may alter a certain value via the keyboard.



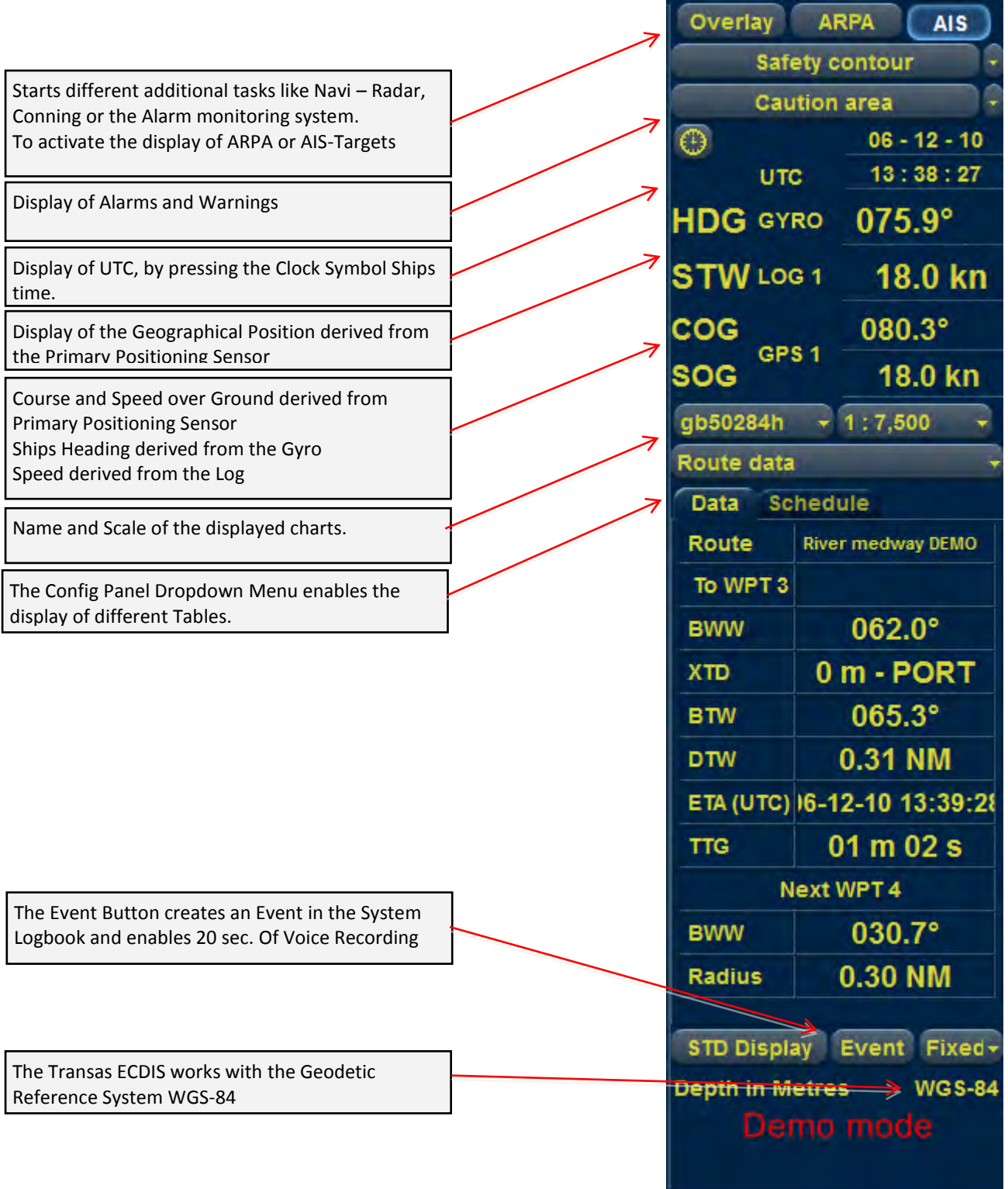
The specific Layout of the information Window will differ in accordance with the selected functionality the user selected.

Exercise 1

1. Activate the view cursor.
2. Enter the information window by pressing the TAB button.
3. Go to position 60°34.450' N 028° 25.390' E and watch how the cursor jumps to that position. You will find a Lighthouse there. Read out the information concerning this Lighthouse using the information cursor (Pick report). What can you find there?
4. Change to the zoom cursor and try how to handle by zooming in to a harbor starting from position 60° 04.791' N 029°31.080' E. Which harbor you can find in vicinity?
5. Change to the ERBL cursor and measure the distance to the buoy in Position 54° 37.692' N 007° 55.182' E. What is the distance and which buoy you can expect (use also the information button to find detailed information)?
6. Off center the ERBL cursor and measure the distance between two the buoy from Nr. 5 and the southern cardinal buoy in south easterly direction. How far is it and in which direction is it precisely?

[Answers to the questions can be found on page 74](#)

Control Panel



The image shows a screenshot of the TRANSAS Control Panel interface. On the left, there are seven text boxes with arrows pointing to specific features on the interface. On the right, the interface itself is shown, displaying various navigation and status information.

Text Boxes (Left):

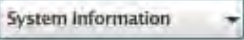
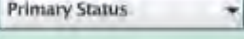
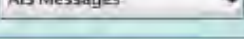
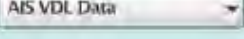
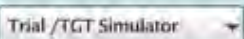
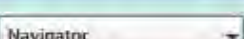
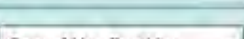
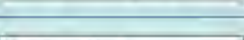
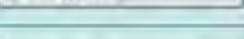
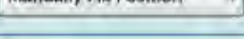
- Starts different additional tasks like Navi – Radar, Conning or the Alarm monitoring system. To activate the display of ARPA or AIS-Targets
- Display of Alarms and Warnings
- Display of UTC, by pressing the Clock Symbol Ships time.
- Display of the Geographical Position derived from the Primary Positioning Sensor
- Course and Speed over Ground derived from Primary Positioning Sensor
Ships Heading derived from the Gyro
Speed derived from the Log
- Name and Scale of the displayed charts.
- The Config Panel Dropdown Menu enables the display of different Tables.

Interface Elements (Right):

- Buttons:** Overlay, ARPA, AIS (selected)
- Dropdowns:** Safety contour, Caution area
- Time:** 06 - 12 - 10, 13 : 38 : 27 (UTC)
- HDG GYRO:** 075.9°
- STW LOG 1:** 18.0 kn
- COG GPS 1:** 080.3°
- SOG:** 18.0 kn
- Chart:** gb50284h, 1 : 7,500
- Route data:**
 - Data Schedule**
 - Route:** River midway DEMO
 - To WPT 3:**
 - BWW: 062.0°
 - XTD: 0 m - PORT
 - BTW: 065.3°
 - DTW: 0.31 NM
 - ETA (UTC): 16-12-10 13:39:28
 - TTG: 01 m 02 s
 - Next WPT 4:**
 - BWW: 030.7°
 - Radius: 0.30 NM
- Buttons:** STD Display, Event, Fixed
- Depth in Metres:** WGS-84
- Demo mode:** (Red text)

Display Mode Panel Dropdown Menu

Click on button  to open Drop Down menu.

Button	Click	Function
	 Left-click	Display Drift, Current, Safety Contour, Wind, Water temperature, Depth and Tide information
		Display positioning information from Electronic Position Fixing System (e.g. GPS)
		Display schedule information for a selected waypoint
		Display information about the monitored route
		Show tides, tidal currents and surface currents. Animate tides and currents
		Set radar overlay parameters (optional)
		Display two independent EBL/VRM
		View received AIS messages
		Display own ship AIS VDL data
		Activate Prediction functionality
		Activate Trial Maneuver and ARPA Target Simulator functionality (optional)
		Display main navigational data
		Switch on Curve Heading Line
		Switch on Docking Mode
		Obtain position by manually plotted bearings and distances
		Switch on Special Purpose Objects
		Acquire targets, Cancel tracked targets, Switch on Guard Zones

This overview gives all available possibilities of the ECDIS System; it may differ from yours depending on software version and licensed items you purchased.

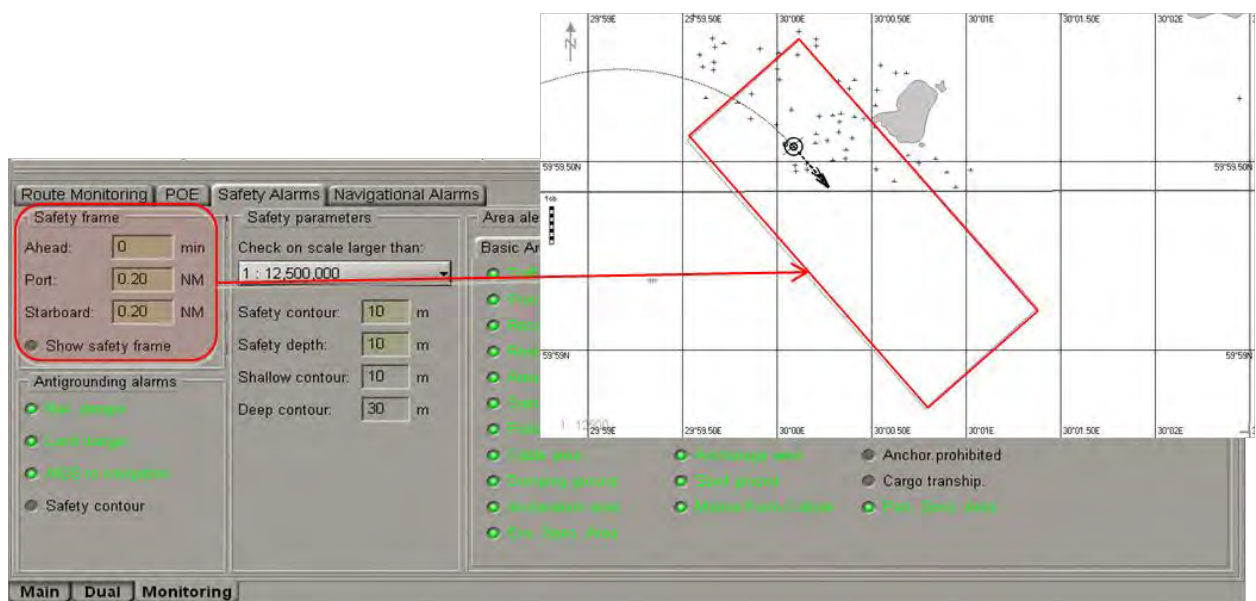
Setting Safety Parameters

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 alarms, Area alerts and Navigational alarms.

- **Ahead - window for the input of advance time for alarm/warning generation.**

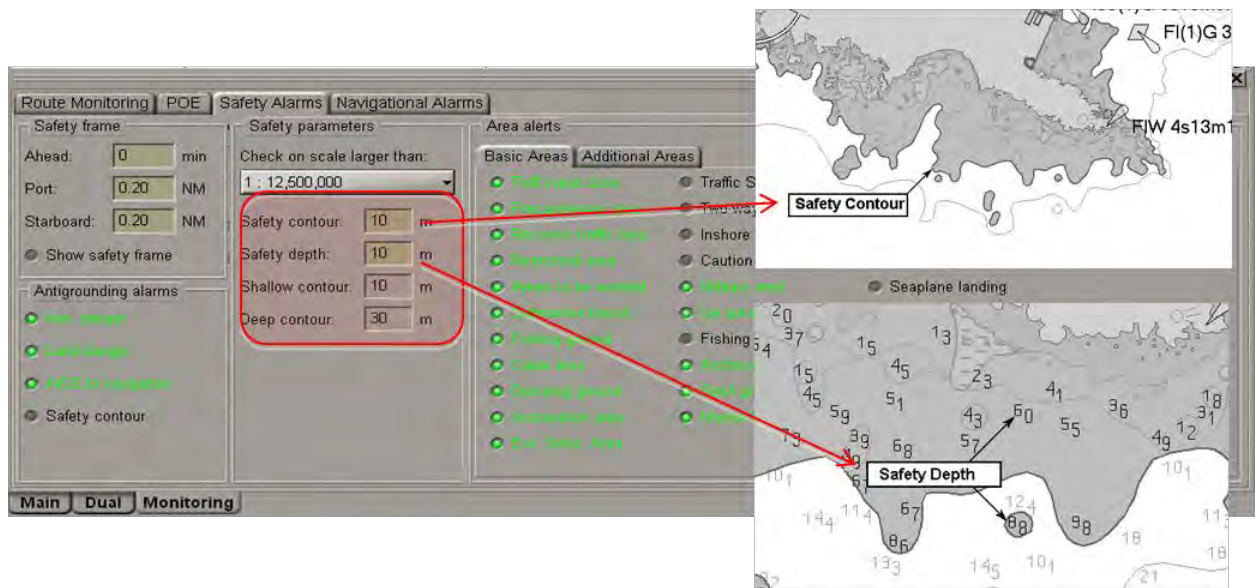
The time value determines the length equal to the distance covered by the ship proceeding at the current SOG. If the zero value is set, warnings are generated when the ship symbol crosses the area limits:

- **Port - to set the width of the corridor to the left of the ship;**
- **Starboard - to set the width of the corridor to the right of the ship;**
- **Show safety frame - to display the safety frame on the ECDIS.**



Safety contour is a set value, which determined the safety contour depth.

The safety contour is highlighted on the ECDIS task screen with a bold line. Safety Contour parameter cannot be larger than Safety Depth parameter. If, however, the operator sets a larger value, the same value is automatically assigned to Safety Depth parameter. And the other way round, if an operator sets a smaller value for the Safety Depth parameter, the same value is automatically assigned to Safety Contour parameter. If, with a change of chart set under the ship position, the previously selected safety contour becomes unavailable, Safety contour alarm is generated. In this case, the safety contour is automatically set as equal to a deeper available depth contour.



Safety depth - operator-set value which, in the check of an area delimited with Safety frame, serves as a criterion for classifying the detected depth as a danger to navigation.

A depth equal to or less than the **Safety depth** is highlighted on the ECDIS task screen in **bold type** when the display of spot soundings is turned on. If such danger is detected, **Nav. Danger alarm** is triggered off.

Exercise 2

1. Set the Safety contour and the Safety depth to the same value of 10m.
2. Use the View cursor and go to Position 01°11,120'N 103°47,639' E read out the corresponding information by using the Info cursor.
3. Set both values to 15m. What can be observed?
4. Can you see an unknown Symbol on your screen which is corresponding on your set values?
5. Go to Position 01°11,120'N 103°47,639' E and read out the information by using the information cursor. Which content is corresponding to the new symbol?
6. Now change the value of safety depth to 8m. What can be observed?

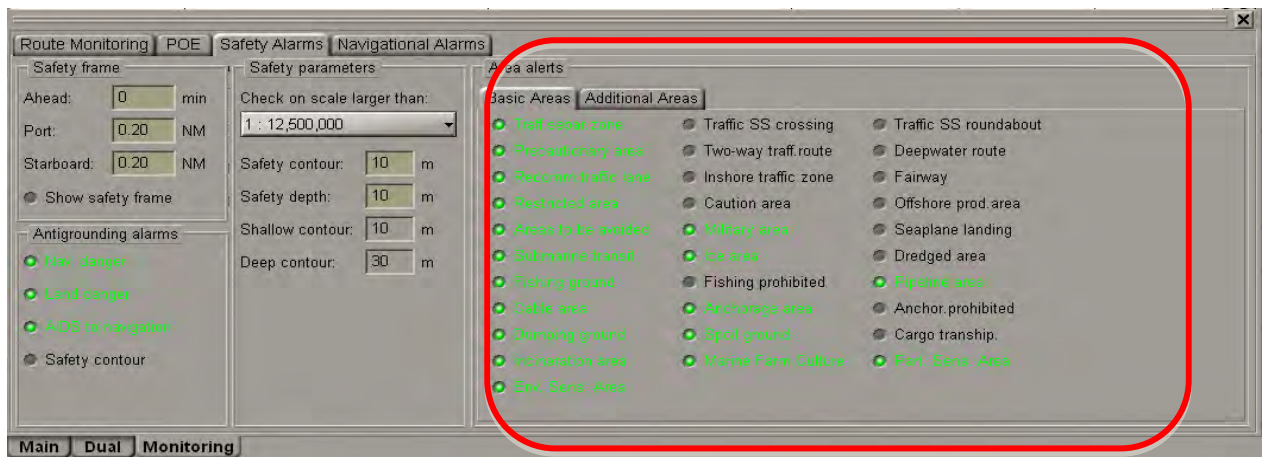
[Answers to the questions can be found on page 75](#)

Alarms and Warnings

Most of the Alarms are set at the Monitoring menu.

It depends on the navigational status of the vessel which Alarms make sense in being activated.

If the wrong settings are made Alarms may not be considered or may be acknowledged without paying attention to it.



Special Alarms and Warnings for example:

- CPA Alarms
- End of Watch Alarm
- Waypoint and Route generated Alarms

are set and activated in the specific menu they are related to.

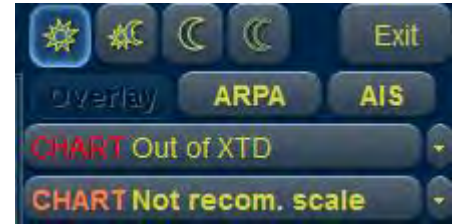
(TARGETS, CONFIG, MONITORING)

Alarms & Warnings are displayed in the Alarm Monitoring Window of the Control Panel.

It contains:

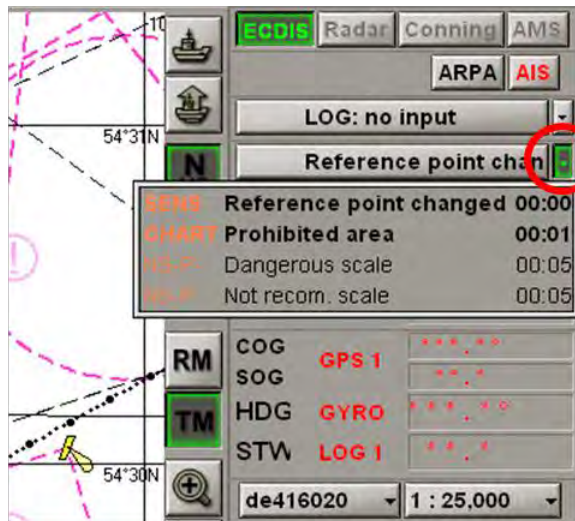
Kind of Alarm/Source/Kind of error

They can be acknowledged via the mouse cursor or the Alarm button on the dedicated keyboard.



Alarm Status	Font	Color	Flashing	Signal
Active unacknowledged Alarms	Bold	Red	Yes	Yes
Active unacknowledged Alarms Silent e.g. ARPA	Bold	Red	Yes	No
Active acknowledged Alarms	Bold	Red	No	No
Non-Active unacknowledged Alarms	Normal	Red	Yes	Yes
Non-Active acknowledged Alarms	No	No	No	No
Active unacknowledged Warnings	Bold	Orange	Yes	No
Active acknowledged Warnings	Bold	Orange	No	No
Non-Active unacknowledged Warnings	Normal	Orange	Yes	No
Non-Active acknowledged Warnings	No	No	No	No

In the opened Alarm or Warning field you can follow all Alarms with the time they triggered off and their current status.



The sound of an alarm will stop if the operator acknowledged it, Warnings will stop the sound after 2 seconds automatically.

A list of the most common Alarms is stated at the Functional description Manual of Navi-Sailor 4000 (Page 179).

Customize the Display

Optimizing your ECDIS Display

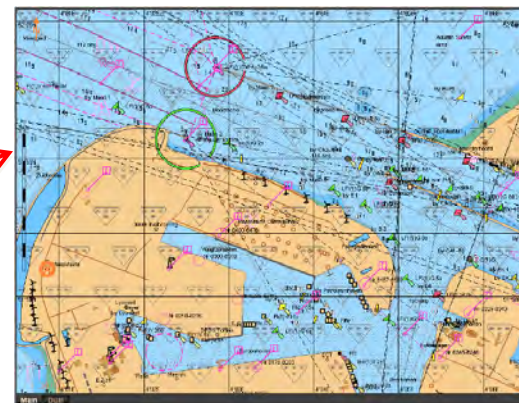
The ECDIS has four different display settings:

BASE – not allowed for navigational use

STANDARD – First display setting that might be used for navigation

CUSTOM – May be customized between Standard and all layers upon the customers' needs

ALL LAYERS – Shows all available Layers of a vectorized Chart



For setting up your Display you have to enter the charts menu via the task list.

LAYERS TAB

The Layers tab contains all settings for vectorized charts. There is also no right or wrong setting. You should decide between the items shown on the chart panel also on the nav. status and the intentions of the vessel.

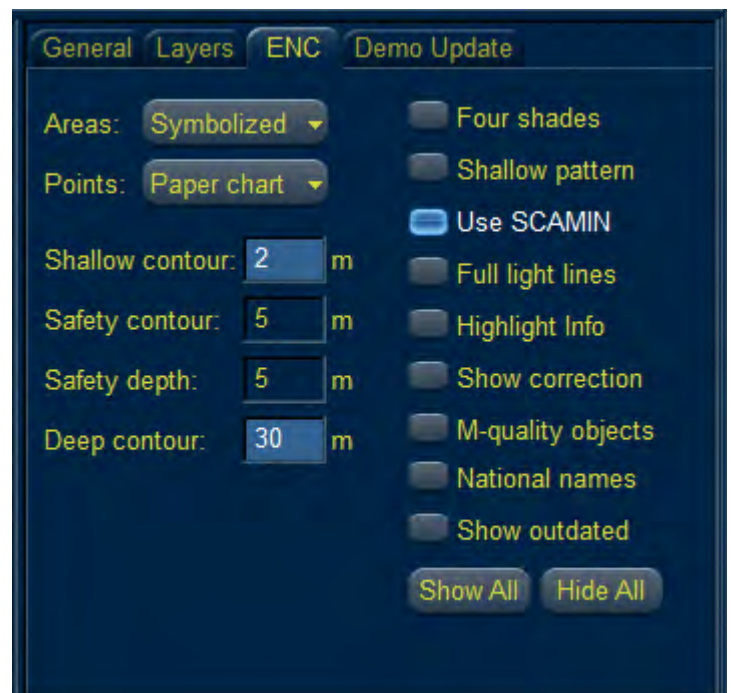


ENC TAB

The ENC tab would only change the lookalike of official ENC Data.

REMEMBER:

ALL SETTINGS MADE IN THIS MENU DO ONLY EFFECT THE PRESENTATION OF CHARTS; THERE IS NO FURTHER BENEFIT LIKE CREATING ALARMS OR WARNINGS DUE TO THE SETTINGS MADE:



Four shades vs. Two shade

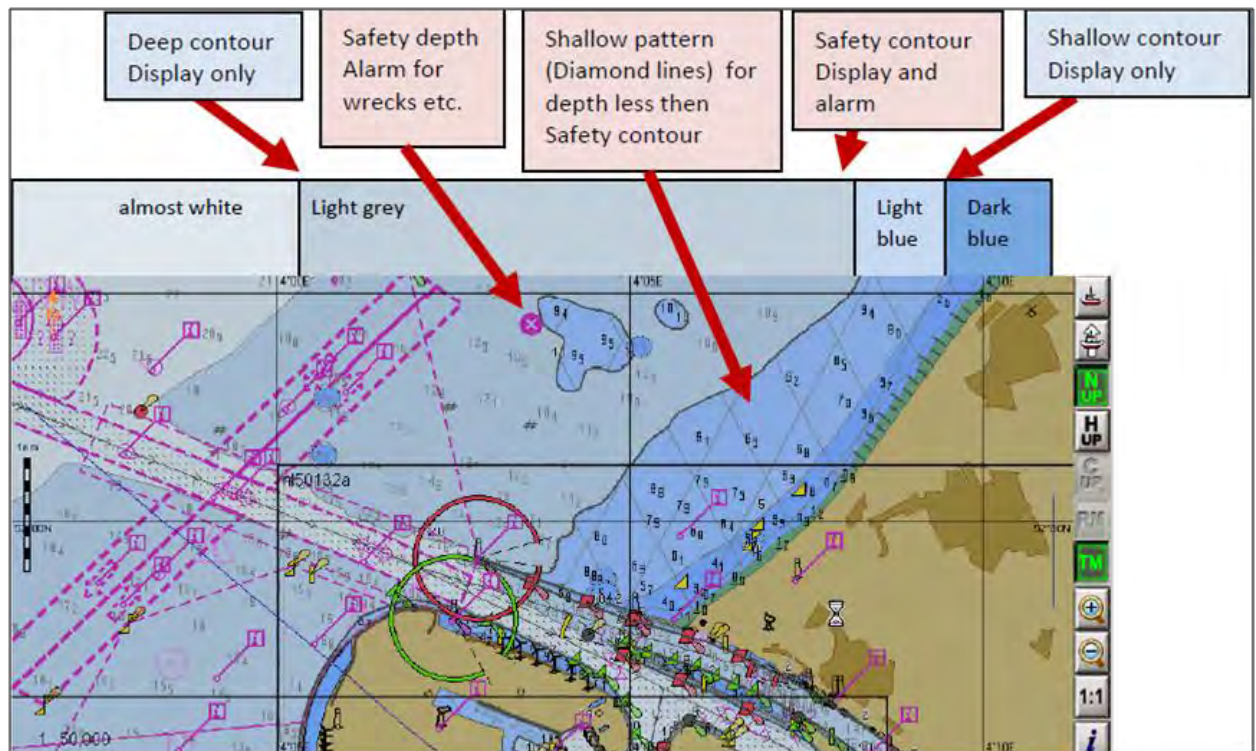
Situational Awareness:

Activating the four shades mode the display related Shallow and deep contour will be show as two additional blue colored patterns on the chart panel.

The user must now distinguish between maneuverable water and non-navigable water. A help could be reached by activating the “shallow Pattern” which crosses out the non-navigable waters.

This might lead to a cluttered screen.

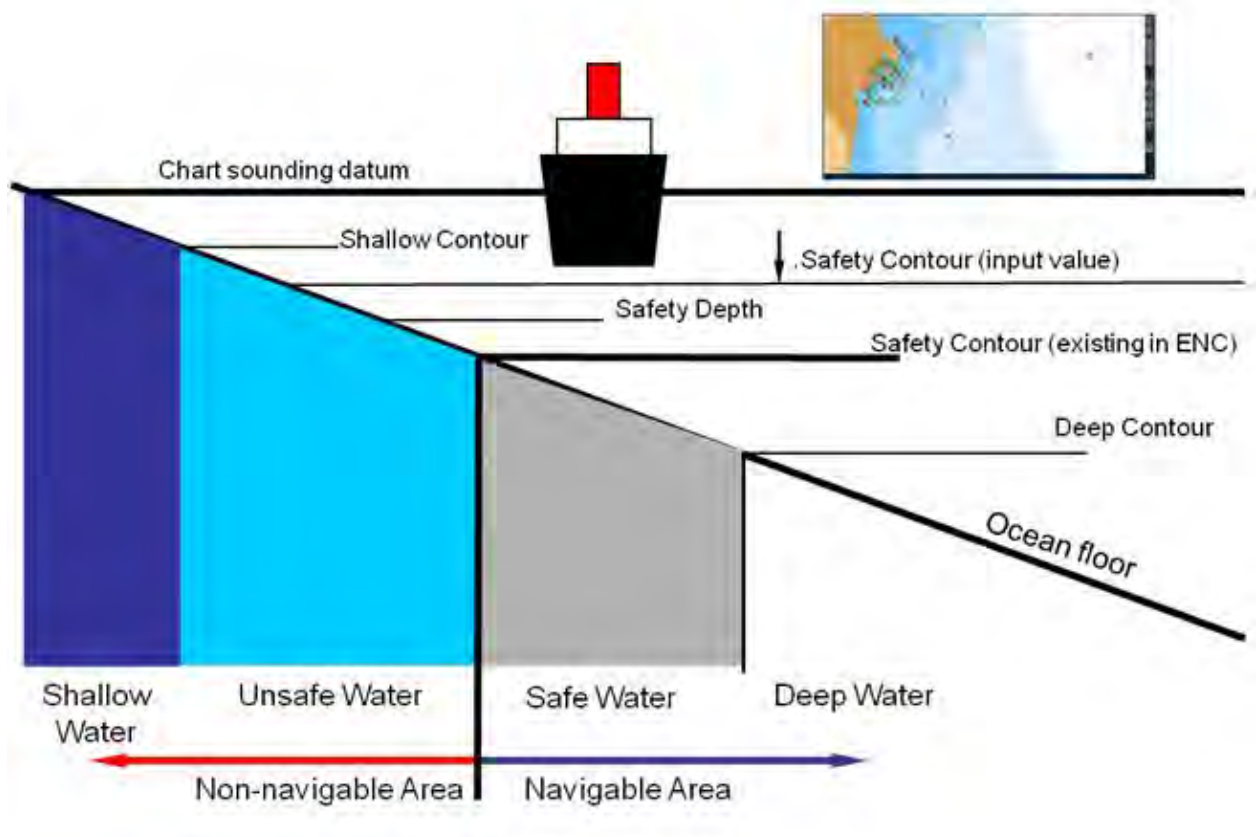
Sailing in two shades Mode with proper set safety depth values the user can easily differ between Good-White (black during night vision) and Bad-Blue displayed contours.



Basic Navigational Functions

The safety contour is displayed on your chart as a grey bold line separating navigable from non-navigable waters.

The "Route check" and "alarm" features will use this separation between navigable and non-navigable waters for alarm functionality. Also, the overall display features change according to the safety contour values.



Depending on the safety parameters, the display mode and the position of an object, its presentation style might change in order to indicate a danger.

Example - Isolated Dangers:

The symbol for an "isolated danger" will change depending on your safety contour.

If the isolated danger has a safe passing depth less than your safety contour, it will be considered "Not safe to pass over" and the top warning symbols will be in use.

If the safe passing depth is more than your safety contour, the isolated danger becomes insignificant and is only shown if selected in chart layers and according to the blue symbol.

The same happens if the isolated danger lies in waters already declared non-navigable by the safety contour.



Isolated danger of depth less than the safety contour in safe water



Underwater hazard with a defined depth, outside the safety contour in non navigable water, or within safe water and depth greater than the safety contour.

Questions 2

1. Which display mode is allowed for proper navigation?
2. When the user is setting the safety contour value, which contour line is selected by the ECDIS computer?
3. What is the significant difference between these two S-52 chart symbols?



4. Buoys, Beacons and other aids to navigation are only displayed in which display mode?
5. Which menu icon can be used if you are not sure what the charted symbol stands for?
6. What is the horizontal datum for geographic position on an ECDIS?
7. What is the major difference between ENC vector charts and other vector charts?
8. Which Chart is the safety frame performing checks on?
9. In what order are the alarms listed in the control panel drop down?
10. What happens if clicking left in the chart area?

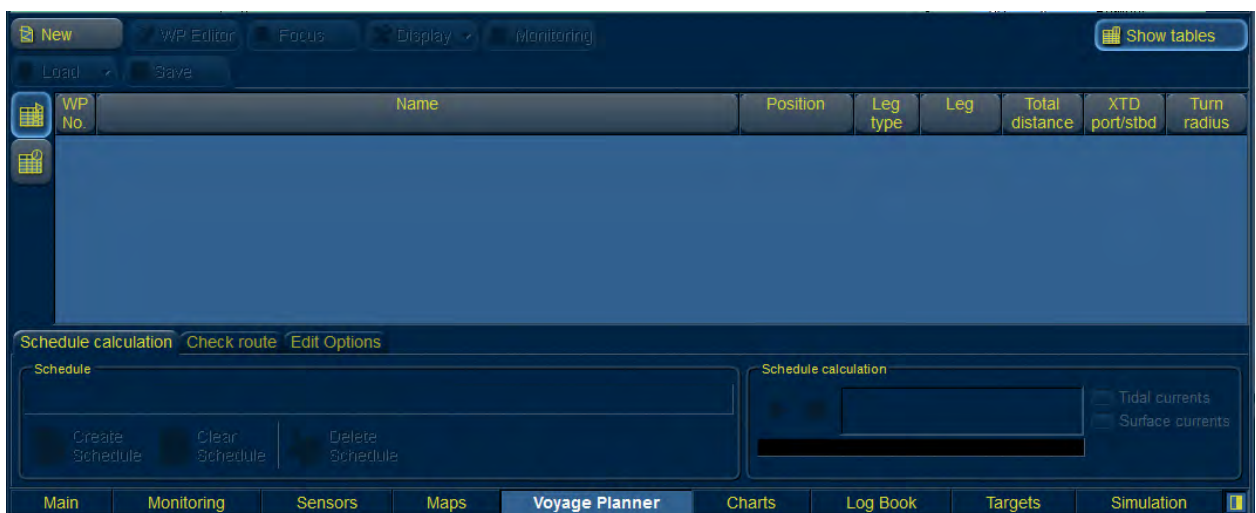
[Answers to the questions can be found on page 76](#)

Route Planning

A route aims to establish the most favorable way to a destination, while maintaining appropriate safety margins in regard of navigational and anti-collision hazards.

The Transas ECDIS system has several features to facilitate route planning:

- ETA - It is quite simple to do a quick assessment on arrival time to a port.
- Route plan - the planning of waypoints, route legs, turn radiuses and safety distances may be conducted in the ECDIS.
- Calculations regarding tide levels and tidal streams are available, allowing for full UKC calculations.
- The resulting route plan may be printed in tabular form or uploaded to connected radars, GPS units etc.
- Load Route - to load a route for viewing or editing by the name selected from the list;
- Unload Route - to unload a route by the name selected from the list;
- Focus on Route - to promptly find the active route on the NS Chart Panel;
- WP Editor - to turn on the graphic route editor;
- Save - to save the active route;
- Name - to enter the active route name.

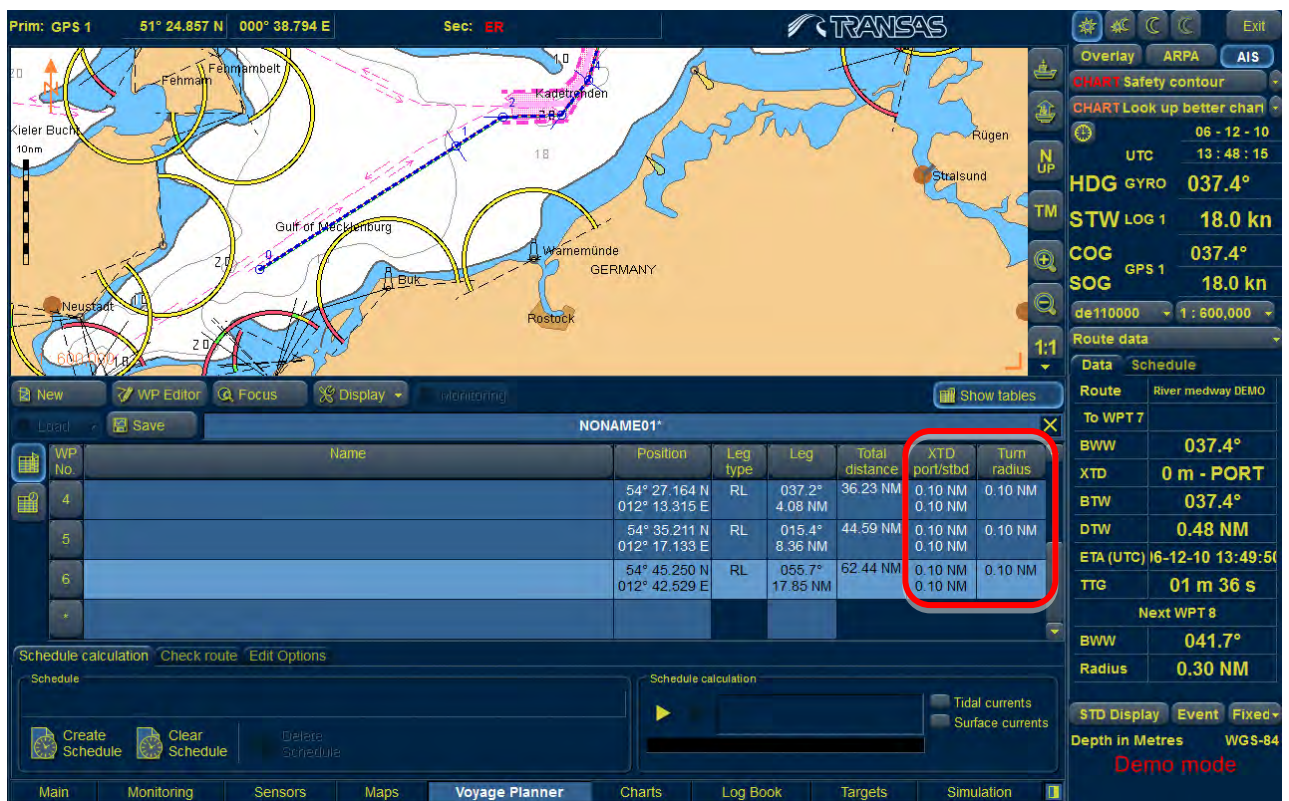


Waypoints may now be created by moving and left clicking the mouse.

The waypoints will be listed by latitude and longitude in a table and a route will be generated.

This route will have default XTD settings of 0.10 NM and turn radius 0.10 NM.

Waypoints and XTD may be edited by click and drag. Alternatively, any data may be edited by entering new values in the waypoint table or in the graphic mode by entering the information window (Tab) for the upcoming Waypoints.



The screenshot displays the TRANSAS Voyage Planner interface. The top map shows a route through the Baltic Sea, with waypoints marked. The bottom panel features a table of waypoints, and the right sidebar contains various settings and status information.

WP No.	Name	Position	Leg type	Leg	Total distance	XTD port/stbd	Turn radius
4		54° 27.164 N 012° 13.315 E	RL	037.2° 4.08 NM	36.23 NM	0.10 NM 0.10 NM	0.10 NM
5		54° 35.211 N 012° 17.133 E	RL	015.4° 8.36 NM	44.59 NM	0.10 NM 0.10 NM	0.10 NM
6		54° 45.250 N 012° 42.529 E	RL	055.7° 17.85 NM	62.44 NM	0.10 NM 0.10 NM	0.10 NM

The right sidebar displays various settings and status information, including:

- Overlay: ARPA, AIS
- CHART: Safety contour, Look up better chart
- UTC: 06 - 12 - 10, 13 : 48 : 15
- HDG GYRO: 037.4°
- STW LOG 1: 18.0 kn
- COG GPS 1: 037.4°
- SOG GPS 1: 18.0 kn
- de110000, 1 : 600,000
- Route data: Data, Schedule
- Route: River midway DEMO
- To WPT 7
- BWW: 037.4°
- XTD: 0 m - PORT
- BTW: 037.4°
- DTW: 0.48 NM
- ETA (UTC): 16-12-10 13:49:50
- TTG: 01 m 36 s
- Next WPT 8
- BWW: 041.7°
- Radius: 0.30 NM
- STD Display, Event, Fixed
- Depth in Metres, WGS-84
- Demo mode

When all the waypoints seem to be OK, the values for Turn radius and XTD should be adjusted to ensure that the safety margins are adequate.

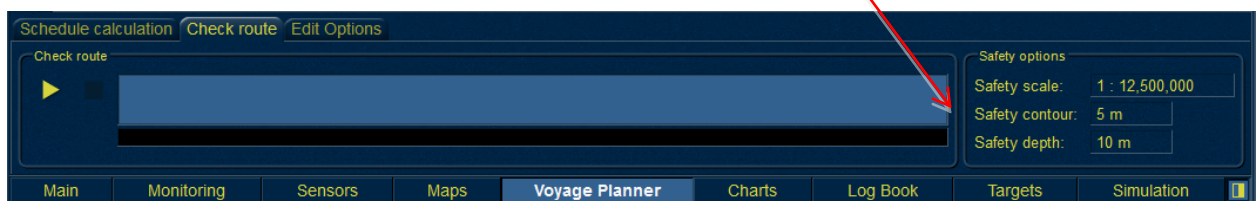
In areas where safety margins are narrow, special caution should be exercised in accordance with your company's navigation policy.

Precautions might include bridge manning, speed and engine readiness, requirements for daylight and visibility, requirements for tidal levels and speed and direction of wind and currents.

When the route is completed, there is a feature whereby an automatic safety check might be made for the entire route and all the charts that are affected.

The safety check will be made using your safety parameters and pre-programmed maneuvering parameters.

Transas Marine recommends that all routes are thoroughly checked both manually and automatically before being put to use.



A route that has been created can be modified in several ways.

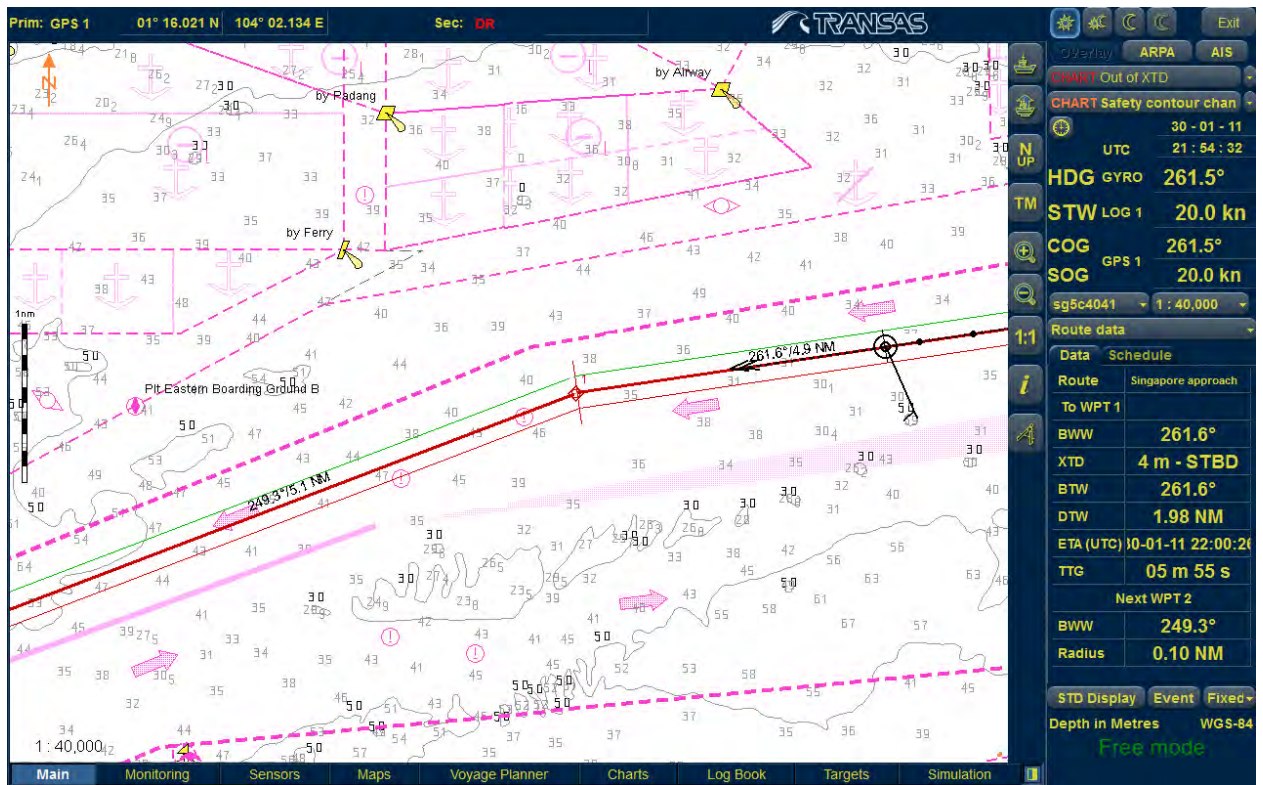
Routes can be merged or linked with new or already existing routes.



The ECDIS needs ENC charts of an appropriate scale and with the latest corrections in order to improve the safety of your ship.

Should you find that you need to update or purchase ENC licenses, the route you have created might be opened in the Transas Chart Assistant and assist you in updating or ordering.

(more about this in the Chart Assistant chapter)



Questions 3

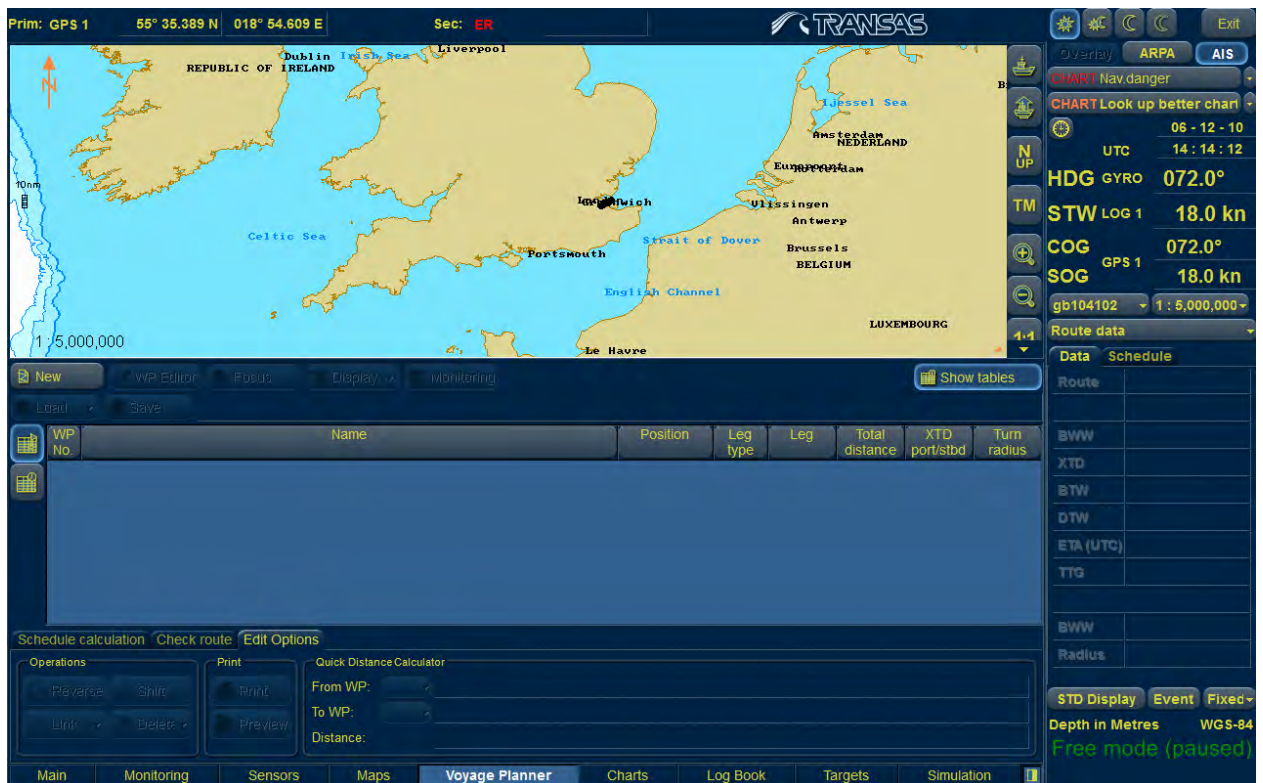
1. How can you create or change a route plan?
2. Name the different types of route legs available in your ECDIS?
3. Why is it necessary to also have a manual route check besides the automatic check?

[Answers to the questions can be found on page 76](#)

Exercise 3

Plan a route from Le Havre (FRA) Lt to Liverpool (UK).

- Choose **Voyage Planner**
- Choose **New**



- Place the cursor where you want the route to start and then left click.
- Then place waypoints at appropriate positions.
- After placing the final waypoint, please right click twice.
- Now save the created route by filling in *Le Havre-Lpool* in the empty text field and press **Save**.
- The route is now saved under the name *Le Havre-Lpool*.

Plan a route from Liverpool to Dublin according to prior example and save it as *Lpool-Dublin*.

Exercise 4

Now you will make a route go the opposite way.

- Load the route *Lpool-Dublin*.
- Choose **Edit Options**.
- Choose **Reverse**.
- **And save the route under the new name Dublin-Lpool.**

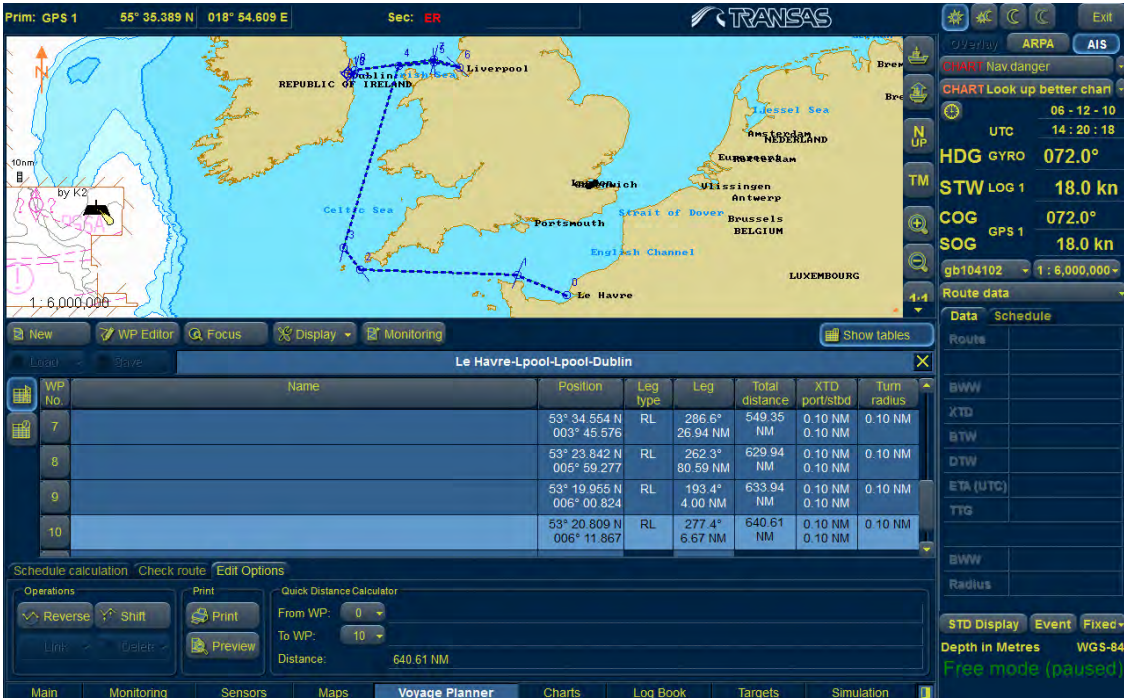
Now you can see that the waypoint numbers are reversed. Always control the direction of a route when you activate it!!

Now you will link two routes together. You are supposed to have a route going *Le Havre - Lpool-Lpool - Dublin*.

- Load the route *Le Havre-Lpool*.
- Make sure it goes in the right direction.
- Choose **Edit Options**.
- Choose **Link**.
- Choose *Lpool – Dublin*.

Now control that the route goes as planned- if not- TROUBLE SHOOT! Save the Route using a new name.

Note: The link goes from the highest numbered waypoint in the loaded route to the lowest numbered waypoint in the linked route.



The screenshot shows the TRANSAS Voyage Planner interface. The map displays the North Atlantic, including the British Isles, Ireland, and parts of Europe. A route is plotted from Le Havre (France) to Lpool (Liverpool) and then to Dublin (Ireland). The route table below the map shows the details of the route.

WP No	Name	Position	Leg type	Leg	Total distance	XTD port/stbd	Turn radius
7		53° 34.554 N 003° 45.576 E	RL	266.6° 26.94 NM	549.35 NM	0.10 NM	0.10 NM
8		53° 23.842 N 005° 59.277 E	RL	262.3° 80.59 NM	629.94 NM	0.10 NM	0.10 NM
9		53° 19.955 N 006° 00.824 E	RL	193.4° 4.00 NM	633.94 NM	0.10 NM	0.10 NM
10		53° 20.809 N 006° 11.867 E	RL	277.4° 6.67 NM	640.61 NM	0.10 NM	0.10 NM

The interface also includes a 'Quick Distance Calculator' at the bottom, showing a distance of 640.61 NM. The bottom menu bar includes options like Main, Monitoring, Sensors, Maps, Voyage Planner, Charts, Log Book, Targets, and Simulation.

Exercise 5

Create a new route using the positions from the Waypoint list.

WP 1: 36° 52.805 N 076° 19.823 W

WP 2: 36° 57.886 N 076° 20.459 W

WP 3: 36° 47.457 N 075° 44.251 W

WP 4: 25° 55.426 N 069° 12.223 W

WP 5: 49° 37.138 N 004° 48.823 W

WP 6: 51° 24.647 N 000° 36.174 E

- Name WP and the route from your departure place to the port of arrival
- As you see the route has to be adjusted
- Make changes in the routes, you may use both graphically and tabular method.
- Do not forget to save occasionally.

Check route (according to set safety parameters).

- Choose **Check route**
- Click on **Play**

If a lot of alarms occur, please check **safety parameters** and make a new check!

One of the most common settings that need to be changed is the “**Check on scales larger than**”. You are probably not interested in safety contours on overview-charts smaller than 1:200 000. This will reduce the number of alarms a lot.

If you lose yourself in the chart, press **Focus Button**!

When you are satisfied with your route plan, you can activate it and make it integrate with the system by pressing **Monitor**. The route will now turn red. You can only make changes in a route plan (blue route), not in a red route.

Do not forget to also adjust your XTD value if you plan narrow passages.

[Answers to the questions can be found on page 77](#)

Exercise 6

Go to the Simulation Tab and load the Singapore Scenario in Routes and Scenarios. The ECDIS Demo Software changes to Demo Mode. Change to the Voyage Planner and create a new Route by planning 10 Waypoints along the displayed red Route. Save it under “*Singapore approach*”. Then again select NONE in Scenario under the Simulation Tab.

Load *Singapore approach* and carry out a Route check using 5m as safety contour and depth value.

Change to the Schedule View of the table. Enter following data in the voyage plan table:

- ETD: 01-11-12 15:00 (from first waypoint)
- ETA: 01-11-12 19:30 (last waypoint)

Choose **Schedule calculation and press the play button**. Save the result as *SING app 1* by entering the Name and click on Create Schedule.

What speed should you keep: _____ kn.

Activate Schedule 1 delete the ETA by clicking right in the cell and scroll to clear cell then enter 14 kn at the speed column. Click again right and choose fill cells down. Save that schedule as *SING app 2*

When will you be at the last waypoint if you keep the entered speed?

Between WP 7 and WP 8 there is the Western Pilot Boarding ground. Plan a stop at **WP 7:** and stay there for 0.5 hours. ETA at the last WP is 01-11-12 18:30 if you sail with the speed of 12 kn to WP 7 what is your SOA for the last 3 WP? Save the schedule under *SING app 3*.

Select the schedule 1 tab and activate Tidal currents and Surface currents under schedule calculation. What SOA is now needed to arrive in time?

Use the Quick Distance Calculator in Edit options to calculate distance between WP 7 and WP10.

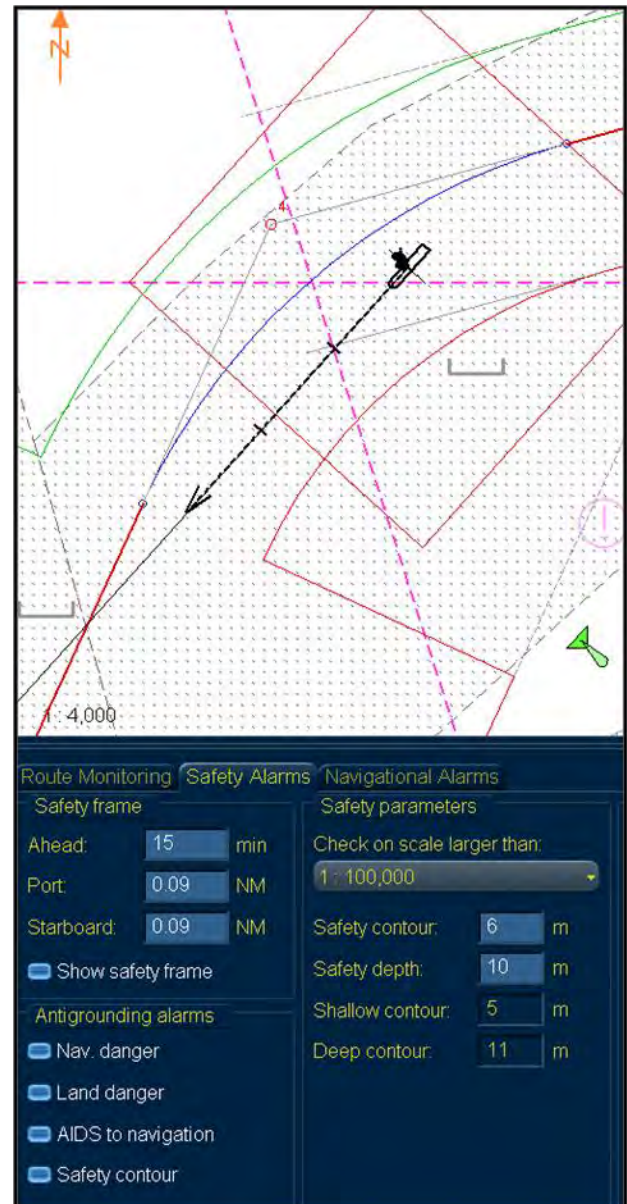
[Answers to the questions can be found on page 77](#)

Route Monitoring

The added safety of using an ECDIS will only be available if a few basic requirements are met:

- The ECDIS is loaded with ENC charts of an adequate scale and with the latest updates.
- The user has set appropriate safety parameters for his ship.
- The user has created a route for the intended voyage and checked it for safety.
- The user has activated appropriate alarm functions:
 - Route monitoring is active.
 - Safety frame is active.

The Monitoring menu is available over the Task list.



Various area alarms can be activated by the user.

An ECDIS is designed to suit a multitude of users and activities. Some of the alarms might not be relevant to a merchant ship.

You have to consider that there is no overall setting for an appropriate Alarm generation. It is dependent on the area you are operating in and your intentions.

Please keep in mind that Alarms may also differ between Voyage planning and Route monitoring.



While travelling along a pre-planned track, the ECDIS is ready to monitor your ship's progress.

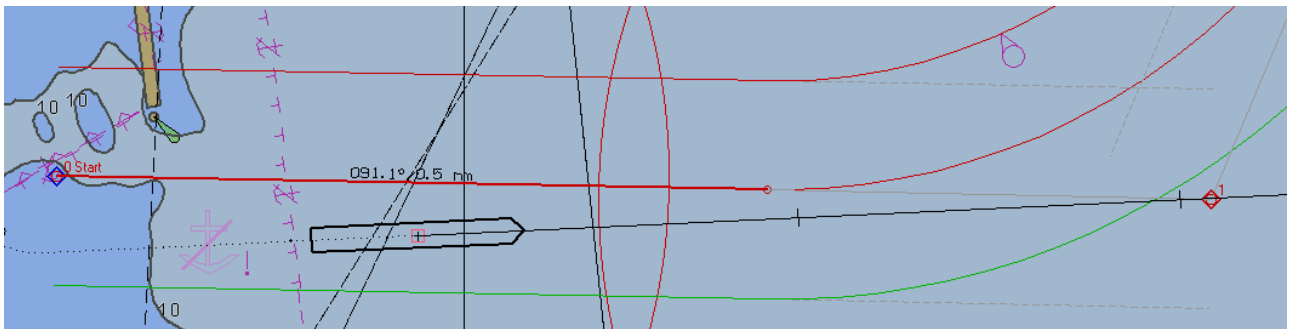
When a route has been loaded in "active monitoring" the following features are available:

- XTD is monitored and can be displayed.
- An alarm for Out of schedule is optional.
- An alarm for approach of WP and end of track alarm is optional.
- An alarm for heading difference from intended leg course is optional.

There might be instances where the officer of the watch needs to leave the monitored route due to unforeseen events (to avoid a collision or to assist a vessel in distress).

The safety frame feature allows automatic monitoring and warning generation and works independently of the route.

It is not intended to replace the thorough process of full voyage planning.



Questions 4

1. How a monitored route is presented and is it possible to monitor more routes at the same time?
2. How can an actively monitored route be changed?
3. State the relevant steps you need to follow to monitor a route and maintain safety?

[Answers to the questions can be found on page 78](#)

Maps

The function Maps offers the possibility of adding, changing or deleting any object in a chart the same way as in a paper charts and enables the user to create several user charts as an overlay to the presented ENC chart. It is the navigators pencil for no go areas or remarks he has to the chart which is displayed.

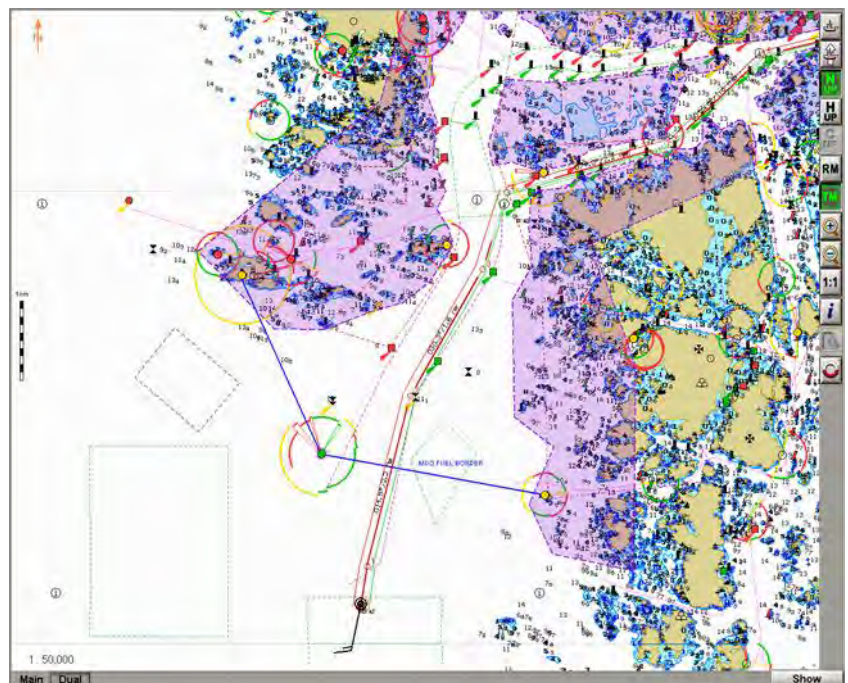
Maps are saved in one separate data layer.

Unfortunately there is no mechanism to replace manual updates when automatic updates are received. If a manual correction is done to an object and the same object is later changed by an automated update, the manual correction will still exist.

Therefore the user has to manually delete all manual updates as soon as the automatic updates are applied.

Within the Maps Table we have the opportunity to create:

- Areas as polygons or circles (No Go Areas)
- Symbols, lines, text and depths can be added (useful in voyage planning)
- Attachments such as pic's or documents can be added to any object and will be displayed with the info tool.
- Own symbol libraries can be implemented on request

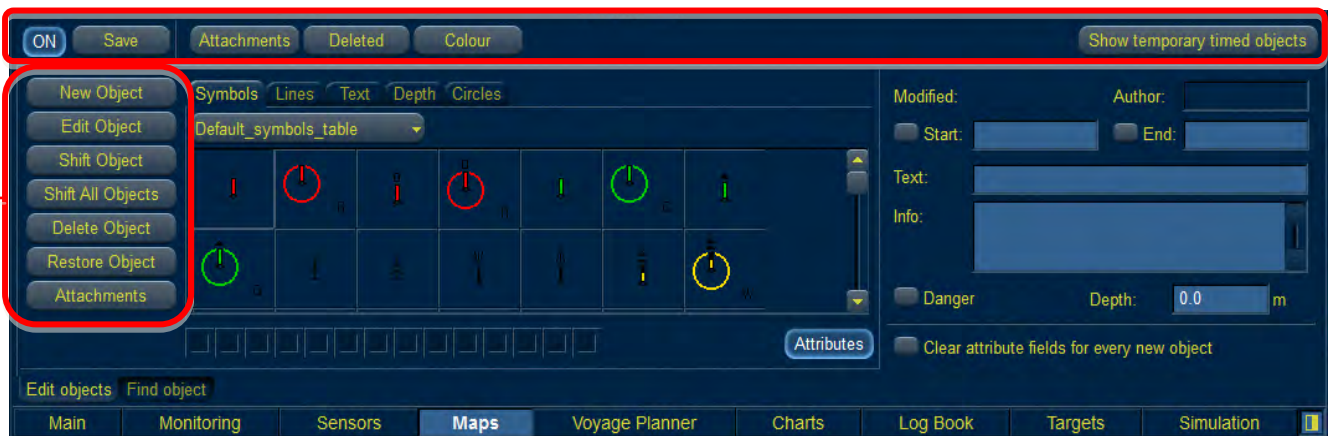


To display Maps panel select the appropriate tab on the panel bar.

Maps panel consists of the following groups:

Group for the control of the user chart object display consists of the following elements:

- On – to turn on the display of the active layer on the electronic chart;
- Save – to save the user chart;
- Attachments – to turn on the highlighting of objects with attached files;
- Deleted – to turn on the highlighting of deleted object;
- Colour – to turn on the orange colored lighting of all the user chart objects.

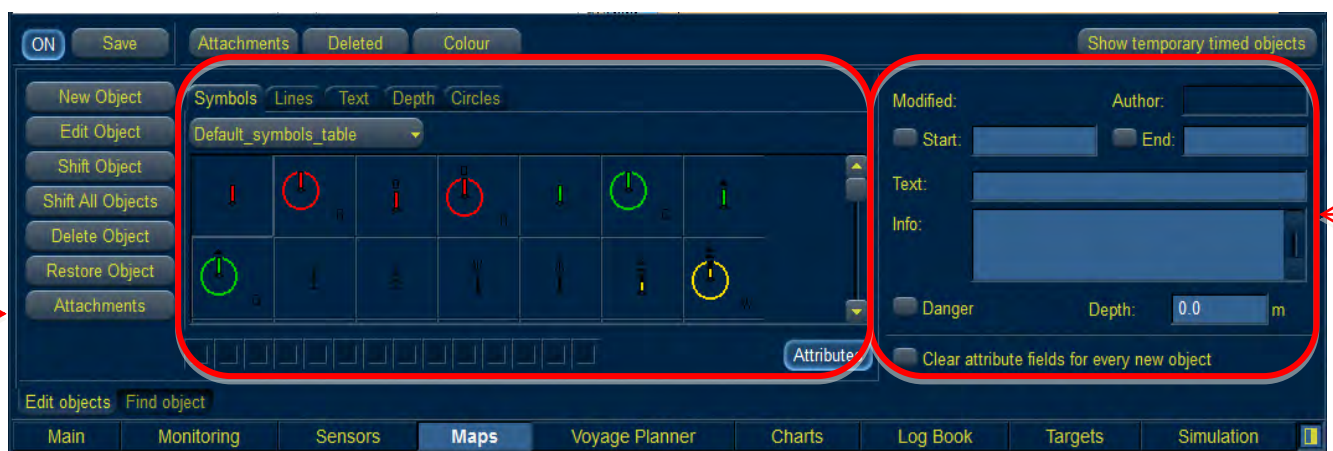


Area for Creating and Editing Objects in the active layer contains the following elements:

- New Object – to plot a new object on the chart;
- Edit Object – to select an existing object for editing;
- Shift Object – to select and move an existing object;
- Shift All Objects – to move all the objects to the distance;
- Delete Object – to select and delete an object;
- Restore Object – to select and restore a previously deleted object;
- Attachments – to assign "attached file" attribute by selecting a file from a list.

Area for selection of Object Category and Type contains 5 windows:

- Symbol - provides a point object symbol library;
- Lines - provides a symbol library of various line and area types;
- Depth - window for the input of the distinctive depth object value;
- Text - window for typing the text object characters;
- Circles - provides a symbol library of various circle line and area types.



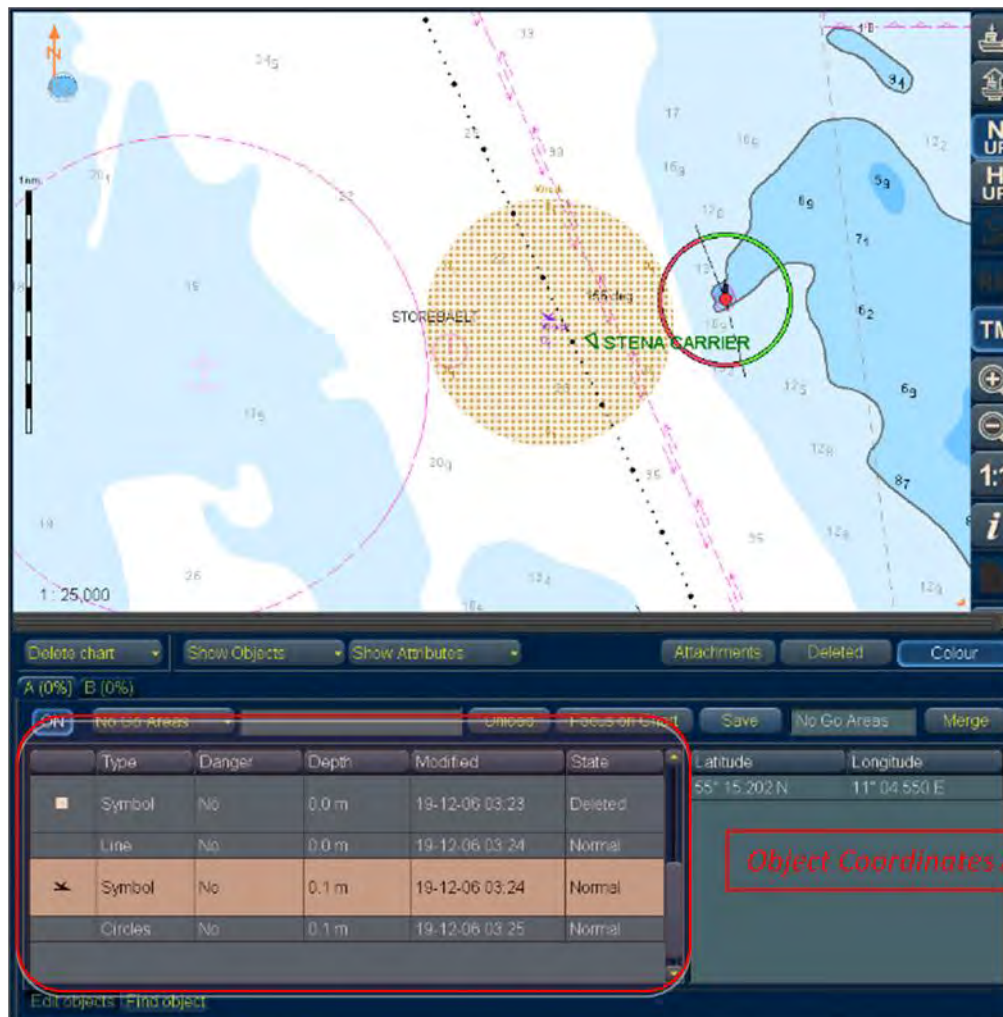
Object Attributes Editing area contains the following elements:

- Colour palette - to assign "object colour" attribute to the object;
- Attributes - to open the window of the rest of the object attributes;
- Text - to assign "object text";
- Info - to assign "object information" attribute;
- Depth - to assign "object depth" attribute;
- Clear attributes ... - to cancel all the attributes for each new object.

Find Object page consists of two elements:

Object Parameters Area:

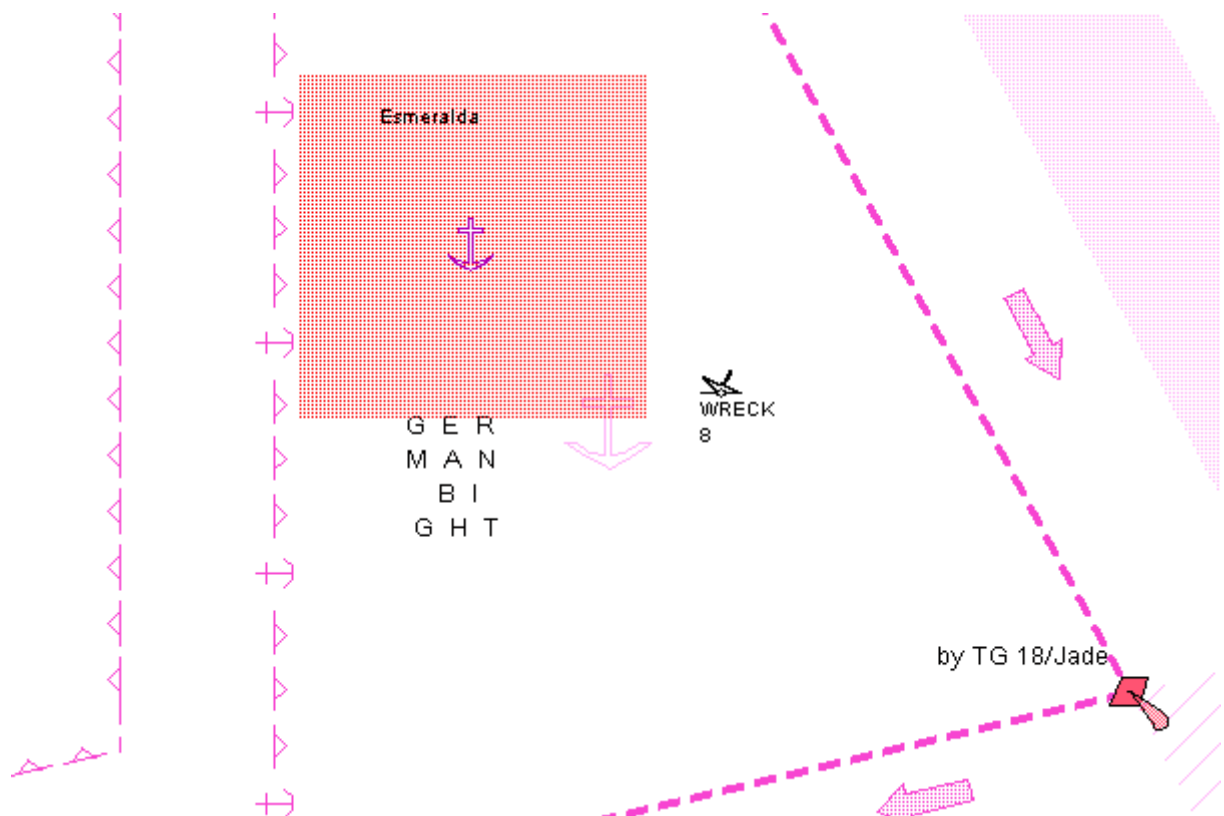
- Object symbol;
- Type - object category;
- Danger - object status as a danger to navigation;
- Modified - date and time of the most recent change of the object except the change of its geographic position;
- State - object status (deleted/ modified etc.).



Exercise 7

Activate User Chart by pressing **ON**.

1. Draw a square with an anchor-sign (Square Center) within it. All sides should be approx. 2 nm.
Start at position 54° 05.190' N 007° 24.675' E
2. Write the name of your ship inside the square.
3. Save the map.
4. Add a new object including the **text** "WRECK" and add a danger depth of 8 m.
5. Move the object approx. 0.5 nm west from its original position.
6. Save the changes into the current layer.
7. Create No-Go Areas using the Maps tool and familiarize with the different Object categories.



Risk of Overreliance

The training in ECDIS operational use should address:

- the limitations of ECDIS as a navigational tool,
- potential risk of improper functioning of the system,
- system limitations, including those of its sensors,
- knowledge of principal types of ARPA/ECDIS/AIS, their display characteristics, performance standards and the dangers of over reliance on ARPA/ECDIS/AIS,
- hydrographic data inaccuracy; limitations of vector and raster electronic charts (ECDIS vs. RCDS and ENC vs. RNC), and
- Potential risk of human errors.

Emphasis should be placed on the need to keep a proper look-out and to perform periodical checking, especially of the ship's position, by ECDIS independent methods.

IMO. STCW.7/Circ.10 (2001)

The use of ECDIS does not relieve the officer of the watch from his duty to use all available means.

The ECDIS is a single unit that consolidates several sensors and the navigation chart.

Any error in a sensor, the chart or the ECDIS itself, may lead to a dangerous situation.

The officer of the watch should therefore conduct regular checks of all connected sensors, the back-up ECDIS and use sight and hearing as well as all available means to fix ships position and progress.

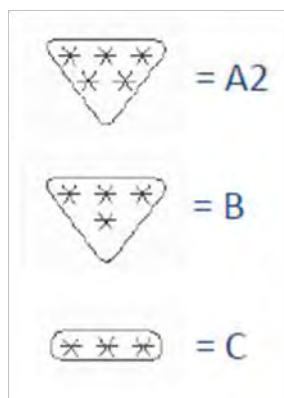
The main sensor for your ECDIS is the EPFS.

The officer of the watch should familiarize him or herself with the EPFS, know its menus and where the antenna is located.

A quick check of the unit should include:

- Power on
- All cables and connectors appear OK
- Several satellites are being tracked, and they have an OK value for SNR (signal strength)
- The HDOP value is low - normal might be 0,5 - 3, high is any value above 4
- RAIM settings are OK and indicate safe
- Position is being updated every second
- Chart datum is set to WGS-84
- If DGPS is in use - the station in use is near by
- If DGPS is in use - corrections are being received for most satellites





1	2	3		4	5
ZOC	Position Accuracy	Depth Accuracy		Seafloor Coverage	Typical Survey Characteristics
A1	± 5 m + 5% depth	=0.50+1% <i>d</i>		Full area search undertaken. Significant seafloor features detected and depths measured	Controlled, systematic survey high position and depth accuracy achieved using DGPS or a minimum three high quality lines of position (LOP) a multibeam, channel or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	±0.6		
		30	±0.8		
		100	±1.5		
		1000	±10.5		
A2	± 20 m	=1.00+2% <i>d</i>		Full area search undertaken. Significant seafloor features detected and depths measured	Controlled systematic survey achieving position and depth accuracy less than ZOC A1 and using a modern survey echosounder and a sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	±1.2		
		30	±1.6		
		100	±3.0		
		1000	±21.0		
B	± 50 m	=1.00+2% <i>d</i>		Full area search not achieved; uncharted features, hazardous to surface navigation not expected but may exist.	Controlled systematic survey achieving similar depth but lesser position accuracies than ZOC A2, using a modern survey echosounder, but no sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	±1.2		
		30	±1.6		
		100	±3.0		
		1000	±21.0		
C	± 500 m	=2.00+5% <i>d</i>		Full area search not achieved, depth anomalies may be expected.	Low accuracy survey or data collected on an opportunity basis such as soundings on passage.
		Depth (m)	Accuracy (m)		
		10	±2.5		
		30	±3.5		
		100	±7.0		
		1000	±52.0		
D	Worse than ZOC C	Worse than ZOC C		Full area search not achieved, large depth anomalies may be expected.	Poor quality data or data that cannot be quality assessed due to lack of information.
U	Unassessed – The quality of the bathymetric data has yet to be assessed				

As mentioned the charted information in ENC is as it is on paper charts dependent on the surveyed information the national Hydrographic offices provided.

These inaccuracies may be considered by displaying the M-Quality Objects from the Chart menu of the Task list.

Your ECDIS is an industrial type computer and has been through tough testing for before being approved to be put onboard a ship.

Even so, something might fail. A single component failure may affect a single function or the whole ECDIS.

Most errors should be immediately obvious to the officer of the watch, and also detected by the back-up ECDIS but in rare occasions an almost invisible „freeze“ of the computer might occur, and may go undetected for some time.

There have also been events where duplicate units of other marine equipment have had the same software fault whereby they both stopped working at the same time.

It might be advisable to reboot ECDIS computers periodically, with different re-boot times for main ECDIS and back-up units.



Human Error

Preconditions for unsafe acts:

1. Internal:

- physiology (illness), mental state (fatigue, distraction)

2. External:

- mismatch between the operator's ability and the task demands (lack of training);
- poor crew resource management (issues such as leadership and communication);
- poor personal readiness practices (e.g., violating the crew rest requirements in aviation);
- Organizational influences (human or financial resources, structures, policies, culture, procedures, schedules, oversight).



Keep in Mind:

1. Same errors as in a paper chart, always depends on the survey.
2. Sensor input plausibility?
3. Correct safety parameter settings?
4. Charts corrected?
5. Use with experience
6. Proper navigational work is still required!
7. Do not just 'follow the red line'!
8. Never trust one system alone.
9. Look out of the window!

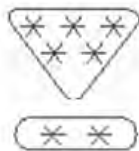


Questions 5

1. Which Elements may cause possibly errors in display or any other failure in an ECDIS?
 - a. Inputs from sensors
 - b. Sensor settings
 - c. The ECDIS hardware
 - d. The charts
 - e. The charts
 - f. The ECDIS software

2. What means of checking the functioning of the ECDIS are available to the OOW?
 - a. ECDIS built-in alarm system?
 - b. Checks of the sensors that are connected to ECDIS
 - c. Position fixing by other means
 - d. ECDIS back-up unit

3. Which of the two ZOC icons represent best survey accuracy?



[Answers to the questions can be found on page 78](#)

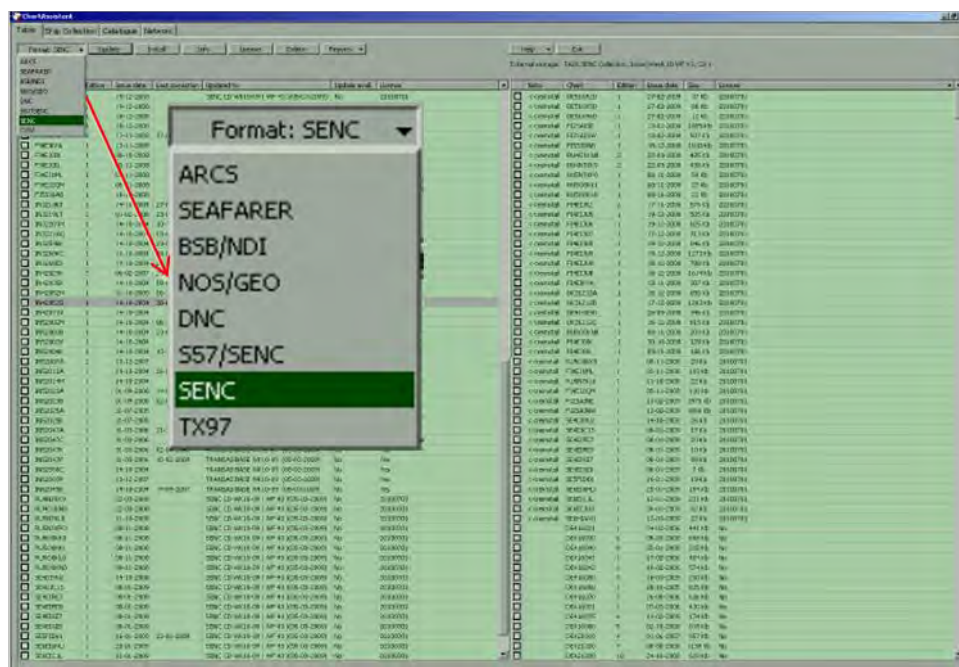
Chart Assistant

Introduction

The ECDIS Demo contains a built in chart folio for certain areas. The updating process is just simulated. To give you an understanding how the updating of a real Transas ECDIS System may look we inserted the following pages.

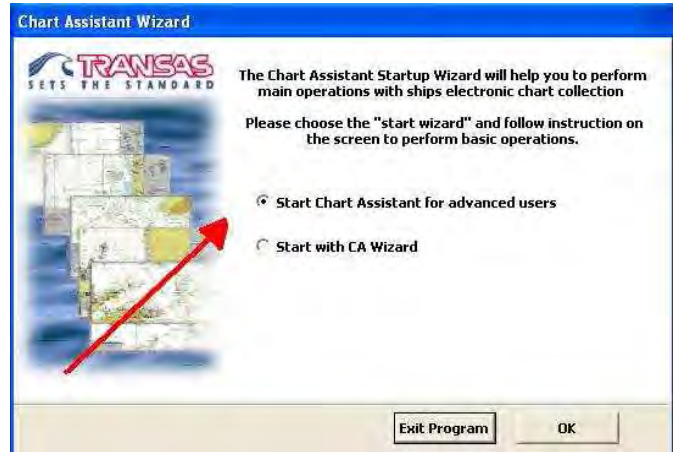
The Chart Assistant application is build to fulfill all actions regarding your chart folio. Starting the application you have the choice between a CA Wizard and the Chart Assistant for advanced users. The Wizard will guide you through a limited amount of actions CA is capable of.

As mentioned in the Chapter Charts Transas ECDIS is capable to display multiple chart formats. Depending on your chart supply and company regulations, you have to choose which charts you have on board.

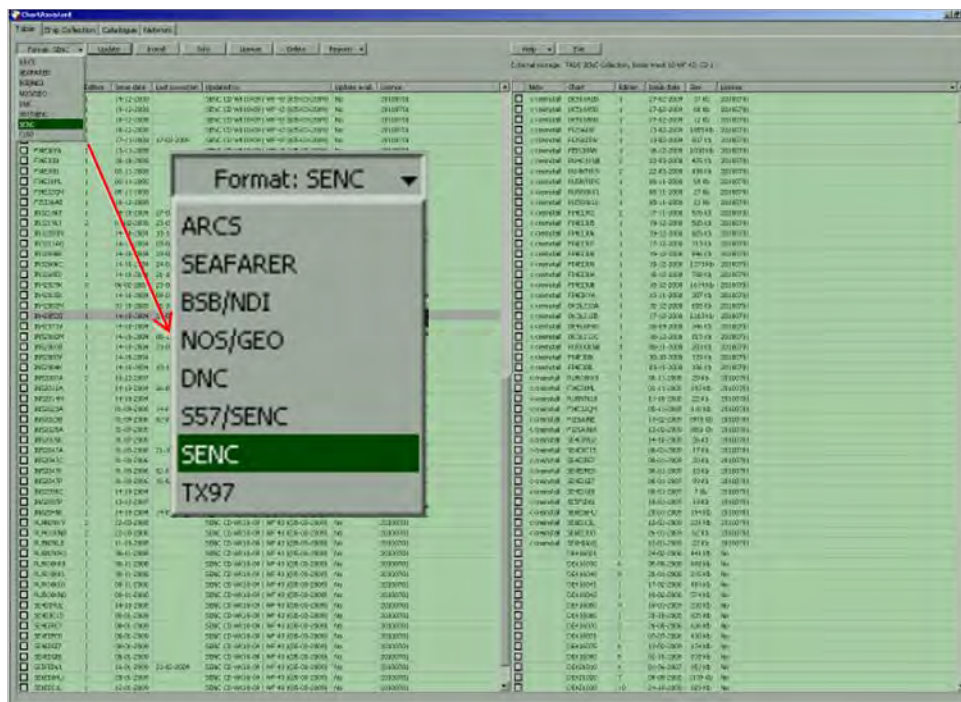


How to do your settings

Getting started with the Chart Assistant we recommend running the Chart Assistant application for advanced users. All possible actions now can be carried out.



After you started the following window will appear. In the top left corner you have to change to SENC (TADS Service) chart format.



By entering the Ships collection Tab you have to choose the Configuration Button to open the Config dialog box. Go to email Panel.

You shall have two folders on a USB device

(only for transferring Data between the Comms PC and your ECDIS)

one called CA_Inbox and the second one called CA_Outbox.



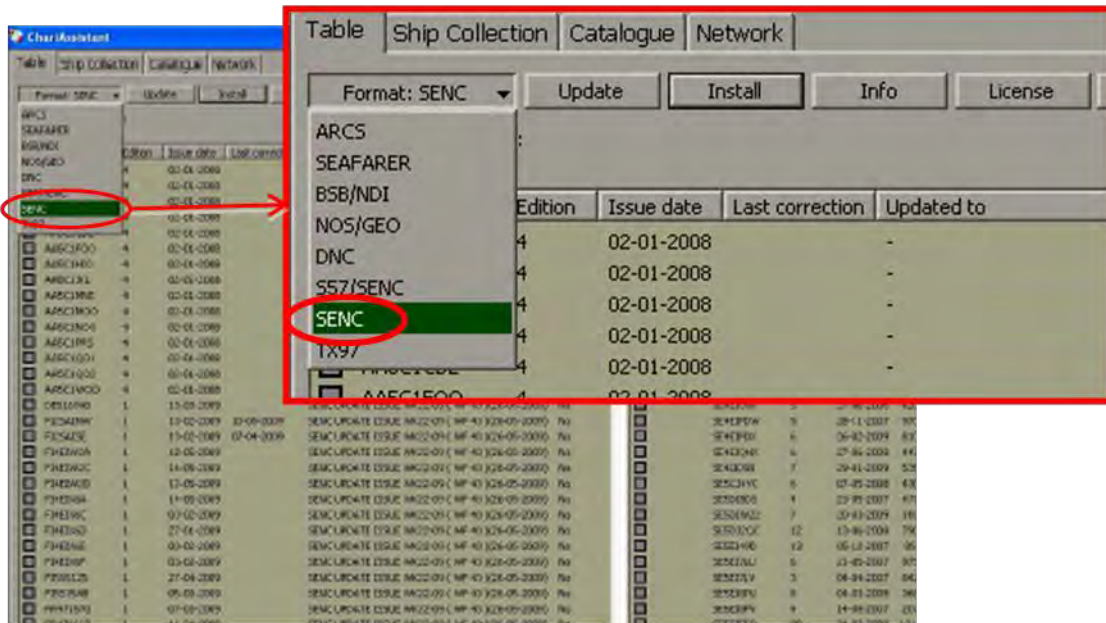
The Configuration dialog box is shown with the 'E-mail' tab selected. It contains several sections: 'E-mail settings' with fields for Outlook profile, Address, and Send to; a 'Reply' section with an 'E-mail message size limit' dropdown and an 'E-mail' field; and a 'Manual files transfer' section with 'Inbox folder' and 'Outbox folder' fields, each with a 'Browse' button. The 'E-mail' field, the 'Inbox folder' field, and the 'Outbox folder' field are all circled in red. At the bottom are 'Ok', 'Cancel', and 'Help' buttons.

Make sure that the correct email address is given under the settings; this is the email address to which our server will reply when you order new catalogue, licenses, charts or updates to the existing charts.

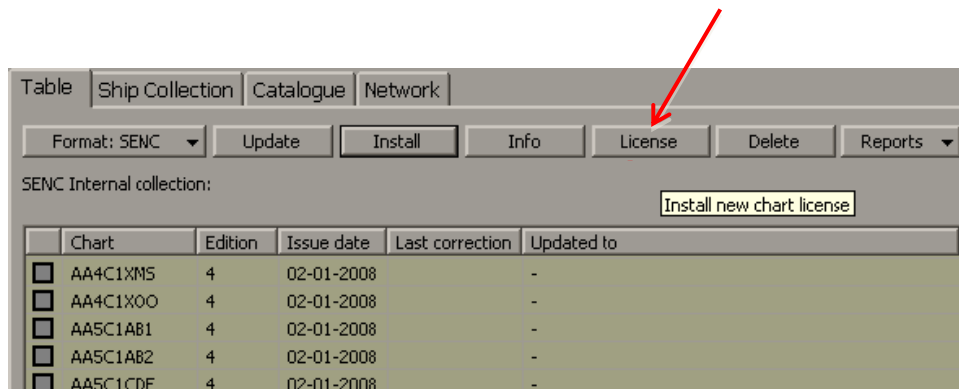
Install your Chart & License

Exit Navi-Sailor and start Chart Assistant for advanced users.

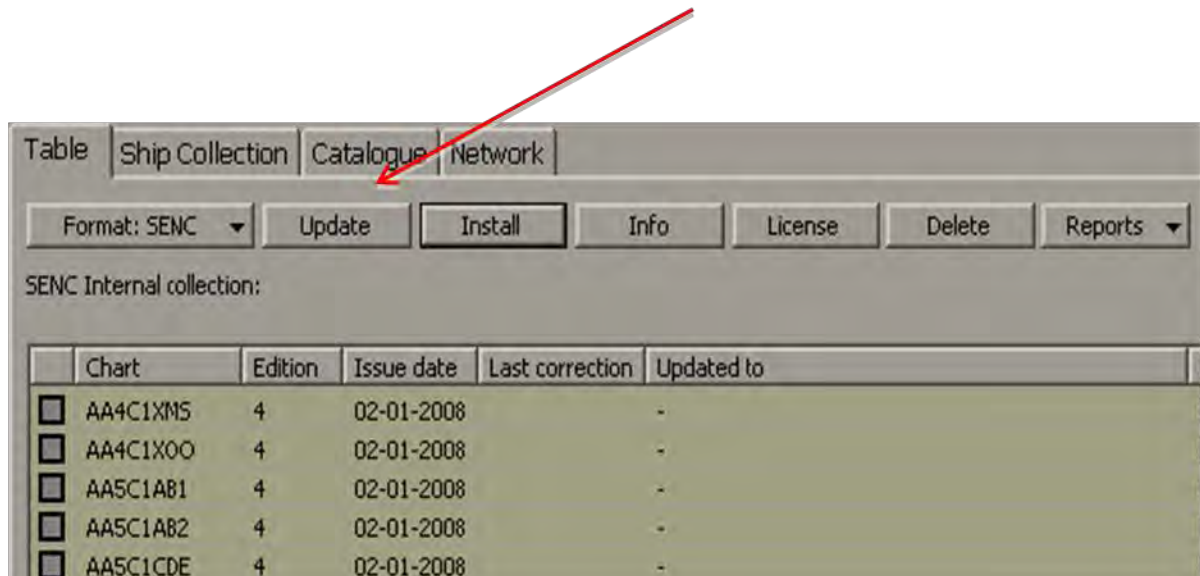
Choose format your required format. Use "SENC" for TADS-Service.



Insert the USB stick with the new license, and then push the "License" button to install a new license:



Insert the Base CD 1 or DVD, then click the **Update** button, and choose CD as the media you wish to install from:



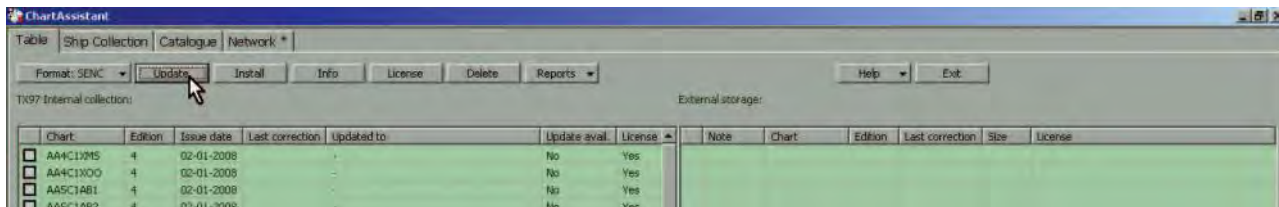
Follow the instructions which are given on the screen; repeat procedures above (6-8) with the other base CDs as well except for TADS ENC BASE CD no 8.

Insert the latest update CD and click Update button for further selection a media from where updates will be installed.

Close Chart Assistant utility.

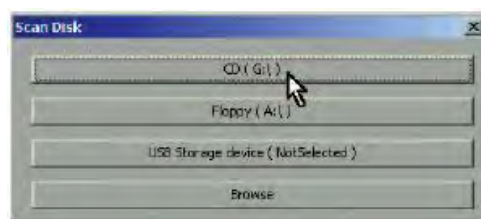
Run Navi-Sailor! It may now take longer to start the Navi-Sailor task due to the new Chart folio of your ship.

Insert CD with a chart folio into the CD drive. Press the **Update** button.

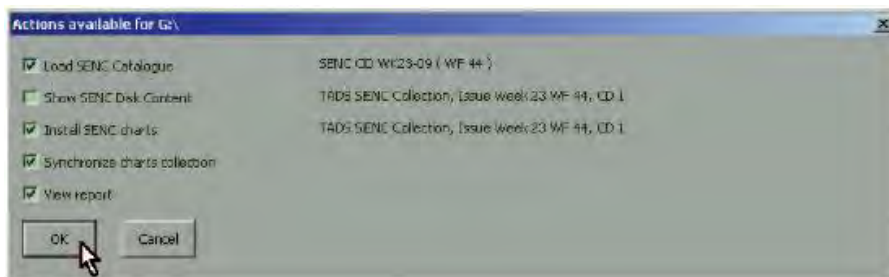


The **Scan Disk** window will open up.

Press the **CD(G:\)** button.



The CA will scan the external storage, will automatically identify the chart format and type of data it contains, and will provide a list of available actions:



NOTE:

If the Install SENC charts option is selected, all the charts contained on the disk, which the licenses are available for, will be automatically installed. If the Show SENC Disk Content option is selected, the screen will display a list of charts for the further selection and installation of necessary charts in the manual mode.

If Show SENC Disk Content option is selected, after the end of the scanning process, the Ship Collection panel displays dashed outlines of all the charts found on the CD. In the Table panel these charts are shown in the right-hand part of the table.

Check Synchronize charts collection checkbox and press the OK button to confirm the installation of chart folio. When this is done you will see the Chart Assistant last operation log window with chart installation log:

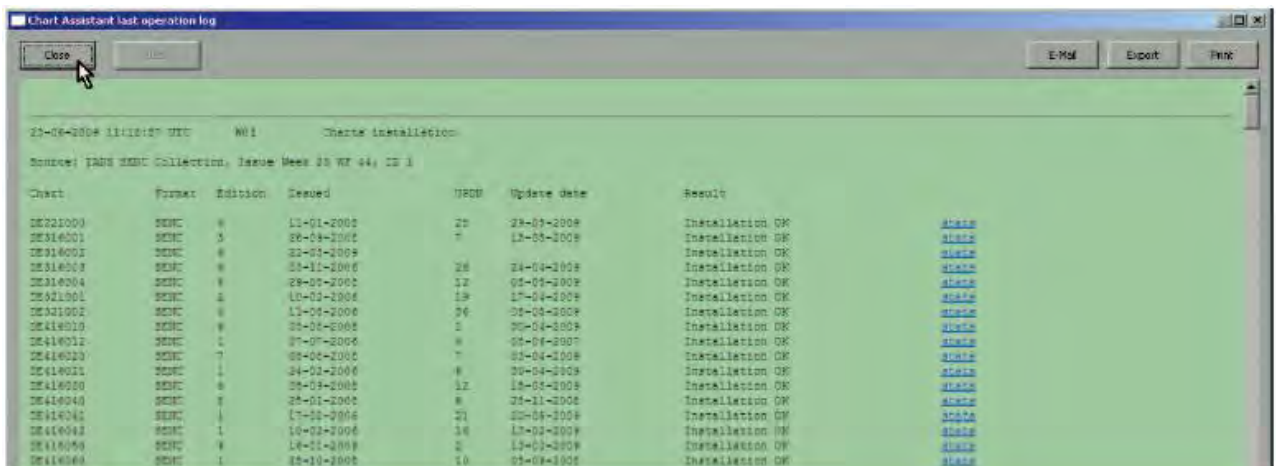


Chart	Format	Edition	Issued	WPDW	Update date	Result
SE221000	SENC	8	11-01-2008	25	28-09-2008	Installation OK
SE316001	SENC	5	30-09-2007	7	12-05-2009	Installation OK
SE316003	SENC	8	31-03-2009			Installation OK
SE316005	SENC	8	31-11-2008	26	24-04-2009	Installation OK
SE316004	SENC	8	28-09-2008	12	05-09-2009	Installation OK
SE316001	SENC	4	10-03-2006	19	17-04-2009	Installation OK
SE316002	SENC	8	13-09-2008	24	05-04-2009	Installation OK
SE418010	SENC	8	30-04-2008	1	05-04-2009	Installation OK
SE418012	SENC	1	07-07-2006	8	05-04-2009	Installation OK
SE418013	SENC	7	08-06-2006	7	05-04-2009	Installation OK
SE418011	SENC	1	34-02-2006	8	05-04-2009	Installation OK
SE418020	SENC	8	30-09-2008	12	18-05-2009	Installation OK
SE418040	SENC	8	28-01-2008	8	28-11-2008	Installation OK
SE418041	SENC	1	17-10-2006	21	20-04-2009	Installation OK
SE418042	SENC	1	10-02-2006	18	17-03-2009	Installation OK
SE418050	SENC	8	18-11-2008	2	13-03-2009	Installation OK
SE418060	SENC	1	25-10-2007	10	05-04-2009	Installation OK

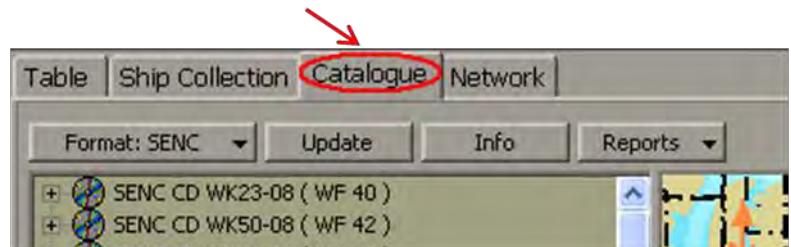
Close the log. Chart installation process is completed.

Consider: All logged actions in Chart Assistant may be reached also with the Reports icon under the Table view.

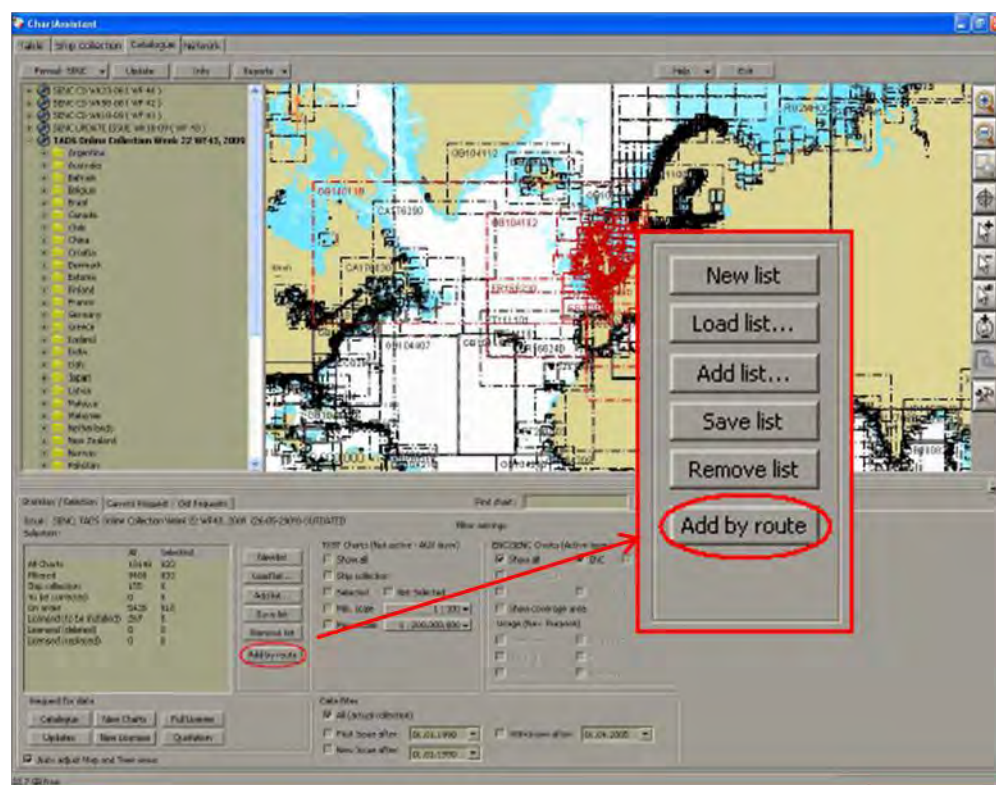
Order Chart Licenses by Route

Create your route in Navi-Sailor and save it. Then start Chart Assistant for Advanced users.

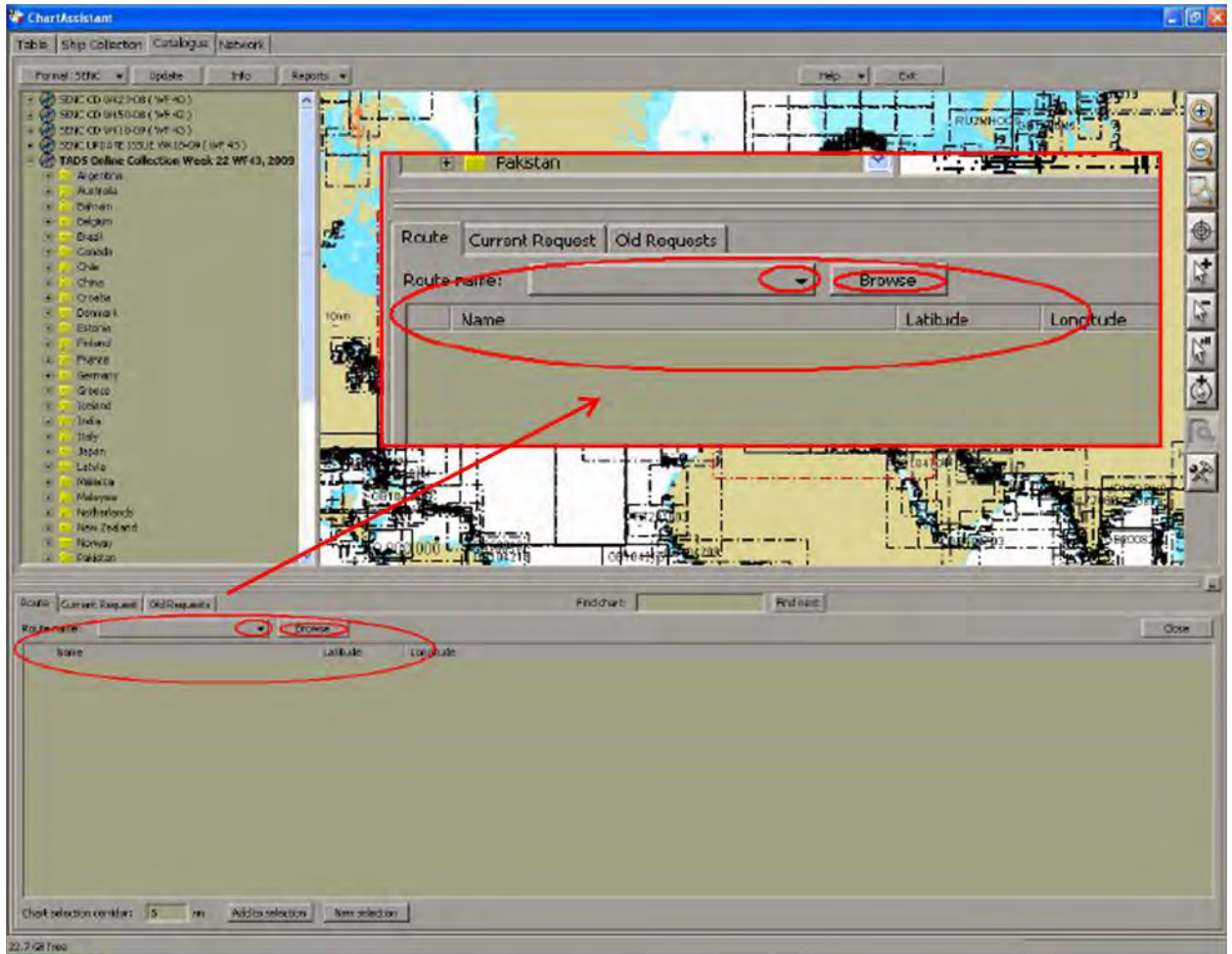
Change format to **SENC**, change to **Catalogue**.



Click the **Add by route** button to select the charts affected by a pre-planned route.



Load the route you created earlier in Navi-Sailor by either clicking the arrow (drop down menu) or the **Browse** button.

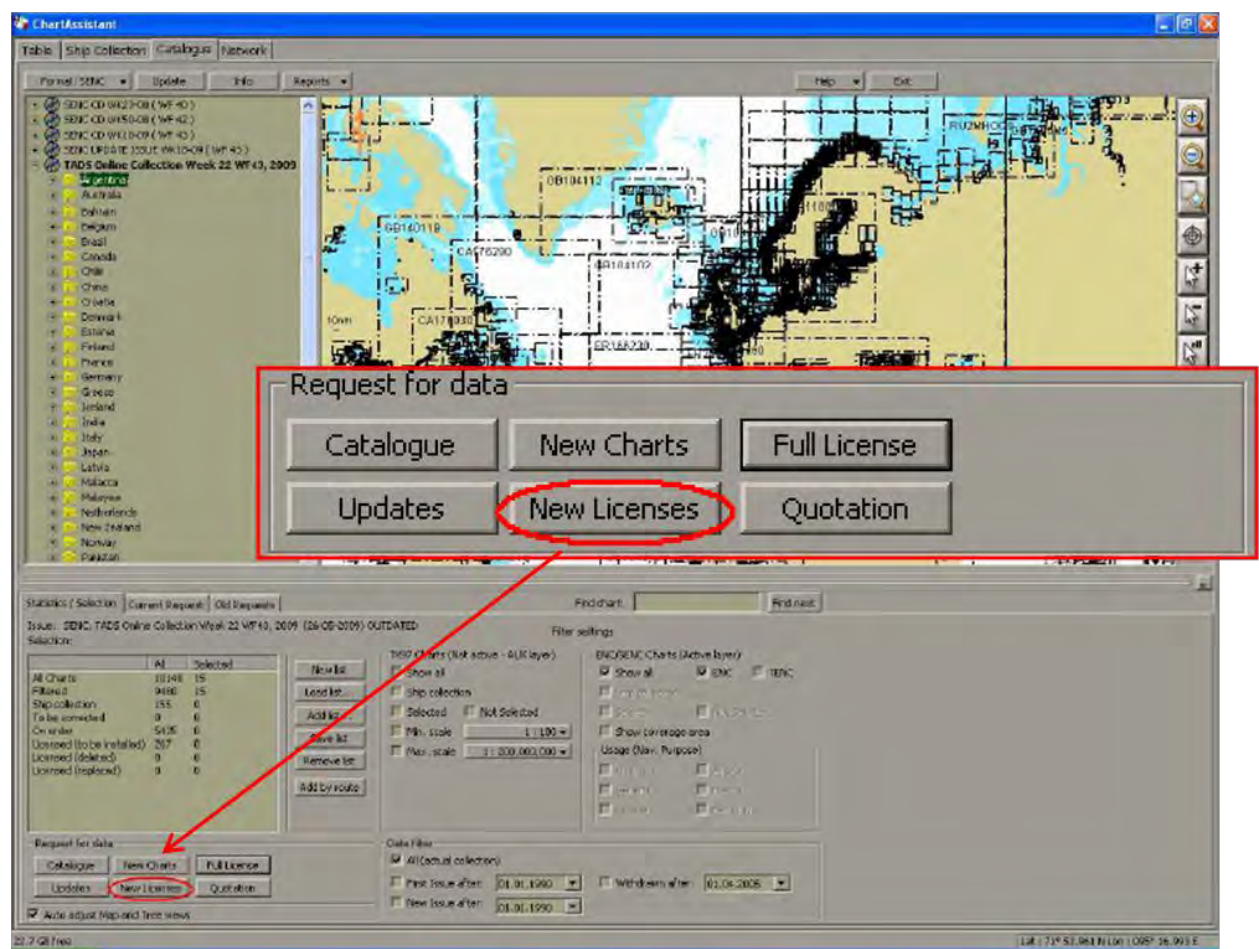


Set the number of how wide range of charts (Chart selection corridor) would you like to have added to your basket (in Nautical miles). Then click **Add to selection**.

12	30° 10.811 N	089° 22.627 W
13	30° 10.807 N	089° 23.408 W
14	30° 10.789 N	089° 24.138 W
15	30° 10.221 N	089° 27.185 W
16	30° 09.483 N	089° 30.207 W
17	30° 09.219 N	089° 31.174 W
18	30° 08.007 N	089° 32.671 W

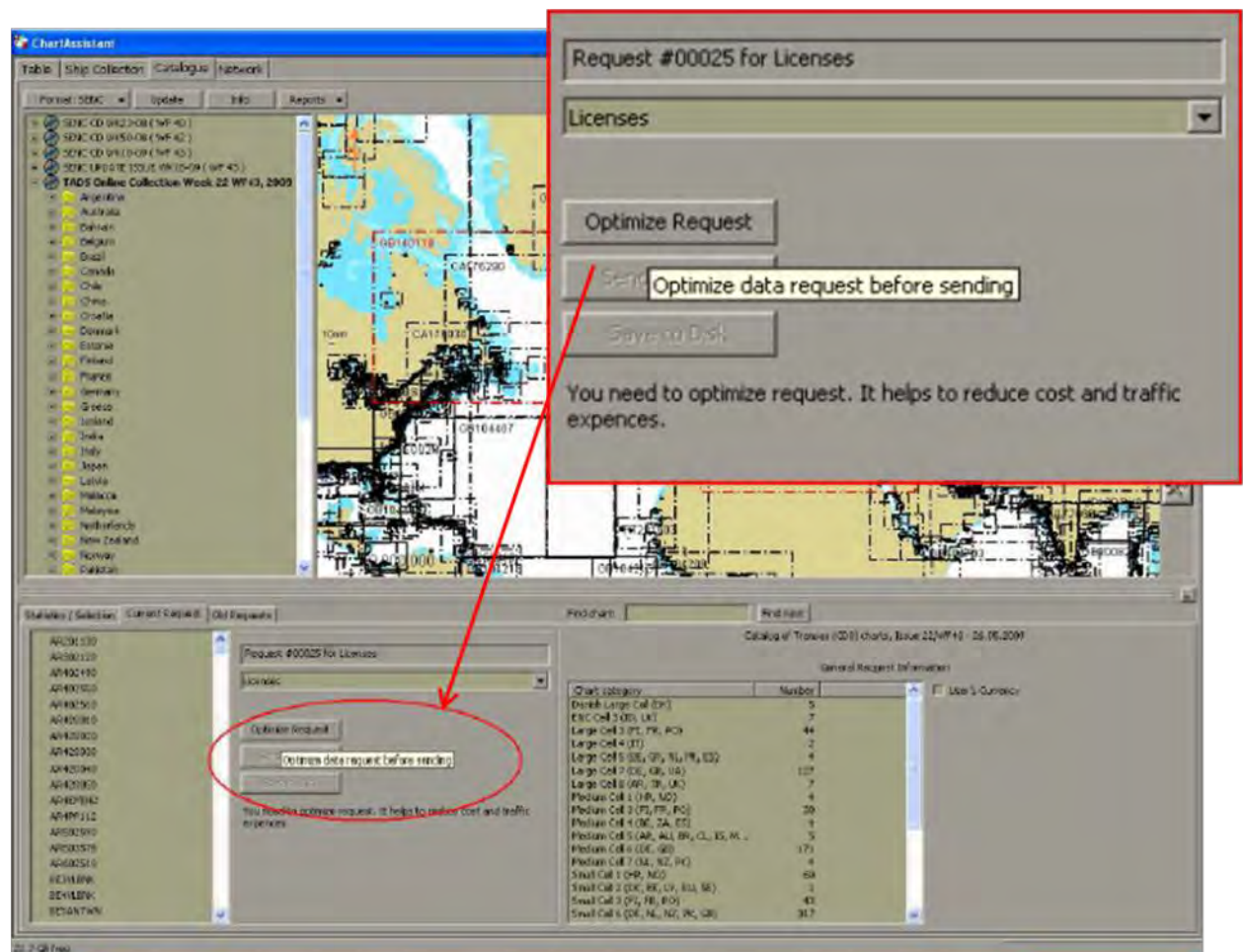
Chart selection corridor: nm **Add to selection** New selection

Click the **New Licenses** button in the Catalogue panel.



The screenshot shows the ChartAssistant software interface. The 'Catalogue' panel is active, displaying a list of countries and regions on the left and a map of the Caribbean on the right. A red box highlights the 'Request for data' dialog box, which contains buttons for 'Catalogue', 'New Charts', 'Full License', 'Updates', 'New Licenses', and 'Quotation'. The 'New Licenses' button is circled in red. A red arrow points from the 'New Licenses' button to the 'Request for data' dialog box. Below the dialog box, the 'Statistics' panel shows a table of chart statistics and a 'Request for data' section with buttons for 'Catalogue', 'New Charts', 'Full License', 'Updates', 'New Licenses', and 'Quotation'. The 'New Licenses' button is also circled in red in this section.

Click on the **Optimize Request** button to run the automatic check functionality. You have to perform the optimization to get send your request for chart licenses.



Request #00025 for Licenses

Licenses

Optimize Request

Send

Optimize data request before sending

Save to Disk

You need to optimize request. It helps to reduce cost and traffic expenses.

Statistics / Selection: Current Catalog: Old Requests

Request #00025 for Licenses

License:

Optimize Request

Optimize data request before sending

Save to Disk

You need to optimize request. It helps to reduce cost and traffic expenses.

Chart category	Number
Drink Large Cell (DR)	5
ENC Cell 1 (DR, UK)	7
Large Cell 3 (DR, FR, PC)	44
Large Cell 4 (DR)	2
Large Cell 5 (DR, GR, IT, PL, ES)	4
Large Cell 7 (DR, GR, US)	107
Large Cell 8 (DR, TR, UK)	7
Medium Cell 1 (DR, NO)	4
Medium Cell 3 (DR, FR, PC)	20
Medium Cell 4 (DR, ZA, ET)	9
Medium Cell 5 (DR, AL, BR, CL, ES, MX)	5
Medium Cell 6 (DR, GR)	171
Medium Cell 7 (DR, NZ, PG)	4
Small Cell 1 (DR, NO)	69
Small Cell 2 (DR, FR, GR, IT, PL, ES)	1
Small Cell 3 (DR, FR, PC)	43
Small Cell 4 (DR, NL, NO, PL, UK)	317

The optimization of your request checks your current chart folio and licenses and may delete charts from your request when you still have a valid license.

On the right side (in “General Request Information” field) you can now see the approximate price for the order.

This price is only a rough estimate for a 12 month licensing of all marked charts.

Catalog of Transas (CD8) charts, Issue 22/WF43 - 26.05.2009

General Request Information

Chart category	Number
Medium Cell 3 (FI, FR, PO)	30
Medium Cell 4 (BE, ZA, ES)	4
Medium Cell 5 (AR, AU, BR, CL, IS, M...	5
Medium Cell 6 (DE, GB)	171
Medium Cell 7 (NL, NZ, PK)	4
Small Cell 1 (HR, NO)	60
Small Cell 2 (DK, EE, LV, RU, SE)	1
Small Cell 3 (FI, FR, PO)	42
Small Cell 6 (DE, NL, NZ, PK, GB)	317
Small Cell 7 (AR, AU, BR, CL, IS, MX, ...)	3
Small Cell 9 (BE, GR, ZA, ES, TR)	2
Total Charts on order	833
Total Request Cost, USD	8227.36

Price without VAT and freight.
Additional distributor discounts could be applied

User's Currency

Click **Send Request** button.

Request #00025 for Licenses

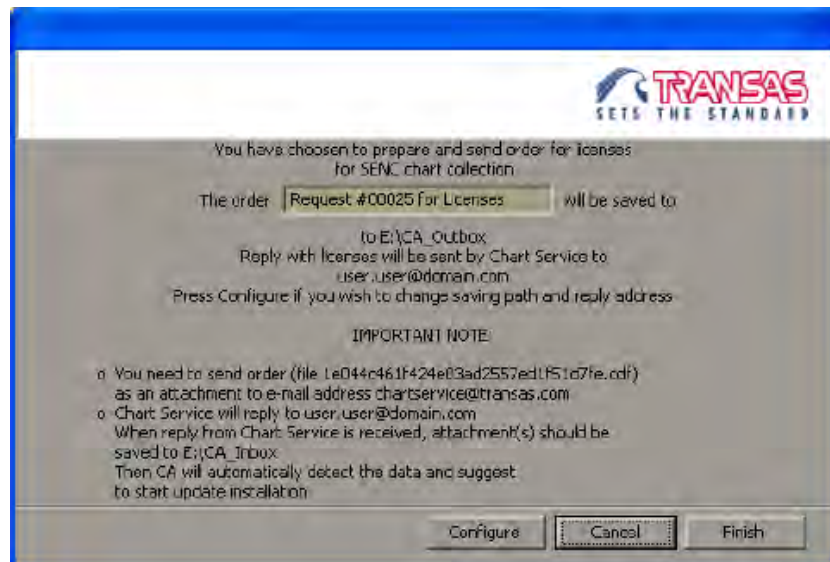
Licenses

Optimize Request

Send Request

Save to Disk

The dialog box will appear. Here you can find useful information about where the files will be saved and where to send them. Create two folders on the USB stick, one called inbox and the second one called Outbox (For full information upon on settings adjustment see How to do your settings in CA document). Make sure your files will be saved on the USB stick in outbox. Click “finish”.



Bring the USB stick to your Internet/communication computer. Send the file you have just made to the Chartservice@transas.com.

In a short while (as soon as Transas has confirmed the order) you will receive a new license sent to you by email. Save the license on the USB stick in the Inbox folder. Bring the stick to the ECDIS and go to Chart Assistant program. Chart Assistant will automatically detect the .cdf file containing the new license.

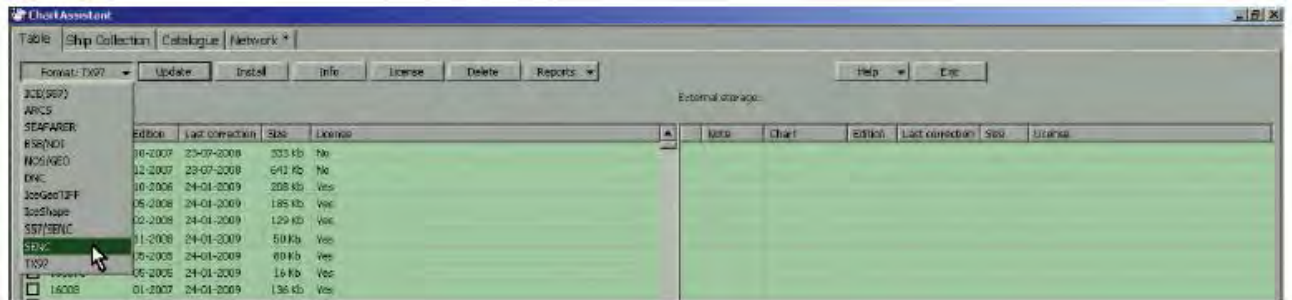
When this is done, you will have to run the BASE CDs to load the new charts.

Run the latest update CD.

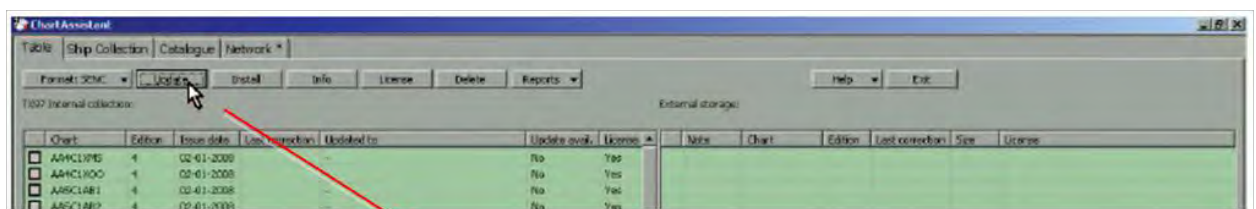
Your new charts are now in the system.

Update via CD

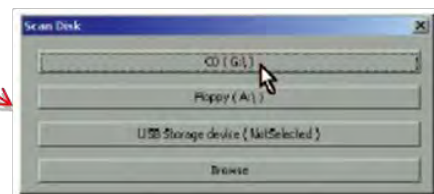
Make sure that you selected the relevant chart format. For TADS Service choose SENC chart format.



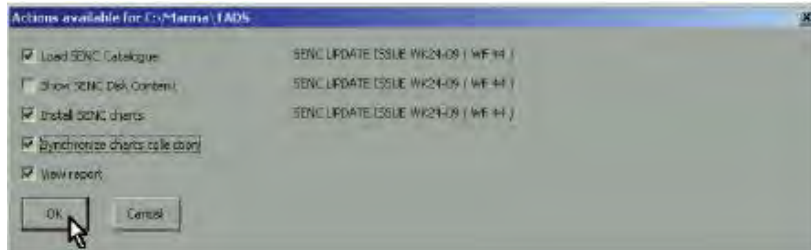
Press the **Update** button to perform the updating process.



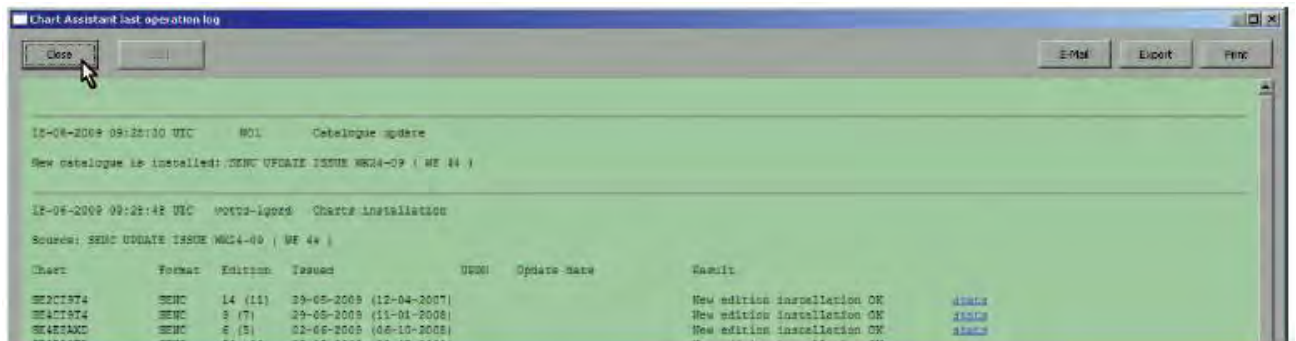
The **Scan Disk** window will open up:



Specify the external storage containing the updates. To run updates from the disk press the **CD (G:\)** button. A window with a proposal to install the update will appear:

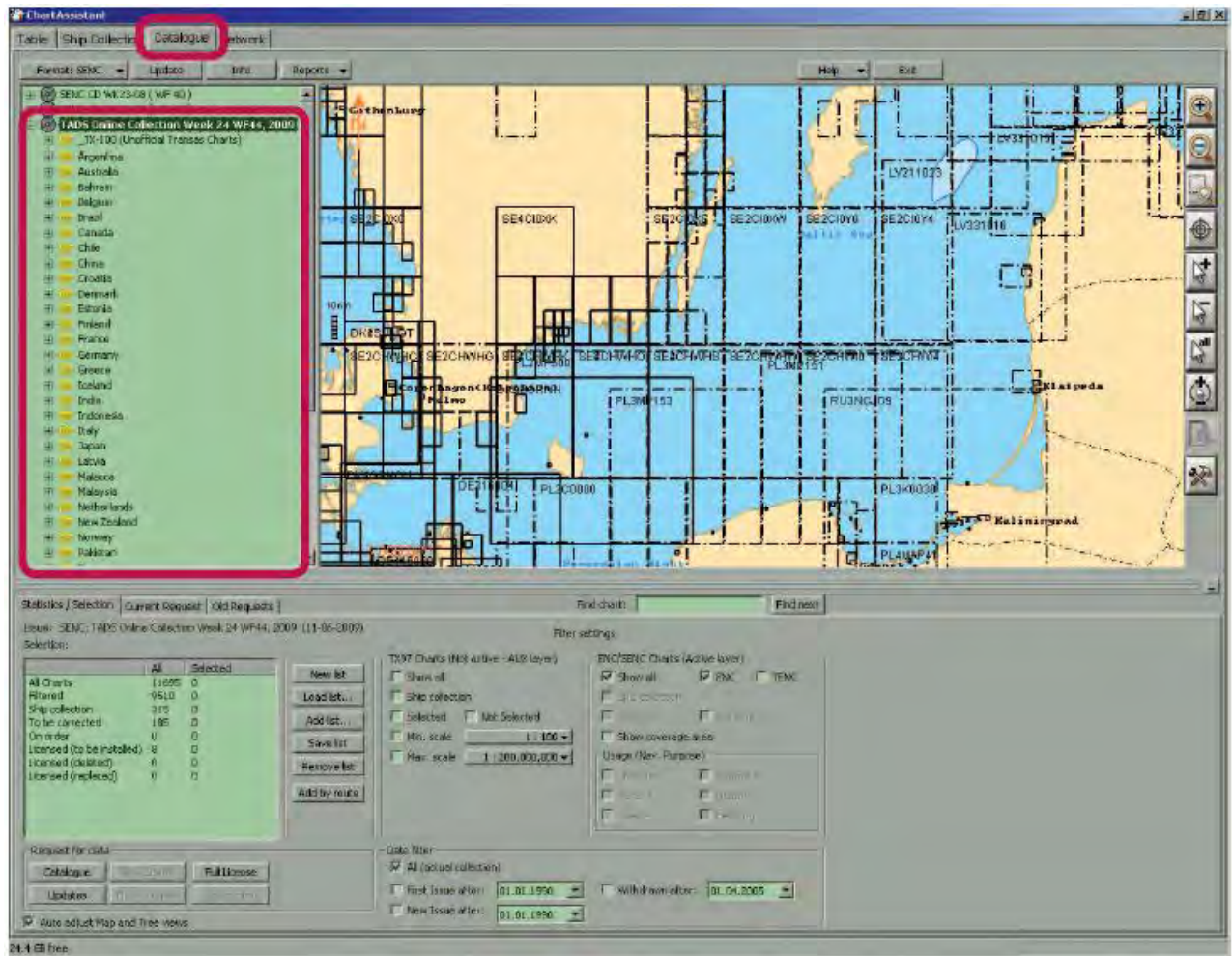


Check **Synchronize charts collection** checkbox and press the **OK** button to confirm the installation of updates. When this is done you will see the **Chart Assistant last operation log** window with updating log:



Close or print the log-file if you need the paperwork. The Chart updating process is completed.

In the **Catalogue** panel you can see which collection of updates is in your system. The catalogue in the catalogue tree which is highlighted by bold is the latest loaded catalogue:

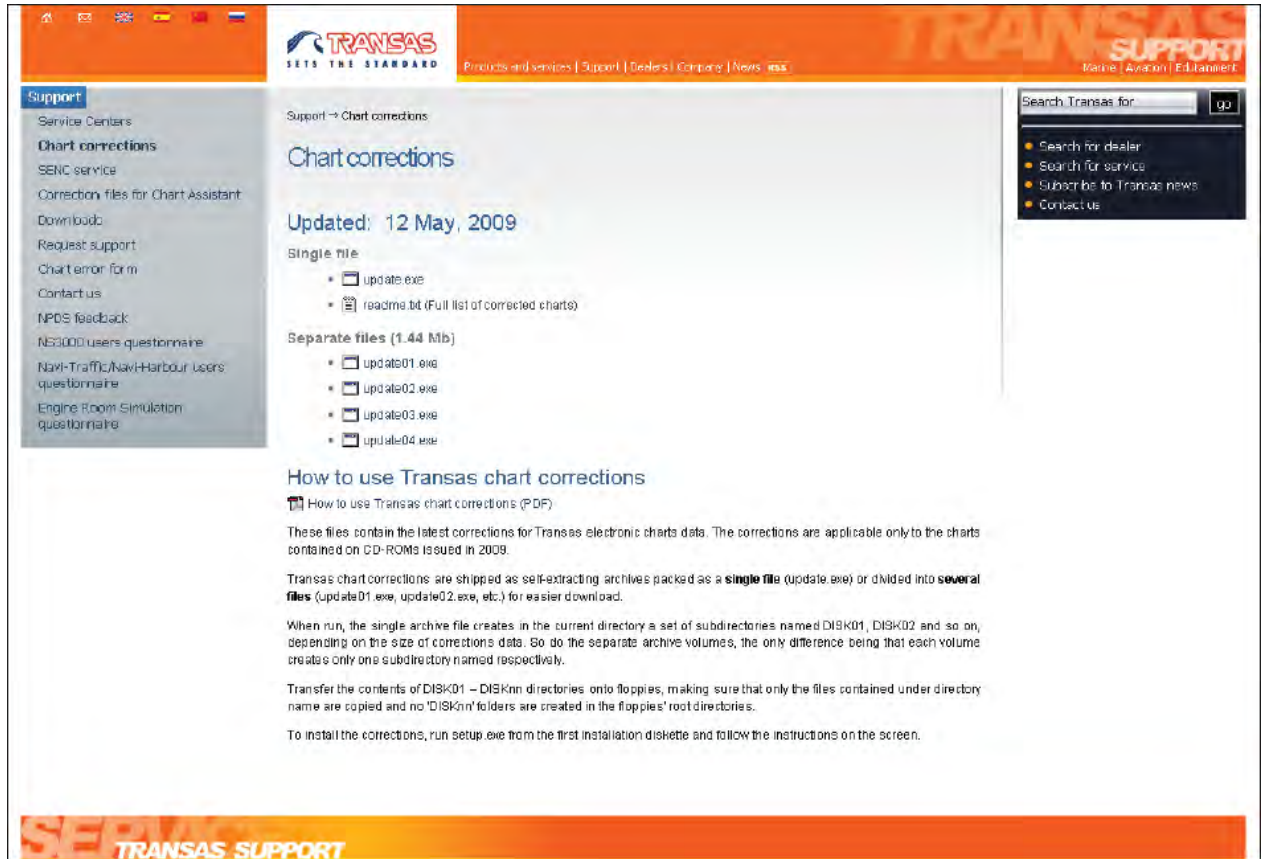


The Catalogue panel shows the charts of TX-79 and SENC formats available for ordering and updating from Transas. This catalog of TX-97 and SENC charts could be updated from chart CDs or downloaded online from Transas chart server.

Obtaining Chart Correction

Obtaining chart correction service is also possible through the Transas site:

http://www.transas.com/support/chart_corrections/



The updating information is prepared every week and is placed on the company web site (http://www.transas.com/support/chart_corrections/). The user specifies the delivery at the time when the Agreement is signed: direct via Internet or on electronic carriers via shore agencies representing the user's interests.

Transas SENC Format Charts Updating

SENC updating data consists of:

- Update - includes all the incremental updating files in S-57 received since the time of SENC CD issue (file **Update<NN>_WF<XX>. exe**); it should be noted that available for installation is only the updating for charts purchased by the customer.
- New Charts - includes all the new charts in Transas SENC format received since the time of SENC CD issue.
- New Edition - includes all the new edition charts in Transas SENC format not included in SENC CD. The updating information is stored in the form of self-extracting archives (e.g. **Update24_WF44. exe**).

For Transas format SENC, the following updating can be used:

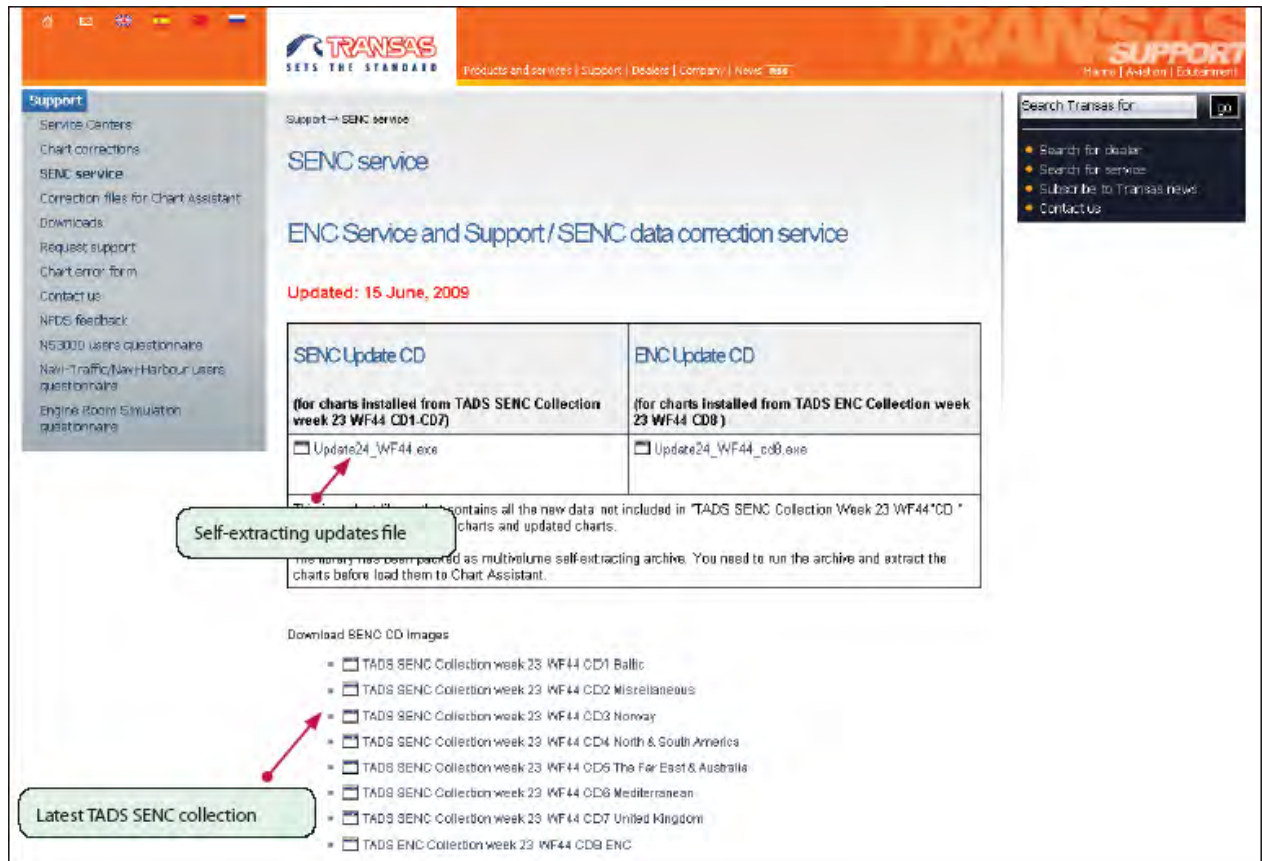
- Open S-57 updating.
- S-57 updating encoded in accordance with S-63 standard (if valid permits are available).
- Transas encoded S-57 updating.
- Binary updating (received with e-mail from the Transas chart server).

ENC Format Charts Updating

ENC format charts can only be updated via the company's Internet site (http://www.transas.com/support/senc_data/). The collection on the site is updated every week.

How to use the official chart corrections

Open the site page http://www.transas.com/support/senc_data/



The screenshot shows the TRANSAS support page for SENC data correction service. The page is titled "ENC Service and Support / SENC data correction service" and is dated "Updated: 15 June, 2009". It features a table with two columns: "SENC Update CD" and "ENC Update CD". The "SENC Update CD" column lists "Update24_WF44.exe" for charts installed from TADS SENC Collection week 23 WF44 CD1-CD7. The "ENC Update CD" column lists "Update24_WF44_cd8.exe" for charts installed from TADS ENC Collection week 23 WF44 CD8. A red arrow points to "Update24_WF44.exe" in the table. Below the table, a callout box labeled "Self-extracting updates file" points to the text: "The library has been packed as multivolume self-extracting archive. You need to run the archive and extract the charts before load them to Chart Assistant." Another red arrow points to the "Latest TADS SENC collection" link in the "Download SENC CD Images" section.

File **Update<NN>_WF<XX>.exe** contains all the new charts, new editions of charts and updated charts which are not included in the latest "TADS SENC Collection CD".

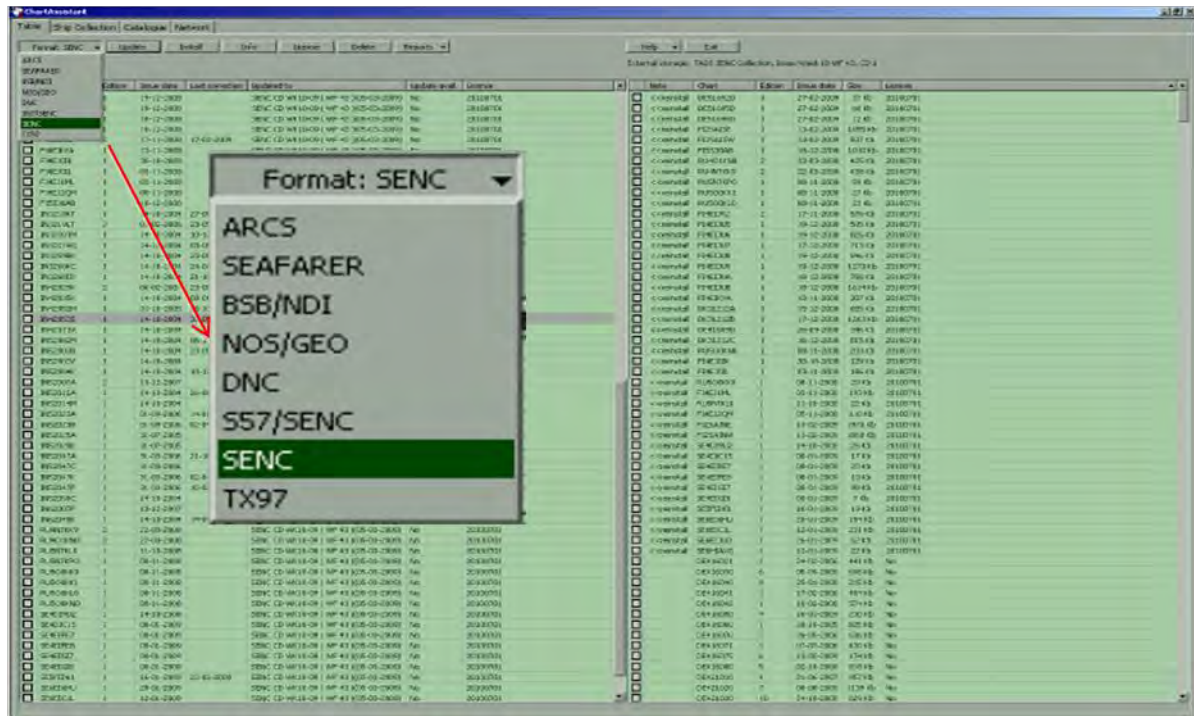
If you have any previous issue of TADS SENC chart folio it is recommended to download SENC CD Images and install new TADS SENC Collection before installing updates. Previously installing new charts you need to update your license.

File **Update<NN>_WF<XX>.exe** has been packed as self-extracting archive. You need to run the archive and extract the charts before installation them by means of Chart Assistant utility.

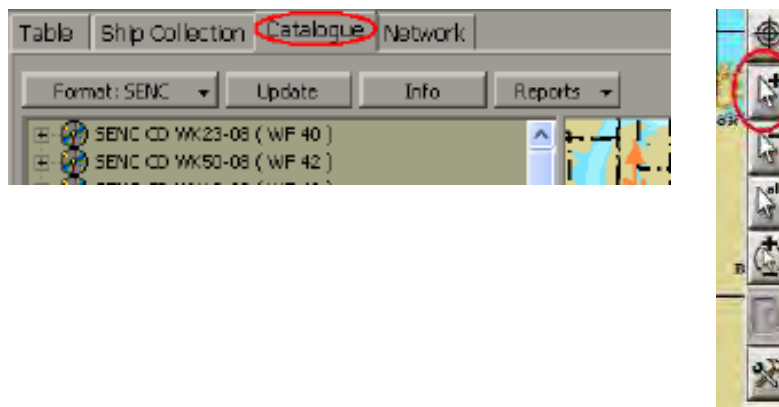
When extraction is completed, a SENC library named **Update<NN>_WF<XX>.clb** is created in the current directory. Specify the path to this directory during installation of updates.

Update via Email

To update your chart folio, start Chart Assistant for Advanced users and change into the required format. Use SENC for TADS-service.

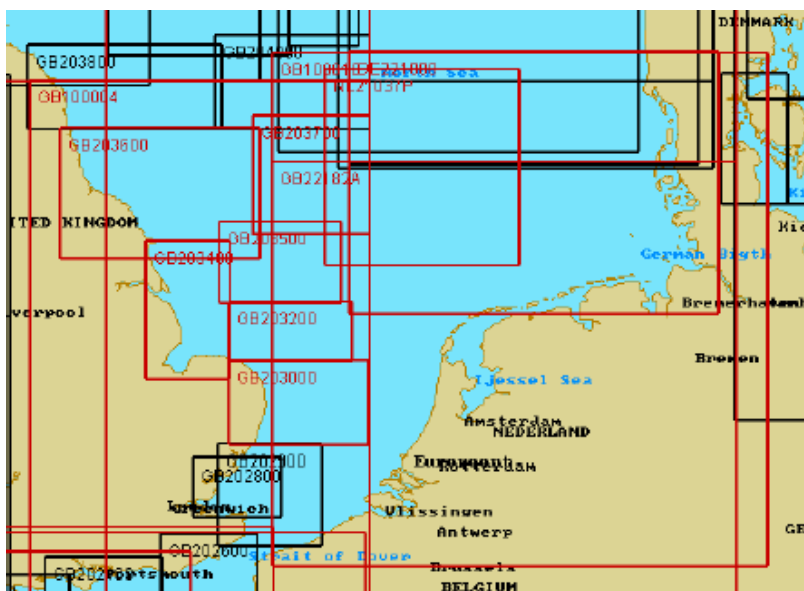
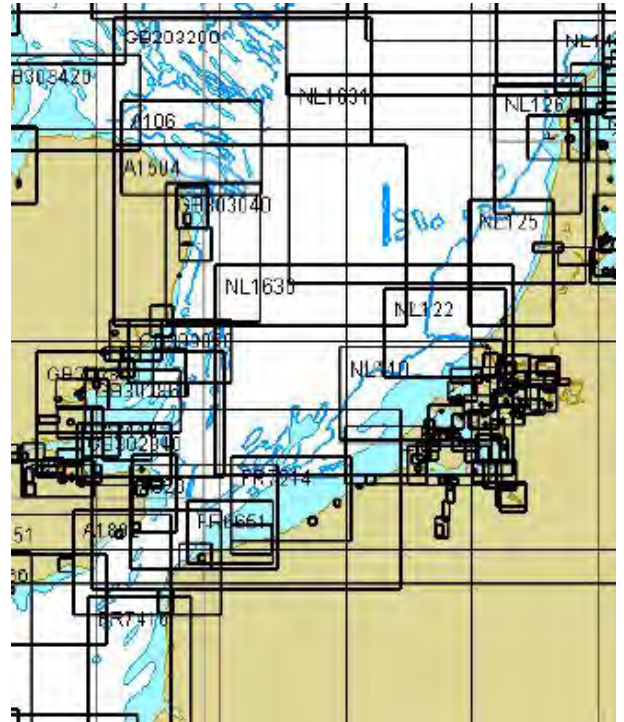


Change to **Catalogue** and click the “+” tool to enable the “adding function”.



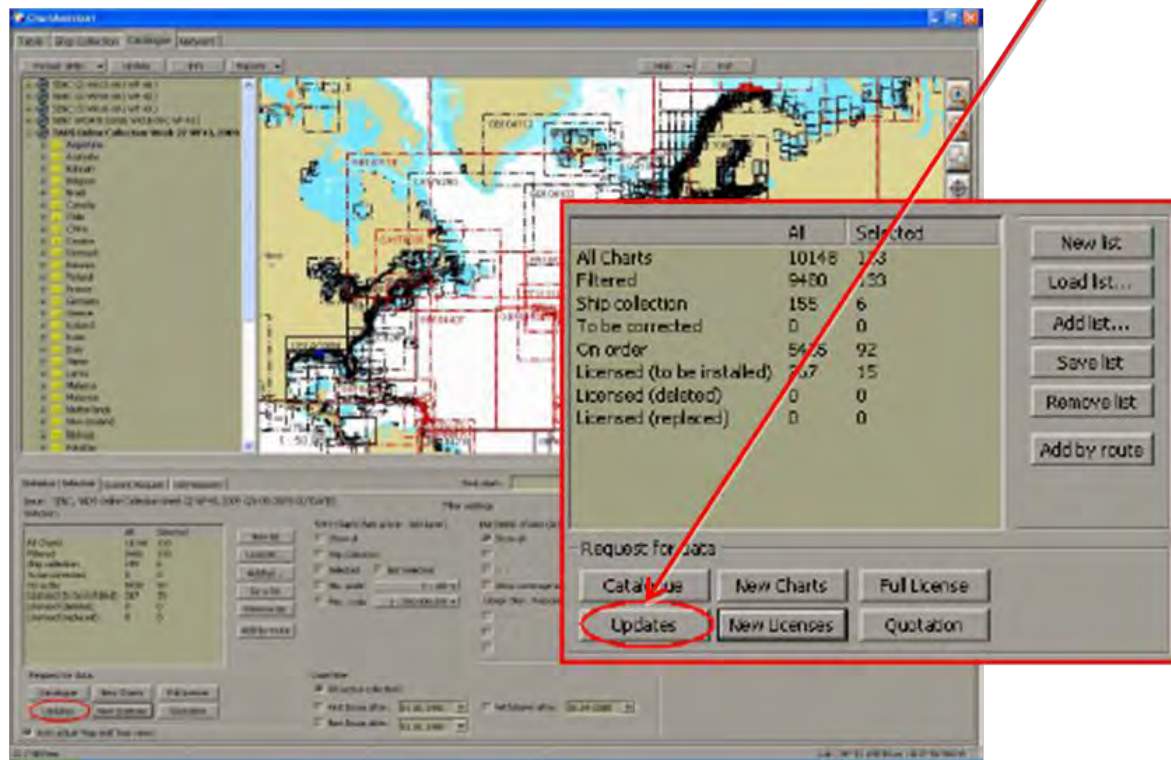
It is also possible to use the ‘Add by route’ functionality or to use a regularly update of all installed charts. The carried out actions is only about the selection of the charts you want to perform a certain action with.

All charts that will be marked now are charts that you would like to order updates for. Left click in the map, and then by moving the trackball you will make the area larger/smaller. Please note that all charts that are connected to or in the area will be marked.



Once you are happy with the area then click the left button again and the charts will be marked red (those boundaries are highlighted by red lines).

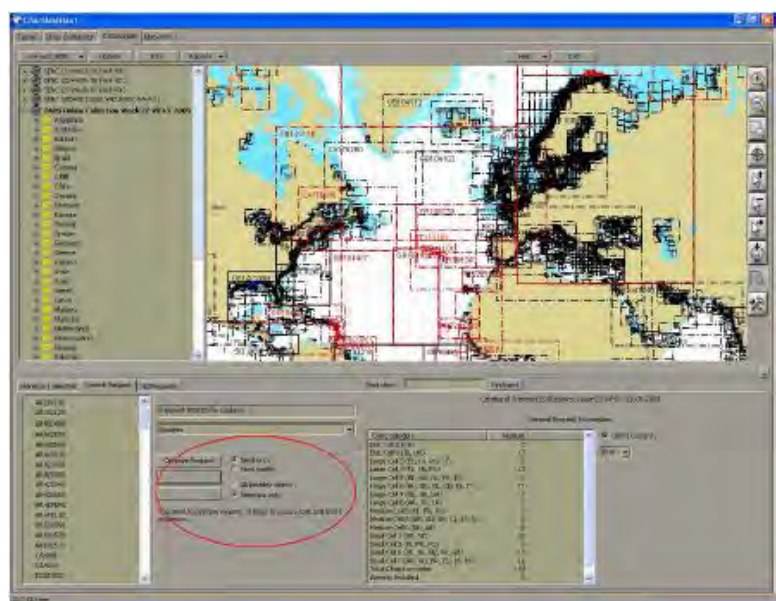
Click the button “**Updates**”.



Click **Optimize request**.

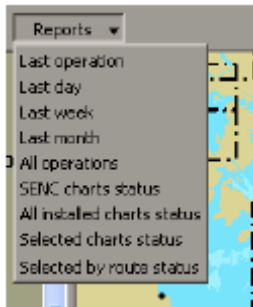
(Only licensed charts are available for updates, unlicensed will be excluded).

NOTE that if you want to order updates for all installed charts you can check that box and in case of that you don't have to mark any chart manually.



To send the request, attach your USB device to the internet/communication computer on the bridge and send the .cdf file as an attachment to the chartservice@transas.com.

A new file/ files will be sent to you from our chart server. Save this file on the USB stick (same place as you use to save received files from TRANSAS). Insert the USB stick into the ECDIS and Chart Assistant will automatically recognize the new updates and ask if you want to install them.



Once they are installed you can take out a report to find out what has been done.

Synchronize your Network with your other workstations to have the latest update available on all workstations.

Note: Do not try to open your sent .cdf files and also the reply of the chart server. The Chart Assistant will recognize these files as corrupted and not install them.

Answers to Exercises and Questions

Answers to Questions 1

1. Raster charts are scanned images of traditional paper charts and look similar displayed in an ECDIS Computer this mode is called RCDS.
2. Vector charts are capable of creating alarms on charted objects due to the safety parameters of ship or users discretion e.g. Area Alarms or CPA alarm.
3. Also vector charts are produced in a certain scale. Raster charts will get more and more pixelated in the ECDIS presentation by zooming in so the user is aware of a more and more inaccurate display on the screen. By zooming in a vector chart the display assumes to be precise, but in fact the charted data is only also getting inaccurate. This inaccuracy is displayed at the left below corner of the chart panel with two orange lines.

[Back to questions](#)

Answers to Exercise 1

1. Povorotnyy Lighthouse, white tower as light support, height 18 m, additionally all light information of the different sectors may be read out.
2. St. Petersburg.
3. Distance is 725,39 NM, western cardinal buoy Amrumbank W.
4. Bearing 137.7° - 8,22 NM to Amrumbank S cardinal buoy.

[Back to exercise](#)

Answers to Exercise 2

1. Safety contour takes now the 10m contour line from the chart and displays the spot sounding of less than 10m in black.
2. There is a starboard hand lateral mark which may be found under the buoy information in the list.
3. Now ECDIS displays the 15m contour line being the border between navigable and non-navigable waters.
4.  Indicating an isolated danger within the navigable waters you defined, but of a depth less than your entered value or of an unknown depth.
5. With this 15m safety contour an obstruction topic has been added to the information window.
6. ECDIS is displaying again the 10m contour line as starting the non-navigable waters all spot soundings of a depth less than 8m are displayed in black the others in light grey.

[Back to exercise](#)

Answers to Questions 2

1. Standard Display, Custom Display and All Layers. The only on which is not allowed is Base Display, it is available as a reference for other used tasks.
2. The contour which represents the safety contour value or the next deeper contour line available in the chart.
3. What is the significant difference between these two S-52 chart symbols?



They are both displaying isolated dangers. The magenta colored is an isolated danger which is a danger for your vessel on the entered safety values but within the navigable waters

The dotted line is the display if the isolated danger is in the non-navigable area ((below your safety contour) or in navigable waters when it is safe to pass over.

4. They are displayed in Standard, Custom and All Layers.
5. The Information cursor.
6. WGS 84.
7. The ENC vector chart is originated by an official hydrographic office and is the only chart which may act as a substitute of the traditional paper chart.
8. Always the best scaled chart which is available on your ECDIS Computer.
9. They are timely ordered.
10. You will activate the previously selected cursor mode at the same time the information window opens and the cursor is caught in the chart panels limitations

[Back to questions](#)

Answers to Questions 3

1. Both actions can be carried out graphically by using the cursor, tabular by entering numerical values in the table and in a semi graphical mode by using the information window entered with the TAB key functionality.
2. Great Circle (GC), Rhumb Line (RL)
3. Every ENC Chart may have coding errors. A manual route check also may eliminate some automatic generated Alarms by zooming in to a better scaled chart along your planned route.

[Back to questions](#)

Answers to Exercise 5

Create a new route using the positions from the Waypoint list.

- WP 1: Norfolk Lambertspoint Coal Pier
- WP 2: Sewels Point
- WP 3: Chesapeake Bay Approach Buoy
- WP 4: North American Basin Nares Abyssal Plain
- WP 5: Approach English Channel
- WP 6: Kingsnorth Jetty

Name of the Route: Norfolk – Kingsnorth Oil Refinery.

[Back to exercise](#)

Answers to Exercise 6

During the Route check also consider to change the safety scale to a appropriate scale for your voyage and activate all necessary warnings which may be good to know for you in advance when planning a trip on that route. Also check the XTD. Use the information cursor to check and double check found alerts.

- SOA: 7,3 kn.
- ETA on WP 10 01-11-12 17:21 at a SOA of 14 kn.
- SOA with 30 min stop and 12 kn up to WP 7 is 7,7 kn.
- The live running ECDIS System is capable of taking Tidal and surface currents into account. It is possible to use Total Tide database for official data and a Transas owned database which comes by default with ship borne equipment.
- The SOA for the last three waypoints is 10,6 if taking also currents into account.
- Distance between WP 7 and WP 10 is 5.54 nm.

[Back to exercise](#)

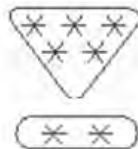
Answers to Questions 4

1. It is displayed as a red bold line and it is only possible to monitor one route.
2. The same route has to be loaded to the Voyage planner tool first. Then using the WPT Editor functionality.
3. Steps you need to follow to monitor a route and maintain safety
 - a. These charts have been updated to the latest available update
 - b. The user has activated the safety frame
 - c. The user has set appropriate safety depth and safety contour
 - d. This route has been checked for safety
 - e. The safety frame has been set with appropriate safety parameters
 - f. The ECDIS is using ENC charts
 - g. These charts are of the latest edition
 - h. All relevant route monitoring alarms are activated
 - i. The user has created a route for the intended voyage
 - j. The user has activated the route monitoring function

[Back to questions](#)

Answers to Questions 5

1. All answers are correct.
2. All answers are correct.
3. The more stars the M-Quality object has the more accurate the survey was carried out. 5 stars stand for CAT ZOC A 2, two for D



[Back to questions](#)

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