



Creators of TECDIS

Feature Guide: TECDIS 4.8.3.1

With the release of TECDIS 4.8.3.1 we are bringing you new features and improvements to the new TECDIS 4.8.3 generation.. For a complete list of changes, see the release history on www.telko.no. Here you will also find Feature Guides for previous releases.

Important improvement: Route danger checks

An issue several users have reported with the 4.8.3 generation, it the loss in system performance when there are many dangers highlighted for the route/route corridor.

We have made several improvements in this release to combat this.

- In the danger highlight panel (*Safe menu*) you can turn off the **Crossing Safety Contour** danger highlight. This was not an option before.
- TECDIS can automatically turn off listing of dangers if there are too many for the system to handle. This should only occur on extra-long routes with many dangers detected (10000+). This will also give a warning message so you can change the parameters of the route to see all dangers.
- In addition, TECDIS can automatically turn off highlighting of dangers in the chart if it detects a loss in system performance. You can manually override this of course, and a message will be displayed.
- Non-ENC charts are by default not checked for danger. This can be changed in the *Safe menu*.

New feature: Move LOP observations without selecting them in the chart

Based on user feedback we have remade the way you move LOP observations. In the minimized LOP window you still use the ReAnchor button and select the LOP in the chart. After that the LOP sticks to your cursor, and when you press the **left mouse button** you place the LOP in its new location. This is a space-effective solution.

But when you use the Maximized LOP window, you now press the Move button besides the LOP observation you want to move. After that the LOP sticks to your cursor just as before.



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The best part comes when you have repositioned that LOP. Because now TECDIS automatically attaches the next LOP in the list to your cursor, making it easier to manage multiple LOP observations in a row.

You can abort/stop moving LOP observations any time by pressing the **right mouse button**.

New feature: Adding LOP bearing and range observations from radar cursor

This is another user requested feature – and it simplifies and improves the LOP tool for users with Radar Cursor integration.

Before, when adding LOP observations from a radar echo, you always had to insert the bearing and distance separately. This is a hassle if the LOP is given from the radar cursor, as it can do both simultaneously.

So now you simply do the following:

1. Move the radar cursor to the echo.
2. With the LOP window open, place the TECDIS cursor on top of the radar cursor and press the middle mouse button.
3. You can now:
 - a. With a **Maximized LOP window**, press the **Move** button besides the bearing in the list, and place the bearing on the echo(radar cursor). Left click twice. This moves both the bearing and the distance to the same location.
 - b. With a **Minimized LOP window**, press the **ReAnchor** Button, place the bearing on the echo and left click. **Repeat** for the distance observation.
4. Press **Auto DR**.

New feature: ECS Mode

When the TECDIS system is intentionally used in installations where it will not comply with ECDIS regulations, it is now possible to activate an **ECS Mode** to distinguish it from other TECDIS units on board. When activated, a warning will appear on screen to notify users that the unit is not meant as a primary navigation aid.

Improvement: AIS AtoN - Meteo bouy

With the release of TECDIS 4.8.3 we removed support for the old AIS AtoN meteorological bouy (FI 11) type to prepare for adding the new type, meteorological bouy FI 31.

After feedback from users, we have decided that support for both types is possible, so in this release we are adding support for the new and reinstating support for the old format.



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Smaller bug fixes and improvements:

- Added warning for uncalibrated brightness when monitor brightness is modified by external dimming solutions.
- Minor GUI background color adjustment.
- Chart engine fix for MS Visual C runtime error on cursor query of dredged areas in special circumstances.
- Chart engine fix for 'MS Visual C runtime error' on route checks.
- Multiple fixes and improvements to Harbour mode.
- Fix for Navtex reception from Navtex units that don't provide message reception date and time.
- Fix for 'g_mini->SetScale() failed' message on startup.
- Fix for transfer of routes with PI lines to other TECDIS.
- Fix for PI line issues on combined and reversed copied routes.
- Fix for adding PI lines, ensured that PI lines cannot be added by clicking on waypoint, only on route legs.
- Fix for issues with route danger review when radar overlay is active.
- Fix for LOP distance observations being shown as solid circles in some special situations.
- Fix for missing main toolbar menu button on 19 inch monitors with many features configured.

Document revision history

1.0	05.07.2017	Initial release	Cato Haugland
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Do not miss! Features and improvements in the major 4.8.3 upgrade:

Important: TECDIS is now certified for new IHO and IEC standards

With this release, TECDIS is now compliant with the following new standards:

IHO

Chart Content and Display Aspects of ECDIS	S-52 Ed. 6.1
Presentation Library 4.0	S-52 Annex A Ed. 4
Test Data Sets for ECDIS	S-64 Ed. 3.0
Data Protection Scheme	S-63 Ed. 1.2

IEC

Electronic chart display and information system (ECDIS)	IEC 61174 Ed. 4.0
Presentation of navigation-related information on shipborne navigational displays	IEC 62288 ¹

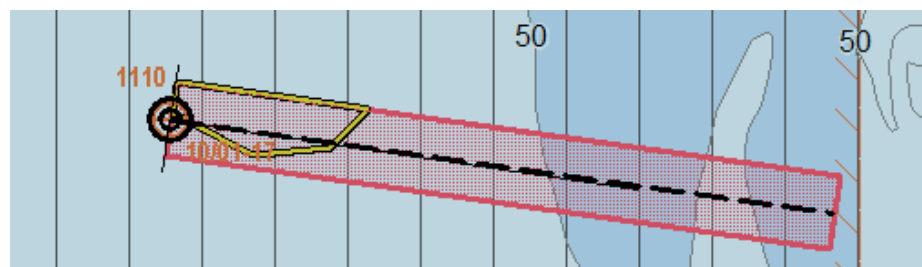
A big part of this compliance is the upgrade to a new version of the C-Map SDK (the chart engine in TECDIS). This brings in new nice improvements such as:

- Faster chart display times
- New chart overscale pattern, compliant with PresLib 4.0
- New scale bars
- Hover over the chart scale field in the main toolbar to see info on overscale factor
- The northern and southern chart display edge is now at 85 degrees N/S
- If a chart object is selected (to display more information) it is now outlined with orange color
- Edges and borders between different charts and charts of different scales are now presented with a thin line (if display is switched on)

Important behavior change: Antigrounding zone

The change you might notice first is the new antigrounding zone in TECDIS. No longer a circular sector, it is now shaped as a rectangle. This has obvious benefits;

- When performing sharp turns, there are no blind spots for your antigrounding alerts.
- You can now have a long check time, but keep the width low enough to minimize irrelevant danger detection (noise).



¹ Compliant since TECDIS software version 4.7.x.30 – released January 2016.



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Important behavior change: STD button indicates what information is displayed in the chart

With the full support of IHO viewing groups we have added to TECDIS in this version, it is now possible to obtain Standard(STD) presentation mode without being in the "S" chart display preset and having the STD button selected.



Now, all chart display presets (B, S, 1, 2 and 3) can be modified to display the STD chart presentation, and we have therefore added a way to indicate what information is displayed in the chart;



Button selected	STD button display	Viewing group	Description
STD	Green text		All viewing groups in "Standard display" are selected, and no viewing groups from "other display" are selected. Also, the chart presentation preset "S" is selected.
		Standard display	All viewing groups in "Standard display" are selected, and no viewing groups from "other display" are selected.
USER	Yellow background	Base Display	Chart elements in the standard display mode have been deselected; this is not the full official presentation.
		Other display	All standard display mode chart elements are displayed, along with some other elements

Important behavior change: Standby Mode is replaced by Harbour Mode



In this release we have replaced the Standby Mode function with a new, improved alternative: Harbour Mode.

Harbour Mode addresses the shortcomings of Standby Mode, and improves the functionality and usability of the function. Where Standby Mode removed all audible alerts, Harbour Mode does the following:

1. Sets the safety contour in the chart to 1000m depth
2. All depth contours, four shades chart display are both turned on.
3. Safety depth stays the same as before Harbour Mode is activated
4. Shallow/Deep contour is set to the same value as safety contour originally was on
5. Sets the check time and check distance for TECDIS Antigrounding to the minimum level
6. Uses the unchanged safety depth for route danger checking, instead of the safety contour of the chart

This means that while in Harbour Mode, you are in a constant state of alarm, and after the alarm has been acknowledged once in TECDIS (and in BNWAS/BAM), **the alarm sound will not repeat itself**. But for safety, your route is still checked for danger based on the unaltered safety depth, and the system logs will report your state of alarm correctly.

Also as the other depth contours in the chart are altered, they can give you a clear indication of where the original safety contour was in the chart, providing a safety reference for the navigator when sailing outside a route.

This function is more useful when you need it, but at the same time less prone to misuse than Standby Mode was.

New feature: 1-click chart updating with ChartCo and PassageMaker 6

We are now adding our super-easy single-click chart updating to ChartCo AVCS charts as well.



So now users of Chartco AVCS and PassageMaker 6 will get a trouble-free and fast way to perform chart updates. Contact ChartCo for more information ☺

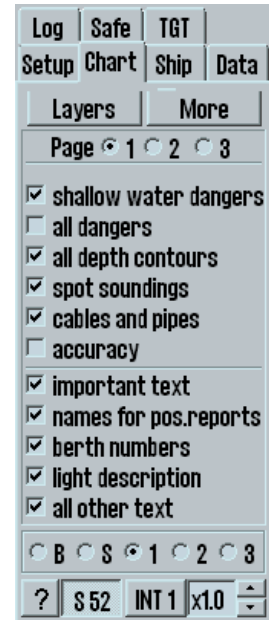
Important improvement: Chart menu

One of the bigger changes in this release is in the chart menu. It has been almost completely remade, and now contains 3 panels for the chart display shortcuts, that are now all organized in groups based on their effect on the chart view.

A new feature in the chart menu is that you now can edit all your B-S-1-2-3 preset settings, not just your 1-2-3 presets. So you can now customize the Base and Standard chart presentation freely. You reset to the standard settings in the Viewing group panel.

You can now also show chart information for a specific time period, in the past or the future. This helps you plan your routes based on the charted information for the planned voyage, and not based on the charts today.

This function is complimented by the possibility to highlight additional chart information, with an “i”-symbol for chart objects with additional information available, and a “d”-symbol for date dependent chart objects.



New feature: Export routes to pdf

This is a highly requested new feature. You can now save and export your routes in the pdf document format, from both the **Route Report** and the route **Export** function, both found in the Route tool.

WP	Lat.	Lon.	Distance (NM)	BRG (T)	Speed (kn)	Lane (NM)	Turn (NM)	Delay (min)	Leg time
1	58° 51.991' N	010° 17.595' E	12.9	262.8°	10.0	0.05	0.20		1 hr 17 min
2	58° 50.371' N	009° 52.851' E	13.4	239.9°	10.0	0.05	0.20		1 hr 20 min
3	58° 43.643' N	009° 30.517' E	4.0	219.1°	10.0	0.05	0.20		24 min 02 s
4	58° 40.559' N	009° 25.698' E	5.4	211.5°	10.0	0.05	0.20		32 min 08 s
5	58° 36.010' N	009° 20.359' E	14.3	213.0°	10.0	0.05	0.20		1 hr 25 min
6	58° 24.056' N	009° 05.502' E	31.1	228.9°	10.0	0.05	0.20		3 hr 06 min
7	58° 03.639' N	008° 21.204' E	19.7	247.2°	10.0	0.05	0.20		1 hr 58 min
8	57° 55.989' N	007° 47.013' E	17.1	265.0°	10.0	0.05	0.20		1 hr 42 min
9	57° 54.502' N	007° 15.187' E	14.9	274.8°	10.0	0.05	0.20		1 hr 29 min

The route report is formatted automatically in the system, and is updated live if you make changes to the route while the route report is open.



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New feature: DEF button (default settings)



This is a new button, with two new single click functions to change TECDIS settings to default values:

<ul style="list-style-type: none"> • Left click (Ctrl+D) 	Resets the chart display to the Standardized default settings (Standard DEF)
	Opens a window where you can:
<ul style="list-style-type: none"> • Right click 	<ol style="list-style-type: none"> 1. Save the listed user definable settings as a User DEF 2. Activate a saved <i>user made default setting</i> (User DEF)

List of settings altered when using the **Standard DEF** function is available in the new TECDIS Reference Manual.

List of settings that can be added to **the User DEF** function:

Toolbar	Display orientation (north up, course up, Radar 1/2 up, etc) Whether or not AIS, Radar 1/2, Tracks, and Symbol functions are activated (buttons pressed down or not)
Function windows	Default Symbol and Track display settings (except specific date limitations) Status of the Lane and Info checkboxes in Voyage planner
Chart menu	All settings
Setup menu	Selected language , and checkboxes for scroll wheel zoom, show help hints and display both primary and secondary position (in <i>NMEA Data input</i>)
Ship menu	All settings <u>except</u> Wheelover
Safe menu	Check time/ check width, highlight settings, all alert checkboxes, except Harbour Mode. Note that safety contour, safety depth and draught can't be saved to the default setting.
TGT menu	All settings

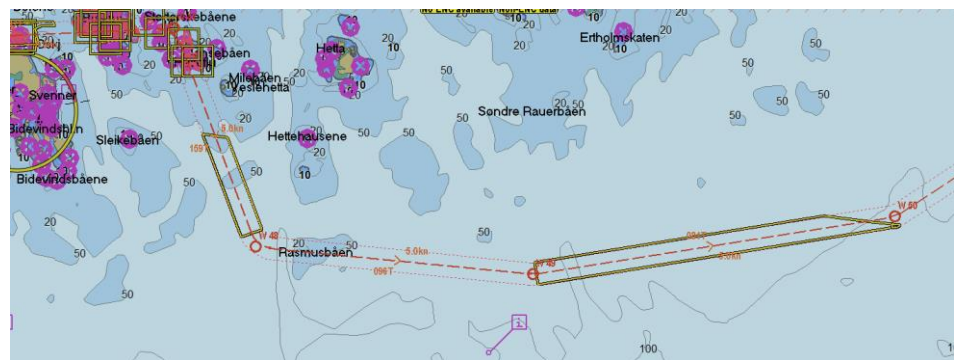
The default settings can be saved and exported, so you can import your own default values each time you start your offshore period.

To save the current settings to make a new default, right click the DEF button.

Important improvement: Danger and caution display for routes

When you create routes, the danger highlighting in TECDIS has now been updated. The graphical indication of dangers is improved and covers up less of the chart features.

- The safety contour in the chart is drawn with red color
- Navigational hazards are drawn with yellow
- Areas with special conditions (cautions) are drawn with yellow
- Dangers in the route lane are now indicated directly, and not just by displaying the route lane with yellow or red.



We have also added danger highlight settings so you can customize how dangers are highlighted both when planning (route danger highlight) and sailing (antigrounding highlight) a route.

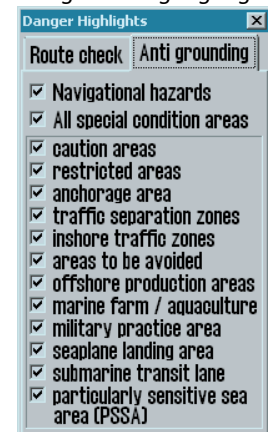
Safe Menu



Route danger highlight

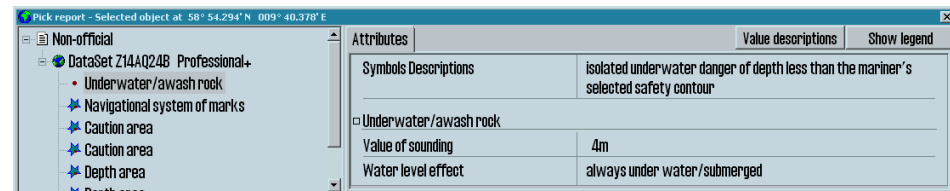


Antigrounding highlight



Important improvement: Query cursor is now CURSOR PICK

This change comes as a result of standardized naming for all ECDISes on certain functions. The query cursor is where you select objects in the chart view (both chart objects and user made symbols) and view detailed information about them, and the new name of the function is **Cursor Pick**. The object inspector has therefore also been renamed to **Pick Report**.



We have also updated the functionality of the Cursor Pick and Pick Report, and you can now:

- See a highlight frame around your selected chart object
- Choose to display **value descriptions** in the Pick Report by pressing the corresponding button
- Switch to the Chart Legend by pressing the corresponding button, to view chart information such as accuracy and scale for the chart at the selected position



Important improvement: Navtex

This is one of the bigger changes to a feature in this release of TECDIS. The Navtex function has been mostly redesigned, with new activation, navtex window and several other improvements.



We have removed the station selection in the chart, and instead placed it in the Navtex window, with standardized **navtex station letters** to filter out stations. We have also remade the message type filter, so you now select what messages to display with the navtex-standardized **message type letter**.



There are also shortcut buttons to display **All/None** of the received navtex messages.

So now, when you want to view the received navtex messages, you click on the MSI/Navtex button on the main toolbar, and the Navtex window appears. Select stations and message types, and the list will be populated with messages.

Important improvement: Changes to alerts

These are some of the changes made to the alert system in TECDIS in this version:

Alert	Changes
Navigational hazards warning	This is by default given as a caution, but you can set it as a warning in the Safe menu
60 second warning interval	You can set the interval of warning sounds, either at 4.8 minutes between audible signals or 60 seconds.
All position sensors lost	Only present in TECDIS TCS (Track Control).
Lost sensor Water Speed	Only present in TECDIS TCS when track control is active.
All position sensors lost	
All heading sensors lost	
Lost sensor Water Speed	Only given as a warning for TECDIS TCS when track control is not active.
Heading difference limit exceeded	Only presented as a caution in TECDIS and in TCS while track control is not active. If TCS is active, this alert is presented as a warning.
Pos sensor difference limit exceeded	Only presented as a caution in TECDIS TCS while track control is not active. If TCS is active, this alert is presented as a warning.
Waypoint alarm	Now warnings. Not available at all for TECDIS TCS with NP5500 autopilot when Track control is active.
Final waypoint passed	

Improvement: Full IEC 61162-450 support

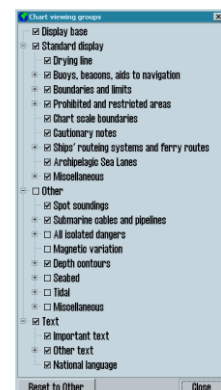
This change is mostly directed towards new installations. With this addition, TECDIS can now be connected to a NMEA-450 network for all sensor data (sensor backup is required in most cases).

Improvement: Support for all viewing groups

With the support of viewing groups in TECDIS since version 4.7.x.30, it has been possible to finetune the chart display based on *IHO's standardized Viewing Groups*.

In this release, we have improved this by adding support for **all viewing groups defined by IHO**. The main improvement of this is the addition of many text subgroups.

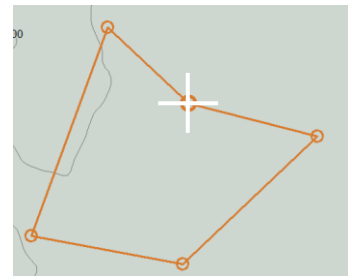
This allows you to really finetune your chart display in very high detail. The function is still available from the **More** button in the chart menu.



Improvement: Manual chart corrections

We have made a number of changes to the manual chart corrections functionality in TECDIS. The most important are:

- You can see the changes you previously made directly in the chart, displayed with thin symbol lines, when the update review window is open. The update review window is the tool you use to review the automatic chart updates.
- Manual corrections can now be added with start and stop-dates, including periodic start and stop.
- Existing chart objects (objects that are not added manually) can now be deleted from the manual corrections tool.
- Manual corrections can now be hidden from the chart, by selecting them and pressing the **Hide** button in the chart correction tool. They will still appear in the chart corrections tool, where you can make them visible again by pressing the **Show** button.
- The manual correction you are placing in the chart is now displayed in the chart view as you create it. You can also manipulate the shape the same way you manipulate routes:
 - **click on the middle of a line** in the object to add an anchor point
 - **right click** an anchor point to remove it from the object
 - **left click** in the chart to add an anchor point (added after the last)
 - You have to use **Save** or **Cancel** to exit the edit mode.
- If the object inspector/cursor pick report is open when a manual update is performed, the results in the object inspector will automatically update itself while you edit/add manual corrections.

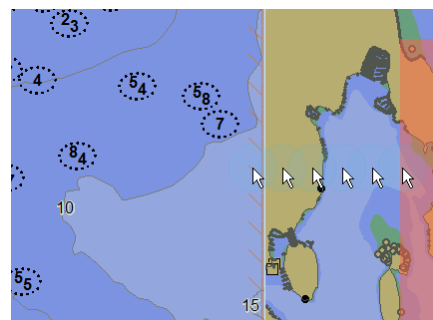


New feature: Easy access to menus

This is a feature we had in a different form a few years ago, that we now have simplified and improved on.

The default way to access the menus is by pressing the menu button on the main toolbar. This still works as before.

Now, to get **easy access** to the menus, you can move the cursor to the right edge of the antigrounding chart. Then the menu will automatically appear.



To close the menus, press the **menu** button on the main toolbar.

Improvement: Anchor watch

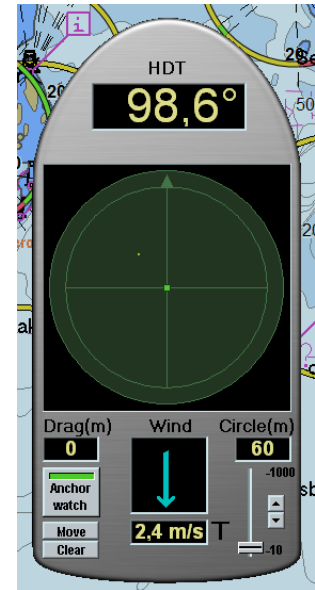
The Anchor watch function in TECDIS has been updated to comply with the new IEC 61174 edition 4 standard. Now, there is **only one anchor watch mode**, where there previously were 3. *You simply switch anchor watch on or off!*

We have also added finetuning of the anchor watch circle diameter with 10 meter steps, and you can use a slider or up/down buttons to set the diameter.

The anchor history plot now shows where the historical positions of the anchor are, not the bow.

We have also made several smaller tweaks to the anchor watch function:

- a new anchor watch symbol in the chart
- graphical updates
- new value labels



Note that the anchor watch feature now gives a warning when the ship is outside the turning radius of the anchor watch zone. This warning will be escalated to an alarm within 2 minutes if not acknowledged.

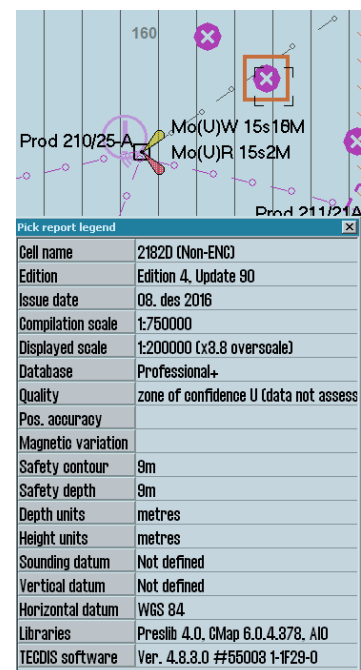
The alarm is removed if the anchor watch function is closed.

Improvement: Chart Legend

The chart Legend has also been given an overhaul, and the most notable change is the new sorting of information. The software version number and 5-digit system ID is now at the bottom row in the chart legend.

Now the title of the window also tells you where the information is referenced from. If the Window title displays **“at centre”** this means that the legend is valid for the centre point in the chart view. Additional reference points are

- At own ship (if the chart is in Auto Mode)
- Graphical index (if more cells are displayed on screen)
- Pick Report (if the reference point is selected with the cursor pick tool)



Improvement: Chart notices



TECDIS has for many years displayed chart notices on the top of the chart view. With this release we are improving the display of these chart notices, and adding some clever functionality to them.

Instead of only showing the most important chart notice, we have updated the system to:

- Show several notices simultaneously
- Show additional information about the notices when you hover over them (same as for any existing button or function in TECDIS)
- **Add “click-to-fix” function:** you can now fix the issue causing the notice simply by clicking on the notice.

The new notices and their functionality are described in the new TECDIS Reference Manual 4.00.

Improvement: Chart loading

The chart loading in TECDIS has been improved with the following new functionality:

1. TECDIS will now perform a full S-58 verification when you are loading S57/S63-charts. This happens before the actual loading, and you will no longer be prompted to take action for each issue – the system will determine actions by itself, and present a much more detailed error/warning list.

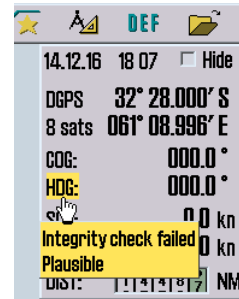
Note that this will cause the chart loading to be much slower! You can avoid this by having “*Ignore S-57 Import Errors/Warnings*” selected in the chart loading tool (Load charts or S63 Chart Loader).

2. Improved chart loading summary for S57/S63 chart loading
3. New chart notices for out of date charts (see explanation above)
4. If you are using charts from C-Map, TECDIS will now perform a signature check of the chart before loading. This prevents the system from loading charts from a bad DVD.

New feature: Integrity check for INS

In this release we are adding support for sensor integrity checks, where the system validates sensor data reception, and displays integrity information for the following sensors:

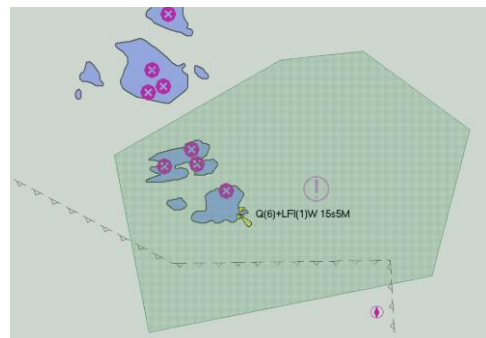
- Position (POS)
- Heading (HDG)
- Course/speed over ground (COG/SOG)
- Speed through water (STW)
- Depth (DPT)
- Time of day (from GPS)



This integrity information is available for INS only. It is displayed when you hover the cursor over the different sensors in the information panel.

Improvement: Area object fill

We have replaced the hatched fill of user-made area objects, with a transparent fill. The transparent color is the same as the object outline color. This makes it much easier to read the information covered by the area object.



Note that yellow fill is not available any more; this is replaced with orange fill.

Improvement: Invalid turn

In this release we are improving how invalid turns in routes are handled. From now, you cannot activate a route with one or more invalid turns. Also, when you create an invalid turn while planning the route, a notice will appear on the bottom of the screen, alerting you of the erroneous turn.

Improvement: AIS activation zone

We have made two improvements to the **AIS activation zone** (*Active range* in TGT menu); A green circle in the chart to indicate the *limit of the AIS activation zone*, and a new option *to turn off the AIS activation zone* (no AIS targets are displayed as active in the chart).

Beyond the green circle, no AIS targets will be displayed as active without being specifically selected. This means that they are displayed as minimalistic as they can in the chart, without key information such as a course vector.

Improvement: Dead Reckoning source indication

To improve the indication of position sources that do not give continuous position updates (in short, this means Dead Reckoning), we have added a yellow background to the position label in the information panel when DR is the active position sensor.



Improvement: How the system handles a full target buffer

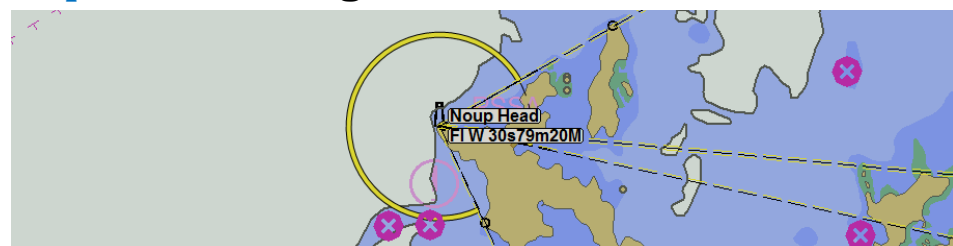
With a target buffer of 2000 targets (AIS and radar combined) TECDIS handles a lot of targets simultaneously. Most likely, you will never experience that many targets at once. But, if you do, we have improved how the system handles that situation.

1500 slots in the buffer are now reserved for targets that are visible when they are received. The remaining 500 slots are free for all targets. When you change settings for target visibility, the 1500 slots are reset, allowing new targets to be handled.

Improvement: 1:200 000 chart scale added

A small change in this release is the addition of a new chart scale level, **1:200 000**. It is not available as a separate button on the main toolbar, but when using the **cursor** or **zoom**-buttons to change scale, it will be included.

Improvement: Lights



In this release we have made several smaller improvements to the display of lights:

- The light description when you hover the cursor over the light itself is updated, with full descriptions according to S-52 edition 4
- The light color when the lights sector is stretched out full (with right click on the light) is now magenta for lights with blue, amber, violet or multiple (alternating) colors. This is done to reflect the light symbols in the chart itself.
- When multiple lights are coming from one point, the description you see when the cursor is hovered over it, will list them all.



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Improvement: Display of AIS SAR Aircraft is added

In this release we have also added support for AIS SAR Aircraft. When received, this is displayed with an aircraft symbol in the chart. Track for the SAR Aircraft is only displayed when it is selected as a target. The symbol is displayed without heading indication and course vector, but it is oriented at its COG.

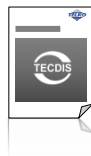
Improvement: New documentation for TECDIS

With this major release, we are also changing the structure of the product documentation for TECDIS.



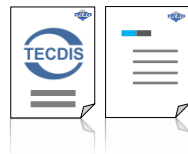
TECDIS User Guide

From now on, a general TECDIS User guide is the primary documentation in printed form. This is a shorter 40 page general guide on how to use TECDIS.



TECDIS Reference Manual

TECDIS User Manual is now renamed TECDIS Reference Manual, and is the complete guide to all functions in TECDIS. The reference manual is available on **C:/Drivers** in the TECDIS computer, as well as for download from www.telko.no/support/TECDIS



TECDIS Installation Manual TECDIS Feature Guides

These documents continue as before. They are available on **C:/Drivers** in the TECDIS computer, and for download from www.telko.no/support/TECDIS