Feature Guide:
TECDIS 4.7.x.30

With the release of TECDIS 4.7.x.30 we are providing you with over 40 new features and bug fixes. The most noticeable changes in this release are the design changes to make TECDIS compliant with IEC 62288 Edition 2. For a complete list, see the release history on www.telko.no. Here you will also find Feature Guides for previous releases.

Note that this Feature guide is the newest documentation for your TECDIS system with software version 4.7.x.30. If you find any conflict between your TECDIS User Manual and this Feature Guide, you should perform any operation according to the guidelines in this Feature Guide.

Here is a guide to the main new features and improvements to TECDIS in this release:

Important improvement: User interface

The biggest changes in this release are the design changes to make TECDIS compliant with IEC 62288 Edition 2. Several parts of the user interface in TECDIS has been improved, most noticeably the color use. All colors are now based on calibrated colors from the IHO palette.

Main Color		Status	Examples of use
Green		Positive attention	ETA set to current speed
			Scale when chart in compilation scale
			Chart license valid
Blue		Selected	Current waypoint in waypoint list
			Selected sorting criteria in AIS target list
			Selected option in drop down menus
Yellow		Attention	Service mode
			Chart license expiring
			Hint texts
		Low integrity	Scale when chart is overscaled
		Caution	Alert cautions
Orange		Invalid	Invalid turn in waypoint list
			Chart license expired
		Warning	Alert warnings
Red		Danger	Grounding dangers
			No go areas
			Dangerous targets
		Alarm	Alert alarms

The following status color is used on text, user interface foreground elements and icons only:

Main Color		Status	Examples of use
Gray		Unavailable	Unavailable scale buttons
			Disabled buttons and checkboxes
			Sensor data derived from dead reckoning

Note that when the status colors are **statically** used in icons, user interface symbols and graphically presented information (such as graphs or direction plots), the color does not impart status information.
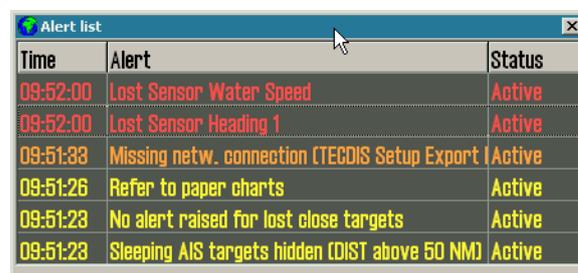
When color use in such information **dynamically** changes to one of the status colors, the associated meaning of the status color may be assumed.

Here are some of the changes you will experience:

- The main toolbar now has a more coherent color use across icons:

- The alert list has a simpler and more readable design:

Important behavior change: The Standard (STD) button

The Standard/STD button in TECDIS **previously** changed to standard chart presentation and removed all auxiliary information such as windows, symbols, tracks, targets and layers.

Now, due to changes in the rules, this is split into two functions:

Left click on the STD button	Changes to standard chart presentation. Only chart settings are affected.
Right click on the STD button	Hide all auxiliary information displayed over the charts, except own vessel and selected route

This allows you to quickly check the charts in their standard presentation as before, but you will not at the same time remove the windows and functions you are using unless you want to.

Important behavior change: Chart overscale/ underscale notification

As part of the new interface color use, the chart over/underscale notification in the main toolbar has been improved. This is the new design of the notification:

Chart overscale	Compilation scale	Chart underscale
1:100 000	**1:120 000**	**1:300 000**

Important behavior change: No CPA alerts

In this release there are several notable changes to the CPA functionality in TECDIS. Most important; **CPA raises no alerts in TECDIS as of this version**.

In addition to no CPA alerts, the following has been changed:

- CPA is calculated for AIS targets and radar reported AIS targets only. For radar tracked targets, CPA reported by the radar is used.
- CPA is not calculated if own vessel or target is missing COG/SOG

Important behavior change: Alert system

Based on feedback from DNVGL we have updated the alert system in TECDIS with the following changes:

- *Lost monitor serial connection* is now **Lost monitor control and alert buzzer**

The following changes affect new installations only. Alerts are unchanged on update of an existing installation, but the changes may be activated by a service technician:

- *Route critical point* is now a **Warning** (cat A)
- *Lost sensor COG/SOG 1* alert is removed
- *Lost sensor COG/SOG 2* alert is removed
- *Lost sensor Heading 1* warning alert is only activated if the system cannot automatically change to a valid alternative sensor.
- *Lost sensor Heading 2* warning alert is only activated if the system cannot automatically change to a valid alternative sensor.
- New *Lost sensor Heading 1* caution alert is activated when the system detects a heading 1 sensor loss and automatically changes to a valid alternative sensor.
- New *Lost sensor Heading 2* caution alert is activated when the system detects a heading 2 sensor loss and automatically changes to a valid alternative sensor.
- *Lost sensor Relative Wind* alert is now a **Caution**.
- When in standard (STD) mode, the following alerts will not appear:
  - ➢ Dynamic licensing update deadline
  - ➢ Dynamic licensing out of credits
  - ➢ Chart licenses expired (over 50%)
  - ➢ Dynamic licensing payment is active
  - ➢ Dynamic licensing credits low
  - ➢ Chart licenses expiring (over 50%)
- Some ECDIS standard alerts have new *ALF* identifiers. The new identifiers can be found in the **Alert list for TECDIS** (available on demand from Furuno Norway).

New feature: Target association

TECDIS now adds target association between radar and AIS targets. If targets received from both the AIS and the radar share **MMSI** number, only one target will be displayed in the chart, and both the radar and AIS target information is displayed for that target.

In the target window, a new button **Associated** is available, allowing you to switch information display between the different targets.

By default any target with both radar and AIS sources will be displayed as AIS targets. The default setting can be changed in the new *TGT/target* menu, by deselecting **Show associated as AIS**.
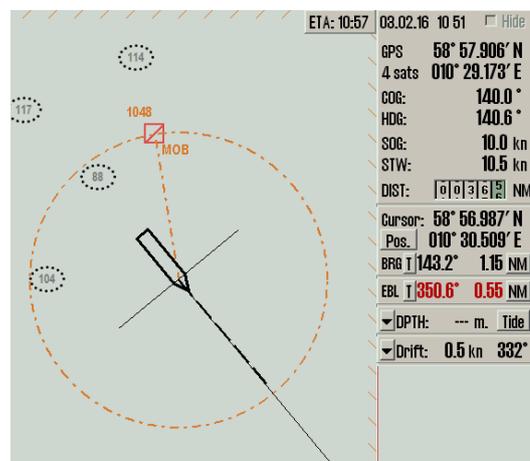
New feature: Targets from radar with new TTD sentence

TTD is a new nmea sentence for targets from radar. To accommodate it in TECDIS, we have made some changes to both TECDIS and TECDIS Setup.

TECDIS	All references to *arpa* has now been changed to *radar* or *targets*
TECDIS Setup	• *Radar arpa 1/Radar arpa 2* have been renamed to **Radar targets 1/Radar targets 2** • For Radar target 1 and 2 you can now select between **TTM** and **TTD** sentence types (*the sentence type has to be identical on both radar inputs*) • The option *Arpa is conning referenced* has been changed to **Radar targets are conning referenced**

Behavior change: MOB button

<u>Previously</u>, when a MOB symbol was placed, a bearing was created from the MOB symbol to the vessel, but the displayed numbers for the bearing were from the vessel to the MOB symbol.

Now, this is improved and the new functionality is more coherent – **when you place a MOB symbol in the chart, both the bearing and its numbers are <u>from the vessel to the MOB symbol</u>.**
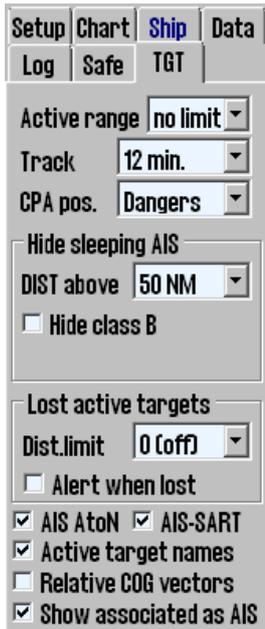
Improved: AIS menu is now TGT menu

As many improvements and new features in this release are related to target handling, we decided to overhaul the AIS menu. It now controls the settings for both AIS and radar targets, and a name change was needed.

The redesigned Target/TGT menu offers more customization of target settings than before, in a simpler interface. Here are the menu functions described:

Function	Description
Active range	Filters which targets are shown as active based on the distance to own vessel. This makes it possible to view all targets with course, COG-vector and past track line. To remove the distance limit and display all targets as active, select **No limit.** When targets are outside the distance limit, they will change to sleeping mode. This can be overridden in the target window, by selecting **Activate**.
Track	Track specifies the length of the past track lines for the targets. It is specified in minutes of travel.
CPA pos.	**Manual:** Displays CPA positions manually for each target from the target window. If the target window is open, the CPA position will be displayed regardless if the CPA is in the past or future. When it is closed, only future CPA will cause CAP position to be displayed. **Dangers:** Same as above, but in addition CPA position will be displayed for all targets the radar classifies as dangerous. **All active:** CPA position is displayed for all active targets with CPA in the future. If you open a target window, only the CPA for that vessel will be displayed, and CPA positions will be displayed even if CPA is in the past.
Hide sleeping AIS	
DIST above	Hides sleeping AIS targets beyond this radius
Hide class B	Removes the display of all class B targets beyond the active range distance setting
AIS Lost active targets	
Dist. Limit	Select if the function should be on or off, and the distance limit for Alert when lost
Alert when lost	Turns on an alert when active AIS targets are lost
AIS AtoN	Turns on the display of Aids to Navigation (AtoN) symbols
AIS-SART	Turns on the display of Search And Rescue Transmitter (SART) symbols
Active target names	When selected, displays target names on all active targets
Relative COG vector	Sets all AIS target COG vectors to be relative to own vessel movement. If not selected, targets use true course and speed.
Show associated as AIS	This displays targets associated with both AIS and radar as AIS targets.

Improved: New presentation of cursor info, EBL/VRM and distance/course for route/line/circle

In this release you will experience a major overhaul of the information panel in TECDIS. We have updated both functionality and look of the cursor info field. To improve the functionality of the different functions embedded in this small field, we have split the information in three panel sections:

Cursor info panel:

Cursor: 75° 00.673′ N Pos. 016° 39.882′ E BRG T 076.8° 100.2 NM	Cursor: 74° 48.279′ N Pos. 015° 07.692′ E 082.0° 74.6 NM	Cursor: BRG T DIST Pos. 041.6° 6.62 NM	Cursor: BRG T DIST 083.0° 3.33 NM
Cursor position and bearing/ distance from own vessel position	Cursor position and enlarged bearing/distance from own vessel position	Cursor bearing/ distance from own vessel position	Enlarged cursor bearing/distance from own vessel position

These panels always show the bearing and distance from the vessel to the cursor. The four cursor panels share the same location, and you toggle between them by clicking on the panel itself. One of the panels is always displayed.

EBL/VRM panel:

EBL T 039.1° 6.86 NM	EBL T VRM 053.8° 8.17 NM	EBL T VRM 000.0° 1.00 NM
Bearing and distance for the EBL/VRM tool	Enlarged view of bearing and distance for the EBL/VRM tool	Configurable bearing and distance for the EBL/VRM tool

The three EBL/VRM panels share the same location, and you toggle between them by clicking on the panel itself. The panels are only displayed when the EBL/VRM tool is activated.

The third panel allows you to set a bearing that is not attached to the cursor. You can modify the bearing and range/distance with the arrow buttons, by text input, and the bearing can be set with the bearing circle; click and hold your cursor on it and when you move the cursor the bearing moves as well.

Route/line/circle panel:

Cursor: 59° 00.747′ N Pos. 010° 35.048′ E BRG T 111.8° 3.37 NM CRS T DIST 051.4° 1.67 NM	The course and distance from the circle centerpoint or last plotted point on lines/routes. The route/line/circle panel is non-configurable.

New feature: TECDIS sends screenshots to VDR

This function is mostly relevant for newbuilding. With the separate program **Telko Screensender** TECDIS is now capable of transmitting screenshots to the VDR in the *IEC 61162-450* network. These screenshots also include conning screens if configured.

Note: This has to be configured by a service technician. A separate installation guide is available on request (*quick installation guide – Telko Screensender 1.0*)

New feature: Navigational status displayed on position sensor

If TECDIS receives navigational status from the position source (GPS, DGPS), this is now displayed on the tooltip for the position sensor in the information panel in TECDIS. The tooltip will display one of the following status items:

- Safe
- Caution
- Unsafe
- Not valid

When TECDIS receives the *caution*, *unsafe* or *not valid* status, the *Position sensor name* in the information panel is displayed in **yellow**.

Improved: Navtex and AIS-SAR symbols

In this release we have changed some symbols due to new regulations.

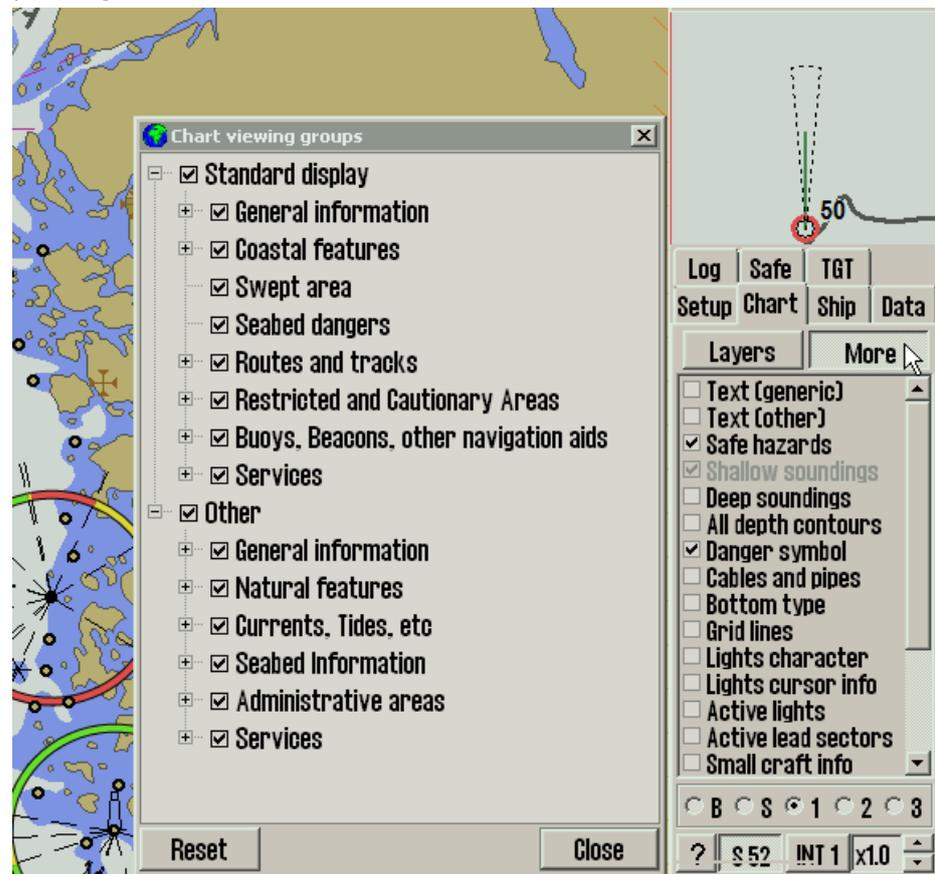| Symbol	Use
MSI	The Maritime Safety Information (MSI) symbol replaces the Navtex symbol in the chart.
	The AIS SART vessel symbol replaces the standard AIS vessel symbol for vessels with active Search and Rescue status.

Improved: Repeated AIS message handling

If the source of an AIS target is a repeated message, the following will be displayed in the title line of the AIS window:

Repeated	Repeated one time
Repeated x times	AIS target repeated several times (max 3 times)
Repeat x	AtoN target repeated several times (max 3 times)

New feature: IHO viewing groups

In this release we are adding IHO viewing groups. The IHO viewing groups are a way to separate charted information in to separate groups, giving the user a way to select what information he/she wants to display.

The selection tool for the viewing groups is accessed from the *Chart menu*, by pressing the **More** button.

Note: This is only available for TECDIS installations with version **4.7.2.30** and higher. TECDIS 4.7.1.xx is not supported, and must be upgraded for using a separate update file.

Also note that this is only available in the user defined **1**, **2** and **3** presentation modes, not the *Base* and *Standard* modes.
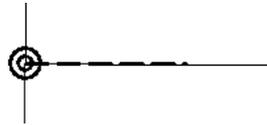

Improved: TTM reception

In this release we are also improving the reception and handling of TTM sentences.

Conversion of relative course and speed values to true values are now corrected, and utilize radar OSD data for reception within a five second window. If the OSD data is older than this, then own reception of COG/SOG/STW/HDG values are used.

Improved: Display of own ship symbol

A smaller but still noticeable change in TECDIS is the new transition rules for the own vessel symbol. Own vessel symbol in TECDIS is either a double circle, or a true scale vessel outline.

If the vessel symbol is <u>smaller</u> than 3 mm on the screen, it will be displayed as a double circle, regardless of the settings.

If it is <u>bigger</u> than 3 mm, it will be displayed according to the settings in the **Ship** menu.

Also, the vessel will not be displayed with a true scale outline without a known heading.

These improvements allow for more charted information to be displayed near the vessel when you are using bigger scaled charts.

Behavior change: Auto display of menu is removed

This change comes at the request of users, who have found this function to be less useful than desired. Removing the function simplifies the experience of the TECDIS user interface.

Before, you could hover over the lower part of the antigrounding panel in TECDIS, and the menu would appear. With that option removed, you must now open the menu with the menu button on the main toolbar.

Improved: Initial AIS ETA is set from AIS data

When AIS data for own ship is changed, TECDIS now sets the initial AIS ETA to the value it receives from the AIS. This value is displayed in the Own ship AIS info window in TECDIS.

We complemented this improvement by adding the option to set ETA on the AIS as unavailable for single values. This is done in TECDIS by setting the value to "---" in the own ship AIS info window. If you set your AIS ETA values in TECDIS the values will be automatically updated in the AIS itself.

Improved: Aids to Navigation symbols

In this release all Aids to Navigation (AtoN) symbols have been updated. Here are the main symbols and their use:

Symbol	Use
	Basic shape
Racon err	Racon error
Off Posn	Off position
Missing	Intended location of missing AtoN
Unlit	Light is unlit
	Virtual AtoN - basic shape

The AtoN type can be displayed with an auxiliary symbol above the main AtoN symbol.

Improved: AIS-SART handling in TECDIS

The display of AIS SART (Search and Rescue Transmitter) targets in TECDIS has changed to reflect new requirements:

- Active SART targets are no longer displayed in red
- SART targets does not display a heading vector
- When AIS message 14 is received, the text contents of the message is used in the target status.
- AIS-MOB and EPIRB-AIS targets are displayed the same way

Improved: AIS target names displayed in S52

By default, names for AIS targets will now be displayed on the target graphic in S52 presentation mode as it has been for a while in INT1. The difference is that in S52 mode the target name will be displayed without a frame.

Display of target names can be removed in the TGT menu.

Improved: AIS and Radar target buttons are not deactivated on sensor timeout

When all data from a target sensor (AIS/Radar) are lost, all targets from that sensor will be lost.

You will however still have access to AIS and Radar buttons on the main toolbar. In previous versions of TECDIS, they would become greyed out and unavailable.

Improved: Ensure alert readability

To comply with requirements and ensure that alerts stay visible even if the monitor is dimmed, a new lower limit for monitor dimming is introduced. The monitor will not be possible to dim below 0,8 cd/m^2.

Improved: TECDIS response indicator

To ensure that users can see clearly if TECDIS is unresponsive, we have added a flashing colon symbol to the clock in the information panel. TECDIS may become temporarily unresponsive when performing heavy tasks such as chart loading, and this is perfectly normal. With this unobtrusive indicator you can easily check if the system is unresponsive/hangs, and for how long.

Long chart redraw times are indicated with an incrementing chart redraw timer, as before.

Caution: Invalid sections of TECDIS User Manual

The following sections in TECDIS User Manual version 3.28 are deprecated as a result of this update. The sections contain incorrect information when you have performed this update, and should not be used for TECDIS functionality reference purposes.

Section	Note
All chapters and Appendixes	All screenshots may contain wrong color use. Refer to user interface color changes detailed on page 1 of the Feature Guide
Chapter 4.5.2 Alert list	Only the reference to Ship CPA alarm is invalid (paragraph 4)
Chapter 4.5.3 Alarm texts	Reference to Ship CPA alarm and the alert system changes detailed on page 3 of the Feature Guide
Chapter 7.8.3 Danger CPA all Targets	Entire subchapter

Note that the chapter numbers in the list above may be incorrect if you are currently using an older version of the TECDIS manual than the last issued version, named TECDIS User Manual 3.28 EN. Also note that this caution will not be relevant for the coming TECDIS User Manual 3.30 EN or newer.

Coming documentation changes

TECDIS User Manual 3.30

The following changes to TECDIS are not covered in this feature guide, and will be documented in the coming TECDIS User Manual version 3.30:

- A new term and abbreviation section will be added to the user manual. The terms and abbreviations are from both the manual itself and from TECDIS. The section will be named Appendix E, and will be the second last section of the manual.
- A document revision section will be added to the user manual. This will be named Appendix F, and will be the last section of the manual.
- Description of all AtoN symbols in chapter *5.4 AIS operation*
- The waiting cursor on chart loading is removed

TECDIS Installation Manual 3.00

The following changes to TECDIS are not covered in this feature guide, and will be documented in the coming TECDIS Installation Manual version 3.00:

- A detailed procedure for installation and configuration of *Telko Conning*

Creators of TECDIS

Document revision history

0.1	01.02.2016	pre-release version	Cato Haugland
0.2	02.02.2016	Added invalid manual sections, coming documentation changes, Chart over/underscale, EBL/VRM functions, TECDIS response indicator, alert readability. Updated list of alert changes, TGT menu description and changes in color use for the user interface.	Cato Haugland
1.0	09.02.2016	**Official release.** Spell check and minor adjustments	Cato Haugland