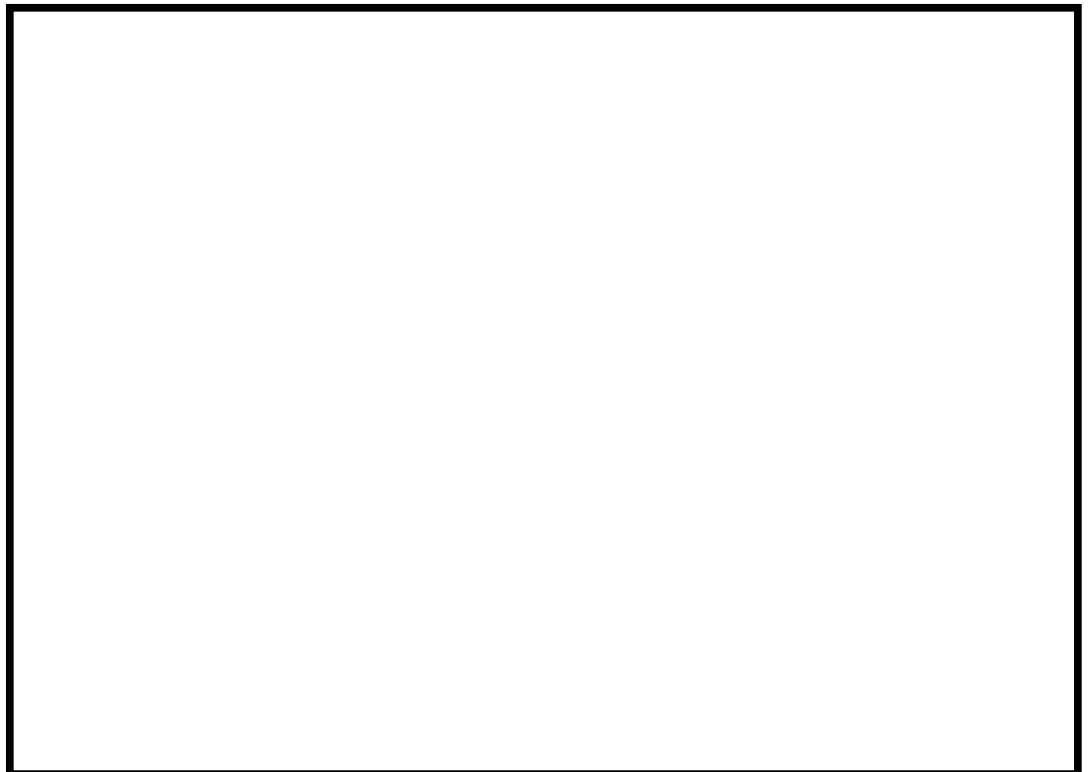

**FEA-2100/2105
(EC-1000)**

Quick guide

By Navintra Ltd



Your Local Agent/Dealer

All rights reserved.

FIRST EDITION : DEC. 2000

PUB.No. OSE-41200-A

FEA-2100/2105



* O S E 4 1 2 0 0 A 0 0 *

APPLICATION FOR MANUAL REVISIONS

Upon receipt of this manual, please fill in the necessary data. It is important that the addressee be the end user so that the operating personnel will receive all revisions to the manual.

EQUIPMENT NAME

SERIAL No**MODEL**

MANUAL TITLE

..... **MANUAL PART NUMBER**

ISSUE INDEX **REVISION INDEX**

PURCHASING AGENCY

NAME OF USER

ADDRESS OF USER

.....

ATTN:.....

CHANGE RECORD

RCS CODE/REV. INDEX	DATE	PURPOSE OF THE CHANGE	CHANGE REQUESTED BY
1.0	19.12.2000	Initial release of Operators Manual for software release 02.02	

Content

INTRODUCTION	1
CONTROL PANEL	2
OVERVIEW	2
OPERATIVE PUSH BUTTONS	3
DIRECT FUNCTION PUSH BUTTONS	3
MENU PUSH BUTTONS	5
INFO & HELP PUSHBUTTON.....	14
ECDIS DISPLAY	15
SET UP BEFORE DEPARTURE	16
UPDATE CHART MATERIAL.....	16
DISPLAY AND APPROVE DATE FOR S57 CHARTS AND MANUAL UPDATES.....	16
CREATE OR UPDATE USER CHART	16
CREATE OR UPDATE REFERENCE TARGETS.....	16
CREATE OR UPDATE PILOT DATA	17
SET CHART ALARM CALCULATION	17
SET DEPTH ALARM LIMIT FOR ECHO SOUNDER.....	17
CREATE OR UPDATE ROUTE.....	18
<i>Check your route against Chart Alarms</i>	18
<i>Recalculate timetable and ETA values</i>	18
CHECK AND PREPARE ROUTE TO BE MONITORED.....	19
<i>Select Next Waypoint</i>	19
<i>Select Final Waypoint</i>	19
<i>Center line for ARPA radar</i>	19
<i>Channel borders for ARPA radar</i>	19
VERIFY CONFIGURATION OF NAVIGATION SENSORS	20
<i>Verify SPEED settings</i>	20
<i>Verify RADAR settings</i>	20
<i>Verify GYRO settings</i>	20
<i>Verify POSITION sensors</i>	21
<i>Verify KALMAN FILTER</i>	21
<i>Verify ALIGNMENT</i>	21
RESET DISTANCE AND TRIP COUNTERS	22
VERIFY DATUM.....	22
ROUTE, USER CHART AND PILOT DATA	23
HOW TO CREATE A ROUTE	23
HOW TO CREATE AN USER CHART.....	24
HOW TO CREATE A PILOT DATA	25
OWN SHIP AND ARPA TARGETS	26
OWN SHIP AND ARPA TARGETS	26
<i>Position of own ship on chart display area</i>	26
<i>Chart motion</i>	26
<i>Own ship symbol</i>	27
<i>ARPA target symbol</i>	27
<i>Vectors of Own ship and ARPA targets</i>	28
<i>Own ship past track</i>	28
<i>ARPA target past track</i>	29

CHARTS, DATUMS AND ALARMS	30
CHARTS.....	30
<i>Chart types</i>	<i>30</i>
<i>Browsing around your charts.....</i>	<i>30</i>
<i>Presentation of ARCS material</i>	<i>30</i>
<i>Presentation of S57 charts</i>	<i>31</i>
<i>Display Base.....</i>	<i>31</i>
<i>Control of visible chart features.....</i>	<i>32</i>
<i>Control of visible navigation features</i>	<i>32</i>
CHART DATUM.....	33
<i>Chart datum of S57</i>	<i>33</i>
<i>Chart datum of ARCS.....</i>	<i>33</i>
ECDIS DATUM.....	33
ALARMS	34
<i>Alarms generated by Navigation Calculation</i>	<i>34</i>
<i>Alarms generated by Chart Calculation.....</i>	<i>34</i>
<i>Alarms generated by Steering Calculation.....</i>	<i>34</i>
<i>Description of the alarm priority system.....</i>	<i>35</i>
UPDATE OF CHARTS	36
ARCS CHARTS	36
S57 CHARTS	37
<i>Date dependency</i>	<i>37</i>
<i>Update of S57 charts using Update CD.....</i>	<i>37</i>
<i>Update of S57 charts using Telecomm.....</i>	<i>37</i>
CONTROL PANEL GUIDE	38

Introduction

The Quick guide of ECDIS EC 1000 is meant to be a short version of Operator's Manual ECDIS EC 1000. Following information is presented in this manual:

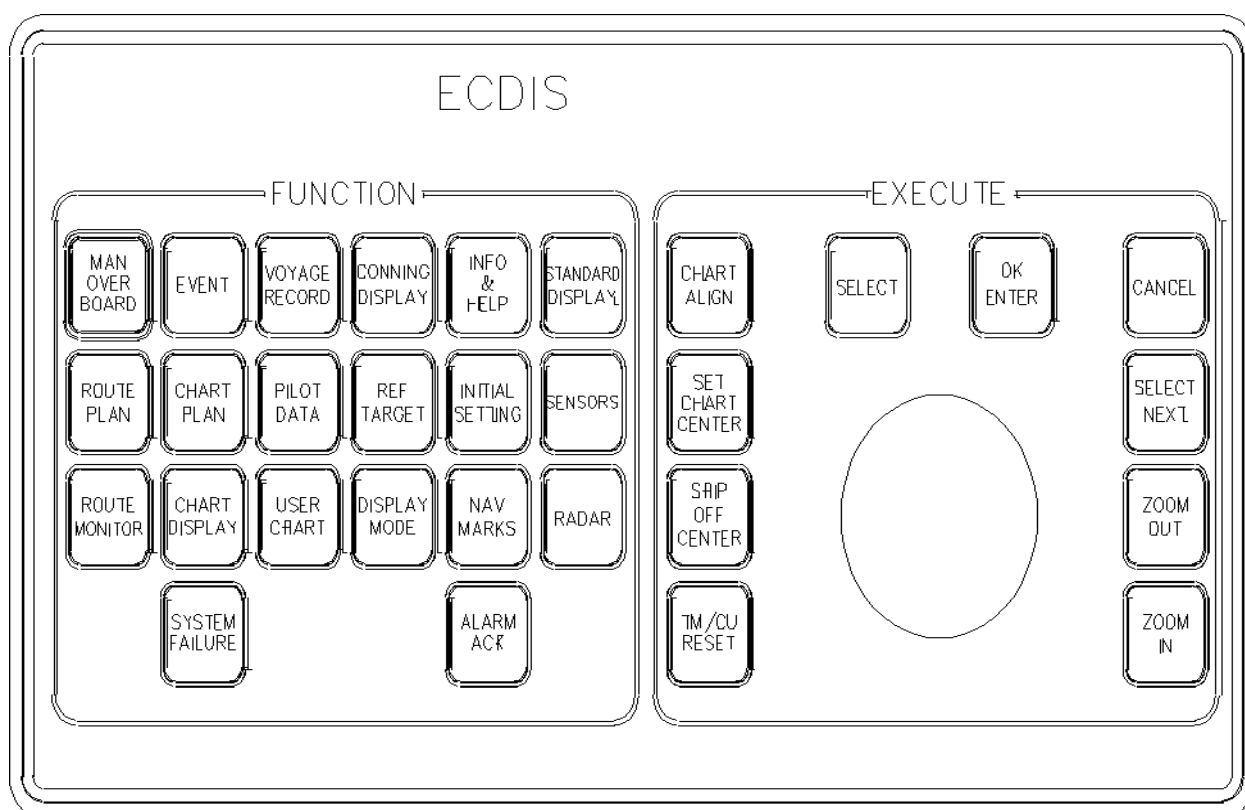
- Introduction of ECDIS Control Panel buttons
- Information available on ECDIS screen
- Setup before departure procedure for common use
- Introduction to create Route, User Chart and Pilot data
- Some essential information about charts and used Datums
- Type of alarms
- Update of Charts

This manual provides an insight into the system operation. **You have to use this manual with ECDIS EC 1000 Operator's Manual to get more detailed and comprehensive information of the system's functionality.**

Control Panel

Overview

The user controls the ECDIS with the Control Panel. The Control Panel includes the pushbuttons and the trackball. The trackball is used as a mouse by rolling the ball and using the pushbuttons SELECT. The user can control the cursor's position on the display, select the menu items and alter values of various parameters.



Layout of the Control Panel.

Operative push buttons



SELECT

Used in window dialog to push soft keys, tick boxes etc. It is also used to insert WPs, User Chart objects etc. when corresponding sheet is open in a Dialog box area.



OK/ENTER

It is used in window dialog to select OK or ENTER option.



SELECT NEXT

If dialog box has two or more sheets, SELECT NEXT is used to open next sheet.



CANCEL

It is used to close window dialog on display. To get Chart legend to be displayed, press CANCEL in the Control Panel until panel appears with Chart Number as top item.

Direct function push buttons



STANDARD DISPLAY

It is used to make displayed object selection as defined by IMO performance standard.



CHART ALIGN

User can move own ship over chart to new position. It is used to align chart correctly if used position method does not give accurate position. Moves also waypoints etc. to a new position if corresponding window is open in dialog box area.



ZOOM OUT

This is used to change the scale of displayed chart. The scales of chart have defined by system. Pushing once the zoom out pushbutton you get next smaller scale of chart on display (e.g. before ZOOM OUT scale was 1:10000 and after ZOOM OUT it is 1:20000). The scale of chart is indicated as fraction in lower statusbar.



ZOOM IN

This is used to change the scale of chart display. The scales of chart have defined by system. Pushing once the zoom in pushbutton user gets next greater scale of chart on display (e.g. before ZOOM IN scale was 1:20000 and after ZOOM IN it is 1:10000). The scale of chart is indicated as fraction in lower statusbar.



SET CHART CENTER

User can set the current cursor position as new chart center position by pushing SET CHART CENTER button. Automatic true motion reset is disabled, if user press SET CHART CENTER button, until user pushes either TM/CU RESET or SHIP OFF CENTER. It can be used to view ahead, route planning etc.



SHIP OFF CENTER

User can set the current cursor position as new position of ship on the display. This enables automatic true motion reset. If the cursor position was in true motion reset area then an automatic true motion reset happens.



TM/CU RESET

Pressing this button performs true motion reset and enables automatic true motion resets.



LOGBOOK M.O.B.

This button is used to record a predefined Man Over Board event to logbook. Position of this event is also displayed on chart as a red mark.



LOGBOOK EVENT

This button is used to record an event to logbook. You can also write a comment for this event.

Note, it is displayed only if Events is selected to display in Chart display dialog box.



ALARM ACK

Alarm is displayed in the lower status bar. Also a red lamp is activated for this pushbutton. High priority alarm has also an audible sound.



lamp SYSTEM FAILURE

This lamp is lit in case of internal failure which has serious effects for operation.

Menu push buttons

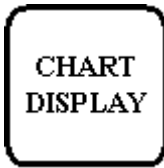
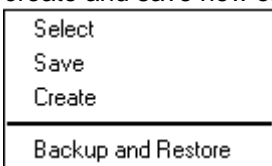


CHART DISPLAY PUSH BUTTON IS USED TO CONTROL VISIBILITY OF CHART DETAILS OF BOTH ARCS RASTER CHARTS AND S57 VECTOR CHARTS.

For more information, see Chapter "Control of visible chart features" in ECDIS EC 1000 Operators Manual.

Press Chart Display button once, a Chart display window appears. To open another page of Chart Display (Chart, Standard, Other, Tracking, Mariner, Route or ARCS details), use SELECT NEXT button.

Press Chart display button once more a Chart display menu, where you can select predefined settings or create and save new ones, appears:



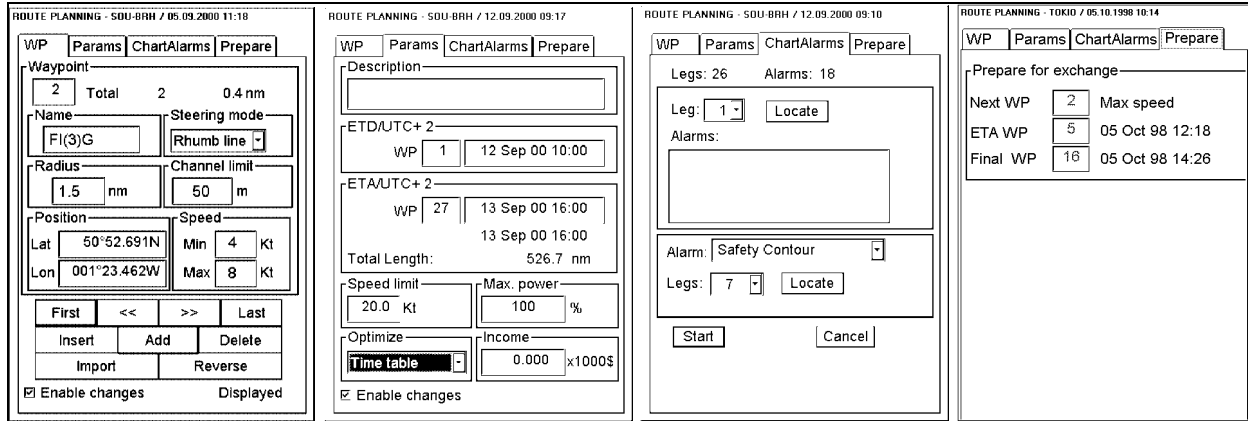


ROUTE PLAN PUSH BUTTON IS USED TO CONTROL ROUTE PLANNING FUNCTION.

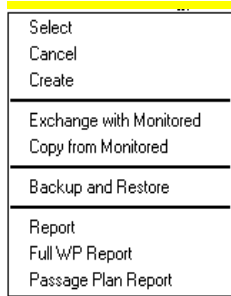
For more information, see Chapter "Route Planning" in ECDIS EC 1000 Operators Manual.

Press Route Plan button once, a Route Plan window, which shows information of selected route, appears in Dialog box area.

To open another page (WP, Params, Chart Alarms or Prepare), use SELECT NEXT button



Press Route Plan button once more a Route Plan menu, where you can select another route for planning or create a new one, etc., appears:



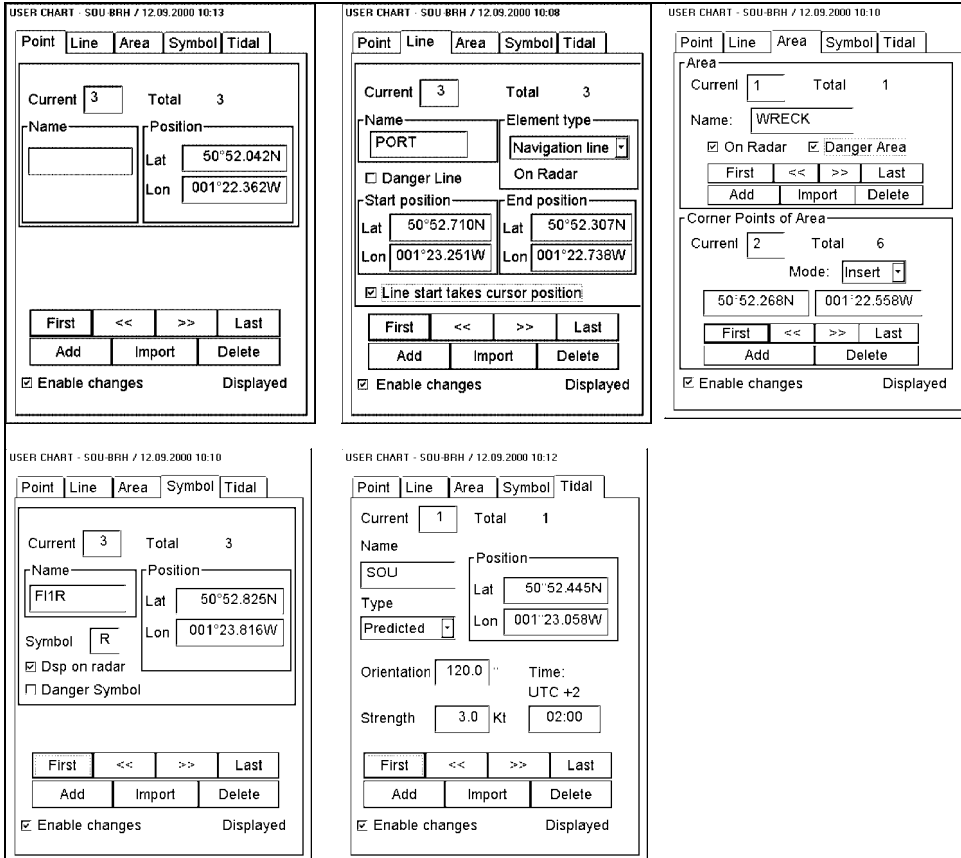


USER CHART PUSH BUTTON IS USED TO CONTROL USER CHARTS.

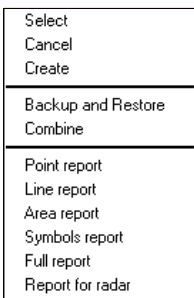
For more information, see Chapter "User Chart Control" in ECDIS EC 1000 Operators Manual.

Press User Chart button once, a User Chart window, which shows information of selected User Chart, appears in Dialog box area.

To open another page (Point, Line, Area, Symbol or Tidal), use SELECT NEXT button.



Press User Chart button once more a User Chart menu, where you can select another User Chart for use or create a new one, etc., appears:



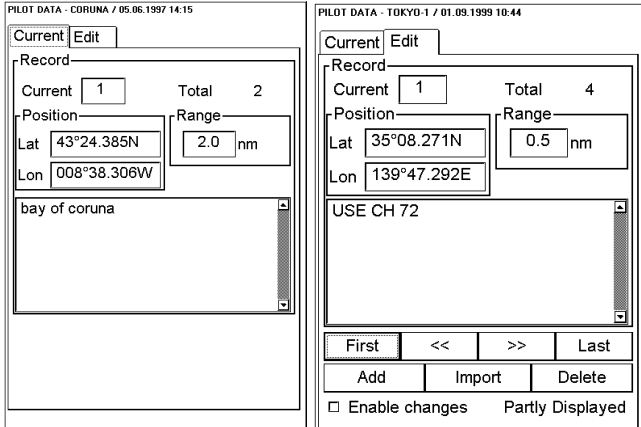


PILOT DATA PUSH BUTTON IS USED TO CONTROL PILOT DATA.

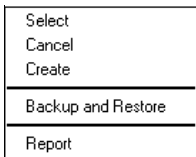
For more information, see Chapter "Pilot data" in ECDIS EC 1000 Operators Manual.

When you press Pilot Data button once, a Pilot Data window, which shows information of selected Pilot Data, appears in Dialog box area.

To open another page (Current or Edit), use SELECT NEXT button.



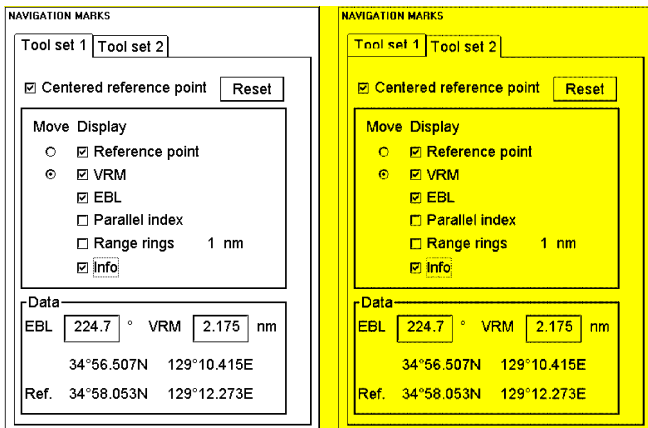
When you press Pilot Data button once more a Pilot Data menu, where you can select another Pilot Data for use or create a new one, etc., appears:

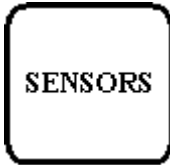


NAV MARKS PUSH BUTTON IS USED TO DEFINE EBL, VRM, PARALLEL INDEX AND RANGE RINGS.

For more information, see Chapter "Navigation marks" in ECDIS EC 1000 Operators Manual.

Navigation marks consist of two independent sets of tools. Both tools have REFERENCE POINT, EBL, VRM, PARALLEL INDEX and RANGE RINGS which are displayed in the Electronic Chart Area.





SENSORS PUSH BUTTON IS USED TO SELECT SENSORS USED BY ECDIS.

For more information, see Chapter "Navigation Sensors" in ECDIS EC 1000 Operators Manual.

To open another page (Speed/Course, Pos, Other or Record), use SELECT NEXT button.

<p>SELECT SENSORS</p> <p>Speed/Course Pos Other Record</p> <p><input type="checkbox"/> Manual speed <input type="text"/> Kt</p> <p><input type="checkbox"/> Log (no pulse) Kt</p> <p><input checked="" type="checkbox"/> Dual log < 2.3 Kt (bottom) ^ 12.7 Kt</p> <p><input type="checkbox"/> ARPA 13.2 Kt 60.8 °</p> <p><input type="checkbox"/> Manual course <input type="text"/> °</p> <p><input checked="" type="checkbox"/> Gyro 1 61.0 °</p> <p><input type="checkbox"/> Gyro 2 61.0 °</p> <p><input checked="" type="checkbox"/> Rate gyro</p>	<p>SELECT SENSORS</p> <p>Speed/Course Pos Other Record</p> <p><input type="checkbox"/> Alignment <input type="text"/> Start</p> <p><input type="checkbox"/> Enable chart align</p> <p>Range 0.0 nm Bearing 0.0 °</p> <p><input type="checkbox"/> Dead reckoning</p> <p>Lat <input type="text"/> 60°25.191N Lon <input type="text"/> 024°59.897E</p> <p>Kalman filter <input type="text"/> Off</p> <p>12.7 Kt 59.6 °</p> <p>Lat <input type="text"/> 60°25.192N Lon <input type="text"/> 024°59.897E</p> <p>DGPS <input type="text"/> Primary <input type="text"/> Diff</p> <p>12.7 Kt 59.6 °</p> <p>Lat <input type="text"/> 60°25.188N Lon <input type="text"/> 024°59.885E</p> <p>GLL+ZDA <input type="text"/> Secondary</p> <p>12.7 Kt 59.6 °</p> <p>Lat <input type="text"/> 60°25.196N Lon <input type="text"/> 024°59.908E</p>	<p>SELECT SENSORS</p> <p>Speed/Course Pos Other Record</p> <p>True Wind</p> <p>9.9 Kt 346 °</p> <p>Set and Drift</p> <p>(posit.) Angle -1.0 ° Manual <input type="checkbox"/></p> <p>Crs <input type="text"/> 330.8 ° Spd <input type="text"/> 0.4 Kt</p> <p>Pitch and Roll</p> <p>Pitch ° Roll °</p> <p>Depth below transducer 114.5 m</p> <p>Gyro correction °</p> <p>Distance counter 0.7 nm</p> <p>Trip counter 0.7 nm</p>	<p>SELECT SENSORS</p> <p>Speed/Course Pos Other Record</p> <p>Device: <input type="text"/> DGPS</p> <p>Lat: <input type="text"/> 60°25.353N Lon: <input type="text"/> 025°00.462E</p> <p><input type="text"/> Record</p>
---	--	--	--

CHART PLAN

CHART PLAN PUSH BUTTON IS USED TO CONTROL BOTH ARCS RASTER CHARTS AND S57 VECTOR CHARTS MENUS.

For more information about ARCS charts, see Chapter "ARCS charts" and about S57 charts see chapter "S57 charts" in ECDIS EC 1000 Operators Manual.

Chart Plan menu when ARCS is in use

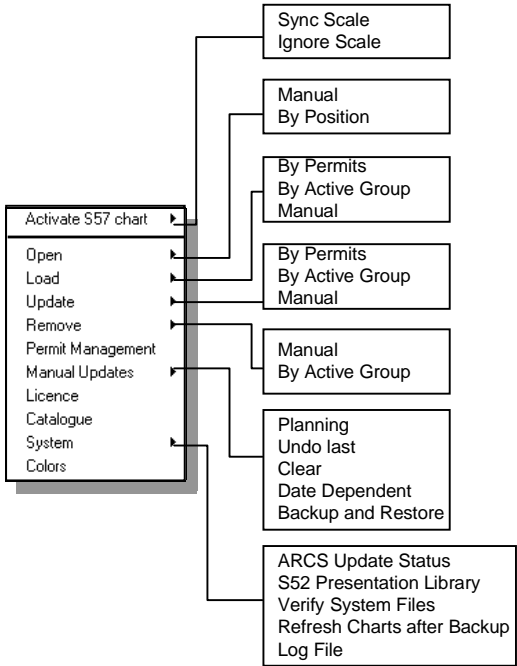
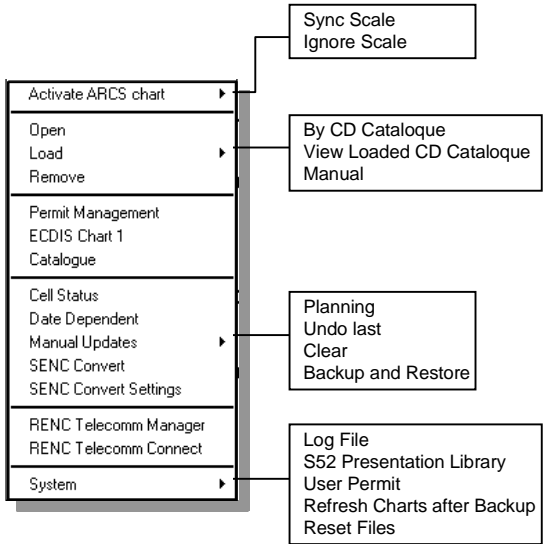


Chart Plan menu when S57 is in use





ROUTE MONITOR PUSH BUTTON IS USED TO MONITOR ROUTE.

For more information, see Chapter "Route Monitoring" in Operators Manual ECDIS EC 1000.

Press Route Monitor button once, a Route Monitor window, which shows information of selected route, appears in Dialog box area.

ROUTE MONITORING - TOKYO	
Next W/P	2 Max speed
ETA	
W/P	4 Time 15 Dec 97 07:34 Distance 7.9 nm
Final	
W/P	12 Time 15 Dec 97 09:18 Distance 40.9 nm
Suggested speed	min Kt
Trial speed	[] Kt
Speed profile	Plan []
Center line	On [] for ARPA
Channel borders	Off [] radar

Select...
Cancel

Press Route Monitor button once more a Route Monitor menu, where you can select another route for monitoring, appears:



REF TARGET PUSH BUTTON IS USED TO CONTROL REFERENCE TARGETS.

For more information, see Chapter "Reference targets" in ECDIS EC 1000 Operators Manual.

Press Ref Target button once, a Reference Target window, which shows information of selected Reference Target, appears in Dialog box area.

REFERENCE TARGET - MK_18 / 21.06.1999 11:36	
Target	
Current	4 Total 19
Name	LINTUPAA Element type Normal []
Position	
Lat	60°06.680N
Lon	024°53.840E
Seek	
Min	0.0 nm
Max	24.0 nm
First	<< >> Last
Add	Import Delete
<input checked="" type="checkbox"/> Enable changes	Displayed

Reference target	Start Stop
Select	
Cancel	
Create	
Backup and Restore	
Report	

Press Reference Target button once more a Reference Target menu, where you can select another Reference Target, for use or create a new one, activate Reference target as position device:

INITIAL SETTING

INITIAL SETTING PUSH BUTTON IS USED TO CONTROL SETUP AND CONFIGURATIONS OF THE SYSTEM.

For more information, see Chapter "Parameters setup" in ECDIS EC 1000 Operators Manual.

Press Initial Setting button once, a Initial settings window, where you can select Datum, appears in Dialog box area.

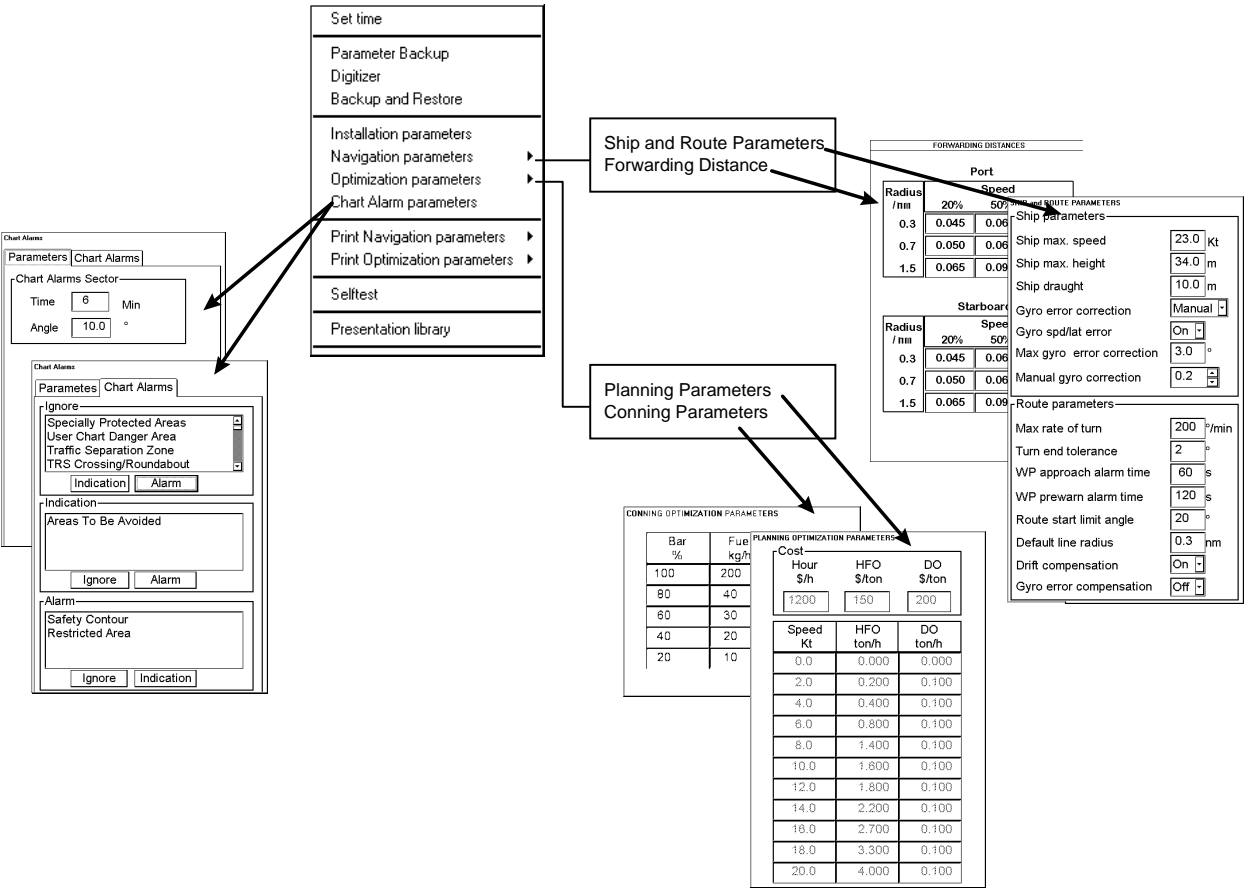
INITIAL SETTINGS

Datum

Gyro

Position discrepancy limit nm

Press Initial setting button once more a Initial Settings menu, where you can change settings of parameters etc., appears:



VOYAGE RECORD

VOYAGE RECORD PUSH BUTTON IS USED TO SELECT VOYAGE RECORDING RELATED THINGS.

For more information, see Chapter "Recording functions" in ECDIS EC 1000 Operators Manual.

When VOYAGE RECORD button is pressed a menu appears where various logs can be viewed, set conditions for recordings, etc.

DISPLAY MODE

DISPLAY MODE PUSH BUTTON IS USED TO CONTROL SELECTION BETWEEN TRUE AND RELATIVE MOTION.

For more information, see chapter "Display mode" in ECDIS EC 1000 Operators Manual.

Display mode	▶	True motion
Orientation	▶	Relative motion
Center...		

CONNING DISPLAY

CONNING DISPLAY PUSHBUTTON IS USED TO SWITCH CONNING DISPLAY BETWEEN HARBOUR AND NAVIGATE MODE AND CHANGE BACKGROUND COLOUR.

Note, Conning Display is an option which is not available all devices.

For more information, see chapter "Conning Display" in ECDIS EC 1000 Operators Manual.

CONNING DISPLAY	
Conning	Harbour 1
Palette	BLUE BACKGROUND



RADAR PUSH BUTTON IS USED TO CONTROL ARPA TARGET SOURCE AND RADAR ECHO OVERLAY SETTINGS on ECDIS display.

Note, Radar overlay is an option which is not available all devices.

For more information, see Chapter "Radar video overlay" in ECDIS EC 1000 Operators Manual.

RADAR OVERLAY SETTINGS

Radar Overlay source MAST X

Gain %

Sea clutter filter %

Rain clutter filter %

Echo trail time min

Echo trails TRUE

Interference reject OFF

Echo stretch OFF

Noise display OFF

Mode ECDIS and Radar

Transparency Opaque

ARPA target source 1

INFO & HELP pushbutton



INFO & HELP push button operates together with the cursor on display.

- If cursor is located outside chart area, then it activates help function.
- If cursor is located in chart area over ARPA target, then you will get the information of that target.
- If cursor is located over Pilot data, User Chart or Reference target object, or over M.O.B or Event symbol, then you get information of pointed object.
- If cursor is located in chart area, then you will get information from chart database about the pointed cartographic object.
- If cursor is located over alarm text, then it activates Alarm Queue

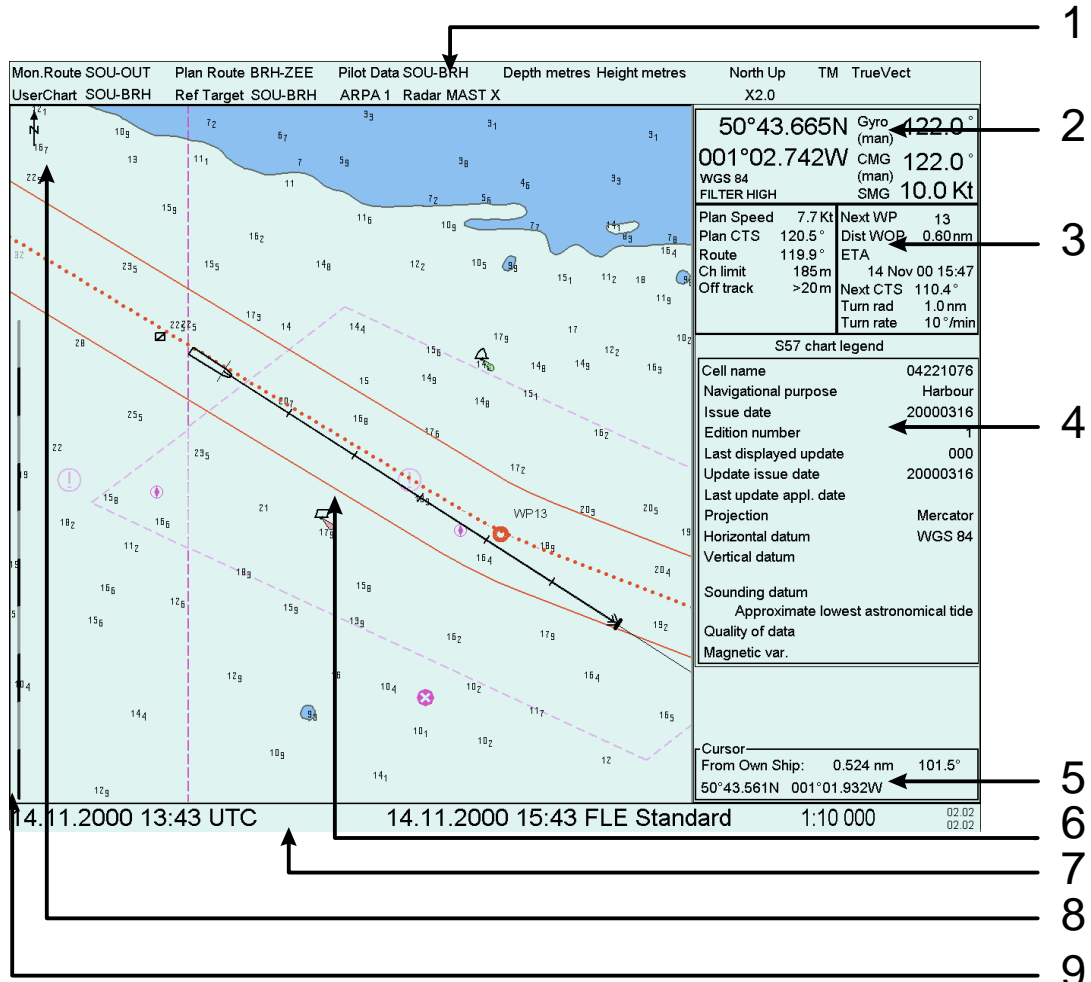
Alarm Queue

2 5100 Safety Contour

2 5103 User Chart Danger Area

8 2001 No speed available

ECDIS display



1. **Upper Status bar**
Route in Monitoring mode (**Mon.Route**)
Route in Planning mode (**Plan Route**)
Selected Pilot Data file (**Pilot Data**)
Selected User Chart (**UserChart**)
Selected Reference target file (**Ref Target**)
Source of displayed ARPA targets (**ARPA**)
Source of radar overlay video (**Radar**)
Display mode for chart motion, (**TM/RM**)
Display mode for own ship and ARPA target's speed vectors (**TrueVect/RelVect**)
Display mode for trails of radar video (**TrueTrail/RelTrail**)
2. **Information of position and speed/course**
Position of own ship (used datum and source of position)
Gyro reading and source of it.
Course Made Good (CMG) and source of it.
Speed Made Good (SMG)
3. **Route monitor window**, in this window it is displayed how the ship behave relative to the monitored route.
4. **Dialog Box area**, reserved for Chart information (Chart legend). If any push button will be pressed chart legend will be replaced with information related to button.
5. **Position information of cursor**
6. **Chart display area**
7. **Lower Status bar**
UTC time
Local time, user selectable
Scale of displayed chart
Alarms
8. **Indication of North**
9. **Scale bar**
Grey-orange scale bar; total length 1 NM
Grey-black scale bar; total length 10 NM

Set up before departure

Update Chart material

Update your ARCS and S57 chart material before departure to a new voyage. To get more information about updating ARCS charts, see Chapter "Raster Charts" and about updating S57 charts, see chapter "S57 vector charts" in ECDIS EC 1000 Operators Manual.

Note that if you have an installation with a back-up station, you can make a backup of your chart to back-up station in an easy way, see Chapter "Backup of chart material" in ECDIS EC 1000 Operators Manual.

Display and Approve date for S57 charts and manual updates

NOTE! It is very important that you set Display and Approve date for S57 charts as current date.

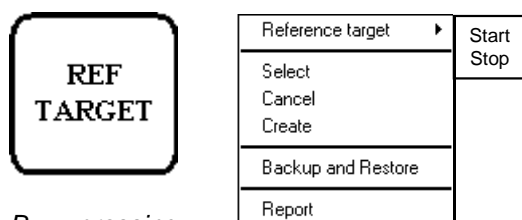
There may be features which are Date dependent or periodical in S57 charts, therefore if you not have set Display and Approve dates as current date there is possibility that you may have wrong presentation or some feature may completely be absent. To get more information about to set Display and Approve date, see Chapter "Date dependent and periodical features of S57 chart" in ECDIS EC 1000 Operators Manual.

Create or update User chart

If it is necessary, create a new User chart or modify existing one for a new voyage. To get more information about User chart, see Chapter "User Chart Control" in ECDIS EC 1000 Operators Manual or chapter "How to create an User Chart" on page 23 in this manual.

Create or update Reference targets

If it is necessary, create a new Reference targets file or modify existing one for a new voyage. To get more information about Reference targets, see Chapter "Reference targets" in ECDIS EC 1000 Operators Manual.



By pressing this button a following menu appears.

If you have made a Reference target (min. 8 fix points), select **Reference target > Start** to activate this function. After this Reference target is one of the position sensors. For more information, see chapter "Reference Targets" in ECDIS EC 1000 Operators Manual.

Create or update Pilot data

If it is necessary, create a new Pilot data or modify existing one for a new voyage. To get more information about pilot data, see Chapter "Pilot data" in ECDIS EC 1000 Operators Manual or chapter "How to create a Pilot data" on page 24 in this manual.

Set Chart Alarm calculation

Set Chart Alarms areas suitable for your coming voyage. For more information, see chapter "Chart Alarms" in ECDIS EC 1000 Operators Manual.

To open Chart Alarms window, press INITIAL SETTING button and select **Chart Alarms Parameters** from the menu.

Set Depth alarm limit for Echo Sounder



To change Depth alarm limit take cursor to Echo alarm depth edit box and press SELECT button..

Chart display - ALL-ON			
ARCS details	Tracking	Mariner	Route
Chart	Standard	Other	
Echo alarm depth	5	m	
Shallow contour	10	m	
Safety depth	30	m	
Safety contour	30	m	
Deep contour	50	m	

Use **Echo alarm depth** to set the Depth alarm limit for Echo Sounder.

Note, that the ECDIS will alarm based on information received from Echo Sounder. This is an option which is not available with all installations.

Create or update Route



By pressing ROUTE PLAN button twice a following menu appears. Use this menu to select a route for Planning.

Select
Cancel
Create
Exchange with Monitored
Copy from Monitored
Backup and Restore
Report
Full WP Report
Passage Plan Report

If it is necessary, create a new route or modify existing one for a new voyage. To get more information about creating or updating a route, see Chapter "Route Planning" in ECDIS EC 1000 Operators Manual or chapter "How to create Route" on page 22 in this manual.

Check your route against Chart Alarms

Before you sail your route, you should always check your route again for Chart Alarms. This is important because your S57 charts and manual updates may contain any amount of date dependent information. Check of Chart Alarms can be done on **ChartAlarms page**.

Recalculate timetable and ETA values

Recalculation can be done on **Params page**. Set at least ETD to correspond departure time and perform desired optimization.

Set at least ETD to date and time edit box in ETD/UTC field to correspond departure time.

ROUTE PLANNING - TOKYO / 01.09.1999 13:49

WP Params ChartAlarms Prepare

Description
OUT OF TOKYO BAY

ETD/UTC+ 3
WP 1 01 Sep 99 19:16

ETA/UTC+ 3
WP 23 01 Sep 99 23:55
01 Sep 99 23:55

Total Length: 81.6 nm

Speed limit 20.0 Kt Max. power 100 %

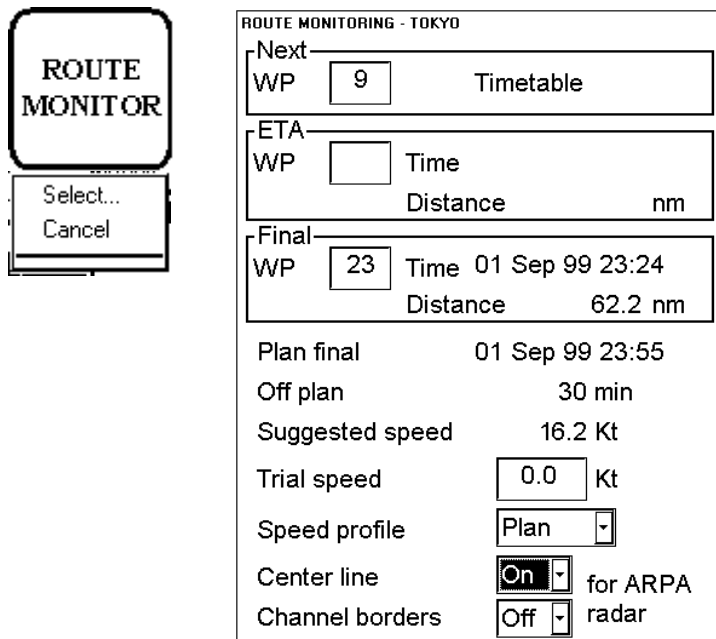
Optimize Time table Income 0.000 x1000\$

Enable changes

After check of Chart Alarms and set of ETD, cancel selection of the Planned Route in order to enable the selection of it for route to be monitored. Use **Cancel** from above menu to do it or use **Exchange with Monitored** to select it directly as Monitored Route.

Check and prepare Route to be monitored

Select a route for the next voyage; double click Route monitor push button and select recalculated route. For more information selection of route, see Chapter "How to select route to be monitored" in ECDIS EC 1000 Operators Manual.



ROUTE MONITORING - TOKYO	
Next WP	9 Timetable
ETA WP	Time Distance nm
Final WP	23 Time 01 Sep 99 23:24 Distance 62.2 nm
Plan final	01 Sep 99 23:55
Off plan	30 min
Suggested speed	16.2 Kt
Trial speed	0.0 Kt
Speed profile	Plan
Center line	On for ARPA
Channel borders	Off radar

Select Next Waypoint

The system selects next waypoint automatically, check that it is correct one. Note that waypoint number 1 is not accepted. Use above menu to do it.

Select Final Waypoint

This selection is used ONLY in case that the last waypoint should be different to that one defined last in your route. If needed use above menu to do it.

Center line for ARPA radar

Select ON to display the center line of the route on the radar display. Displayed part of the route consists of one leg before next waypoint and four legs after that. Select OFF to disable display of the center line on the radar display.

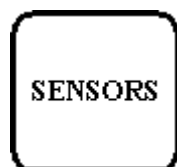
Channel borders for ARPA radar

Select ON to display the channel limit lines of the route on the radar display. Displayed part of the route consists of one leg before next waypoint and four legs after that. Select OFF to disable display of the channel limit lines on the radar display.

Verify configuration of navigation sensors

User can select navigation sensors used in navigation and view their current values.

Checkbox status shows whether to use the sensor for integrated navigation or not. If there is no value with sensor it indicates that sensor is not valid. Note, that content of these sheets is depending on sensors which are in use on the ship.



SENSORS
push button
To select
between
Speed/Course
and
Position
sheets to be
opened either
press button



or go by
cursor above
Speed/Course
or Position
text and press
SELECT

SELECT SENSORS		
Speed/Course	Pos	Other
<input type="checkbox"/> Manual speed		[] Kt
<input checked="" type="checkbox"/> Log		16.9 Kt
<input checked="" type="checkbox"/> Dual log	> ^	0.0 Kt 16.9 Kt
<input type="checkbox"/> Radar		17.0 Kt 359.9 °
<input type="checkbox"/> Manual course		[] °
<input checked="" type="checkbox"/> Gyro 1		359.9 °
<input checked="" type="checkbox"/> Rate gyro	(calc.)	0.0 °/min

Verify SPEED settings

Select both LOG and DUAL LOG, if they are available. Or select one of them.

Note that MANUAL SPEED should be used in only emergency state when no other speed reference is available. Remember that position sensors are also available as speed reference sources.

Verify RADAR settings

If LOG and DUAL LOG are not available, you can use radar as source for speed and course.

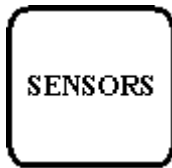
Verify GYRO settings

Select GYRO1 or GYRO2. Note that in typical installation GYRO1 is connected to a traditional gyro compass, while GYRO2 receives gyro value from either Trackpilot or a DGPS sensor.

Note that MANUAL COURSE should be used in only emergency state when no other heading reference is available.

Rate gyro is always automatically selected.

Verify POSITION sensors



*SENSORS push button
To select between
Speed/Course and Position
sheets to be opened either
press button*



*or go by cursor above
Speed/Course or Position
text and press SELECT*

SELECT SENSORS			
Speed/Course	Pos	Other	Record
<input type="checkbox"/> Alignment	Start		
<input type="checkbox"/> Enable chart align	Range 0.0 nm Bearing 0.0°		
<input type="checkbox"/> Dead reckoning	Lat 78°20.925N Lon 031°47.224E		
Kalman filter	On		
16.9 Kt 359.9°	Lat 78°20.925N Lon 031°47.223E		
DGPS PB	Primary		Diff
16.9 Kt 359.9°	Lat 78°20.925N Lon 031°47.223E		
SYLEDIS	Secondary		
16.9 Kt 359.9°	Lat 78°20.752N Lon 031°47.186E		
LSR85PB	Secondary		
16.9 Kt 359.9°	Lat 78°20.902N Lon 031°47.203E		

The data field of a position sensor contains a label (here DGPS PB, SYLEDIS or LSR85PB) which indicates the type of the sensor, **Primary-Secondary-OFF** status that indicates, if the sensor is included or not, position in local datum, speed and course. A DGPS position sensor has additional text **Diff**, if differential signal is in use.

Position sensors have priority, which is indicated using Primary and Secondary. Only one sensor can be primary while the others can be secondary or off position. After OFF-state a position sensor is changed to secondary-state. After secondary-state a position sensor is changed to primary-state and if there was already a position sensor with primary-state it will be changed automatically to secondary-state.

SWITCH "Primary" THAT SENSOR WHICH IS CONSIDERED TO BE MOST RELIABLE.

SWITCH "Secondary" OTHER SENSORS.

Verify KALMAN FILTER

The Kalman filter is an automatic process that will calculate the most probable position based on all position sensors. The filter uses in its process all sensor that has not OFF as selection. For more information about Kalman Filter, see Chapter "Filter operation" in ECDIS EC 1000 Operators Manual.

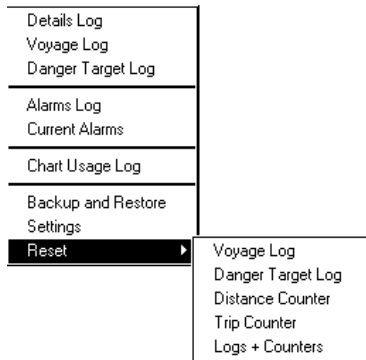
Verify ALIGNMENT

The alignment is a correction given by the Chart Align function. It is used to move vessel "Correct" position if position devices define "incorrect" position. Normally switch OFF in the start up procedure. For more information about alignment, see Chapter "How to use position alignment" in ECDIS EC 1000 Operators Manual.

Reset Distance and Trip Counters



Use this button to open Voyage record menu.



Press **Voyage Record** push button and select **Reset Trip Counter** and **Reset Distance Counter**.

Verify Datum

Datum is used to select between different models of the earth. It is essential that you use Datum in a consistent way.

If you use paper charts together with electronic chart material, it is recommended that you use the same Datum as your current paper chart to avoid misalignment between your electronic system and points taken or plotted on your current paper chart.

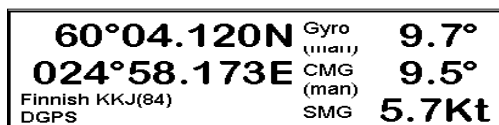
Once you have selected a datum, all numerical latitude-longitude position values are presented in your selected datum.

Note: ARCS raster charts contain some rasterized position information, like scales in the edges of ARCS charts, which is true only if you have selected native datum of that ARCS chart.

To select datum proceed as follows:



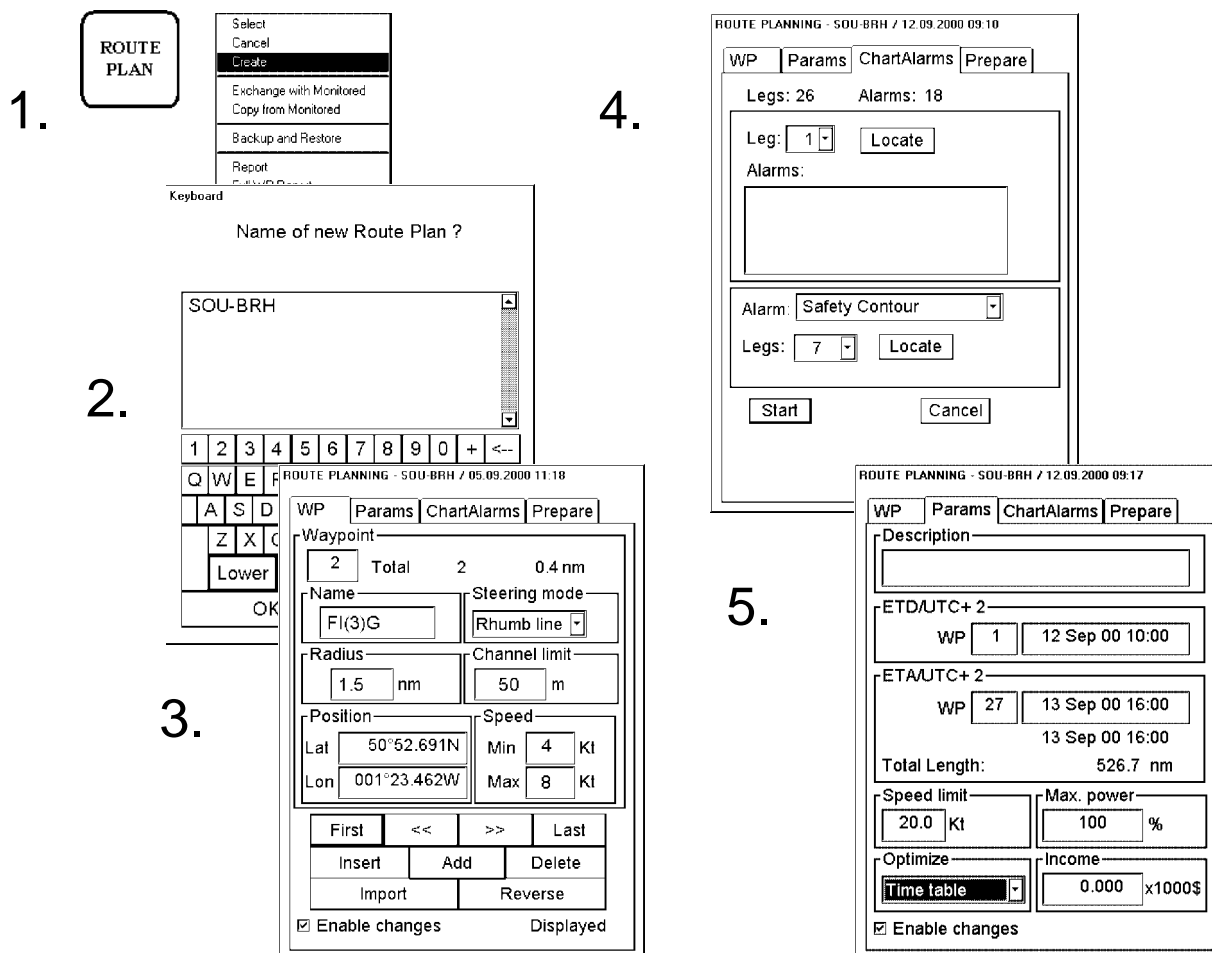
1. Press **Initial setting** push button.
2. Select desired datum from a list box of **Datum**.
3. Selected datum is shown on the Upper information area.



Selected datum is shown on Upper information area (in this case Finnish KKJ(84)).

Route, User chart and Pilot data

How to create a route

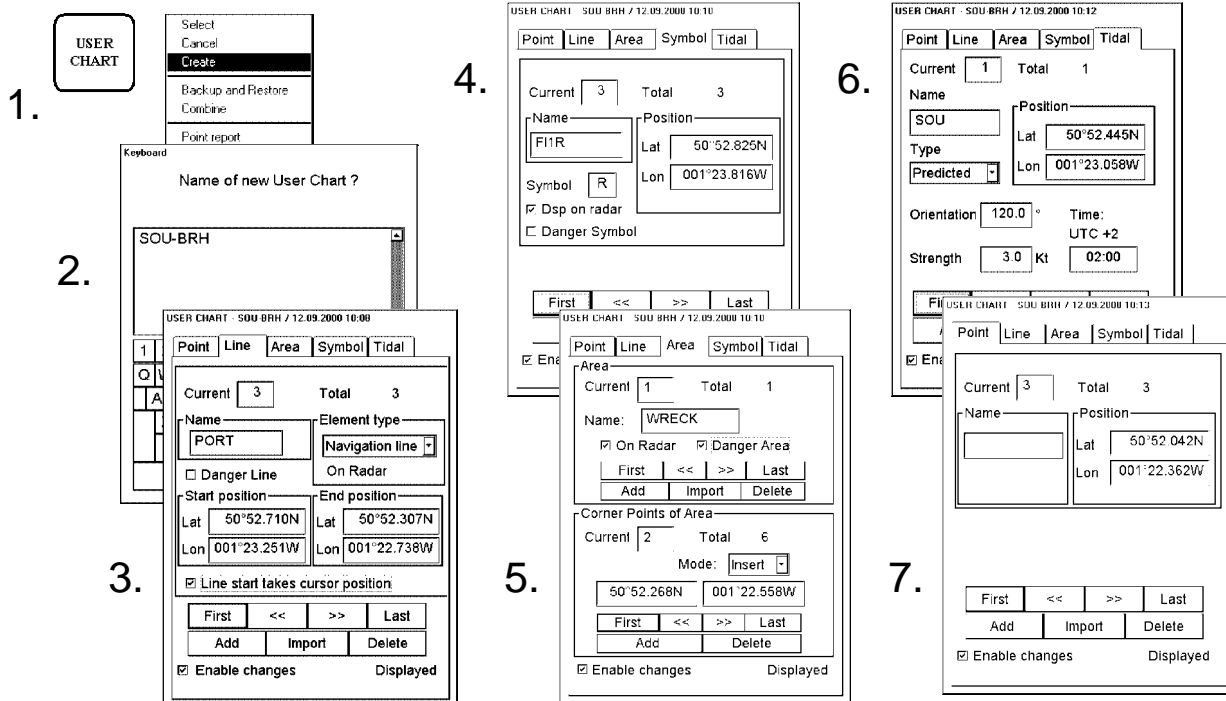


To make a complete route for a voyage, proceed as follows:

1. Press twice **ROUTE PLAN** button. Select **Create** from the menu.
2. Enter a name for route using Keypad dialog box.
3. Select **Enable changes**. Define position of waypoint by moving cursor to desired position and then press **SELECT** button of Control Panel. After that complete following in WP page of Route Planning dialog box; **Name**, **Steering mode**, **Radius**, **Channel limit** and **Speed** (Min, Max). Do this for all waypoints of your route.
4. Use **ChartAlarms** page to detect areas where depth is less than Safety contour or where specified conditions exists. The ECDIS can examine chart database against planned route to make a list of alarms where route across Safety contour or specified areas used in Chart Alarms, press **Start** button to do it.
5. Enter Estimated Time of Departure (**ETD**) and Estimated Time of Arrival (**ETA**, if you are using Time table optimising). Select desired Optimising mode from list box of **Optimize**.

To print Waypoint report press **ROUTE PLAN** button and select **Report** from the menu. Select **Print** from File menu in Report page.

How to create an User Chart

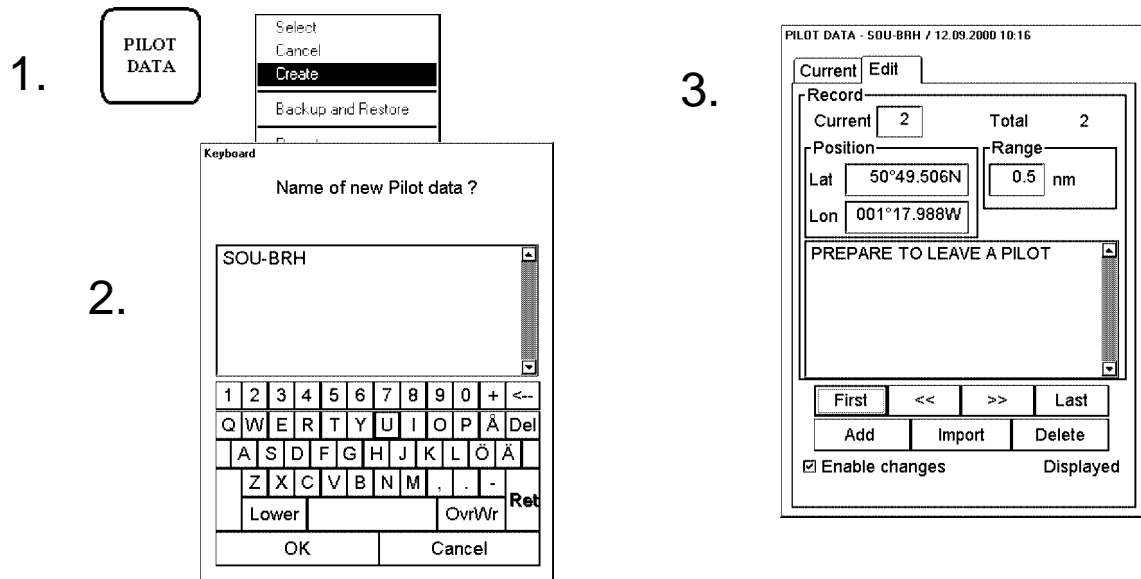


To make a complete User Chart, proceed as follows:

1. Press twice **USER CHART** button. Select **Create** from the menu.
2. Enter a name for User Chart using Keypad dialog box and press OK.
3. Open **Line** page of User Chart. Use Cursor and SELECT button to define location of start point of line. Define **Name** and **Element type** for line. Use cursor and SELECT button to design shape of lines. To start new line from new position select **Line start takes cursor position**. Option "Danger Line" enables it to be used in ChartAlarm calculation.
4. Open **Symbol** page of User Chart. Use Cursor and SELECT button to define location of Symbol. Define **Name** and used **Symbol**. Option "Dsp on radar" is automatically selected. Option "Danger Symbol" enables it to be used in ChartAlarm calculation.
5. Open **Area** page of User Chart. To make a new area, press Add button in Area -field. Define **Name** for area, define also if it is displayed on Radar display (**On Radar**) and used in Chart Alarms calculation (**Danger Area**). Use Cursor and SELECT button to define location Corner Points of Area.
6. Open **Tidal** page of User Chart. Use Cursor and SELECT button to define location of Tidal symbol. Define **Name**, **Type**, **Orientation**, **Strength** and **Time** for Tidal. The Tidal symbol is displayed only on ECDIS display.
7. Open **Point** page of User Chart. Use Cursor and SELECT button to define location of Points.

When you remove selection **Enable changes** or close User Chart dialog box from display, User Chart is sent to radar to be displayed also there.

How to create a Pilot Data



To make a complete Pilot Data, proceed as follows:

1. Press twice **PILOT DATA** button. Select **Create** from the menu.
2. Enter a name for Pilot Data using Keypad dialog box and press **OK**.
3. Open **Edit** page of Pilot Data. Use Cursor and **SELECT** button to define location of Pilot data. Define **Range** and **Text** for Pilot Data.

Own ship and ARPA targets

Own ship and ARPA targets

Position of own ship on chart display area

TM/CU RESET. This will place the vessel at the position of automatic TM Reset margin.

SHIP OFF CENTER. This will place the vessel at the position of the cursor.

Chart motion

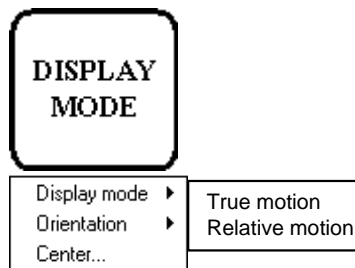
You can use either **TRUE MOTION** or **RELATIVE** motion. In True motion your own ship moves until it reaches the true motion reset borderline. Then it will jump back to opposite position on screen based on its course. In relative motion your own ship stays in a fixed position while the chart under it moves on screen.

If you use true motion and you press **SHIP OFF CENTER**, your ship will go to cursor position on screen and continue true motion movement from that position. When it reaches true motion reset borderline it will automatically jump to true motion reset position.

If you use relative motion and you press **TM/CU RESET**, your ship will immediately jump to true motion reset position and use that position as fixed position to stay on screen.

If you use relative motion, you can select a new fixed position to your ship with cursor and by pressing **SHIP OFF CENTER** push button.

To select desired **display mode**, proceed as follow:

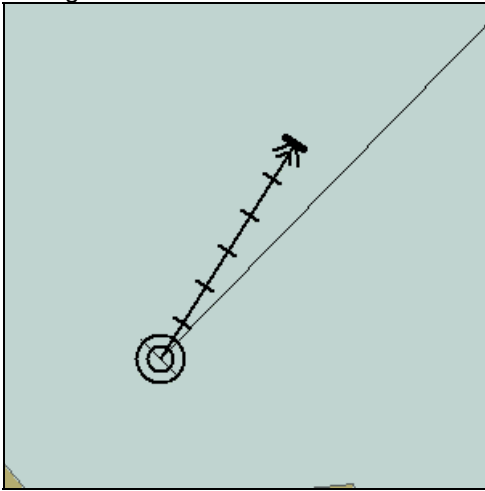


1. Press the **DISPLAY MODE** in the Control Panel, a menu opens.
2. Place cursor over DISPLAY MODE and select using SELECT button.
3. A sub menu opens with **True motion** and **Relative motion**.
4. Use cursor to select desired motion.

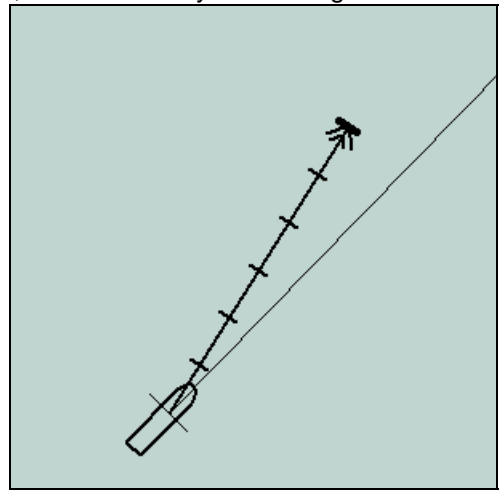
Own ship symbol

The vessel position is indicated by a circle, the centre indicates the conning position.

At large scale the vessel is indicated as true scale symbol, when size of symbol is larger than 6 mm.



Own ship symbol at small scale chart



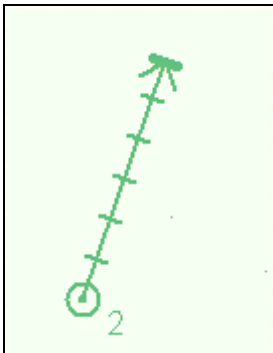
Own ship symbol at large scale chart

Vessel heading (Gyro) is shown by a solid line over chart..

Vessel ground speed (SMG) and ground course (CMG) is shown by a vector which starts at Conning position.

ARPA target symbol

A symbol of ARPA target is shown figure below.

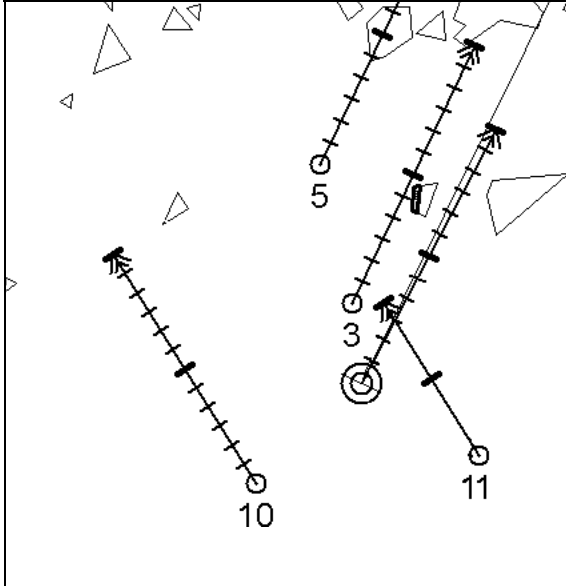


A dangerous ARPA radar target is displayed as a blinking target symbols between colours green and red. The ECDIS has its own definition for dangerous target limits (CPA, TCPA).

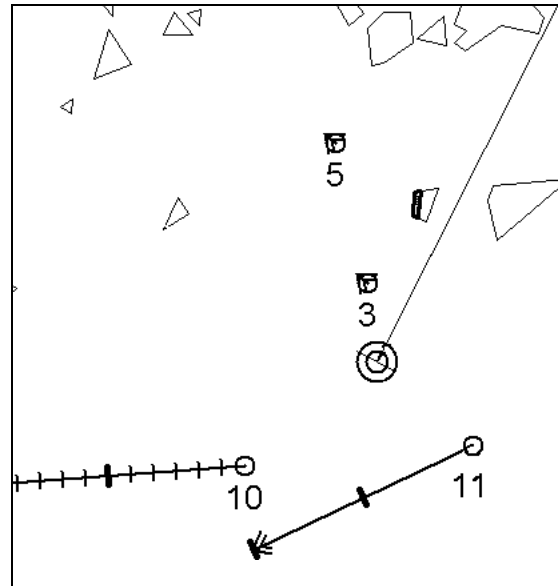
A Lost ARPA radar target is displayed as a blinking target symbols between colours green and dark yellow.

Vectors of Own ship and ARPA targets

Targets vector can be displayed relative to own ship's heading (**RelVect**) or with reference to the North (**TrueVect**). Both presentation modes can be used with relative motion (**RM**) or true motion (**TM**) of own ship display mode.



Presentation of True Vectors (TrueVect)



Presentation of Relative Vectors (RelVect)

To change the length and/or presentation mode of the own ship and ARPA vector:

1. Press **CHART DISPLAY** in the Control Panel and open Chart page.
2. There is a box showing **Vector Time**, place cursor on box to enter desired Vector Time.
3. To change presentation mode use a list box next to Vector time box (TRUE or RELATIVE vectors).

Own ship past track

Press **CHART DISPLAY** in Control Panel, open "**Tracking**" page. In the box "Past Tracks" the first panel below this title refers to own ship. Use the cursor and select button to activate desired settings.

Off	the tracking information is switched off
Std	the tracking information is switched on
Other	the tracking information is switched on until STANDARD DISPLAY button is pressed (Selection is switched automatically off).
System	the tracking information uses the system's position sensor(s).
Primary	the tracking information uses the primary position sensor.
Secondary	the tracking information uses the secondary position sensor.
Length	use cursor and select to adjust length of track history.
Labels	use cursor and select to specify interval between dots on the history track.

ARPA target past track

Press **CHART DISPLAY** in Control Panel, open "**Tracking**" page. In the box "Past Tracks" the second panel below this title refers to ARPA targets. Use the cursor and select button the activate desired settings.

ARPA targets the tracking information of ARPA target is displayed.

Off the tracking information is switched off

Std the tracking information is switched on

Other the tracking information is switched on until STANDARD DISPLAY button is pressed (Selection is switched automatically off).

Length use cursor and select to adjust length of track history.

Labels use cursor and select to specify interval between dots on the history track.

Charts, Datums and Alarms

Charts

Chart types

User can select between two different chart types; ARCS raster chart or S57 (ENC) vector chart.

To select desired chart material, proceed as follows:

1. Press **CHART PLAN** button in the Control Panel.
2. In the menu select

Activate S57 chart	for vector chart
Activate ARCS chart	for raster chart
3. **Sync Scale** is used to open another type of chart with the same scale. **Ignore Scale** is used to open another type of chart with the same scale as it was used last time.

Browsing around your charts

Viewing charts from different positions and using different scales is very easy. Basic tools to browse around are push buttons **ZOOM IN**, **ZOOM OUT**, **SET CHART CENTER**, **SHIP OFF CENTER** and **TM/CU RESET**.

You can use **SET CHART CENTER** to look ahead any other position than your own ship position. Pressing it automatically deactivates true motion reset function. When true motion reset is deactivated you have on upper right hand part of the display either indication **Ship out of dsp** or **TM RESET OFF** depending of the view.

If another overlapping chart with same scale is available, indication "Same scale available" appears. To open chart press **SELECT NEXT** button.

If you want immediately back to your own ship position, push either **TM/CU RESET** or **SHIP OFF CENTER** button.

ZOOM IN and ZOOM OUT with ARCS charts:

ZOOM IN and **ZOOM OUT** are used to change scale of chart. ARCS system allows 2* overscaling and ½* underscaling. The system has a logical way to automatically select next larger or smaller scale chart. The system has an indication of **Larger scale available**, if there is larger scale chart available at your current viewing position. If the system uses natural scale of an ARCS chart, the scale indication is in black color like **1:100000**. If the system uses underscale or overscale image of an ARCS chart, the scale indication is in red colour like **1:20000**. The system has also indication **UNDERSCALE** or **OVERSCALE**.

ZOOM IN and ZOOM OUT with S57 charts:

ZOOM IN and **ZOOM OUT** are used to change scale of the chart display. The system has a logical way to automatically select next larger or smaller scale. The system has an indication of **LARGER SCALE DATA EXISTS**, if there exist a chart with larger compilation scale available at your current viewing position.

Presentation of ARCS material

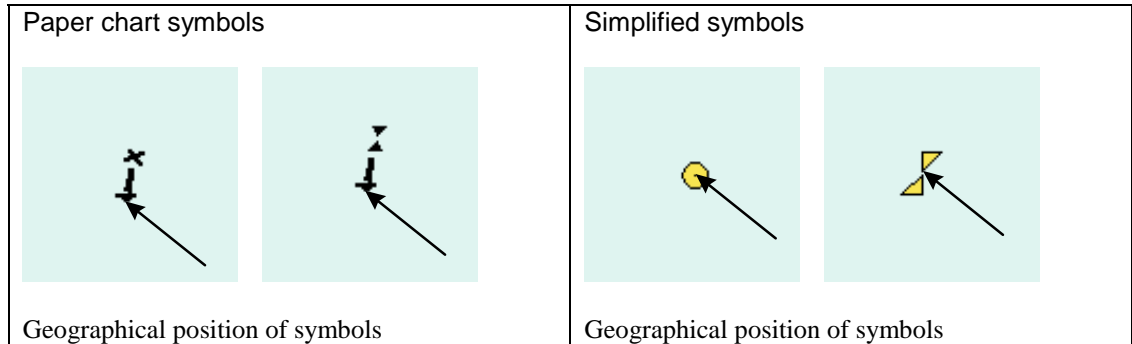
ARCS charts are facsimile copies of BA paper charts, and as such share a common numbering system and the raster images are identical to the paper ones.

Presentation of S57 charts

As a user you can familiarise yourself with the used presentation by browsing IHO ECDIS Demo Chart 1, which is included in this ECDIS. Note that it behaves as any S57 Chart and it follows your selections.

To use IHO ECDIS Chart 1 select **ECDIS Chart 1** from the Chart Plan-menu.

It is possible to use two kind of presentation for S57 charts symbology:



Display Base

A subset of chart features is called as Display base. As required by IMO, these features cannot be made invisible under any user selection. The **Display Base** consist of following chart features:

- coastline (high water)
- own ship's safety contour, which is selected by the user
- indication of isolated underwater dangers of depths less than the safety contour, which lie within the safe waters defined by the safety contour
- indication of isolated dangers, which lie within the safe water defined by the safety contour such as bridges, overhead wires, etc., and including buoys and beacons whether or not these are being used as aids to navigation
- traffic routine systems
- scale, range, orientation and display mode
- units of depth and height

Chart datum

Chart datum of S57

Used datum in S57 charts is always WGS-84.

Chart datum of ARCS

The difference between ARCS chart local datum and WGS84 datum is known as WGS84 Shift. For most of the ARCS charts this is known and the system can do conversion automatically. For some ARCS chart this is unknown and the user is responsible to define it. For some ARCS charts this is partially known and the user is responsible to define it for the unknown areas of partially known ARCS charts. See chapter "How to define User WGS84 shift" in ECDIS EC1000 Operator's manual.

See also ARCS Navigator User Guide. It has a chapter "Use with GPS" about the datum question.

ECDIS datum

If you use paper charts together with electronic chart material, it is recommended that you use the same Datum as your current paper chart to avoid misalignment between your electronic system and points taken or plotted on your current paper chart. This selection of the datum does not change anything inside the ECDIS for navigation calculation processes or for electronic sea chart display processes. But it changes the numerical values of positions displayed on the ECDIS screen into the user selected Datum.

Alarms

There are three kind of alarms generated by ECDIS or Track Pilot processors. To see list of alarms, see chapter "List of Alarms" on ECDIS EC 1000 Operator's Manual.

Alarms generated by Navigation Calculation

Navigation Calculation generates following alarms:

- Error detected in position sensor
- Error detected in log sensor
- Error detected in gyro sensor
- etc.

The alarms are displayed on the ECDIS screen left corner of lower status bar. Press Alarm Ack pushbutton from the Control Panel to reset the alarm on the screen.

2009 Position source change	03.11.1999 10:49 FLE Standard	1:50 000	02.00 02.00
-----------------------------	-------------------------------	----------	----------------

Lower status bar, when an alarm is generated by Navigation Calculation.

Alarms generated by Chart Calculation

Chart Calculation generates following alarms:

- new pilot data available
- Chart Alarms based on S57 charts
- Chart Alarms based on User Chart dangerous Symbols, Lines and Areas

The alarms are displayed on the ECDIS screen left corner of lower status bar. Press Alarm Ack pushbutton from the Control Panel to reset the alarm on the screen.

5100 Safety Contour	03.11.1999 10:54 FLE Standard	1:50 000	02.00 02.00
---------------------	-------------------------------	----------	----------------

Lower status bar, when an alarm is generated by Chart Calculation.

Alarms generated by Steering Calculation

Note that all steering related functions are available only if the ECDIS processor is also connected to an optional Track Pilot processor. Some of the alarms such as Outside Channel limit is also available without the optional Track Pilot processor. Without optional Track Pilot processor all alarms generated by Steering Calculation appear in the same alarm queue as alarms Generated by Navigation Calculation.

03.11.1999 09:04 UTC	2486 Disabled: Steering off	1:50 000	02.00 02.00
----------------------	-----------------------------	----------	----------------

Lower status bar, when an alarm is generated by Steering Calculation.

Description of the alarm priority system

The permanently visible alarm in lower status bar is the top most i.e. latest most urgent alarm in any moment. Alarms has priority from 1 to 10 to control urgency. Priority 1 is highest. The list of alarms, in ECDIS Operator's manual, shows these priorities for each alarm with following syntax:

"/1" in the end first row means priority = 1

"/1/8" in the end of first row means that priority is = 1, if unacknowledged and priority = 8, if acknowledged but the state of alarm still exist.

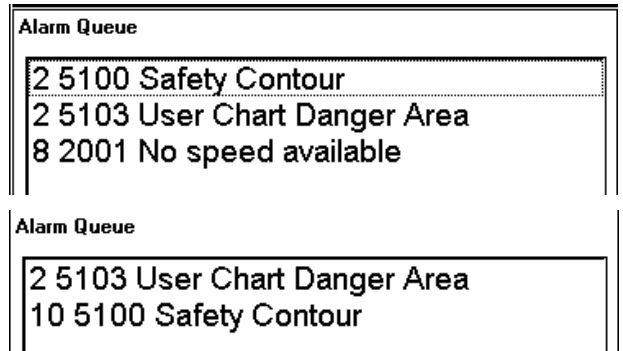
You have a possibility to view the alarms, which are in the queue. Move the cursor over the red alarm text in lower status bar and press INFO/HELP. This open Alarm queue window. See example below.

How to read alarm queue (first row as an example):

- first number "2" indicates alarm priority
- second number "5100" indicates alarm number
- text indicates reason of alarm "Safety contour"

First example show how alarm 2001 changes its priority from 1 to 8 after acknowledge. Then lower priority alarm 5100 is the most urgent out of the remaining alarms.

Second example show how alarm 5100 changes its priority to 10 after acknowledge. Then alarm 5103 is the most urgent out of the remaining alarms.



Update of Charts

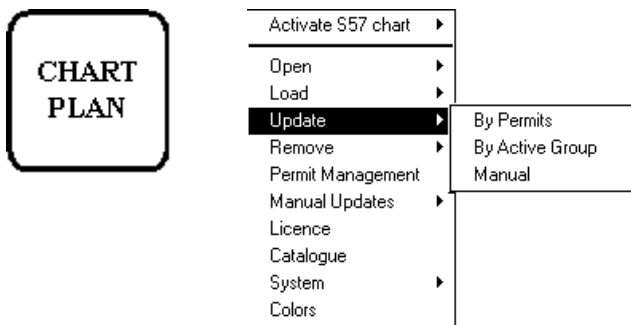
ARCS charts

ARCS permits and charts will be loaded when necessary (when loading new permits into ECDIS).

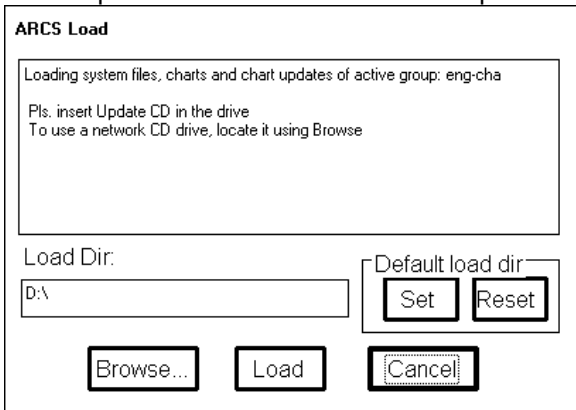
ARCS weekly Update CD-ROM is issued once in week. This CD-ROM consists all the corrections for chart after it was issued.

To update all the ARCS raster charts to which you have permits, use **Update by permit** function.

1. Press CHART PLAN button and select Update By Permits from the menu. After that follow the instructions on screen.



2. Insert Update CD to CD-ROM drive and press Load.



3. ECDIS will automatically update your charts.

For more information, see chapter "How to update ARCS charts" on ECDIS EC1000 Operator's manual.

S57 charts

Date dependency

If you use currently charts, which has Display Until and/or Approved Until dates set in Date Dependent window more than 1 week from current system date, you have a permanent reminder on your chart display.

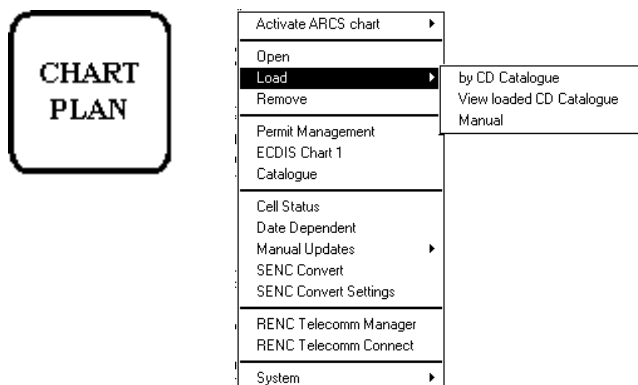
Permanent Warning

At least one of used charts has more than 1 week between "Approved Until" and/or "Displayed Until" and current system date. Use Chart Plan - Date Dependent to set dates

To remove this warning, set "Approve Until" and/or "Display until" as current system date. For more information to keep your S57 charts up-to-date, see chapter "Date dependent and periodical features of Vector chart" on ECDIS EC 1000 Operator's manual.

Update of S57 charts using Update CD

The updates can be delivered in update CD-ROM. To start updating, proceed as follows:



Press CHART PLAN push button. Select **Load** from the menu and **by CD Catalogue** from the sub menu and follow the instructions on screen.

If you receive Update CD from Hydrographic Office, for more information, see chapter "How to load S57 charts from a CD, floppy or LAN" on ECDIS EC 1000 Operator's manual.

If you receive Update CD from a RENC (Regional ENC co-ordinating centre), for more information, see chapter "An Update CD-ROM from a RENC" on ECDIS EC 1000 Operator's manual.

Update of S57 charts using Telecomm

If you are using Telecomm to keep your S57 charts up-to-date, see chapter "Telecomm service from a RENC" on ECDIS EC 1000 Operator's Manual.

Control Panel Guide

