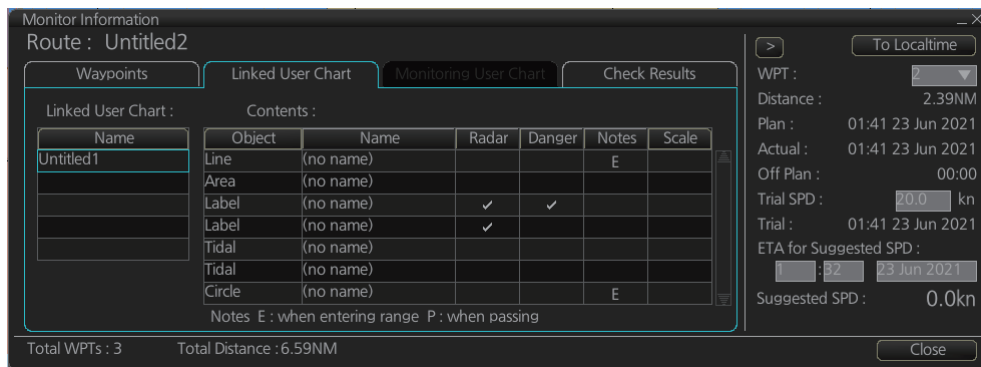


6. CHART OVERVIEW



Select confirm conditions of the route plan

Check the setting on the [Chart Alert] dialog box; click the [DISP], [SET] and [Chart Alert] buttons to show that dialog box.

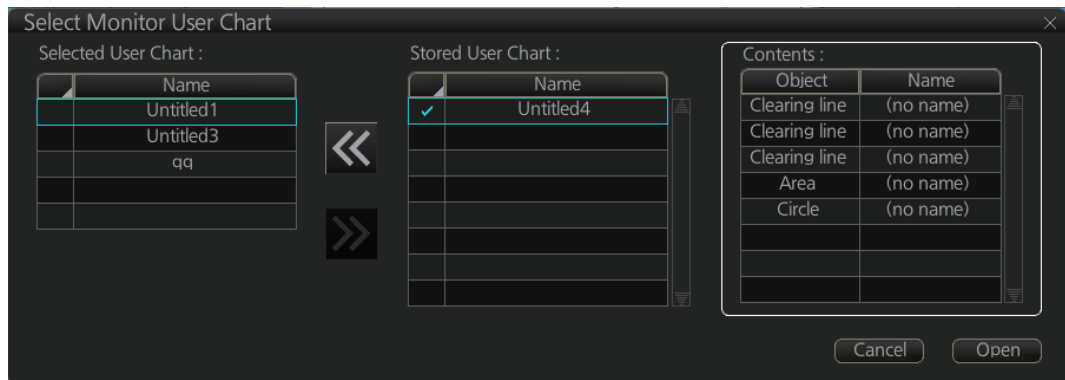


Select the user chart(s) to monitor

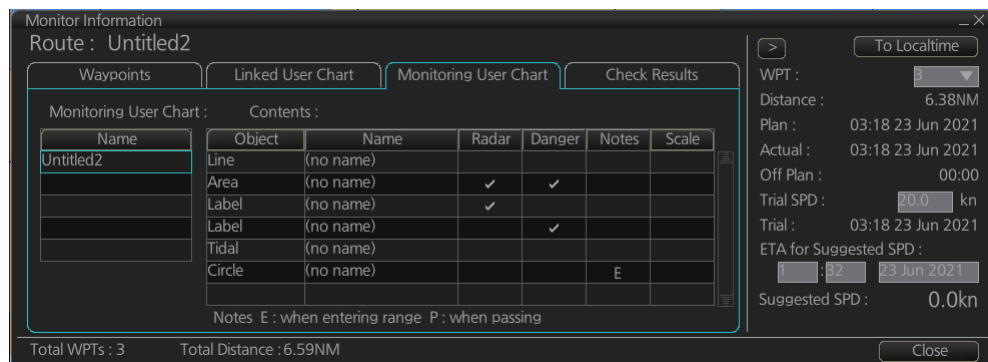
A user chart can be monitored without linking it to a route. You can select a user chart two ways.

- Click the [Voyage], [User Chart] and [Select/Unselect] buttons on the InstantAccess bar™ to open the [Select Monitor User Chart] dialog box.
- In the Voyage navigation mode, right click anywhere in the Route information box (right side of screen) to show the [Select Monitor User Chart] dialog box.

Check the chart(s) to use in the [Stored User Chart] window, then click the [<<] and [Open] buttons.



The [Monitor Information] dialog box automatically appears and the user chart(s) selected are displayed in the [Monitoring User Chart] tab. Click a user chart to view its contents.

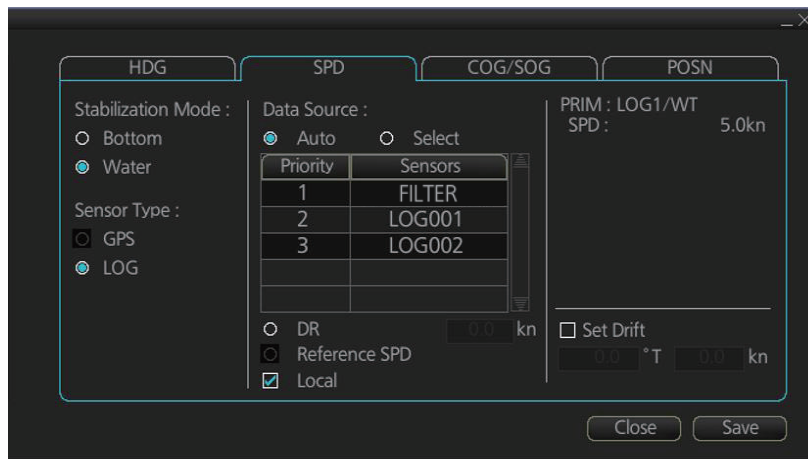


6.16.4 Check configuration of navigation sensors

You can check the configuration of your navigation sensors.

Check speed settings ([SPD] page)

Open the menu and click the [SPD] tab in the [System Sensor Settings] page of the [Sensor] menu. The user can select navigation sensors for use in navigation and view their current values.



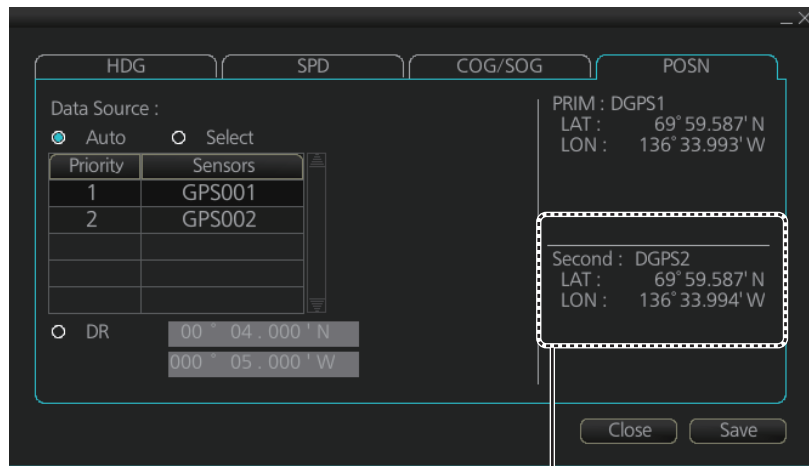
If there is no value shown for a sensor, this means that the sensor is not valid. Note that the content of these pages depends on the sensors that are in use on the ship.

The content of the display changes with sensor.

Note that manual speed should only be used in an emergency, when no other speed reference is available. Remember that position sensors are also available as speed sources. If no dual log is available, check [Local] and [Reference SPD] to use a reference target from the radar as the source for speed and course.

Check position sensors ([POSN] page)

Open the menu and click the [POSN] tab in the [System Sensor Settings] page of the [Sensor] menu. The [PRIM] and [Second] labels indicate the type of the position sensor. (In the figure below the [PRIM] label shows GPS1.) [PRIM] and [Second] indicate sensor status and priority.



The indication for the second sensor appears even when only one position-fixing equipment is connected.

Only one sensor can be primary while the others can be secondary or off position. After a sensor is turned off, its status is changed to [Second] (Secondary) state. When a position sensor state is changed to [PRIM] (Primary) and another sensor was [PRIM] (Primary), the sensor formerly [PRIM] (Primary) becomes [Second] (Secondary).

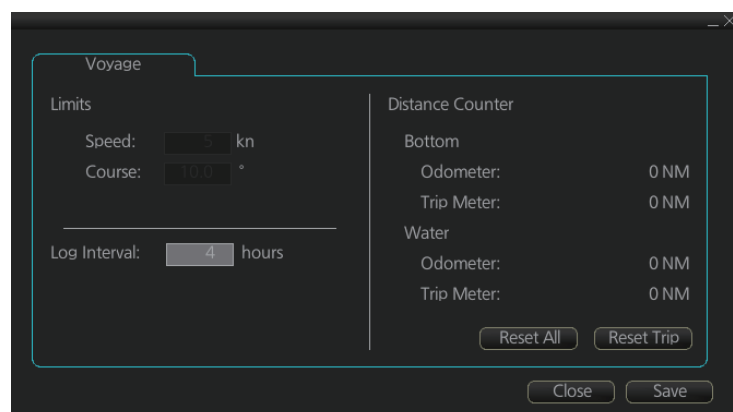
Select the "Primary" navigation sensor as the sensor that is considered to be most accurate and reliable. Set all other navigation sensors as "Secondary".

6

6.16.5 How to reset odometer and trip meter

To reset the odometer and/or trip meter do as follows:

1. Open the menu and select the [Voyage] menu from the [NAV Log] menu in the [Log] menu.



2. Click one of the following buttons.
[Reset All]: Reset both the odometer and the trip meter for both "Water" and "Bottom".
[Reset Trip]: Reset the trip distance for both "Water" and "Bottom".
3. Click the [Close] button to finish.

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7. HOW TO MANAGE CHARTS

This chapter mainly shows you how to install the public keys, licenses and charts, manually update chart objects, and synchronize charts. All chart-related operations begin from the Chart maintenance mode, which you access by clicking the [CHARTS] button on the Status bar.

Note 1: Charts, routes, monitored routes, and user charts are shared with other FMD-3xxx and FAR-3xxx units, via LAN. Data is shared automatically; no operation is required.

Note 2: Chart processing (installation, deletion, etc.) may take several minutes depending on the number of charts to be processed.

Note 3: If, when attempting to install charts, nothing appears on the display at the start of the procedure, reset the power and try again.

Note 4: If installation of AVCS charts stops, the message "Chart installation has stopped. Run the installation again. Installation will continue from the chart not yet installed." appears. This does not indicate completion of the installation. Restart the installation. The installation resumes from the chart not yet installed.

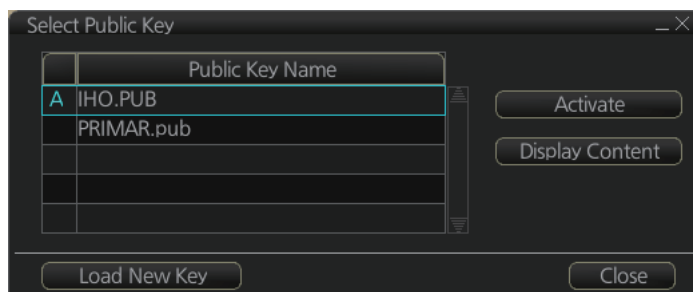
This message may also appear when installing C-MAP ENC SERVICE, C-MAP PROFESSIONAL+ C-MAP ENC+ SERVICE charts if the user does not confirm completion of the installation within approx. one hour. (Installation window remains on the screen.) However, this is not an indication of failed installation.

Note 5: When installing the AVCS LargeMedia, the message "No connection to dongle" may appear in the [Result] window at the completion of the installation. If this occurs, reinstall the media.

7.1 How to Install Public Keys for ENC Charts

Public keys authenticate the source and integrity of the ENC chart materials used in this chart system. Before you install a new ENC chart, confirm that the corresponding public key is installed.

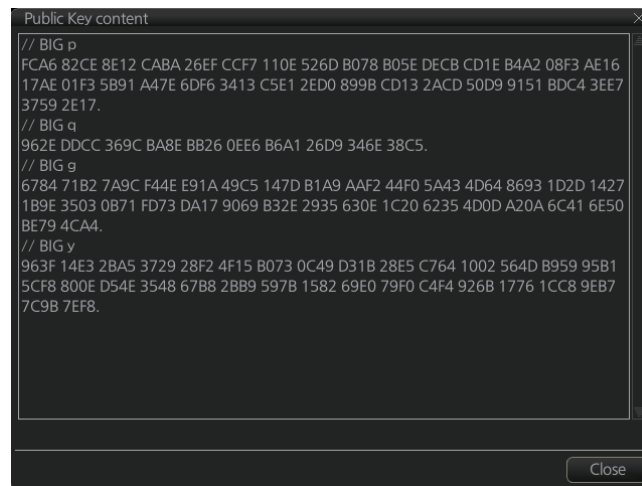
1. Set the medium (DVD, USB flash memory, etc.) that contains the public key. (The IHO public key is preinstalled.)
2. Get into the Chart maintenance mode then click the [Public Key] button on the InstantAccess bar™.



3. Click the [Load New Key] button to show the [Open file] dialog box.
4. Find the .pub file then click the [Open] button. The [Select Public Key] dialog box reappears.

7. HOW TO MANAGE CHARTS

- Click the [Display Content] button on the [Select Public Key] dialog box to show the display contents.



- To accept the contents, click the [Activate] button on the [Select Public Key] dialog box.

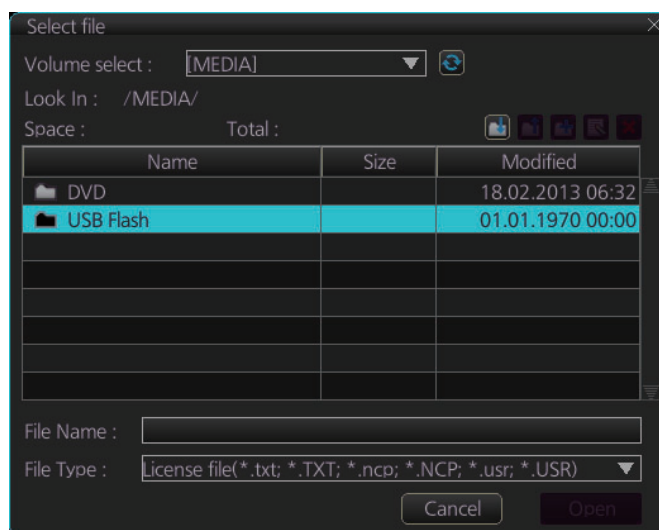
7.2 How to Install ENC Licenses, Charts

Install your ENC licenses and charts, in that order.

7.2.1 How to install an ENC license

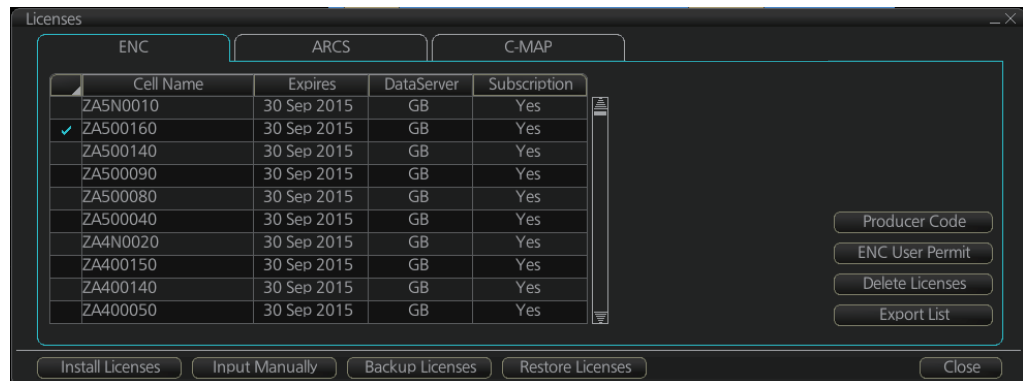
Automatic installation

- Insert the medium (DVD, USB flash memory, etc.) that contains the ENC license.
- Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™ to show the [Licenses] dialog box.
- Click the [Import Licenses] button.



- Select the medium, or folder, that contains the license then click the [Open] button.

- Find the license (permit.txt) then click the [OK] button to install the license. The [Licenses] dialog box then shows cell name, date of expiration, data server name and subscription type of the license.

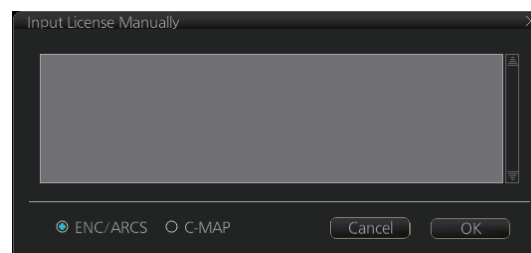


- Click the [Close] button to finish.

Manual installation

If you do not have the medium which has your ENC license, you can enter the license number manually.

- Click the [CHARTS] button on the Status bar to go the Chart maintenance mode, then click the [License] button on the InstantAccess bar™.
- Click the [Input Manually] button to show the [Input License Manually] box.



- Select the type [ENC/ARCS] at the bottom of the screen.
- Enter the license number(s) then click the [OK] button.

7.2.2 How to install ENC charts

When you install charts from a medium, the system first loads a catalog, which stores certain information into your SSD such as cell IDs, their position, and edition number, from the install medium. Then, the system asks which charts you want to install from the chosen medium. After building the catalog, you can view the contents of it by clicking the [Cell Status] button on the InstantAccess bar™.

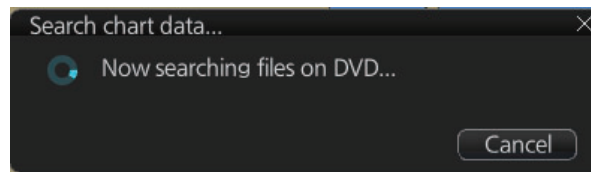
Note 1: Do not click the [Cancel] button during the installation of a chart. If you get an error message, try to install the charts again.

Note 2: When any chart is installed, all checked routes are reverted to unchecked status. Use the [Check Route] button on the [Alert Parameters] page to re-check routes before starting any voyage.

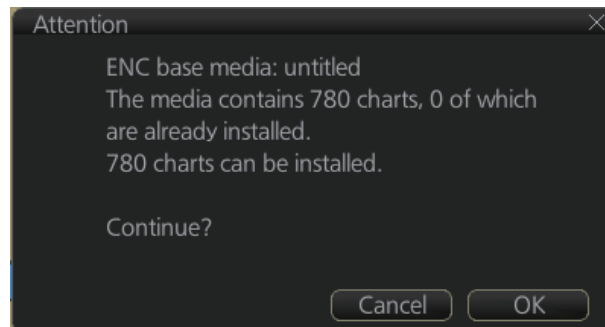
- Set the medium that contains the ENC charts.
- Get into the Chart maintenance mode then click the [AUTO Load] button on the InstantAccess bar™. The confirmation message "Attention: This process takes time to complete, and the operation speed of the system will decline. Do you wish

7. HOW TO MANAGE CHARTS

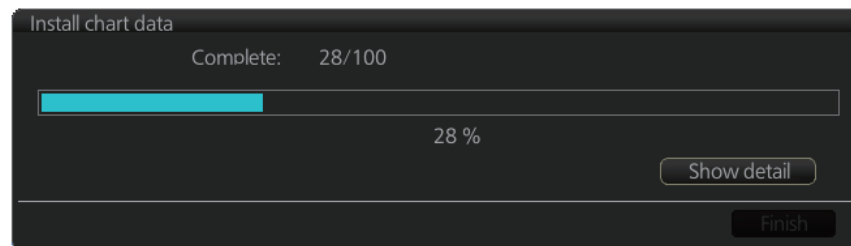
to continue?" appears. Click the [OK] button to continue. A message informs you that the system is searching the medium (in the figure below the medium is a DVD) for chart data.



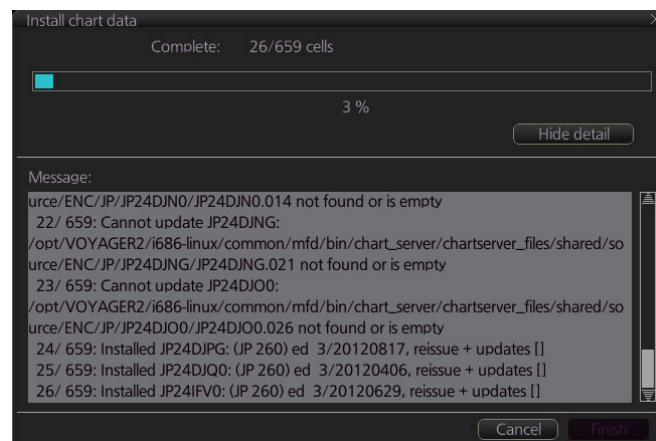
The results of the search are displayed, an example of which is shown below. To cancel the installation, click the [Cancel] button.



3. Click the [OK] button to install the charts. The [Install chart data] window appears and shows the percentage of completion, with digital and analog indications.

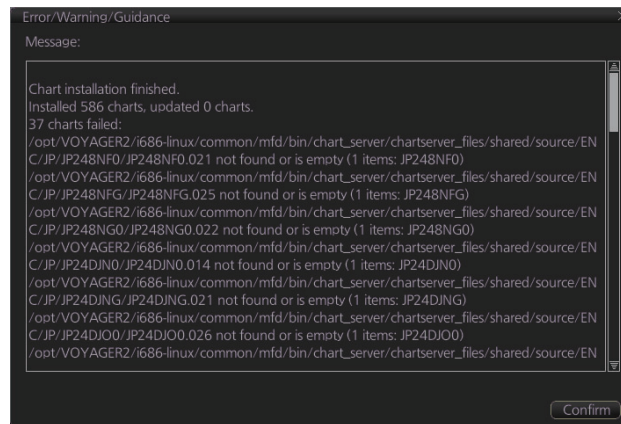


To show details during the installation, click the [Show detail] button.



To close the [Message] window, click the [Hide detail] button.

- When the installation is completed, information about the installation appears in the [Result] window. Click the [Confirm] button to finish.



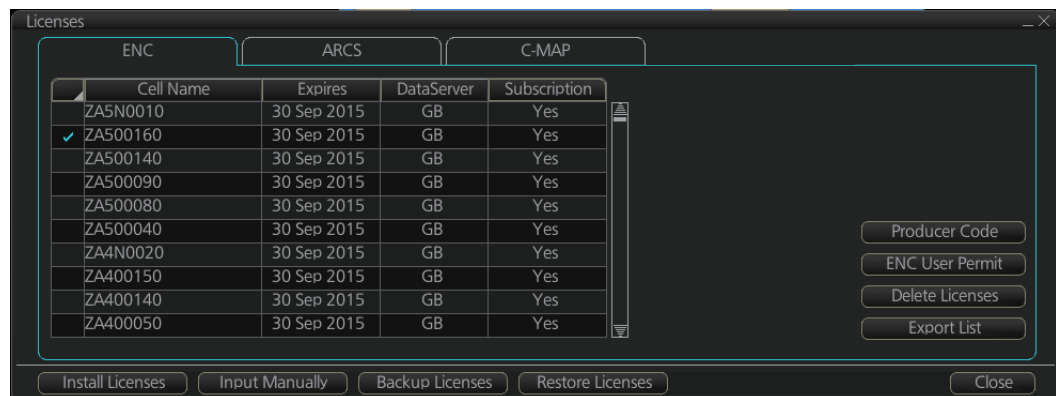
- If applicable, set the next sequential medium then repeat steps 2-4 to install the next database.
- After all necessary charts are installed, reset the power.

Note 1: When many charts are installed, the chart system checks for error in the installed chart data at the next power up. This is not an indication of malfunction.

Note 2: Previous versions of charts cannot be displayed if installed after installing the latest versions.

7.3 How to Delete ENC Licenses

- Get into the Chart maintenance mode.
- Click the [License] button on the InstantAccess bar™.
- Click the [ENC] tab as appropriate to show a list of licenses.



- Put a checkmark next to the license(s) to delete.
- Click the [Delete Licenses] button to delete the license(s) selected.
- Reset the power.

7.4 How to Update ENC Chart Manufacturer Info

An ENC chart has official or unofficial attributes. You can determine if an ENC chart is official or unofficial by viewing the chart manufacturer's information. Manufacturer's information has the following functions.

- [Filter] window (see section 7.13) can show or hide official or unofficial charts.
- Chart judgment with chart alert (see subsection 11.1.2). (Unofficial charts are subject to chart alert.)
- Unofficial charts are denoted on the [Check Results] of the [Route Plan] dialog box (see subsection 12.4.5). (Unofficial charts are subject to chart alert.)

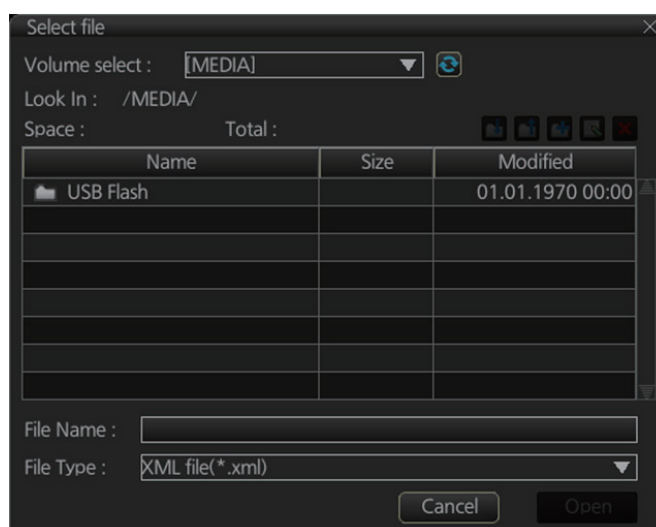


The ENC manufacturer information can be updated as follows.

Note 1: ENC chart manufacturer information is built in the FMD beforehand, and it is not normally necessary to update the information.

Note 2: The ENC chart manufacturer information file has its own format. For details, contact a FURUNO dealer.

1. In the Chart maintenance mode, click the [License] button to show the [Licenses] dialog box.
2. Click the [ENC] tab.
3. Click the [Producer Code] button.



4. Select the ENC chart manufacturer information file then click the [Open] button.
5. Reset the power.

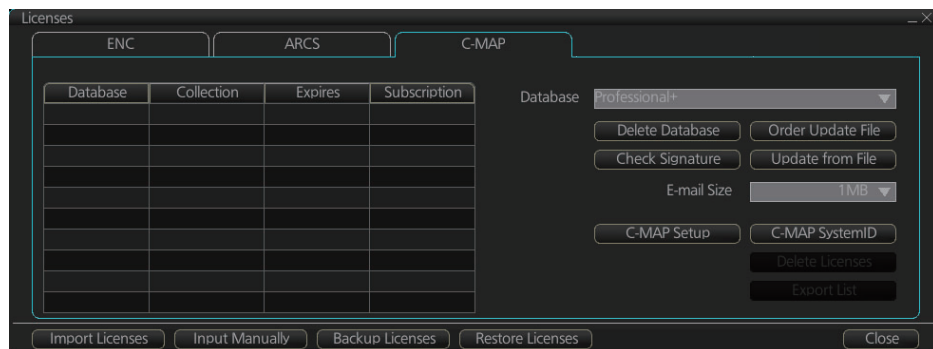
7.5 How to Install C-MAP Charts

Synchronize chart data before you install C-MAP charts, grouping the chart radar units to synchronize, otherwise the chart data cannot be shared. See the procedure in subsection 7.20.1 for how to synchronize chart data. If C-MAP charts are not synchronized after installation, delete all C-MAP charts, and do the above procedure again.

7.5.1 How to register the eToken

The eToken is a hardware mechanism (installed inside the processor unit) used for password authentication. Registration of the eToken is required only once, before you install the C-MAP database.

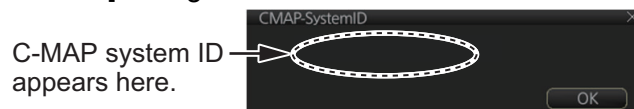
1. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™ to show the [License] dialog box.
2. Click the [C-MAP] tab to show the [Licenses] dialog box for C-MAP.



3. Click the [C-MAP Setup] button.
4. The confirmation message "Attention: C-MAP eToken will be initialized. Do you wish to continue?" appears. Click the [OK] button to continue and register the eToken.

Note 1: "C-MAP: No connection to eToken" disappears from the Permanent warning box after completion of the registration.

Note 2: You can show your C-MAP system ID by clicking the [C-MAP SystemID] button on the [Licenses] dialog box for C-MAP.



7.5.2 How to install the C-MAP database

When you install the C-MAP database from a medium, all data is saved to the SSD.

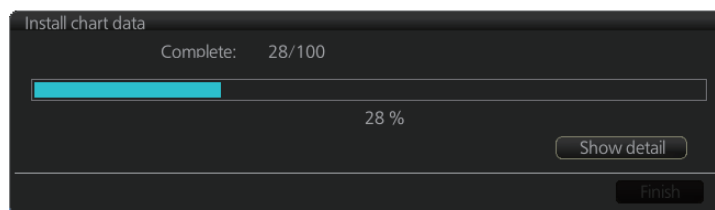
Note 1: To synchronize chart data between multiple units (FMD-3xxx or FAR-3xxx), group the units (see section 7.20.1) you wish to synchronize before you install the charts. If the group setting is done after chart installation, the units will not synchronize. If, after setting the group and installing the charts, the charts are not synchronized, delete, then reinstall the chart.

Note 2: The installation of a chart cannot be cancelled while it is in progress. If you get an error message, try to install the charts again.

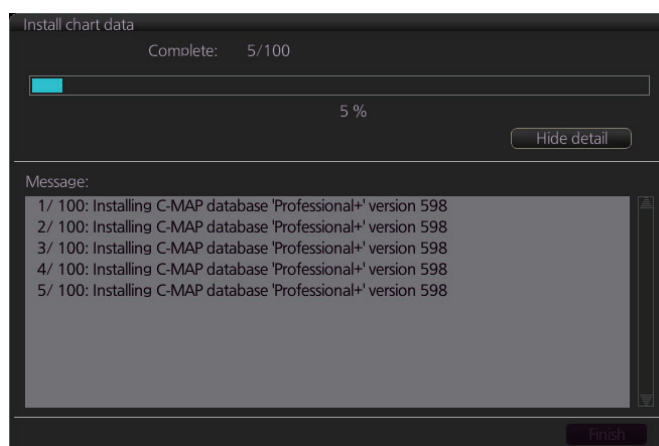
Note 3: The C-MAP database in the units selected for synchronization are synchronized at the successful completion of the database installation.

7. HOW TO MANAGE CHARTS

1. Insert the medium that contains the C-MAP database.
2. Get into the Chart maintenance mode then click the [AUTO Load] button on the InstantAccess bar™.
3. The [Install chart data] window appears and shows the percentage of completion, with digital and analog indications.

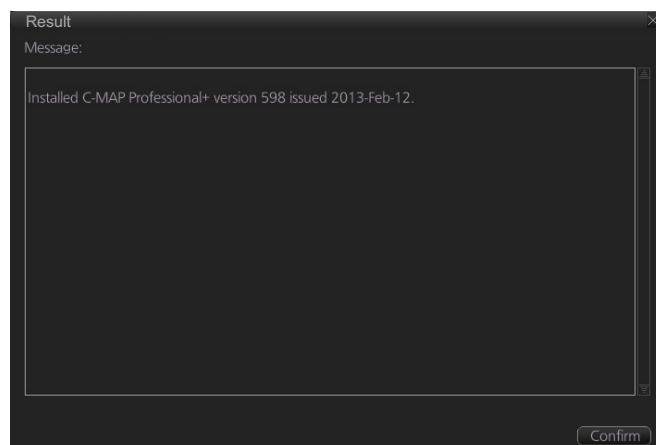


To show details during the installation, click the [Show detail] button.



To close the [Message] window, click the [Hide detail] button.

4. When the installation is completed, information about the chart database installed appears in the [Result] window. Click the [Confirm] button to finish.



5. If applicable, set the next sequential medium and repeat steps 2-3 to install the next databases.
6. After all databases are installed, reset the power.

Note 1: If, after installation, C-MAP charts do not appear, delete all corresponding charts and then reinstall them.

Note 2: Synchronization is not done for charts which could not be installed successfully. Reinstall failed charts.

7.5.3 How to install C-MAP licenses

A C-MAP license should be installed using the automatic installation method shown below. If the automatic installation fails, try the manual installation method.

Automatic installation

1. Set the medium (DVD, USB flash memory, etc.) that contains the C-MAP license.
2. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™.
3. Click the [Import Licenses] button.
4. Select the medium that contains the license then click the [Open] button.
5. Click the [OK] button to install the license.
6. Click the [Close] button to finish.
7. Reset the power.

Manual installation

1. Click the [CHARTS] button on the Status bar to go the Chart maintenance mode, then click the [License] button on the InstantAccess bar™.
2. Click the [Input Manually] button to show the [Input License Manually] box.

3. Select the type [C-MAP] at the bottom of the window.
4. Enter the [Database name] and [Collection name] information as shown in the table below. Enter the names exactly as shown to ensure correct installation.

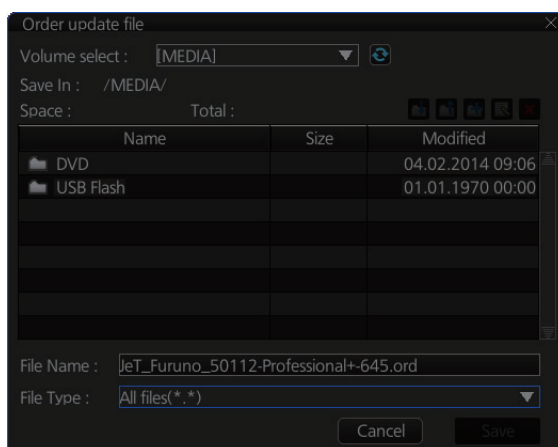
Chart type	Name to enter	
	Database name	Collection name
PROFESSIONAL+	Professional+	Enter "Zone *" (without quotations, *= contracted zone number) Ex. Zone 1
ENC SERVICE	ENC	Enter "Zone * ENC" (without quotations, *= contracted zone number) Ex. Zone 1 ENC
ENC+ SERVICE	ENC+	
ADMIRALTY ENC SERVICE	CAES	Enter the contracted collection name.

5. Enter the license (max. 16 characters) in the bottommost window.
6. Click the [OK] button to install the license.
7. Reset the power.

7.5.4 How to generate and order an update file

To update the C-MAP chart database, you have to generate an update file, and e-mail the file directly to C-MAP. The update file defines coverage of charts you can display on your chart system.

1. Connect a USB flash memory to the USB port on the Control Unit.
2. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™.
3. Click the [C-MAP] tab to show the [Licenses] dialog box for C-MAP.
4. From the [E-mail Size] drop-down list, select the size of the update file. The choices are [100KB], [200KB], [300KB], [400KB], [500KB], [750KB], [1MB], [2MB], [3MB], [4MB], [10MB], [Unlimited]. This is the size of the data file in an e-mail. The file may be sent in pieces depending of the size selected.
5. Click the [Order Update File] button. A file name (C-MAP system ID and chart type) is automatically created, with the extension .ord.



6. Select the USB flash memory.
7. Click the [Save] button to save the order file to the USB flash memory.
8. Send the order file to update@c-map.com.

Within a few minutes you will receive a file that includes the terms for using the chart service and the chart updates. Save the file to a USB flash memory and apply it as shown in the next section.

7.5.5 How to apply the update file

1. Insert the USB flash memory that contains the update file (.ans extension) into the USB port on the Control Unit.
2. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™.
3. Click the [C-MAP] tab to show the [Licenses] dialog box for C-MAP.
4. Click the [Update from File] button.
5. Find the update file on the USB flash memory then click the [Open] button.

7.5.6 How to check license status

You can check the status of your chart licenses with the following procedure. The chart database and respective licenses must be installed before you check the status.

1. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™.
2. Click the [C-MAP] tab to show the C-MAP license dialog.
3. Click the [Check Signature] button at the right-side of the dialog.
The results appear in the window as "Ok" or "Not Ok". Where the results appears as "Not Ok", consult your local dealer.
4. Click the [OK] button to close the results window.

7.6 How to Delete a C-MAP Database

If you are going to delete all C-MAP databases, turn off chart synchronization (see section 7.20) and delete the databases from each unit.

1. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™.
2. Click the [C-MAP] tab to show the [Licenses] dialog box for C-MAP.
3. Select the database to delete with the [Database] pull-down list.
4. Click the [Delete Database] button.
5. Reset the power.

7.7 How to Export a List of Charts

Get into the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to show the [Manage Charts] dialog box. Check the charts to add to the list. Click the [Export List] button to export the checked charts to a USB flash memory, in .txt format.

7

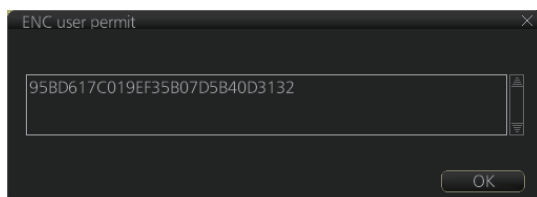
7.8 How to Export a List of Specific Licenses

You can export a list of your ENC or C-MAP licenses to a USB flash memory, in .txt format.

1. Set a USB flash memory in the USB port on the Control Unit.
2. Get into the Chart maintenance mode then click the [License] button.
3. Click the [ENC] or [C-MAP] tab.
4. Click the [Export List] button.
5. Change the file name at [File Name] if desired.
6. Select the USB flash memory then click the [Save] button.
7. Click the [OK] button to finish.

7.9 How to Show the ENC Permit

1. Get into the Chart maintenance mode then click the [License] button.
2. Click the [ENC] tab.
3. Click the [ENC User Permit] button to show the ENC permit.



4. Click the [OK] button to finish.

7.10 How to Backup, Restore Licenses

You can make backup copies of your ENC, ARCS and AVCS (AIO) licenses and save them to a USB flash memory. If re-installation of the licenses becomes necessary, you can reinstall them from the USB flash memory. The backup and restore functions are not available with C-MAP charts.

To backup licenses:

1. Insert a USB flash memory into the USB port on the Control Unit.
2. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™ to show the [Licenses] dialog box.
3. Click the [Backup Licenses] button.
4. Select the USB flash memory then select the folder in which to save the licenses, then click the [OK] button.
The license files (ENCpermit.dat, ARCSpermit.dat) are saved in the selected folder.
5. Click the [OK] button.

To restore licenses:

1. Insert the USB flash memory that has the licenses into the USB port on the Control Unit.
2. Get into the Chart maintenance mode then click the [License] button on the InstantAccess bar™ to show the [Licenses] dialog box.
3. Click the [Restore Licenses] button.
4. Select the USB flash memory then select the folder in which licenses are saved, then click the [OK] button.
5. Click the [OK] button.

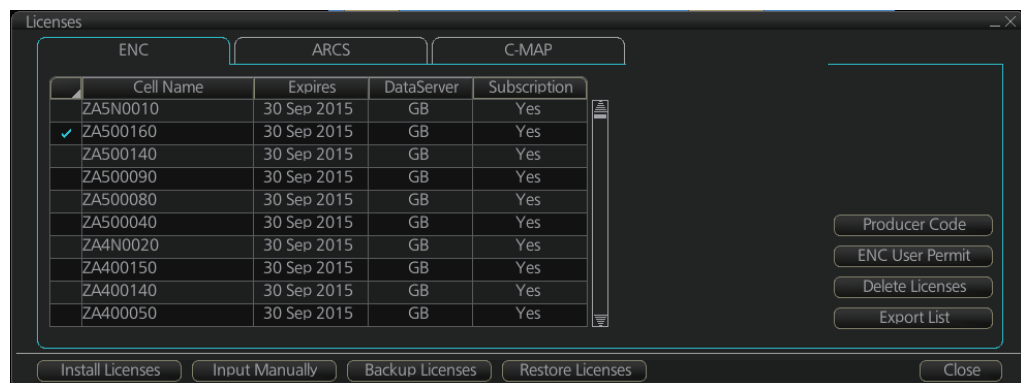
7.11 How to View Permit Expiration Date

Permits are used to control the right to use chart data in this chart system. A permit is connected to the edition of a chart. Permits are issued in two different types:

- **Subscription permit:** This type of permit includes updates for subsequent 3, 6, 9 or 12 months.
- **One-Off permit:** This type of permit includes only updates up to the issue date of the permit.

The expiry date of a permit controls the installation of Base charts and their updates to the chart. The system will warn you when you are installing charts or updates that are issued less than 30 days before the expiration date of a permit. If a permit has expired, it is impossible to install a chart or its update that was issued after the expiration date of the permit. The user has a right to view a chart forever, except C-MAP charts that have viewing periods which end two months after the expiry date of the license. If the charts are not updated regularly it will not complete the requirements for having up-to-date charts. To view the permit status of a chart, click the [License] button on the InstantAccess bar™ and then click the applicable "chart" tab ([ENC], or [C-MAP]).

The example below shows the status of ENC charts. The expiration date of each cell appears in the [Expires] window.



Cell Name	Expires	DataServer	Subscription
ZA5N0010	30 Sep 2015	GB	Yes
✓ ZA500160	30 Sep 2015	GB	Yes
ZA500140	30 Sep 2015	GB	Yes
ZA500090	30 Sep 2015	GB	Yes
ZA500080	30 Sep 2015	GB	Yes
ZA500040	30 Sep 2015	GB	Yes
ZA4N0020	30 Sep 2015	GB	Yes
ZA400150	30 Sep 2015	GB	Yes
ZA400140	30 Sep 2015	GB	Yes
ZA400050	30 Sep 2015	GB	Yes

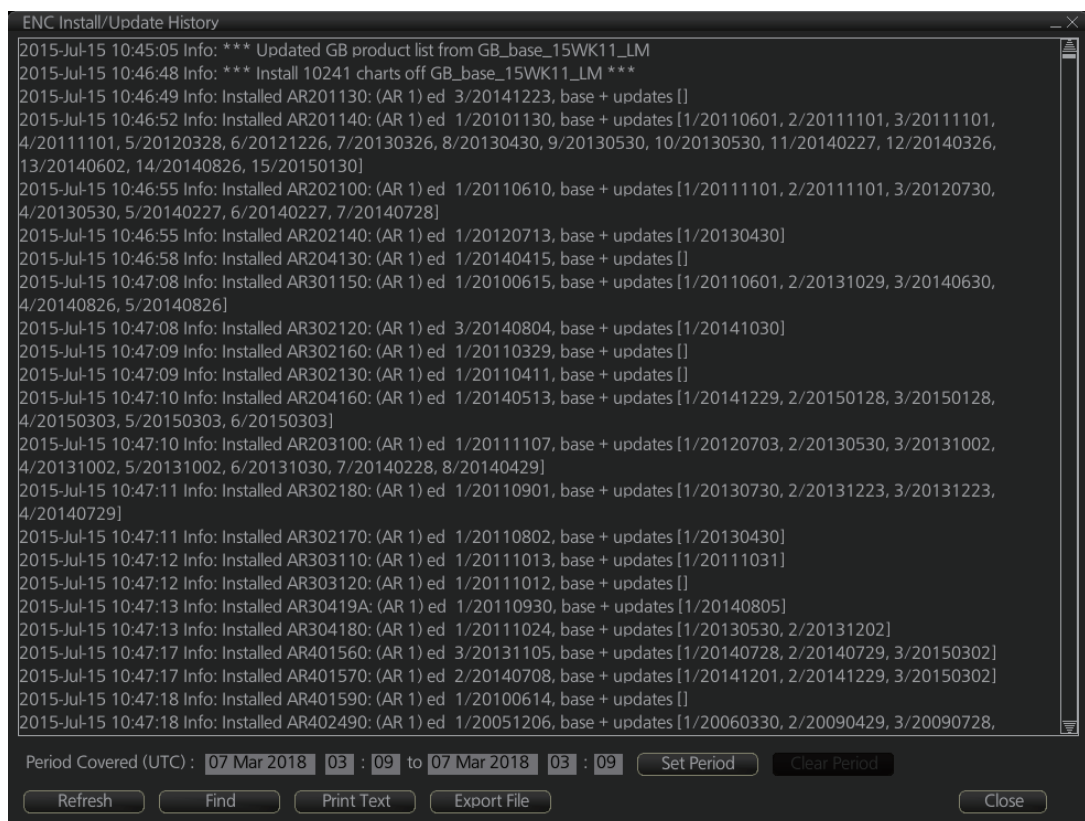
Subscription warnings for RENC

If you have at least one subscription-type permit, the system will automatically warn you about the expiration date of your subscription license, in the Permanent warning box.

Note: If you change service provider for some reason, it is recommended that you remove all the charts from this chart system before installing new charts of new service provider.

7.12 How to Display Install/Update History

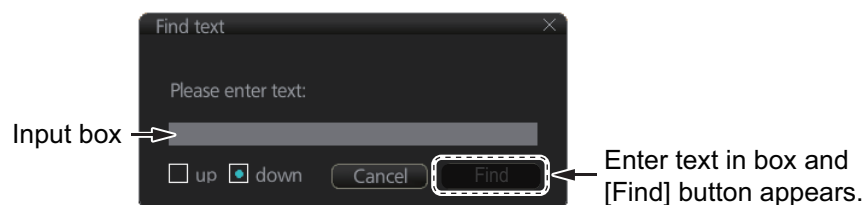
You can see a history of chart installations and updates. On the InstantAccess bar™, click the [Log] and [Update Log] buttons followed by the [ENC] or [C-MAP] button. The example below shows the install/update history for ENC charts.



You can filter the log with [Period Covered (UTC)]. Enter the period to display then click the [Set Period] button. Click the [Clear Period] button to display all entries. The [Refresh] button updates the list. [Print Text] prints hard copy of the history. [Export File] exports the log file. The file name "UpdateLog_***YYYYMMDDhhmmss.txt" is automatically assigned. (***=ENC, CMAP)

The [Find] button searches required text string as follows:

1. Click the [Find] button to show the [Find text] box.



2. Click the input box then enter the text to search.
3. Select the search direction with the [up] or [down] radio button.
4. Click the [Find] button. The first matching text is highlighted in yellow at the top of the screen.
5. To continue the search click the [Find] button. To cancel the search, click the [Cancel] button.

7.13 Catalog of Chart Cells

A catalog is used to view graphical coverage of the charts stored in your SSD. Available charts are displayed showing their border limits. Note that sometimes the real coverage of the charts may be considerably less than the declared limits of it.

To display the catalog, get into the Chart maintenance mode then click the [Manage Charts] button on the InstantAccess bar™. The [Filter] window lets you select what to display. Check or uncheck items as appropriate.

Line Color Legend

- Chart is up-to-date
- Permit will expire within 30 days
- Permit missing/expired
- Chart is not up-to-date
- Permit available, chart is not installed
- Permit not available
- Chart's status is unknown
- Chart is withdrawn or corrupted

Filter

Chart Type : ☒ ENC ☒ ARCS ☒ C-MAP

Availability : ☒ Available ☐ Unavailable

License : ☒ Valid ☒ Missing/Expired

C-MAP Collections : ☐

Official : ☒ Official ☒ Unofficial

Up-to-date : ☒ Up-to-date ☒ Not Up-to-date

Purpose : ☒ Overview ☒ Approach ☒ General ☒ Harbour ☒ Coastal ☒ Berthing

Group : ☐

Route : ☐

Set Default

Select

Manage Charts

Type	Chart Name	Data Server	Status	Action
ENC	AR201010		not installed	
ENC	AR201140		not installed	
ENC	AR202100		not installed	
ENC	AR202140		not installed	
ENC	AR202150		not installed	
ENC	AR203100		not installed	
ENC	AR203170		not installed	
ENC	AR204130		not installed	
ENC	AR204160		not installed	
ENC	AR301150		not installed	

Data Location : Internal

Description :

Open Chart

Note

Print List

Export List

Import Charts Delete Charts Individual Update Close

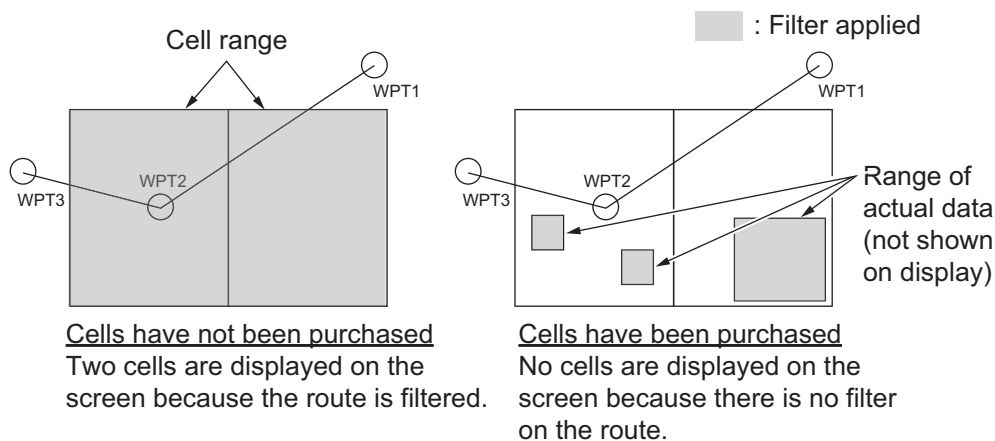
- 1) Chart Type
ENC: Display ENC charts.
ARCS: Display ARCS charts.
C-MAP: Display C-MAP charts.
- 2) Availability
Display available or unavailable charts.
- 3) License
Valid: Cell with valid license.
Missing/Expired: Cell with missing or expired license.
Valid + Missing/Expired: Display cell regardless of license.
Uncheck both: Hide all cells.
- 4) C-MAP Collections
A collection is a pre-defined dataset, the contents of which can be defined by zone, individual chart or any of those combinations. Applicable to C-MAP charts also.

7. HOW TO MANAGE CHARTS

- 5) Official
Display official or unofficial charts.
- 6) Up-to-date
Display charts which are or are not up to date.
- 7) Purpose
Display chart according to its purpose - Overview, General, Coastal, NtoM, Approach, Harbour, Berthing.
- 8) Group
See the next section for how to group charts.
- 9) Route
The cells within a route and route waypoints (start and end points settable) are shown. When checked, the [Action] column of the [Manage Charts] dialog box shows the necessary action to be taken for each chart within the specified route in order to navigate the route.

Action	Description
[install]	License is installed, however the chart has not been installed. Install the chart.
[no action]	The latest chart is installed, and the license expiration date is 30 or more days away.
[order]	License not purchased. Order the license.
[reinstall]	The chart is corrupted. Reinstall the chart.
[remove]	Chart status is "withdrawn". It is not necessary to purchase the license.
[renew]	The latest chart is installed, however the license expires within 30 days. Purchase the license.
[update]	Chart is not up-to-date. Install the latest chart.

Further, the range of the cell (square region) and the range in which the cell has actual data do not necessarily match. If the cell has not been purchased, the cell range is filtered, and if it has been purchased, the actual data range is filtered.



- 10)[Set Default] button
Restores all factory defaults for items in the window.
- 11)Apply button
Changes made to the filter window are applied to the chart. This button is only visible if changes are made to the filter window settings.
- 12)Chart boundary boxes
Define the area covered by a chart and are color-coded according license and permit status.

13) Line color legend

The line color legend provides information about license validity.

Color	Message	Color	Message
Internal charts		External charts	
Green	Chart is up-to-date	Green	Already installed and up-to-date
Dark Green	Permit will expire within 30 days	Yellow	Can be installed/updated but a warning
Yellow	Permit missing/expired	Orange	Already installed but not up-to-date
Orange	Chart is not up-to-date	Magenta	Can be installed/updated
Magenta	Permit available, chart not installed	Red	No valid permit
Red	Permit not available	Gray	Cannot be installed/updated
Blue	Chart's status is unknown		
Gray	Chart is withdrawn or corrupted		

7.13.1 How to group chart cells

You can define groups of like-format chart cells. This means you can collect related charts, for example, all cells that cover a route from Liverpool to New York or all cells available from a National Hydrographic Office.

You can make a group and define charts from the [Edit Group] dialog box.

How to make a new group of chart cells

1. In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™.
2. Click the [Edit] button in the [Filter] window to show the [Edit Group] dialog box.



3. Click the [New] button.
4. In the [Outside Group] window, click the box to the left of the chart cell you want to add to the group to show a checkmark. (A context-sensitive menu with [Select All] and [Deselect All] functions is available by right-clicking the box to the left of [Name], in either window.)
5. After you have selected the cells to add to the group, click the [<<] button to move the names of the selected cells to the [Inside Group] window. If you want to remove a chart from the group, select it then click the [>>] button.
6. Click the [Save] button.
7. Enter a name for the group, using the keyboard on the Control Unit or software keyboard, then click the [OK] button.
8. Click the [Close] button to finish.

How to edit a group of chart cells

You can edit a group of chart cells from a group as follows:

1. In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to show the [Filter] window.
2. Click the [Edit] button.
3. Select the name of the group with the pull-down list at the item [Group Name].
4. In the [Inside Group] window, click the box to the left of the chart cell you want to remove from the group to show a checkmark. (A context-sensitive menu with [Select All] and [Deselect All] functions is available by right-clicking the box to the left of [Name].)
5. After you have selected the charts to remove to the group, click the [>>] button to remove the selected charts cells from the group.
6. Click the [Save] button.
7. Click the [Close] button to finish.

How to delete a group of chart cells

You can delete group of chart cells as follows:

1. In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to show the [Filter] window.
2. Click the [Edit] button.
3. Select the name of the group with the pull-down list at the item [Group Name].
4. Click the [Remove] button.
5. Click the [OK] button.
6. Click the [Close] button to finish.

How to select the group to view

1. In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to show the [Filter] window.
2. Select the group to view from the pull-down list at [Group].
3. Click the [Close] button to finish.

7.13.2 How to view status of chart cells

The [Cell Status] dialog box shows the status of the chart cells stored in the system. To show this dialog box, get into the Chart maintenance mode then click the [Cell Status] button on the InstantAccess bar™.

Type	Chart Name	Data Server	Edition/Issue Date	Update: Num/Date	Status
ARCS	100	GB	06 May 1994	-/-	up to date
ARCS	1000	GB	05 Mar 2009	-/28 May 2015	not up to date
ARCS	1001	GB	05 Mar 2009	-/28 May 2015	up to date
ARCS	1002	GB	27 Nov 1912	-/-	not up to date
ARCS	1003	GB	15 Jan 2004	-/25 Jun 2015	up to date
ARCS	1004	GB	03 Oct 2013	-/-	up to date
ARCS	1005	GB	30 Apr 2015	-/-	up to date
ARCS	1006	GB	03 Oct 2013	-/-	up to date
ARCS	1007	GB	09 Apr 2015	-/11 Jun 2015	up to date
ARCS	1008	GB	09 Apr 2015	-/-	not up to date

- [Type]: Type of chart cell, ENC or C-MAP.
- [Chart Name]: Chart name
- [Data Server]: The name of the data server where the chart was downloaded from.
- [Edition/Issue Date]: Edition no. and issued date of the chart cell.
- [Update: Num/Date]: No. and date of the update of the chart cell.
- [Updated]: The update status for the selected cell. "up to date" is shown for cells that are up-to-date, "not up to date" is shown for cells that are not up-to-date, "withdrawn" is shown if a cell is canceled, "unknown" is shown if the cell is not delivered as part of a data service and "broken" is shown if the cell is corrupted.
- [Status]:
 - [up to date]: Cell is up-to-date.
 - [not up to date]: Cell is not up-to-date.
 - [not installed]: Cell is not installed.
 - [withdrawn]: Cell has been withdrawn (cell will not be updated).
 - [unknown]: Cell is not delivered as part of a data server service (ex. unencrypted ENC).
 - [broken]: Cell is corrupted.

7.14 How to Open Charts

In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to display the dialog box shown below. Select the chart to open then click the [Open Chart] button.

Type	Chart Name	Data Server	Status	Action
ENC	JP13UV00	GB	not up to date	
ENC	JP13UV10	GB	not up to date	
✓ ENC	JP13UV20	GB	not up to date	
ENC	JP13UV30	GB	not up to date	
ENC	JP148NF0	GB	not up to date	
ENC	JP148NG0	GB	not up to date	
ENC	JP148NH0	GB	not up to date	
ENC	JP148NI0	GB	not up to date	
ENC	JP148NJ0	GB	not up to date	
ENC	JP14CCJ4	GB	not up to date	

7.15 How to Print Chart List, Cell Status List

7.15.1 How to print the chart list

1. In the Chart maintenance mode, click the [Manage Charts] button on the InstantAccess bar™ to show the [Manage Charts] dialog box.
2. Check the charts to print.
3. On the [Filter] window, check the information to print.
4. Click the [Print List] button to print. (If you have selected more than 30 charts, the message "The number of page is 1. Do you want to continue?." appears. Click the [OK] button to continue, or the [Cancel] button to escape.)

Chart Management Report			
Ship Name:		Call Sign:	
IMO Number:		MMSI Number:	
Printing Date:	2013-06-18 21:14:00		
Data Location:	Internal		
Filter			
Chart Type:	ENC/ARCS/C-MAP	Availability:	Available
License:	Valid/Missing/Expired	Dynamic License:	DL/Non-DL
Official:	Official/Unofficial	Up-to-date:	Up-to-date/Not Up-to-date
Purpose:	Overview/General/Coastal/Approach/Harbour/Berthing		
Group:	test_all		
Status Summary			
yes		1251/1884	
no		633/1884	
Type	Chart Name	Data Server	Status
ENC	AU130060	GB	yes
ENC	AU130090	GB	yes
ENC	AU130120	GB	yes
ENC	AU130150	GB	yes

Example

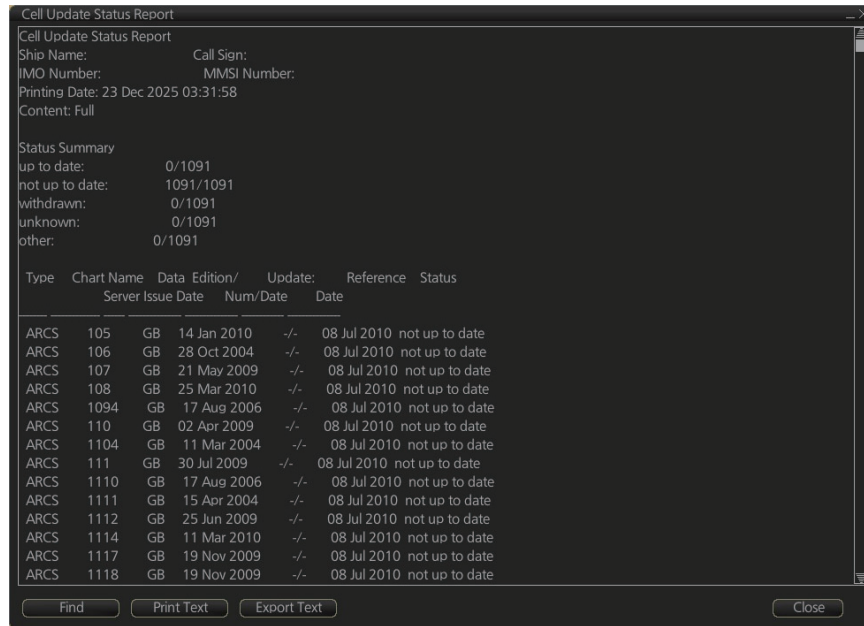
Description of chart list printout

Item	Description
[Ship Name]	Name of ship
[IMO Number]	Ship's IMO number
[Call Sign]	Ship's call sign
[MMSI Number]	Ship's MMSI number
[Printing Date]	Date list printed
[Data Location]	Location of charts; normally [Internal].
[Filter]	Settings of the items in the [Filter] window.
[Status Summary]	[yes]: charts with yes status/total number of charts [no]: charts with no status/total number of charts

7.15.2 How to show the cell status list

1. In the Chart maintenance mode, click the [Cell Status] button on the InstantAccess bar™ to show the [Cell Status] dialog box.
2. On the [Filter] window, check the information to show.
3. Click the [Create Report] button to generate the report. A report for all cells shown in the [Cell Status] dialog appears.

Note: If there are no cells shown in the [Cell Status] dialog box, the [Create Report] button is not available.



Example

4. To print the report, click the [Print Text] button. To output the report as a PDF file click the [Export Text].

Description of cell status printout

Item	Description
[Ship Name]	Name of ship
[IMO Number]	Ship's IMO number
[Call Sign]	Ship's call sign
[MMSI Number]	Ship's MMSI number
[Printing Date]	Date list printed
[Content]	Settings of the items in the [Filter] window.
[Status Summary]	[up to date]: charts with "up to date" status/total number of charts [not up to date]: charts with "not up to date" status/total number of charts [withdrawn]: charts with "withdrawn" status/total number of charts [unknown]: charts with "unknown" status/total number of charts [other]: charts with "other" status/total number of charts

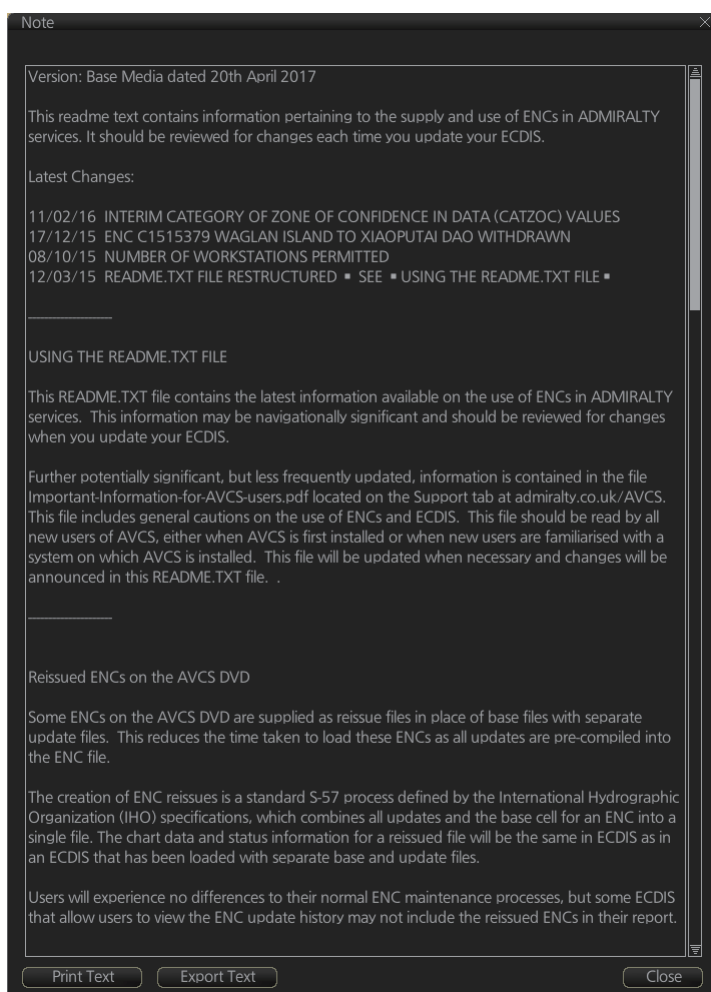
7.16 How to Delete Charts

If you are going to delete all charts, turn off chart synchronization (see section 7.20) and delete charts from each unit.

1. Click the [Manage Charts] button to show the [Manage Charts] dialog box.
2. Click the block to the left of the chart to remove, a checkmark appears. A context-sensitive menu with [Select All] and [Deselect All] functions is available by right-clicking the block to the left of [Type].
3. Click the [Delete Charts] button to delete the charts selected.
4. Reset the power.

7.17 How to Show Publishers Notes for ENC Charts

You should read the text file associated with each catalog, which you can view when installing a chart from a medium. Click the [Note] button in the [Manage Charts] dialog box. To print a hard copy, click the [Print Text] button. To output as a PDF file click the [Export Text].



7.18 How to Find the Chart Type

The electronic chart system can display more than one ENC chart cell at a time. This feature is called multi-cell display. If one ENC chart cell does not cover the whole display, the system opens more ENC chart cells for display, if appropriate cells for the displayed area are available. The Own ship functions box shows information about ENC chart cells displayed on the electronic chart display area. When automatic TM reset is active, the information is displayed with reference to your ship's position. If TM reset is OFF, the information is displayed with reference to current cursor position.

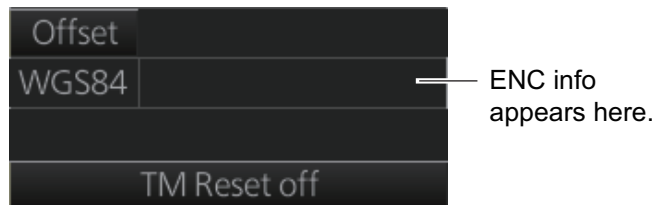


Chart type indication

No indication (Official ENC chart)

“Non-ENC data” (Unofficial ENC chart, indication in yellow)

“ENC data available” (Currently, RNC chart is in use, but ENC material is available. Indication shown in yellow.)

7.19 How to Update ENC, C-MAP Charts Manually

Manual update may include deleting an already existing object, modifying a position or other characteristics of an already existing object or inserting of a new object. In this system, manual updates are stored in a common database.

Mariners cannot permanently remove any of the official objects from the chart display. If a mariner needs to make obsolete any official objects which were entered manually, he “deletes” them. Then, in practice, the deleted objects are still visible, but a diagonal line on the object indicates it is a deleted object.

However, a mariner can remove objects that he has inserted himself.

Note that the manual updates have no automatic connection to any automatic update received later for charts. If a manual update itself became obsolete, because the official chart has been updated to include the update defined as a manual update, the mariner must himself delete the obsolete manual update in question.

The system records complete usage of manual updates. All deletions, modifications and insertions are recorded and time stamped. If the mariner wishes to see what kind of manual updates he had in the past, for example, two weeks ago, he uses Update History to specify the relevant date range. For information on how to set Display date and Update Review dates, see section 9.2.4.

Note 1: Do not manually update charts while charts are being synchronized. Wait until synchronization is completed.

Note 2: When any chart is updated, all checked routes are reverted to unchecked status. Use the [Check Route] button on the [Alert Parameters] page to re-check routes before starting any voyage.

7.19.1 How to insert update symbols

A manual update symbol can be added as shown in the procedure below.

Note 1: If the system freezes when updating the drawing type [Area], reset the power.

Note 2: An update symbol that straddles the international date line cannot be edited. In this case, insert the same symbol on each side of the line.

Note 3: Do not do manual updating during chart synchronizing. Do the updating after the completion of synchronizing or do the updating where the chart is installed.

1. Go to the Voyage navigation mode.
2. Click the [Manual Update] button on the InstantAccess bar™ to open the [Manual Update] dialog box.
3. Click the [Planning] tab.

4. Click the [Add] button.
Note: This window can also be shown from the context-sensitive menu. Right-click the display area then select [Manual Update] and [Add New].
5. Use the [Drawing Type] pull-down list to select drawing type: [Point], [Line] or [Area].
6. Click desired object.
7. Put the cursor on the location where to insert the symbol then left click. The [Manual Update] dialog box shows:
 - [Object]
 - [Drawing Type]

8. You can add a comment related to a manual update object in the [Annotation] box.

9. To add textual information to an attribute, select the attribute from the [Attributes] window then add text in the [Edit Attribute's Value] window.
The [Date end] factory default is set to three months from the date of insertion and applies to all chart items. You can adjust the dates here.
10. Click the [Commit] button to add all selected objects to the chart.

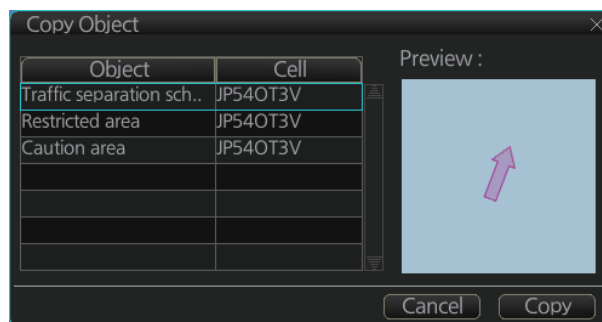
Note 1: If there is no textual information entered in the [Annotations] window, a confirmation message appears when you click the [Confirm] button. Check that the information is correct and click [Yes] or [No] as appropriate.

Note 2: A manual update object is displayed until the display until date entered for it has passed. If the object remains on the screen after the display until date, do some operation on the screen to refresh the screen to erase the object.

7.19.2 How to copy objects from an official chart and insert them

You can copy objects from an official chart and insert them as a manual update with the following procedure:

1. Right-click the object you wish to copy to show the context-sensitive menu, the click [Manual Update] and [Copy From Chart]. The Copy Chart dialog box appears.



2. Click the object to copy, then click [Copy]. The object is copied to the [Manual Update] dialog box.
3. Referring to step 8 and step 9 in section 7.19.1, edit the object as required.
4. Click the [Commit] button to add the object to the chart.

Note: If there is no textual information entered in the [Annotations] window, a confirmation message appears when you click the [Confirm] button. Check that the information is correct and click [Yes] or [No] as appropriate.

7.19.3 How to ignore chart objects

Manually entered update symbols cannot be deleted until the display until date arrives or is changed. However, you can mark the symbol to indicate that it can be ignored.

1. Put the cursor on the symbol then right-click to show the context-sensitive menu.
2. Select [Manual Update] and [Delete].

The symbol is marked with a diagonal line.

Deleted symbol is marked with a diagonal line



7.19.4 How to delete (hide) a chart object

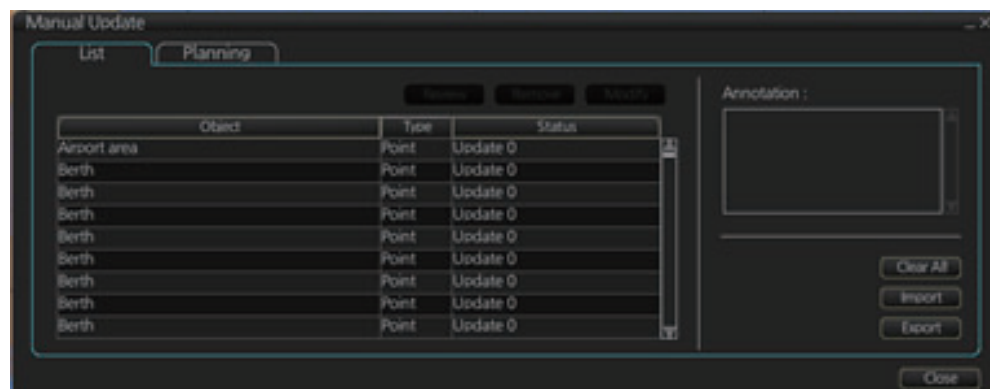
You can hide a manually inserted chart object by doing the following:

1. Referring to step 1 and step 2 of section 7.19.1, show the [Manual Update] dialog box.
2. Click the [List] tab.
3. Click the object to hide, then click the [Remove] button. The selected item is hidden from the chart display.

7.19.5 How to modify existing update symbols

The position, display until date and description of an update symbol can be modified. A symbol that is marked as “deleted” cannot be modified.

1. Follow steps 1-2 in subsection 7.19.1 to display the [Manual Update] dialog box.
2. Click the [List] tab.



3. Select the object to modify then click the [Modify] button. The [Planning] dialog box appears.
4. Modify the object referring to steps 8-9 in subsection 7.19.1.
Note: The annotation for all modified objects is reset to blank when the [Modify] button is clicked. Check and re-input the annotations as necessary.
5. Click the [Commit] button. A confirmation dialog appears. Click [Yes] or [No] as appropriate.

7.19.6 How to review a chart object

You can review a chart object in order to see the object before any changes were made. To review an object, do the following:

1. Follow steps 1-2 in subsection 7.19.1 to display the [Manual Update] dialog box.
2. Click the [List] tab.
3. Select the object to review then click the [Review] button.

Manually updated objects appear with a thick line, as shown in the figure to the right.

Objects under review appear in the [Manual Update] dialog box with the status "Review x" (x indicates the state at which you are viewing the reviewed object). The object appears in a pre-modified state, and with each press of the [Review] button, one modification is “reverted”.

Objects under review appear with a thick line attached.



7.19.7 How to remove all manual update data

You can remove all manual update data by doing the following:

1. Do steps 1-2 in subsection 7.19.1 to display the [Manual Update] dialog box.
2. Click the [List] tab.
3. Click the [Clear All] button.

7.20 How to Synchronize Chart Data

This section shows you how to synchronize chart data between FMD-3xxx and FAR-3xxx units, so that all units share the same chart data. Synchronization can be done automatically or manually (see subsection 7.20.2), however all units selected for synchronization must be powered to complete the synchronization. Synchronization includes the following actions:

- Synchronize public keys
- Synchronize chart permits and licenses
- Synchronize chart data
- Synchronize manual updates

Note 1: Before synchronizing chart data, confirm that all units selected for synchronization are powered. (Do not turn off a unit during synchronizing.) If a unit is turned off during the synchronizing, do the following on the unit which contains the medium:

- Open the [SYNC Status] dialog box then click the [Disable SYNC] button to disable synchronization. Power all units registered for synchronization, then click the [Urge SYNC] button on the [SYNC Status] dialog box on the unit containing the media to forcibly synchronize.
- Make a group of all the units currently powered, referring to subsection 7.20.1, and register the group with [Grouped with This Unit]. Reset the power on all units selected for synchronization.

Note 2: C-MAP charts are not automatically synchronized. C-MAP charts are only synchronized immediately after installing or updating the C-MAP database. If the system has several FARs or FMDs, make a group of associated units before you install C-MAP charts.

7.20.1 How to select the units to synchronize

Do as follows to select the units to synchronize.

1. Get into the Chart maintenance mode. On the InstantAccess bar™, click [System] followed by [SYNC Config] to show the [SYNC Config] dialog box.



[Grouped with This Unit]: This window shows the units currently selected for synchronization.

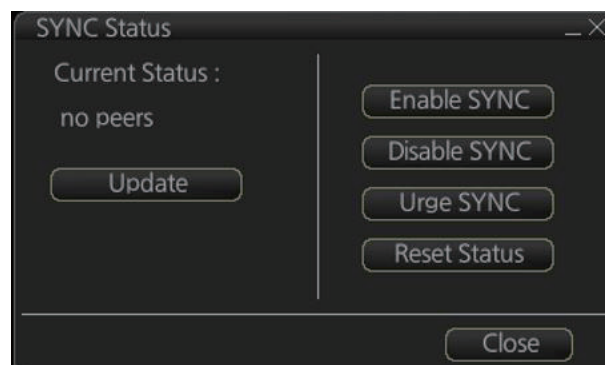
[Not Synchronize with This Unit]: This window shows the units not selected for synchronization.

2. **To select a unit for synchronization:** Put a checkmark next to the unit's name in the [Not Synchronize with This Unit] window then click the [<<] button. That unit's name is moved to the [Grouped with This Unit] window.
To deselect a unit from synchronization: Put a checkmark next to the unit's name in the [Grouped with This Unit] window then click the [>>] button. That unit's name is moved to the [Not Synchronize with This Unit] window.
 To deselect all units, click the [Reset All] button.
3. Click the [Save] button to finish.
4. Restart the power on applicable units to apply synchronization configuration changes.

7.20.2 How to check synchronization status

You can check chart synchronization status on the [SYNC Status] dialog box. Chart synchronization operations also are available from this dialog box. Normally, chart synchronization is done automatically, according to the sync settings on the [SYNC Config] dialog box. Use the [SYNC Status] dialog box to manually synchronize chart data when there is network failure, for example.

Get into the Chart maintenance mode. On the InstantAccess bar™, click [System] followed by [SYNC Status] to show the [SYNC Status] dialog box.



[Current Status]: Displays current synchronization status. The table below shows all the synchronization status messages.

Sync status	Meaning
[disabled]	Synchronization is disabled.
[must receive]	This chart radar will receive chart data from another FMD-3xxx or FAR-3xxx series.
[must send]	This chart radar will send chart data to another FMD-3xxx or FAR-3xxx series.
[none]	No synchronization task ready.

Note: Do not update charts manually when the sync status is “must receive”. Data may be corrupted. Wait until syncing is completed before updating charts manually.

[Update] button: Click this button to update [Current Status].

[Enable SYNC] button: Enables synchronization. The confirmation message "Attention: Do you want to enable sync?" appears. Click the [OK] button to enable synchronization. Synchronization is always enabled when chart radar starts. A progress bar indicates progress in synchronization. The bar is erased within five minutes after completion of synchronization.

[Disable SYNC] button: Disables synchronization function temporarily. Use this feature to enable chart administration in case of network failure, for example. The confirmation message "Attention: Do you want to disable sync?" appears. Click the [OK] button to temporarily disable synchronization.

Note 1: In normal operation do not disable synchronization. If you accidentally disable synchronization, try to synchronize by clicking the [Enable SYNC] button. If that does not work, reset the power of all units selected for synchronization then click the [Urge SYNC] button to synchronize.

Note 2: With synchronization disabled, the message "Synchronization disabled" may appear twice when installing a license. This does not affect installation of a license.

[Urge SYNC] button: Does immediate synchronization. The confirmation message "Attention: Chart data in other units will be overwritten by this unit. Do you wish to continue?" appears. Click the [OK] button to synchronize. If synchronization is not successful, restart applicable units and try again.

[Reset Status] button: Reset synchronization status to recover from synchronization status conflict. The confirmation message "Attention: Do you want to reset sync status? This unit may be synchronized from the other unit." appears. Click the [OK] button to reset.

7.20.3 Manual updates and synchronization

If you are synchronizing multiple units (FMD-3xxx or FAR-3xxx) while manual updating is being done on one of the units, the message "File not found" may appear, meaning the manual update data was deleted. If this occurs, follow the procedure below to synchronize the FAR-3xxx units. The procedure uses CRA001 and CRA002 as an example.

1. At the CRA001, get into the Chart maintenance mode, then click [System] and [SYNC Config] on the InstantAccess bar™.
2. Add CRA002 to [Grouped with This Unit] then click the [Save] button.

7. HOW TO MANAGE CHARTS

3. Reset the power on the CRA001 and CRA002.
4. At the CRA001, get into the Chart maintenance mode, then click the [System] and [SYNC Status] buttons on InstantAccess bar™ to show the [SYNC Status] dialog box.
5. Click the [Urge SYNC] button to synchronize charts between CRA001 and CRA002.
6. To confirm synchronization, do as follows:
 - 1) At the CRA001, get into the Voyage navigation mode, then click the [Manual Update] button on the InstantAccess bar™ to open the [Manual Update] dialog box.
 - 2) Click the [Planning] tab followed by the [Add] button.
 - 3) Insert an object at the CRA001.
 - 4) At the CRA002, move the cursor or change the chart scale. Confirm that the chart is updated.

7.21 How to Reconvert All SENC Charts

If you unintentionally installed outdated SENC charts, you can reconvert those charts to the latest SENC charts. Click the [System] and [Reconvert] buttons on the InstantAccess bar™ to reconvert all your SENC charts.

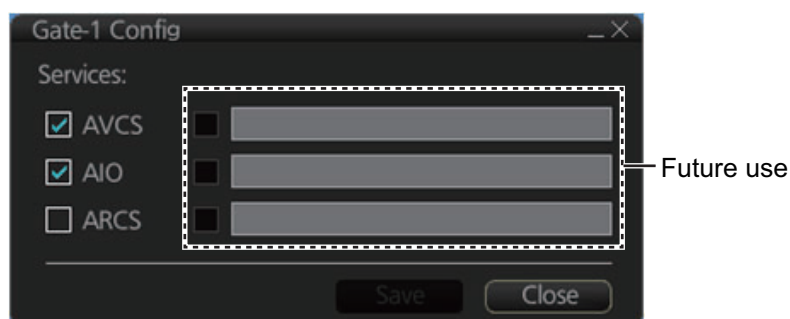
Note: All manual updates are removed in the reversion.

7.22 How to Manage Gate-1 Charts

Gate-1 provides this unit with the up-to-date UKHO chart data and permit file. To use Gate-1, the [Chart Service] setting must be set to [FURUNO], in the installation.

7.22.1 How to select the chart type(s) to install

1. Click the [CHARTS] button on the Status bar.
2. Click the [System] button on the InstantAccess bar™, then click [Gate-1 Config.] to show the [Gate-1 Config] window.



3. Check the chart type(s) that you want to install, then click the [Save] button.
4. You are asked if you are sure to save Gate-1 settings. Click the [OK] button to save settings. The message "Gate-1 services are saved. New services are applied after reboots." appears.
5. Click the [OK] button several times, then restart the unit.

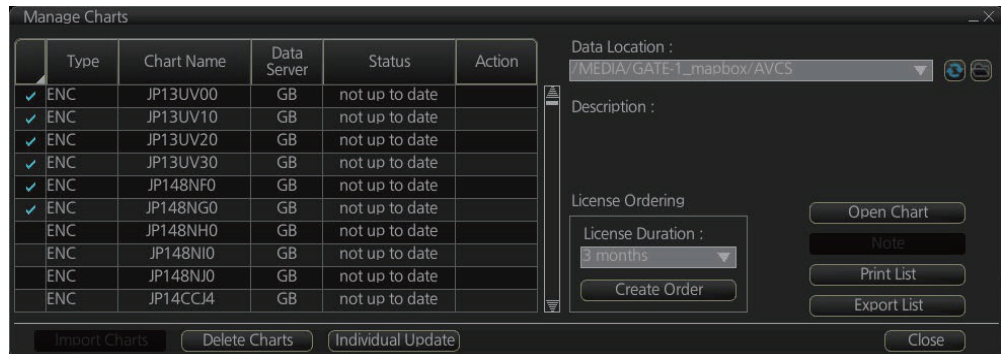
7.22.2 How to install charts and licenses

To install the chart selected at section 7.22.1 and its license, click the [CHARTS] button on the Status bar, then click the [Gate-1] button on the on the InstantAccess bar™. The message "This process takes time to complete, and the operation speed of this system will decline. Do you wish to continue?" appears. Click the [OK] button to continue and install your charts.

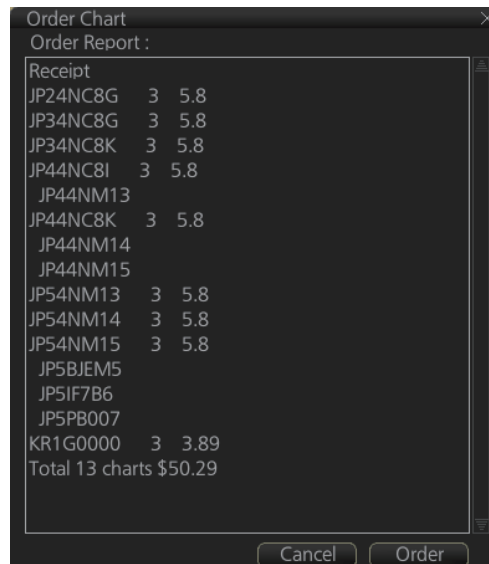
7.22.3 How to order licenses

Follow the procedure below to order licenses from Gate-1.

1. Click the [Manage Charts] button to show the [Manage Charts] dialog box.



2. At the [License Ordering] window, select the license duration from the pull-down list.
3. Click an appropriate block in the far-left hand column to select the chart to order. Repeat to select other charts.
4. After selecting the chart(s) to order, click the [Create Order] button. A window shows the charts ordered together with total cost.



5. Confirm the licenses and prices, then click the [Order] button.

After completing the purchase operation, the chart license purchase procedure is done via Gate-1. It takes several hours for a new license to arrive at Gate-1.

Note 1: Once a purchase is made you cannot cancel the purchase. Take care when making your order.

Note 2: Only UKHO AVCS and AIO licenses can be purchased.

Note 3: A network communication usage fee is assessed when purchasing a license.

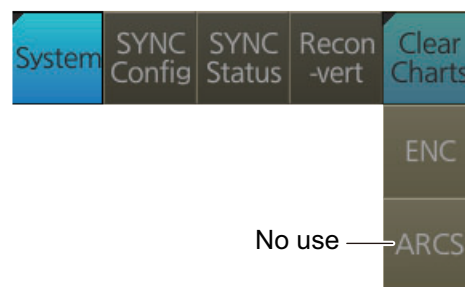
Note 4: Unselected cells may appear in the order window because of the AVCS sales format.

Note 5: When navigating a route with the chart filter on, the filter is applied to the region of the cell where a cell has not been purchased. A region does not always have actual data in all ranges.

7.23 How to Delete Chart Data

Converted data, license, and product list data can be deleted collectively as follows:

To clear all ENC data: Click the [CHARTS] button on the Status bar. On the InstantAccess bar™, click the [System], [Clear Charts] and [ENC] buttons.

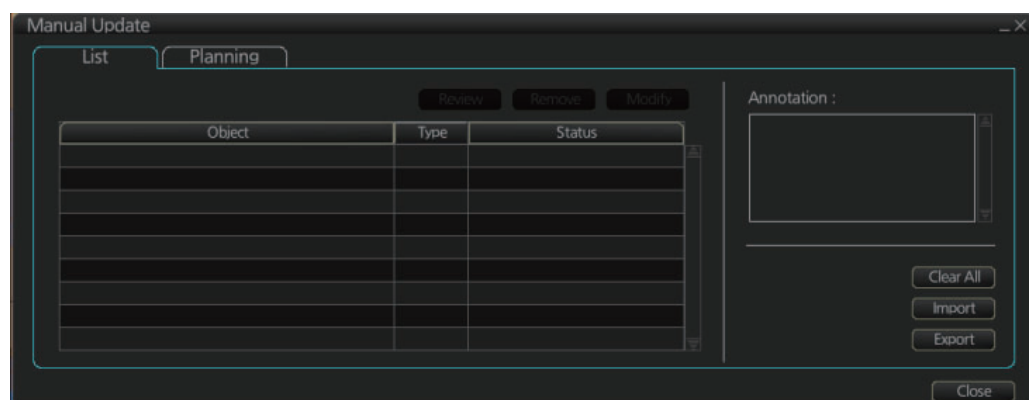


Note: For how to delete C-MAP data, see section 7.6.

7.24 How to Import Chart Objects

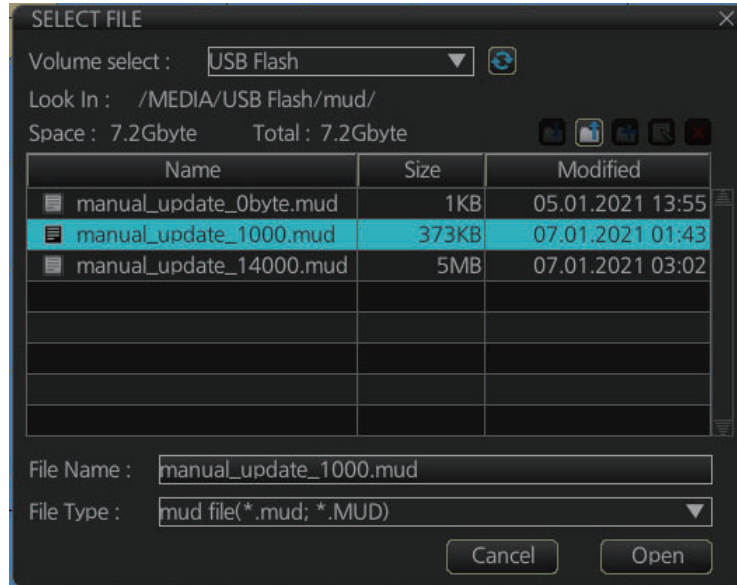
You can import chart data to this unit. The maximum file size that can be imported is 5 MB.

1. On the Control Unit, insert the USB flash memory that contains the data to import into the USB port.
2. On the InstantAccess bar™, click the [Manual Update] button to show the [Manual Update] dialog box.



3. Click the [List] tab.

- Click the [Import] button to show the [Select File] dialog box.



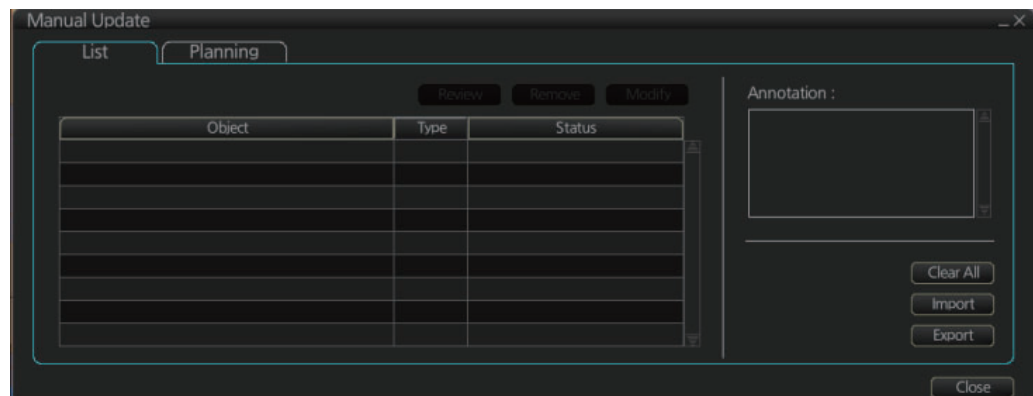
- Click the data in the list that you want to import, then click the [Open] button.

Note: To erase all chart data, click the [All Delete] button.

7.25 How to Export Chart Objects

You can export chart data to a USB flash memory.

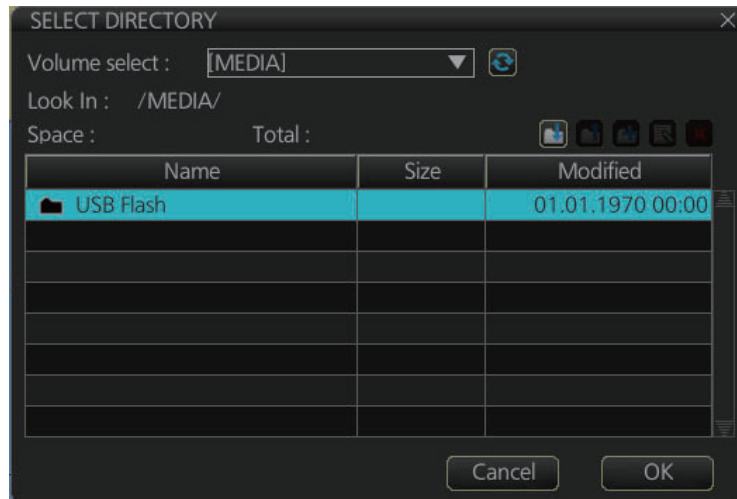
- On the Control Unit, insert the USB flash memory to use for data export.
- On the InstantAccess bar™, click the [Manual Update] button to show the [Manual Update] dialog box.



- Click the [List] tab.

7. HOW TO MANAGE CHARTS

- Click the [Export] button to export the data to the USB flash memory.



- Select USB flash, then click the [OK] button.

8. HOW TO CONTROL CHART OBJECTS

This chapter provides the information necessary for controlling chart features.

8.1 How to Browse Your Charts

You can view your charts using different positions and different scales. The basic tools for browsing charts are the **RANGE** key, chart offcenter, and scroll.

RANGE - and **RANGE +** change the chart scale. (The scrollwheel also can change the chart scale. Spin to change.) If true motion reset is active, ZOOM IN and ZOOM OUT keep the relative position of your ship with respect to the display. If true motion reset is off, ZOOM IN and ZOOM OUT keep the relative position pointed by the cursor with respect to the display. The system automatically selects next larger or smaller scale. If a chart with larger compilation scale is available at your current viewing position, the message "Larger scale ENC available" appears.

The own ship position can be easily relocated to the screen center in the Navigation voyage and Navigation planning modes. Further, in the Navigation voyage mode, the own ship position can be put at the cursor position.

To move the own ship mark to the screen center, put the cursor in the chart area and right-click [Ship on center]. **To move the own ship mark to a location**, right-click the position on the chart where to put the own ship mark then right-click [Ship off center]. ([Ship off center] is not available in the Voyage planning mode.)

To scroll your chart, simply drag and drop.

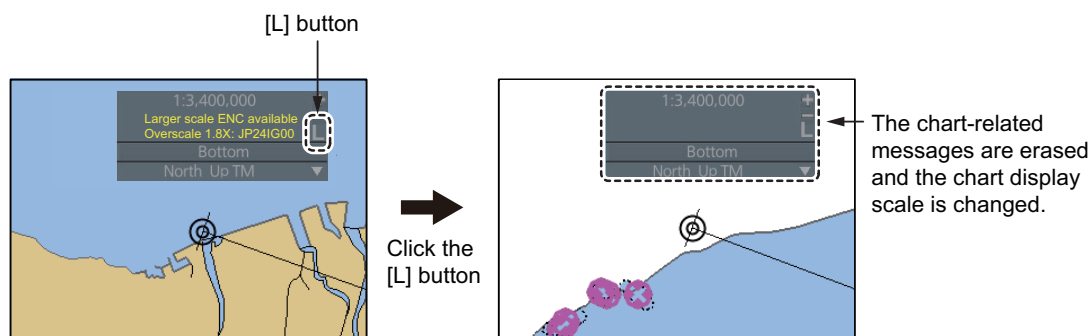
8.2 How to Select the Chart Display Scale

When the chart display scale becomes unsuitable, the Chart scale box shows the message "Larger scale ENC available" together with a message detailing the reason why the chart is unsuitable; for example, "Underscale", "Overscale". If this occurs, adjust the chart scale manually (see section 6.4 for the methods), or automatically by clicking the [L] button ("L" is short for Large) in the Chart scale box. The [L] button automatically sets the compilation scale of the largest ENC at the current position as the chart display scale. The largest compilation scale is extracted from the vector chart cell at own ship position. If there is no vector chart at own ship position, nothing occurs. The background chart is ignored.

The [L] button appears when the following three conditions are satisfied:

- The display mode is NAVI or PLAYBACK.
- The motion mode is true motion or relative motion, with no off centering.
- Own ship position data is valid.

When the cursor is placed on the [L] button, the tooltip "Set the largest compilation scale" appears.



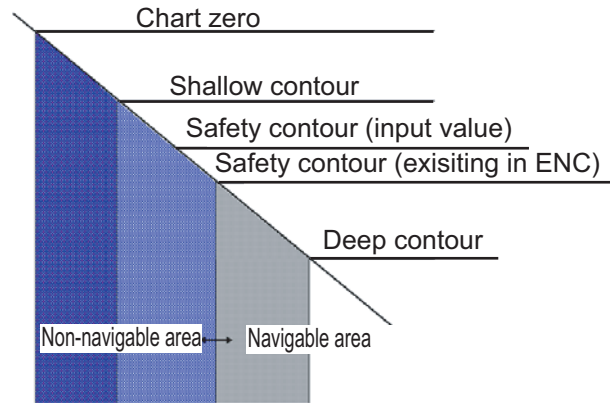
8.3 How to Control Visibility of Chart Objects

The [Chart Display] menu has several pages of chart features that you may show or hide as appropriate. To display this menu, click the [DISP], [SET] and [Chart DISP] buttons on the InstantAccess bar™.

8.3.1 How to set value for shallow contour, safety depth, safety contour and deep contour

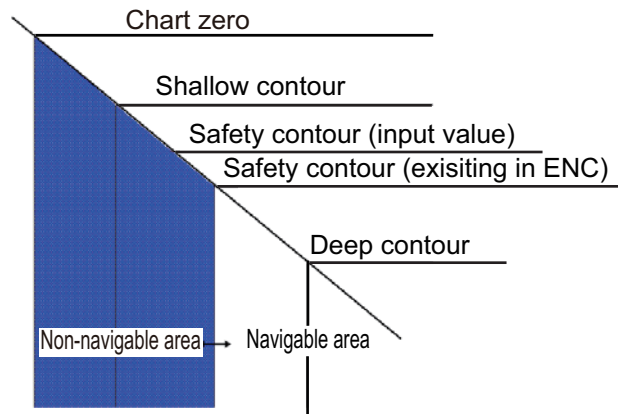
You can set values for shallow contour, safety depth, safety contour and deep contour, on the [Chart Alert] dialog box (sequence: [DISP], [SET], [Chart Alert]). Colors used for depth presentation on the electronic chart are controlled by setting values for shallow contour, safety depth, safety contour and deep contour. Soundings on the electronic chart, which are equal to or less than the value of safety depth, are highlighted. See the illustrations on the next page for multi-color presentation and two-color presentation. Selection of multi- and two-color presentations can be done with [Four Shades] on the [General] page of the [Chart Display] menu. Check the check box for multi-color; uncheck the box for two-color.

Note: The shallow contour cannot be set higher than the safety contour.

MULTI-COLOR presentation

In the multi-color presentation four colors are used for depths. If the value entered as the safety contour does not exist in the electronic chart, the system automatically selects the next available deeper depth contour as the safety contour. For example, the input value is 8 m, but there is no 8 m depth contour in the electronic chart. Then, the system automatically selects the next available deeper depth contour (10 m) as the safety contour. The depth contour value of 10 m is used as the safety contour in the electronic chart.

Shallow contour shows visual color change inside an unsafe water area. An unsafe water area is all areas shallower than the safety contour. Set the value for the shallow contour less than the value of the safety contour.

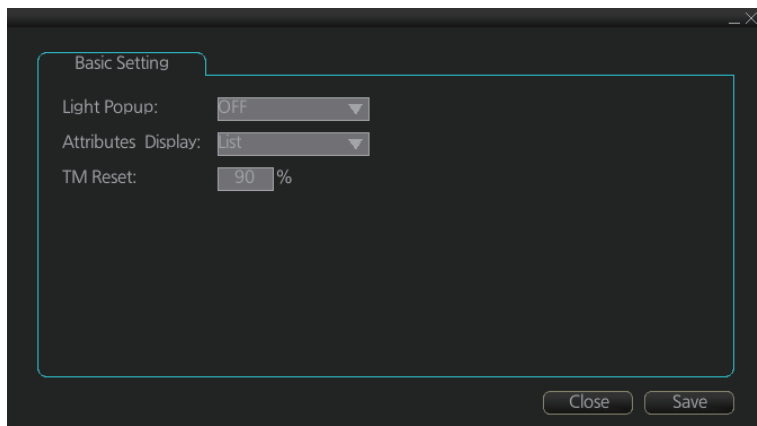
TWO-COLOR presentation

In the two-color presentation, unsafe water is shown in blue and safe water is shown in white. The safety contour is used to qualify unsafe water (depth shallower than safety contour) and safe water (depths deeper than safety contour).

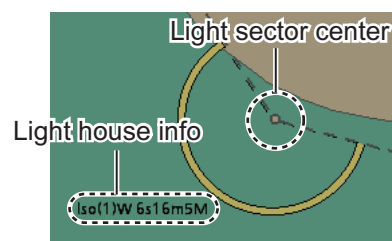
If the value entered as the safety contour does not exist in the electronic chart, the system automatically selects the next deeper available depth contour as the safety contour, the same as with the multi-color presentation.

8.3.2 Basic Setting menu

To display this menu, click [DISP], [SET] and [Basic Setting] on the InstantAccess bar™.

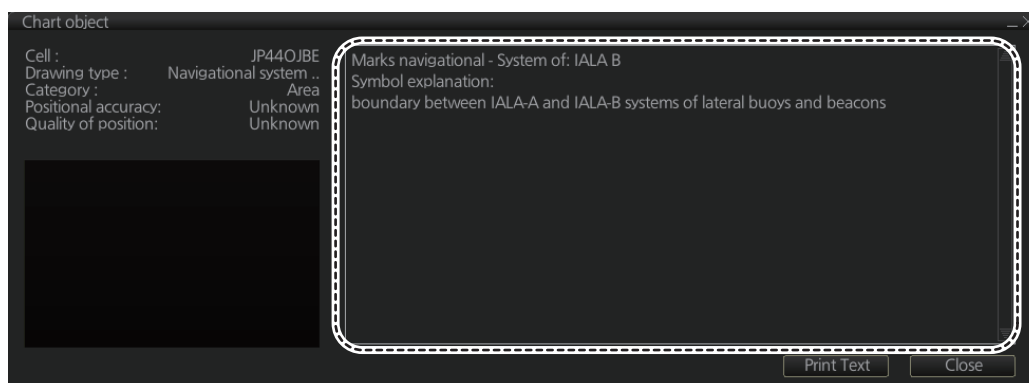


[Light Popup]: Show or hide light sectors information. [ON] provides light sector information (including length of arc of visibility) when the cursor is put on a light or light sector.

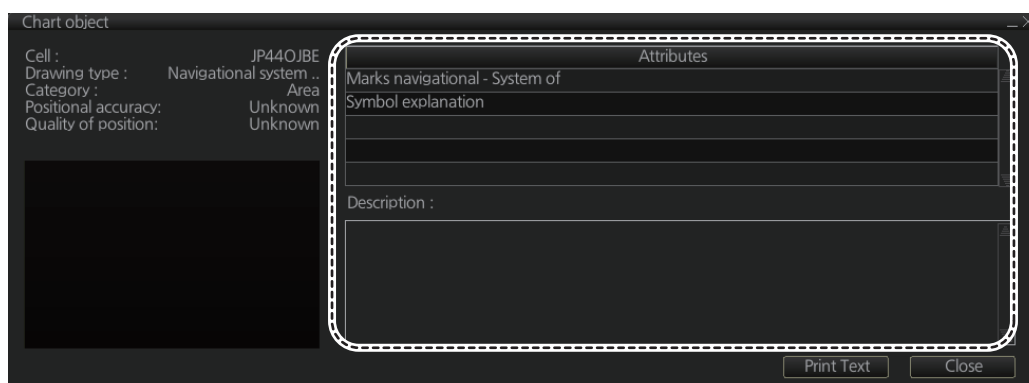


[Attributes Display]: Set how to show attributes in a Pick Report. The options are:

- [Text Box]



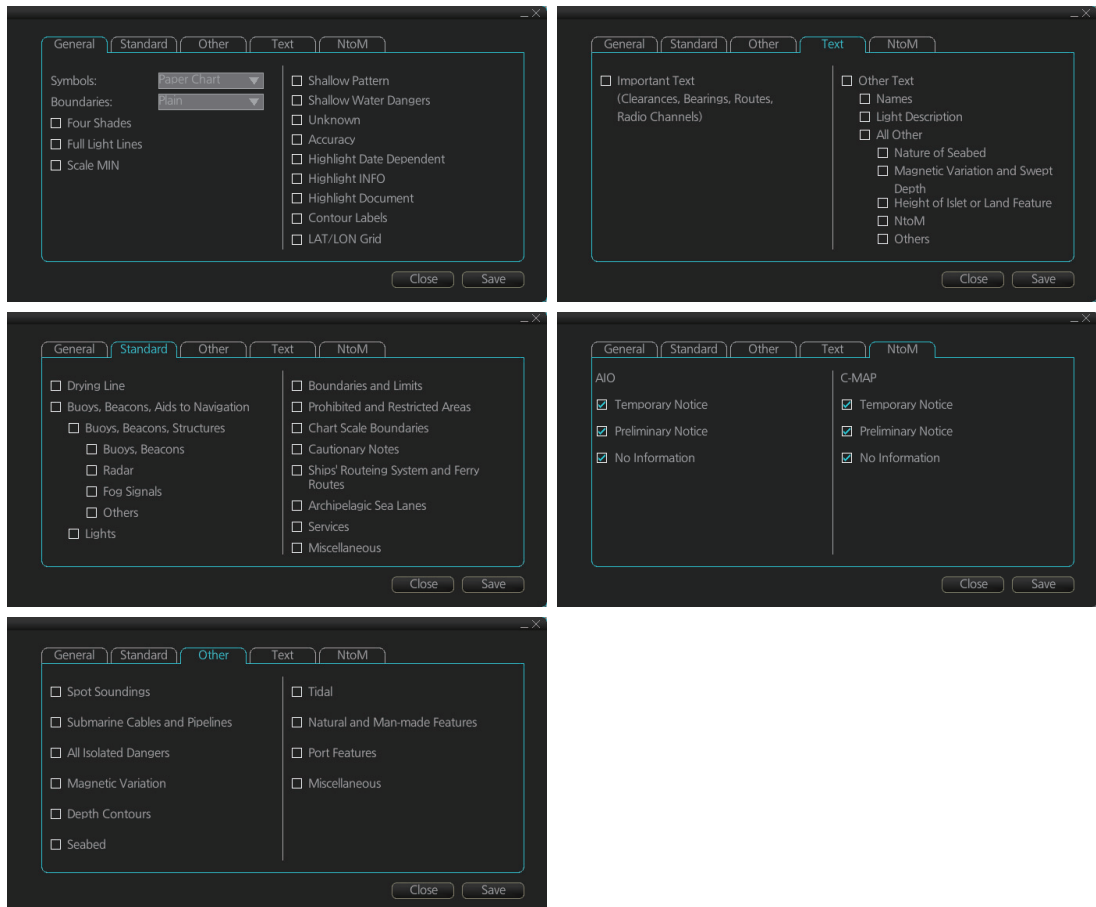
- [List]



[TM Reset]: In the true motion mode, own ship moves until it reaches the true motion reset borderline (set here), and then it jumps back to an opposite position on screen based on its course. Set the limit for TM reset (in percentage). For example, "80" resets the position when the own ship marker is at a location which is 80% of the range.

8.3.3 Chart Display menu

To access the [Chart Display] menu and its pages, click [DISP], [SET] and [Chart DISP] on the InstantAccess bar™, then select [General], [Standard], [Other], [Text], or [NtoM] page as appropriate.



General page

This page turns chart features on (checkbox checked) or off.

Symbol: Determines how to display chart symbols.

- Paper Chart: Symbols displayed the same as the conventional paper chart symbols
- Simplified: Symbols displayed in simplified style, and the sea is displayed in color.

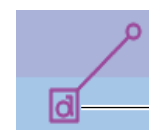
Boundaries: Determines how to show boundary lines of chart objects.

- Plain: Boundary line shown with solid and dashed lines.
- Symbolized: Symbol is attached to the line according to the purpose of the line.

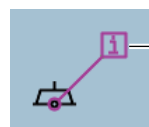
Scale MIN: Set the minimum chart scale to display chart objects. When the chart scale is lower than set here, the chart objects will not be displayed.

Highlight Date Dependent: Put a highlight mark on the chart object which carries a date dependent attribute.

Highlight INFO, Highlight Document: Put a highlight mark on a chart object that has information or document attribute.



Highlight mark
(date dependent)



Highlight mark
(document)

Standard page

The [Standard] page contains chart features defined by IMO that comprise a standard display.

Other page

The [Standard] page contains chart features not contained in IMO standard display.

Text page

Show or hide text information on the chart.

NtoM page

Show or hide the Notice to Mariners data.

Note: To use the “pick report” feature, which provides information for cursor-chosen chart feature, the associated chart feature must be turned on from the [General], [Standard], [Other], [Text], or [NtoM] page.

8.3.4 Display base

A subset of chart features is called the “display base”. As required by IMO, these features cannot be made invisible. To get the display base, click the [STND DISP] button on the status bar.

The display base consists of the 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 that lie within the safe waters defined by the safety contour
- Indication of isolated dangers that 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 operating mode
- Units of depth and height

8.4 How to Control Visibility of Symbols, Features

Control of symbols and features is divided into five pages in the [Symbol Display] menu, which you can access by clicking the [DISP], [SET] and [Symbol DISP] buttons on the InstantAccess bar™.

[General] page: Controls own ship and target related items.

[Tracking] page: Controls past tracks and some other features.

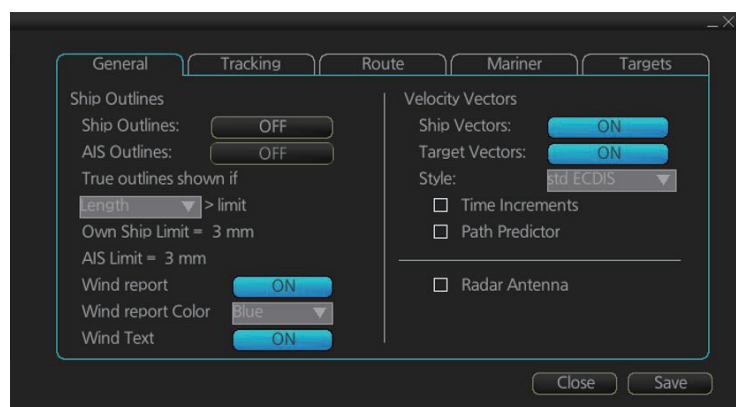
[Route] page: Controls planned and monitored route.

[Mariner] page: Controls user charts.

[Targets] page: Controls TT and AIS objects.

The user can define settings for chart details that are displayed over the chart area.

8.4.1 General page



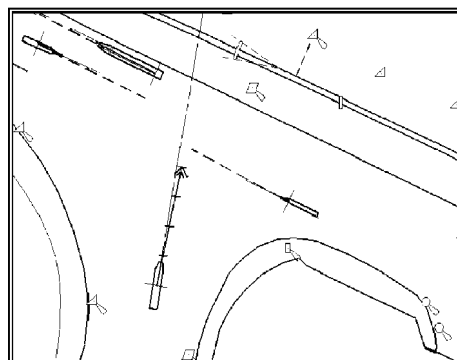
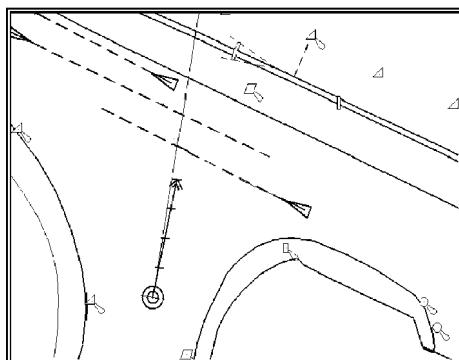
Ship, AIS Outlines

Ship Outlines: Select OFF or ON to show minimized or scaled symbol, respectively.

AIS Outlines: Select OFF or ON to show AIS objects in same size or scaled symbol, respectively.

True outlines shown if: If the length or width of the own ship mark is greater than 3.0 mm, the own ship mark is shown with the true scale symbol. Select [Length] or [Beam width].

The right illustration in the figure below shows own ship mark and AIS objects with scaled symbols. The left illustrations shows own ship mark and AIS objects with point symbols. AIS objects are displayed as true scale symbol if the displayed chart scale is larger than set with "Outlines" limit (length>3.0 mm) on the [General] page in the [Symbol Display] menu and your own ship are displayed as true symbol scale if the size of the true scale symbol is larger than 3.0 mm on the chart display.

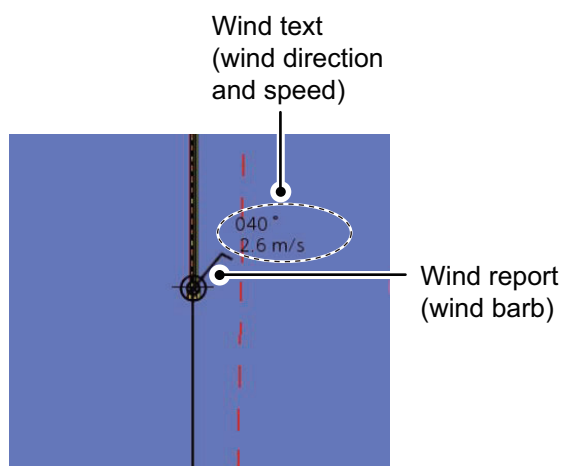


Wind report

[Wind report]: Show or hide the wind barb, which represents the direction and speed of the wind. The wind barb points in the direction from which the wind is blowing. Lines and filled penants on the wind barb indicate wind speed, based on the Beaufort wind scale.

[Wind report Color]: Select the color for the wind report.

[Wind Text]: Show or hide the wind report text.



Note: The wind report feature is not shown if there is no position or wind data.

Velocity Vectors

Ship Vectors: Show or hide own ship vector.

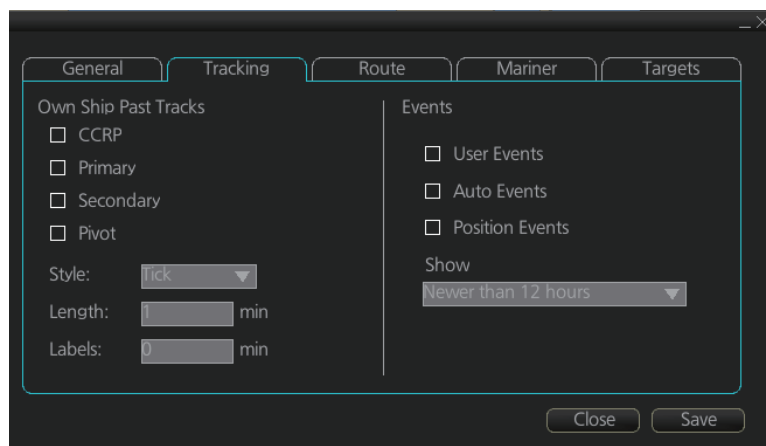
Target Vectors: Show or hide target vectors.

Style: Select the vector style. The [std ECDIS] vector is a speed-referenced vector symbol. [Conventional] is a simplified symbol.

Time Increments: Check to show ticks of velocity vector. This controls both own ship and targets ticks. If ticks are too tightly spaced, they will be automatically removed from the display, until spacing between ticks is sufficient to distinguish them separately. This depends on display scale and speed of vessel and target.

Path Predictor: Check to show the path predictor. The path predictor is a single dashed line originating at the CCRP and drawn at a length to represent the distance and path own ship will travel over the ground in the user-selected time interval for own ship speed vector.

Radar Antenna: Check to mark position of radar antenna (with "x").

8.4.2 Tracking page**[Own Ship Past Tracks]**

CCRP: Check to plot own ship's track with CCRP position as reference.

Primary: Check to plot own ship's track with position fed from sensor with highest priority.

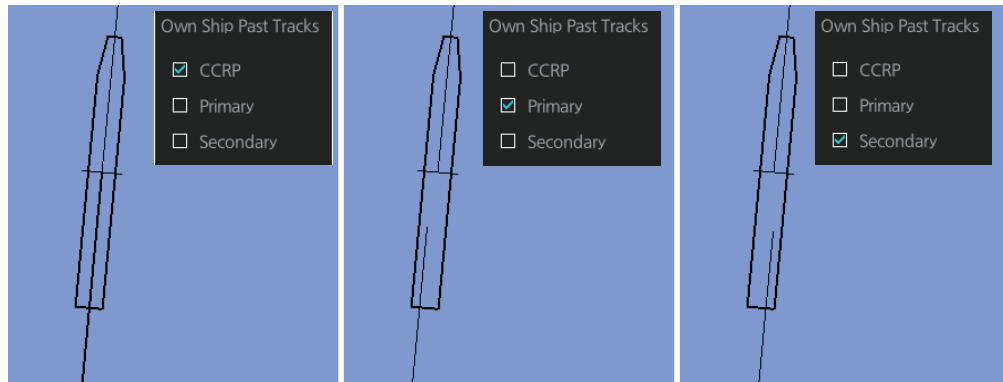
Secondary: Check to plot own ship's track with position fed from sensor with 2nd highest priority.

Pivot: Check to plot own ship's track with own ship's pivot position as reference.

Style: Select time stamp position for past track (indicated by Tick or Point).

Length: Select length of past track.

Labels: Select label interval.



[Events]

Events marks are based on the [Voyage] log records.

User Events: Display event symbols on the chart. User events are recorded by clicking [Log], [Event Log] and [User Event] on the InstantAccess bar™.

Auto Events: Display automatically entered event symbols, where the system has recorded an event based on conditions you have set. The available recording interval is 1 to 4 hours.

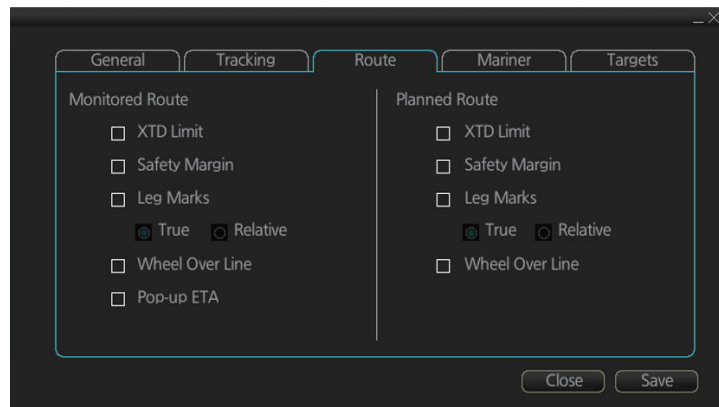
Position Events: Display the latitude and longitude of an event, recorded by clicking [Log], [Event Log] and [POSN Event] on the InstantAccess bar™.

Note 1: A MOB event is visible always.

Note 2: You can select the period of time to display event marks, from the [Show] list box. [Newer than 12 hours], [Newer than 24 hours], [Newer than 1 week], [Newer than 2 weeks], [Newer than 1 month], [Newer than 3 months], or [All].

8.4.3 Route page

The [Route] page selects the route parts of the monitored and planned routes to show on the chart.



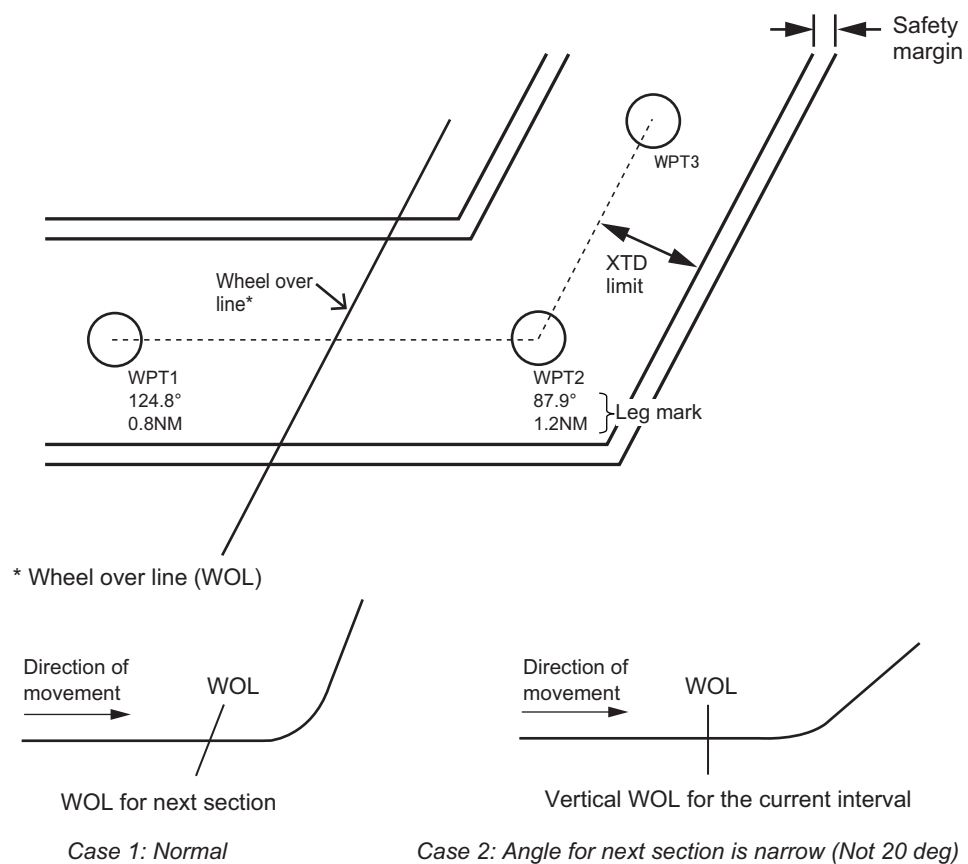
[XTD Limit]: The distance from the centerline to one side of the nav lane.

[Safety Margin]: The distance from one side of the channel limit to the safety margin distance.

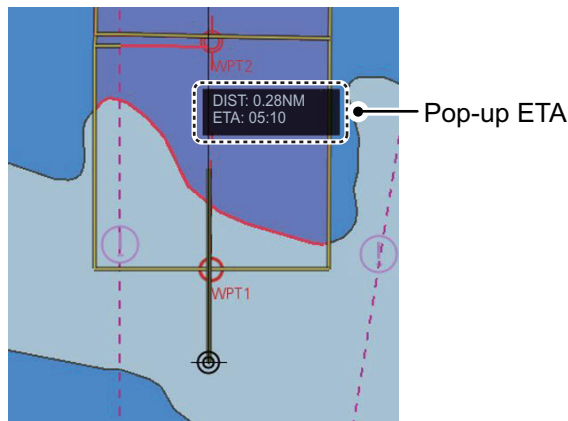
[Leg Marks]: Indications of waypoint no. and range and bearing to next waypoint.

([True]: Reference to North; [Relative]: Reference to heading)

[Wheel Over Line]: The location where the ship turns toward new course.

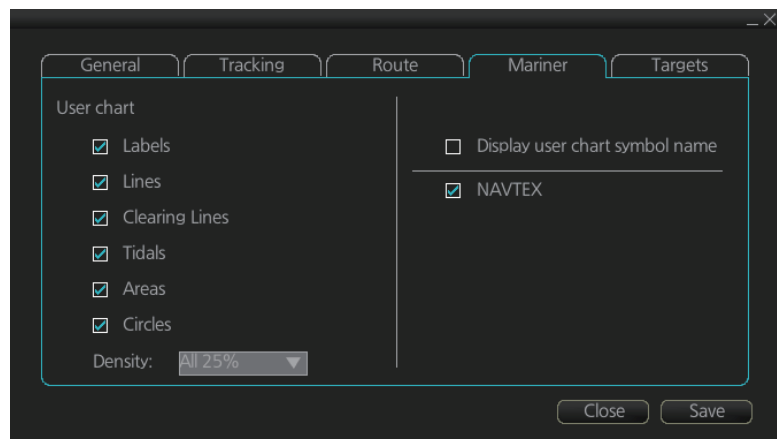


[Pop-up ETA]: When set to [ON], moving the cursor over the monitored route displays the distance and estimated arrival time to the cursor position.



Note: ETA is displayed in UTC or local time depending on the system time setting.

8.4.4 Mariner page



[User chart]

[Labels]: Check to show labels on user charts.

[Lines]: Check to show lines on user charts.

[Clearing Lines]: Check to show clearing lines (for marking dangerous areas) on user charts.

[Tidals]: Check to show symbols and tidals on user charts.

[Areas]: Check to show areas on the user charts.

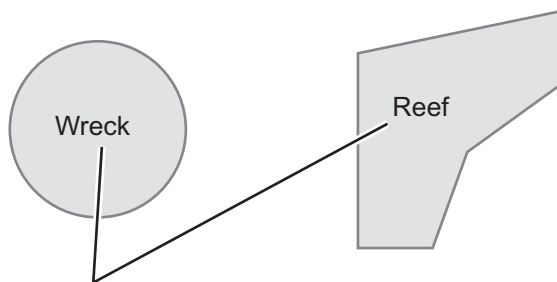
[Circles]: Check to show circles on user charts.

[Density]: Set the degree of transparency for the user chart objects. Color fill for the areas can be selected as transparent from [All 0%], [All 25%], [All 50%], [All 75%], or [Each Object]. If [All 0%] is selected, only the boundaries of the areas are visible.

[Display user chart symbol name]: Check to display the name entered for a user chart symbol in the [Name] column of the [User Chart] dialog box. Effective for the circle and

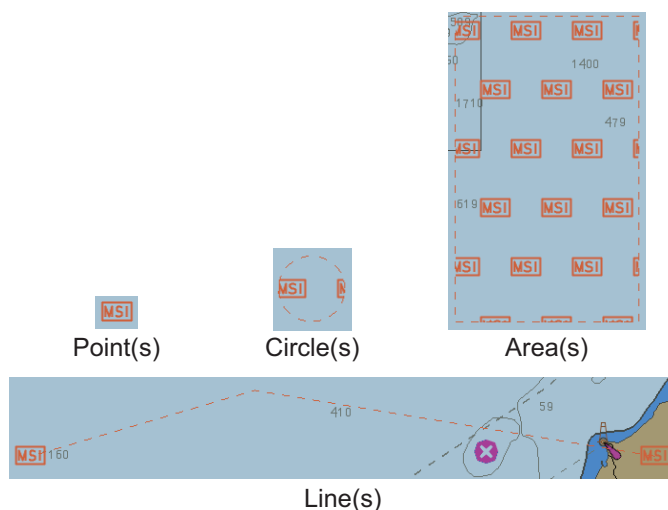
8. HOW TO CONTROL CHART OBJECTS

area symbols only. Names are shown in both the Voyage planning and Voyage navigation modes. See the figure below for examples.

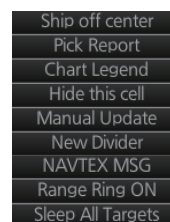


Name as entered in [Name] column.

[NAVTEX]: Available only when a Navtex receiver is enabled at installation. Check to put the Navtex symbol () at the coordinates received in a Navtex message. Depending on the information received, the symbols appears as shown in the figure on the following page.

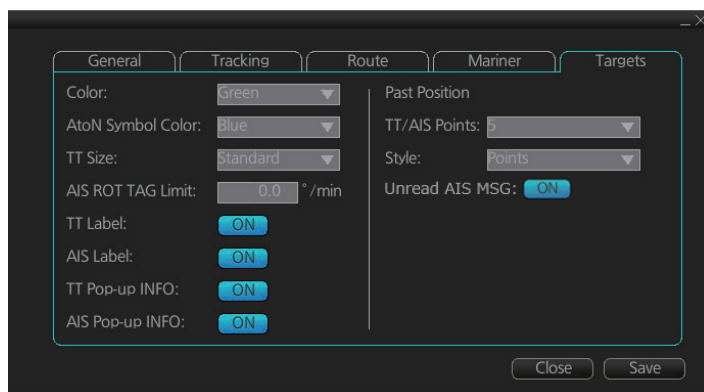


Right-click the  mark to show the context-sensitive menu, then click [NAVTEX MSG] to show the [NAVTEX] page of the Message dialog box (see section 17.2.1).



Context-sensitive menu
(Voyage navigation mode)

8.4.5 Targets page



[Color]: Select color of target (TT and AIS, common) from the list box.

[AtoN Symbol Color]: Select color of target (TT and AIS, common) from the list box.

[TT Size]: Select symbol size for tracked targets, Standard or Small.

[AIS ROT TAG Limit]: ROT (°/min), limit to display AIS target with curved speed vector. (Source of ROT must be ROT gyro on target vessel.)

[TT Label]: Show or hide the TT label (target no.).

[AIS Label]: Show or hide the AIS label (ship's name).

[TT Pop-up INFO]: Show or hide the TT pop-up, which is shown by placing the cursor on a TT.

[AIS Pop-up INFO]: Show or hide the AIS pop-up, which is shown by placing the cursor on an AIS object.

TT(04)
COG: 235.0°T
SOG: 6.1kn
CPA: 0.23NM
TCPA: -10'18"

000000048
COG: 324.0°T
SOG: 8.1kn
CPA: 0.12NM
TCPA: -19'18"

TT pop-up info AIS pop-up info

[Past Position]

[TT/AIS Points]: Select the number of TT and AIS past position points to display.

[Style]: Select style of presentation of target's past position.

[Unread AIS MSG]: When turned on, the unread AIS safety message symbol (📧) appears when there is an unread AIS safety message.

8.5 Control of Predefined IMO Chart Display Settings

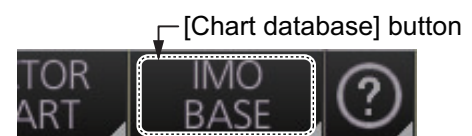
There are three sets of predefined chart display settings that can be used to display charts with certain chart features. The predefined chart display settings are

- [IMO BASE]
- [IMO STND] (STANDARD)
- [IMO ALL]

When the chart settings are changed, the following settings changes are also applied to each page of the [Chart Display] menu.

	[Chart Display] menu		
	IMO Base	IMO Standard	IMO All
[Standard] page	Settings cannot be changed.	Settings cannot be changed.	Settings cannot be changed.
[General] page	All items are unchecked.	All items are unchecked.	All items are unchecked.
[Other] page	All items are unchecked.	All items are unchecked.	All items are checked.
[Text] page	Settings cannot be changed.	Settings cannot be changed.	Settings cannot be changed.
[NtoM] page	Settings cannot be changed.	Settings cannot be changed.	Settings cannot be changed.

You can change the chart display setting in use with the [Chart database] button on the Status bar.



8. HOW TO CONTROL CHART OBJECTS

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9. VECTOR (S57) CHARTS

Theoretically a chart can be coded for use on a computer as a vector chart. Vector-coded charts are coded using a variety of techniques. One technique is called S57ed3 and it has been chosen by IMO as the only alternative for SOLAS compliant electronic charts. If an S57ed3-coded chart is published by a government-authorized Hydrographic Office, then it is called "ENC". You can read more about ENC and related legal issues in this chapter. Hereafter, all references to vector chart material are referred to as "S57 charts" regardless of their source.

Sometimes you may wish to manually add Notices to Mariners or Navtex warnings into your S57 charts. This is called "manual updates". Also, manual updates are valid for all scales so that you don't need to repeat them for charts published in different scales from the same area.

9.1 Introduction to S57 Charts

An ENC chart is encrypted to prevent unauthorized use so the user needs a permit to view the ENC. This permit could be entered manually from the Control Unit, loaded from a USB flash memory.

Any new ENC must be loaded into the system. Some parts of the charts may be date dependent, i.e., they are visible after a set date or they are visible only for a limited period, etc. In the electronic chart system, you control all date-dependent objects with Display date and Update Review dates (see section 9.2.2 for how to set these dates). In the paper chart world, the Preliminary and Temporary Notices to Mariners represent the date dependency described above for S57 charts.

An important part of ENCs are the updates. Hydrographic Offices can issue two kinds of updates:

1. Incremental updates, which are small additions to original base cells.
2. Reissues and new editions, which are complete replacements of previous base cells and their updates.

All updates are date stamped and they may also contain date-dependent parts. You control usage of updates in the electronic chart system from Display date and Update Review dates. Using Display date and Update Review dates, you can view your charts correctly drawn on any date in the past or in the future.

Chart material will be stored in media such as DVD ROMs, CD ROMs and USB flash memory or electronically through from LAN (Local Area Network) in which it could have arrived in DVD ROMs, CD ROMs or USB flash memories. Such material can contain only basic cells, cells and updates or only updates. The electronic chart system contains as standard the software required to access a medium.

Each S57 chart may contain additional links to textual descriptions or pictures, besides the chart itself. Typically additional textual descriptions and pictures contain important sailing directions, tidal tables and other traditional paper chart features that do not have any other method to be included into the S57 chart. This system copies these textual descriptions and pictures into its SSD so the user may cursor-pick them for viewing purposes.

9.1.1 Definitions of terms

Cell	A cell is a geographical area containing ENC data and it is the smallest division of ENC data. Each cell has a separate unique name. Hydrographic Offices divide their responsibility area by the cells that they publish.
S57 chart	A database, standardized as to content, structure and format, is issued for use with this system without any authority of government-authorized Hydrographic Office.
ENC	A database, standardized as to content, structure and format, is issued for use with this system on the authority of government-authorized Hydrographic Offices. The ENC contains all the chart information necessary for safe navigation and may contain supplementary information in addition to that contained in the paper chart (e.g., sailing directions) that may be considered necessary for safe navigation. The name of the coding standard for ENC is S57ed3.
SENC	A database resulting from the transformation of the ENC by the system for appropriate use, updates to the ENC by appropriate means, and other data added by the mariner. It is this database that is actually accessed by the system for display and other navigational functions. The SENC may also contain information from other sources.

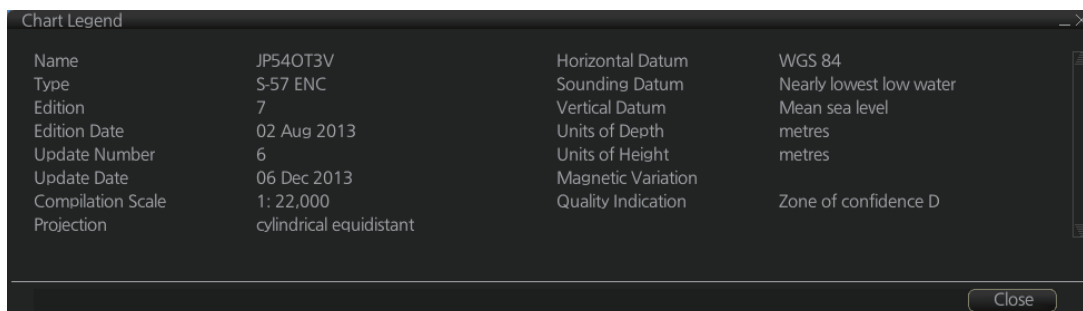
9.1.2 Chart legend for S57 charts

[Chart Legend] dialog box provides various information about the ENC chart currently displayed. The information can be displayed two ways:

- **Chart data for own ship position:** Right click the chart area, select [Ship on center] from the context menu, then click [Chart INFO] and [Chart Legend] on the Instant-Access bar™.
- **Chart data for cursor position:** Right click the chart area, select [Ship off center] from the context menu, then click [Chart INFO] and [Chart Legend] on the Instant-Access bar™.

To close the dialog box, click the [Close] button.

This system is capable of showing more than one S57 chart at a time. This feature is called the multi-chart display. If one S57 chart does not cover the whole display, the system will open more S57 chart cells for display, if appropriate cells for the displayed area are available. The chart legend shows information about S57 charts displayed on the electronic chart display area.



[Name]: Name of chart.

[Type]: Type of chart.

[Edition]: Edition number of the chart.

[Edition Date]: Date the edition was published.

[Update Number]: Update number.

[Update Date]: Date of update.

[Compilation Scale]: The scale of the original paper chart is shown here.

[Projection]: Projection of current chart.

[Horizontal Datum]: Horizontal datum used with current chart.

[Sounding Datum]: Datum used to create sounding data.

[Vertical Datum]: Vertical datum used with current chart.

[Units of Depth]: Unit of depth used with current chart.

[Units of Height]: Unit of measurement used to measure height of objects above sea level.

[Magnetic Variation]: Amount of magnetic variation. A positive value indicates a change in an easterly direction and a negative value indicates a change in a westerly direction.

[Quality Indication]: Quantitative estimate of the accuracy of chart features, given by the chart producer.

9.1.3 Permanent warnings for S57 charts

Permanent warnings help you keep the installed S57 charts up-to-date and these are shown at the bottom of the screen. Permanent warnings appear if the system detects a condition that may cause a chart to be not up-to-date.

Message	Meaning, Remedy
Display Not Real Time	Display date is not the current date. Set Display date and Update Review date to the current date.
No connection to dongle	The dongle is not inserted or not recognized. Insert the dongle to erase the message.
Not up to date (SSE 27): XXXXXXXX (Chart name appears at location of Xs.)	At least one chart is not up to date. Load updated material.
Permit expired (SSE 25): XXXXXXXX (Chart name appears at location of Xs.)	You have an expired permit for a chart. Remove the chart or renew subscription for the permit.

Note: The system can assist in keeping RENC-received charts up-to-date. For charts that have been loaded from sources other than an RENC, the system is unable to know the exact up-to-date situation.

9.2 Chart Viewing Dates and Seasonal Features of the S57 Chart

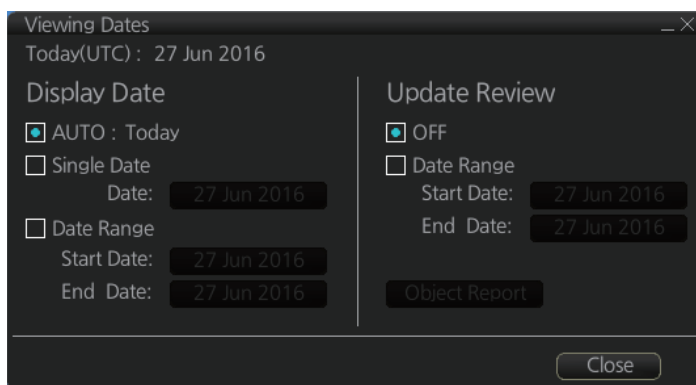
9.2.1 Introduction

S57 charts contain date-dependent features. Updating in general, including reissues, new editions and updates, creates date dependency. In addition to the obvious date dependency, some features of the S57 charts create additional date dependency. These features include "Date Start", "Date End", "Seasonal date start" and "Seasonal date end". Hydrographic Offices use these features to publish Temporary and Preliminary Notices to Mariners, as their paper chart equivalent updates are called. "Seasonal date start" and "Seasonal date end" are used for seasonal chart features such as summer-only sea marks, seasonal yacht race areas, etc.

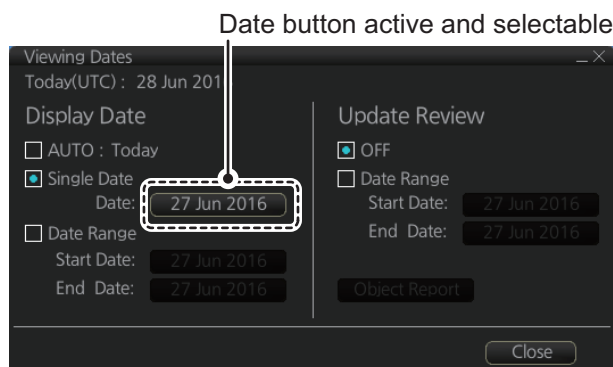
You can efficiently use chart viewing date dependency in order to use the valid data for any given date applicable for your navigation or planning purposes. For example, you can check for existence of changes and restrictions weeks before they became valid. Date dependency is a part of the new electronic method to keep your chart up-to-date and valid for your intended use. Normally you should set Display date and Update Review once per week to keep your chart up-to-date.

9.2.2 How to set Display date and Update Review dates

1. On the InstantAccess bar™, click the [Chart INFO] and [Viewing Dates] button. The [Viewing Date] dialog box appears.



2. Select either [Single Date] or [Date Range] from the [Display Date] column, as appropriate. The date button becomes active and selectable, as shown in the example figure below.



- [Single Date]: Display only charts which have this date.