

S63 Loader User Guide

A fully type approved Electronic Chart and Display Information System (ECDIS), certified by DNV.

Software edition: 1.02
Manual edition: 1.0

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Overview

1.1. Notice, warning and disclaimer

NOTICE, WARNING AND DISCLAIMER

THE TECDIS SYSTEM AND ASSOCIATED NAVIGATION PRODUCTS INCLUDING THE ELECTRONIC CHART DISPLAY AND AUTOMATIC NAVIGATION AND TRACK KEEPING SYSTEM ARE AIDS TO SAFE MARINE NAVIGATION. ALL SUCH NAVIGATION AIDS ARE SUBJECT TO CERTAIN INACCURACIES AND DISCREPANCIES THAT, IF UNCONSIDERED, MAY RESULT IN A MARINE ACCIDENT OR INCIDENT, AND CONSEQUENT LOSS OF LIFE, VESSEL, CARGO AND ENVIRONMENTAL DAMAGE. ACCORDINGLY, THE MARINER WILL NOT RELY ON A SOLE NAVIGATION AID (INCLUDING THE TECDIS SYSTEM) FOR THE SAFE NAVIGATION OF THE VESSEL. THE PRUDENT MARINER WILL OBTAIN NAVIGATION INFORMATION FROM ADDITIONAL SOURCES, CROSS-CHECKING ALL INFORMATION FOR ANY INACCURACIES OR DISCREPANCIES WHILE DETERMINING THE VESSEL'S POSITION, COURSE, SPEED AND INTENDED TRACK.

1.2. Introduction

The Telko S63 Chart Loader (S63 Loader) allows you to load electronic maritime charts in the S63 format onto the TECDIS electronic chart system and prepare them for use in navigation. The S63 Loader also provides facilities for user permit generation, management of S63 cell permits and management of certificates.

1.3. About this guide

This guide is divided into two main sections. The first (Section 1: How to...) provides step-by-step instructions for common operations. The second section (Section 2: Troubleshooting) explains error messages and suggests remedial actions.

Section 1: How to...

In this section, step-by-step instructions for common usage of the S63 Loader is provided.

1.1. How to install the S63 Loader

1. Place the file 'S63LoaderInstaller.exe' on a CD, DVD or USB memory stick.
2. Insert the TECDIS Service Key.
3. Exit the TECDIS software. This will make the Windows Desktop available.
4. Insert the CD, DVD or USB memory stick from step 1.
5. Open 'My Computer' and locate the 'S63LoaderInstaller.exe' file and start this file by double clicking.



6. Press 'Next' on each of the three dialogs that are shown (see above).



7. After the installation is complete, press 'Finish' on the new dialog that is shown (see above).
8. Remove the TECDIS Service Key.
9. Reboot the system.

1.2. How to access the S63 Loader software

The S63 Loader cannot be accessed from the main TECDIS software user interface. Follow these steps to start the S63 Loader.

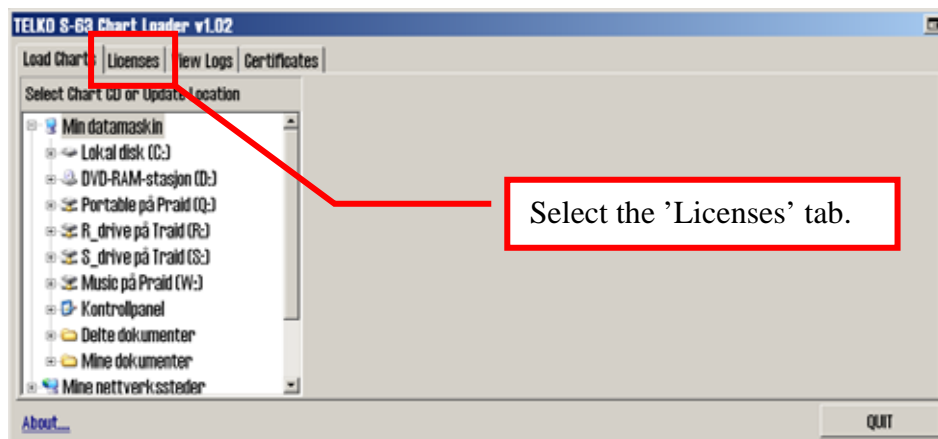
1. Insert the TECDIS Service Key.
 2. Exit the TECDIS Software. This will make the Windows Desktop available.
 3. Double click on the 'S63 Loader' icon.
 4. Wait for the software startup procedures to complete. If any errors are reported, refer to Section 3: Troubleshooting.
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1.3. How to generate a User Permit file

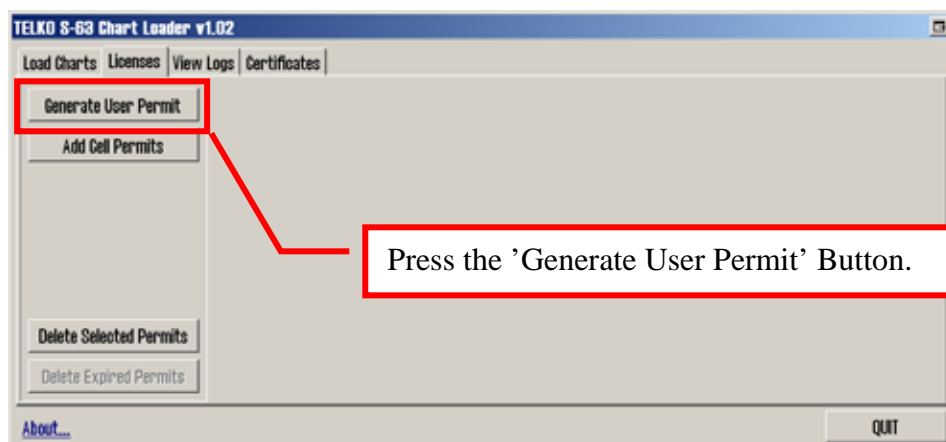
Before cell permits can be provided by a chart supplier, a user permit file needs to be sent to the chart supplier. Follow these steps to generate this user permit file. (These steps assume that the S63 Loader has been started and is ready.)

Important: Verify with your chart system provider that the system license dongle has been prepared for S63 use. If this is not the case, the system license dongle may need to be sent to the manufacturer for updating.

1. Insert removable media such as a USB memory stick into the TECDIS.



2.



3.



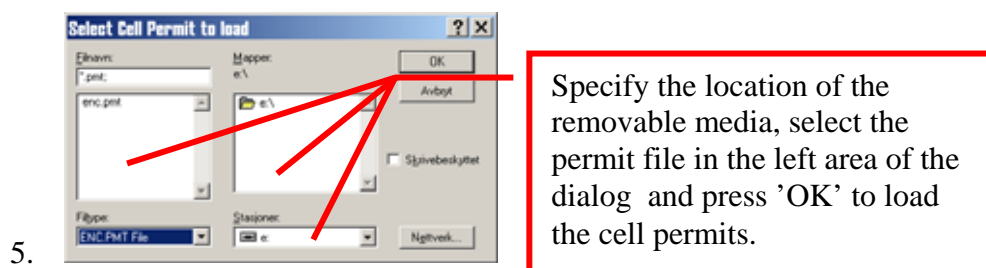
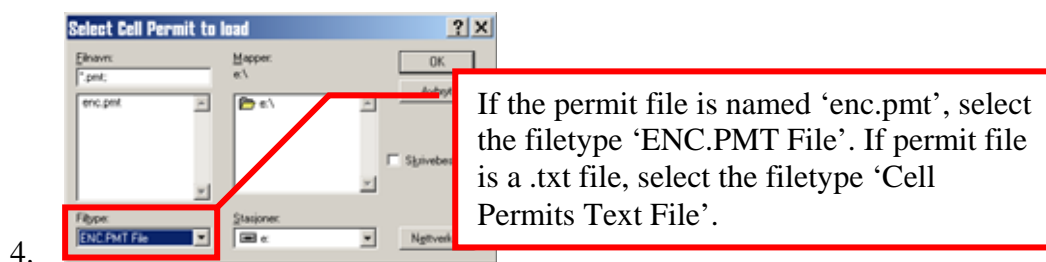
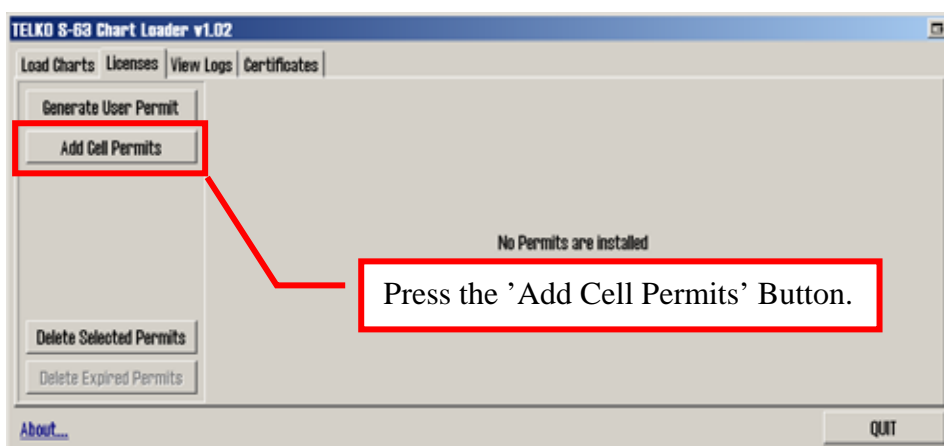
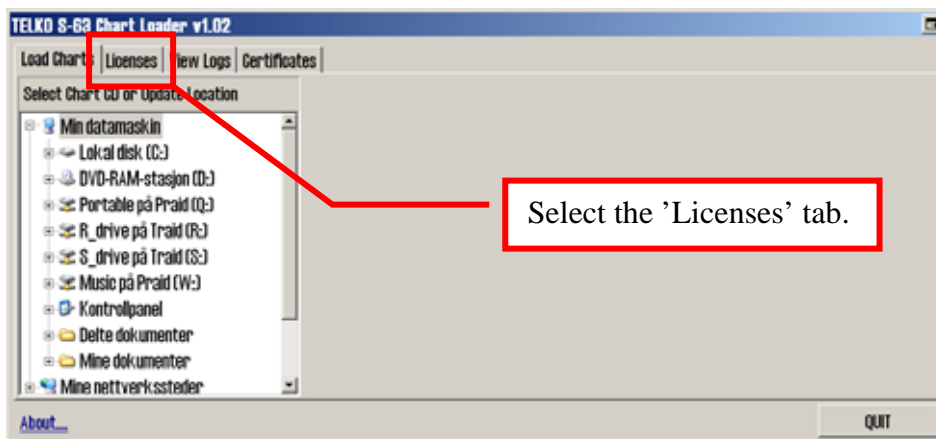
4.

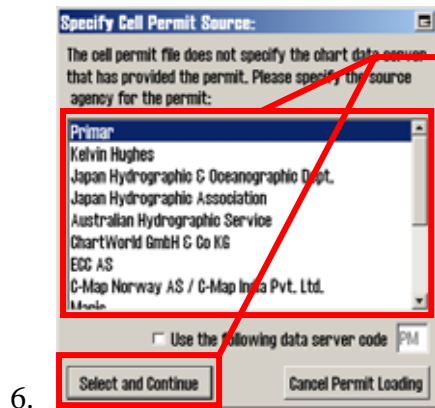
5. Remove the removable media from the TECDIS and send the user permit file now contained on it to the chart supplier.

1.4. How to load cell permits (Chart Licenses)

Cell Permits (chart licenses) are provided by the chart supplier as either a .txt file (typically permit.txt), a file named 'enc.pmt', or both. **If both are provided, it is recommended that you use the .txt file.**

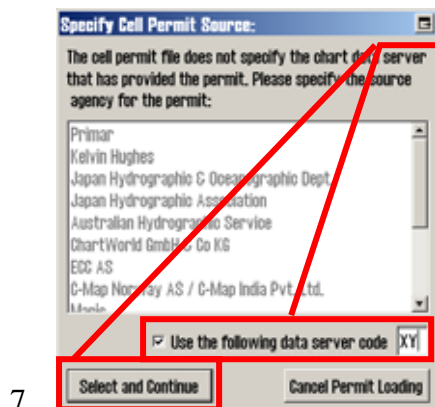
1. Place the permit file provided by the chart supplier on removable media such as a USB memory stick, and insert this into the TECDIS system.





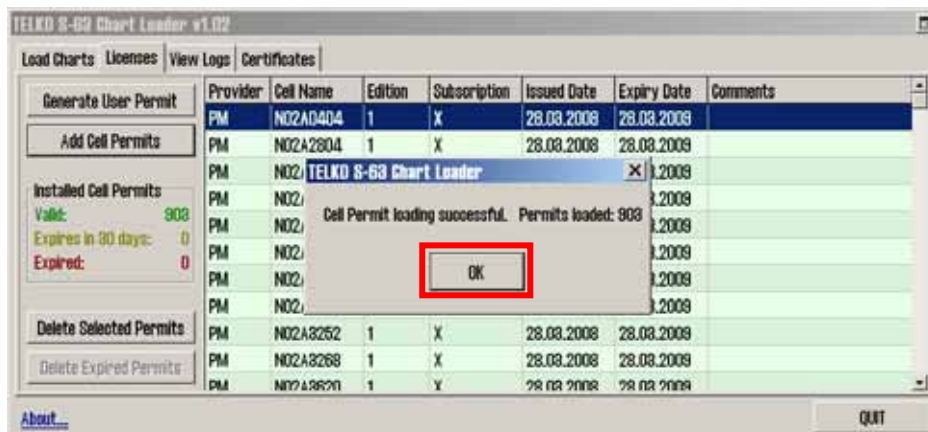
If the permit file does not contain the identity of the chart supplier, this dialog will appear. Select the chart supplier from the list and press 'Select and Continue'.

(Note: You can also double-click the name of the chart supplier.)



If the chart supplier is not listed, you can enter the 'data server code' for the supplier manually. Mark the check box below the supplier list, enter the two digit 'data server code' and press 'Select and Continue'.

The correct 'data server code' can be provided to you by your chart supplier.



8. If no problems are encountered, a message indicating successful cell permit loading will appear, indicating the number of loaded permits. Press 'OK' to close this message, and the permit loading process is complete.

The 'Licenses' tab will now display details about the loaded cell permits, color coded according to permit expiry status.

1.5. How to load charts

Encrypted charts are provided by the chart supplier on one or more CDs/DVDs. The chart loading process uses the installed cell permits to decrypt chart cells, verify the cells against the S57 standard, and compile them into SENC format (CM93/3) used in the TECDIS system.

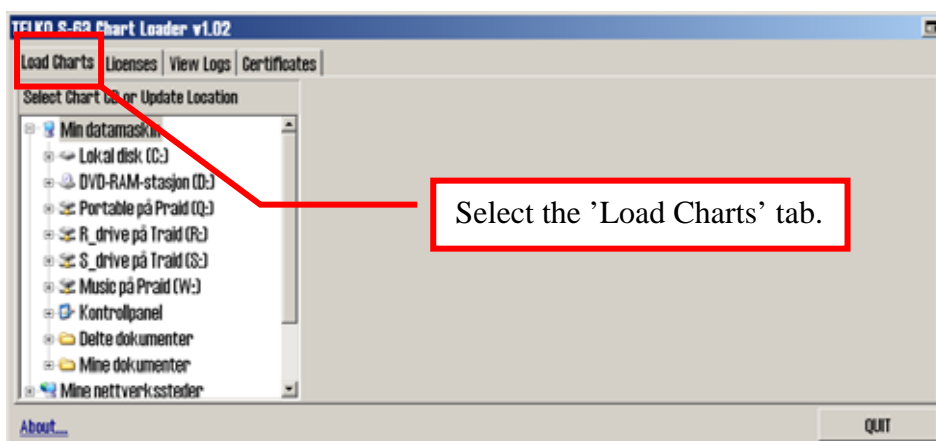
The chart supplier can provide two types of chart media: **BASE** media, and **UPDATE** media. If both are provided and chart loading is to be performed for the first time, *the BASE media must be loaded first and the UPDATE media second*. Care must also be taken that the UPDATE media is loaded in the correct order according to date/sequence labelling on the media.

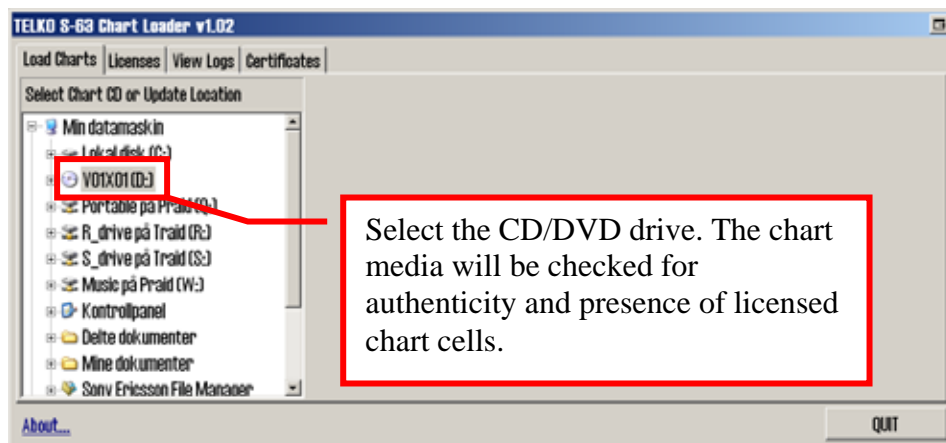
The chart media is checked for authenticity (using the installed certificates) during the chart loading process. If the determined confidence of authenticity is low, the system will provide a number of warnings that must be overridden by the user in order to load the charts. *This can be avoided by installing certificate files from the chart supplier (See section 1.7. How to install certificates)*. Certificate files for PRIMAR (ECC) is preinstalled.

Note that the first chart loading process for a new chart supplier can be time consuming, and may take many hours. Loading of UPDATE media takes less time. For instance, loading all norwegian ENC cells takes approximately 9.5 hours on the TECDIS system. Loading UPDATE CDs for the same selection typically takes between 30 minutes and 1 hour on the TECDIS system.

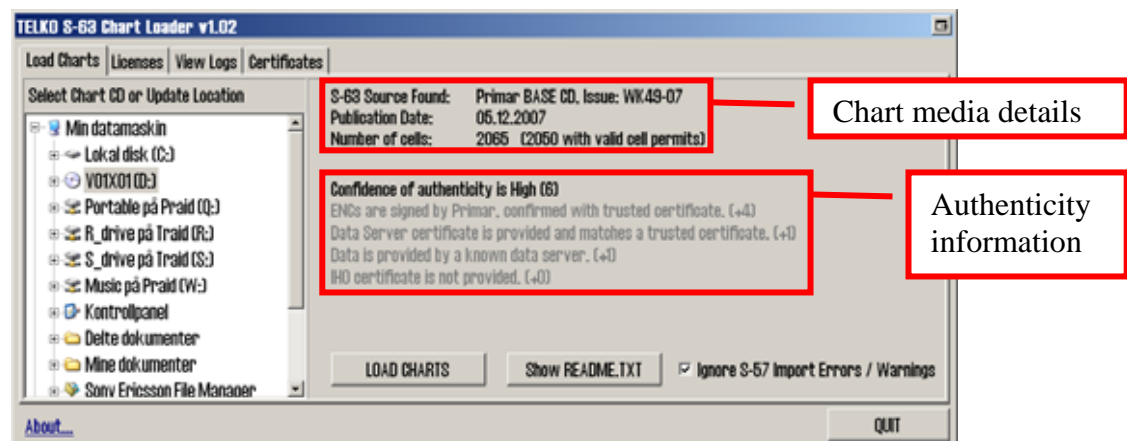
Use the following procedure to load chart CDs / DVDs:

1. Place the chart CD/DVD corresponding with installed cell permits into the CD/DVD drive of the TECDIS system.





- 3.
4. Detailed information about the chart media is displayed. The upper area includes information about the chart supplier, the type of CD (BASE / UPDATE), issue identification, publication date and number of chart cells present on the media. The number of chart cells with valid chart licenses is indicated as well.



The middle area provides a **Confidence of Authenticity** score from 0 to 10. Confidence of Authenticity starts at 0 when chart media is analyzed, and is modified by a number of factors, as detailed in the table on the next page.

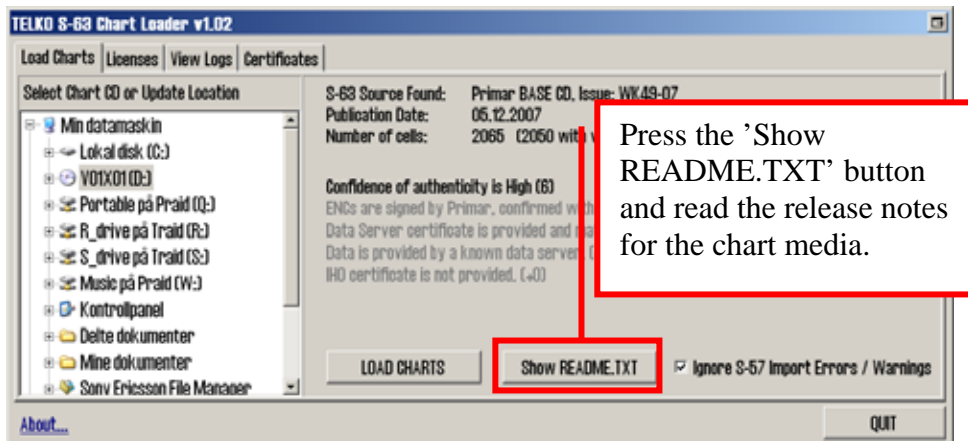
A confidence score of 0-3 is categorized as **Low**, a score of 4-5 is categorized as **Medium**, and scores of 6-10 are categorized as **High**.

If the Confidence of Authenticity is 0, it is not possible to load the chart media.

This score, and the detailed information in grey below the score should be used to determine whether the chart media is authentic and can be trusted to originate from the correct chart supplier.

Table 1.5.1: Confidence of Authenticity details

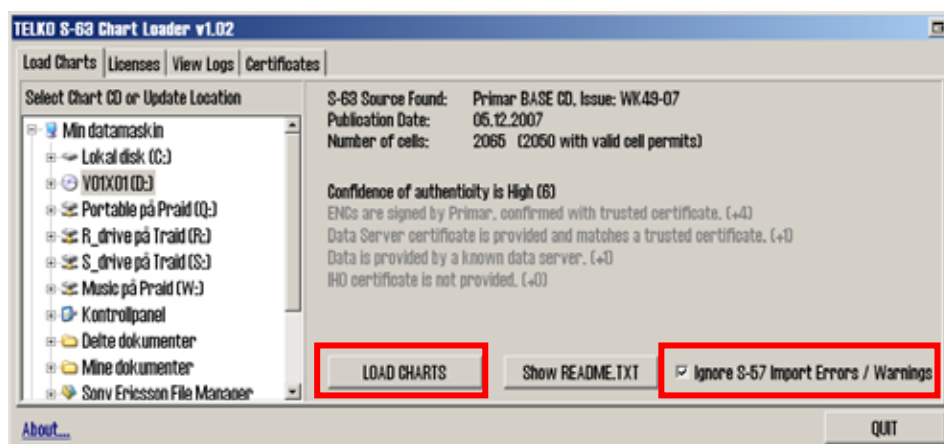
Value	Displayed Text	Explanation
+0	ENCs are not properly signed, data authenticity cannot be confirmed!	The chart media must include a signature for each chart on the media. These signatures are verified by the system.
+2	ENCs are signed with included data server certificate.	If the ENCs are signed by IHO or the supplier and this is confirmed with the installed certificates, the authenticity of the data has been <i>independently</i> confirmed and the data can be trusted.
+4	ENCs are signed by XXX, confirmed with trusted certificate.	
+7	ENCs are signed by IHO, confirmed with trusted certificate.	
		If the ENCs are signed and this is confirmed with a certificate included on the media. This only verifies that the signatures are technically correct. Since the certificate is included along with the data, the origin of the data is <i>not</i> independently confirmed.
		If the ENCs are not properly signed, the chart CD is not valid according to the S63 standard specification.
+0	Data Server certificate is not provided.	The chart media may or may not include a chart supplier (Data Server) certificate. If this certificate is provided and is identical to one of the installed and trusted certificates, this provides another independent confirmation of the media authenticity.
+0	Data Server certificate is provided, but does not match any trusted certificates.	
+1	Data Server certificate is provided and matches a trusted certificate.	
+0	Data is not provided by a known data server.	The system includes an internal list of known S63 chart suppliers (Data Servers). If the chart media is sourced from one of these known suppliers, this is a positive indicator of authenticity.
+1	Data is provided by a known data server.	
+0	IHO certificate is not provided.	The chart media may or may not include an IHO certificate file. If this certificate is provided and is identical to the installed IHO certificate, this provides another independent confirmation of the media authenticity
+0	IHO certificate is provided, but does not match trusted IHO certificate.	
+1	IHO certificate is provided and matches trusted IHO certificate.	
-1	ENC signature files are not present.	If the chart media does not include signatures for the charts on the media, the authenticity of the chart data cannot be confirmed.
-1	ENC signature file checksums are invalid.	If the chart signature checksums are invalid, the signature files may be manipulated and cannot be trusted.



- 5.
6. The 'Ignore S-57 Import Errors / Warnings' checkbox should be set according to the operator's preferences.

If this is not checked, the chart loading process will stop when S57 verification of the chart data produces warnings or errors. The warnings / errors will be displayed and the operator can determine if the chart should be loaded, skipped or if the loading process should be aborted. This requires the operator to be present for the entire chart loading procedure.

If this is checked, chart loading will continue automatically regardless of S57 verification errors / warnings encountered. Charts will only be skipped if *critical* errors are encountered. The display will provide no details on encountered S57 errors / warnings. **Note that the log for the chart loading session should be inspected on completion of the loading process. The log will include details of all warnings / errors.**



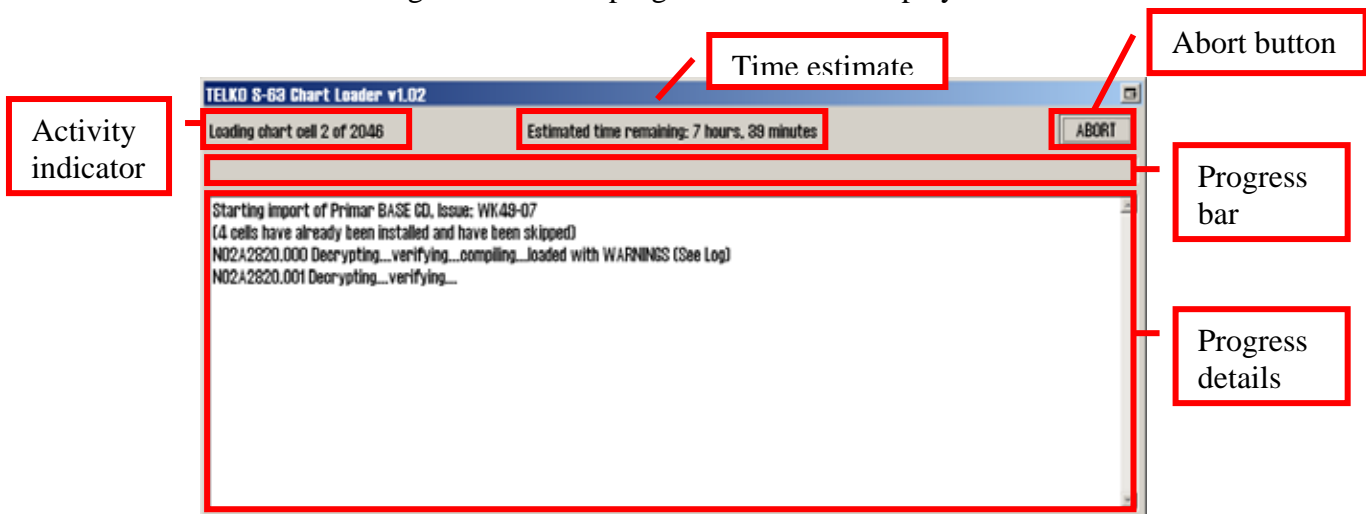
When ready, press the 'LOAD CHARTS' button to start the loading process.



- 7.

If the confidence of authenticity is **Low**, a warning is displayed to confirm that the operator wants to load from the unauthenticated chart media.

8. The chart loading starts and the progress interface is displayed.



The loading process will start with analyzing the charts that have previously been loaded. The 'Activity indicator' will display 'Initiating...' during this process. This may take several minutes if a larger number of ENC's from the chart supplier have been installed previously.

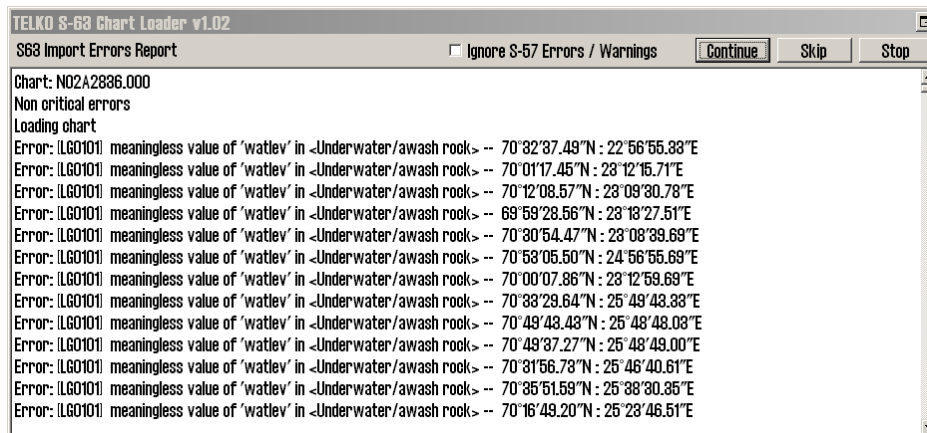
If any of the charts cells present on the media have been installed previously, these will be skipped and the 'Progress details' area will contain information about this.

Once the chart loading has started, the 'Activity indicator' and 'Progress bar' will show the chart loading progress by number of charts loaded. The 'Time estimate' text will provide an indication of how much time remains. *Note that this estimate is based on the average time consumption per chart loaded and may not be very accurate until a sufficient number of chart cells have been loaded.*

The 'Progress details' area will provide details on the loading process and the results of loading each chart cell.

The 'Abort' button can be pressed at any time. The chart loading will be stopped when this button is pressed. Charts that already have been loaded will be available in the TECDIS system, and loading of the same media can be restarted later at the same point by following this procedure again.

9. If 'Ignore S-57 Errors / Warnings' was not selected before starting the chart loading, the chart loading process will be paused each time S57 verification produces errors / warnings.

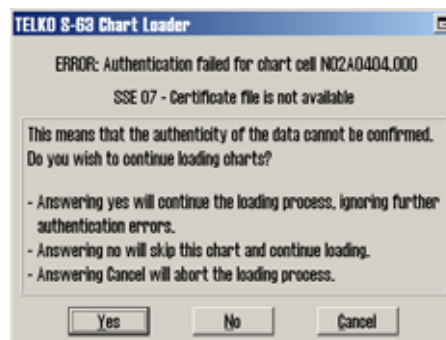


The operator can inspect the reported warnings / errors, and determine if the chart should be loaded regardless of the errors / warnings by pressing 'Continue', or if the chart should be skipped by pressing 'Skip', or if the chart loading process should be cancelled by pressing 'Stop'.

If the operator is uncertain whether S57 errors / warnings encountered may have an impact on chart validity and navigation, the chart supplier should be consulted.

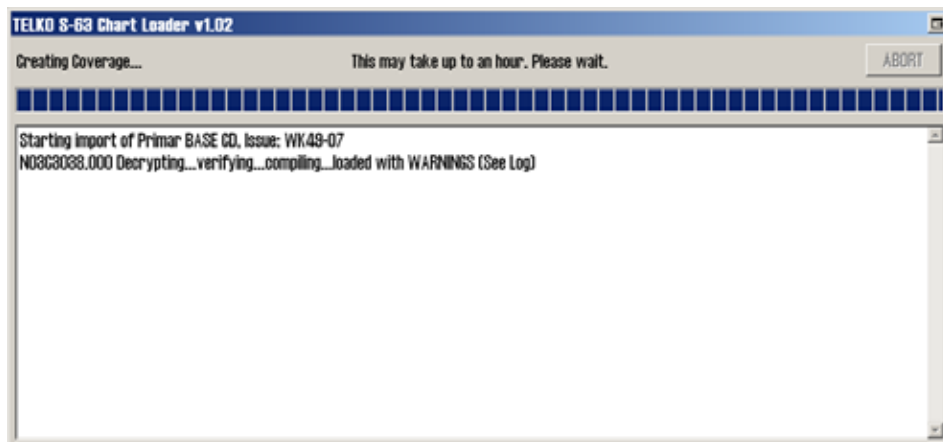
The operator can also choose to ignore further errors / warnings by checking 'Ignore S-57 Errors / Warnings'.

10. If authentication of any chart cells fails during chart loading, the following message will appear:



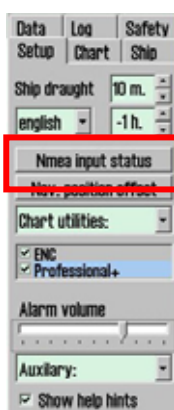
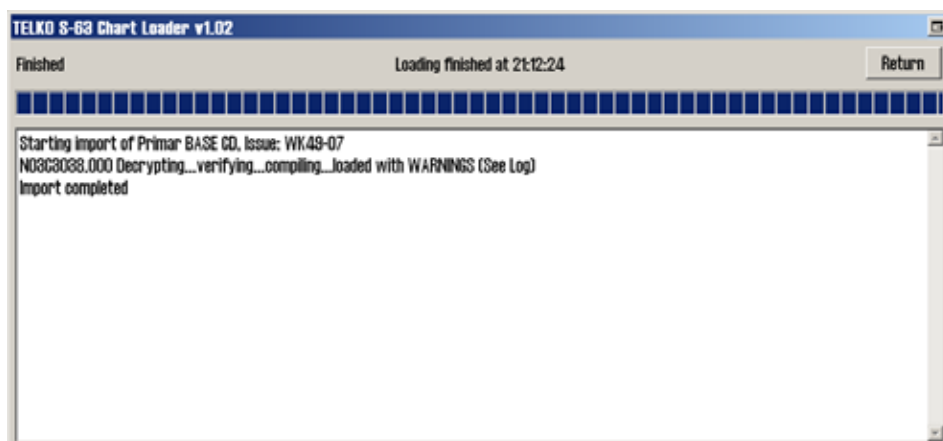
It is possible for the operator to override authentication failure and continue loading the chart cell by pressing 'Yes'. **This should be used with caution, and only if the operator is certain on the authenticity of the data.** If this is done, all remaining charts in the loading process will be loaded regardless of further authentication failures. Pressing 'No' allows the operator to skip the chart in question, and pressing 'Cancel' aborts the loading process.

11. When all chart cells have been loaded, the system must update chart coverage and internal data. This process cannot be aborted, and may take up to an hour.



12. When the chart loading process has been completed, the following display is shown. The operator may inspect the progress details for the entire loading process. Complete the chart loading by pressing the 'Return' button.

Any chart cells that have not been loaded are listed after import completion.



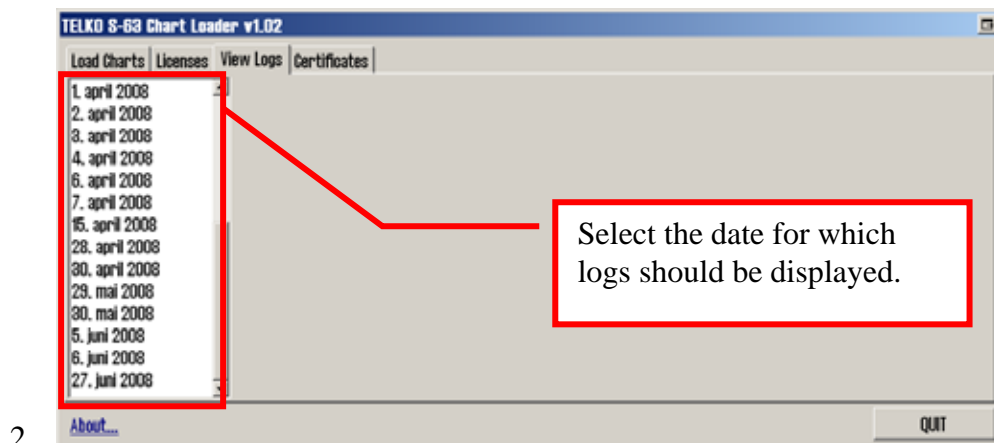
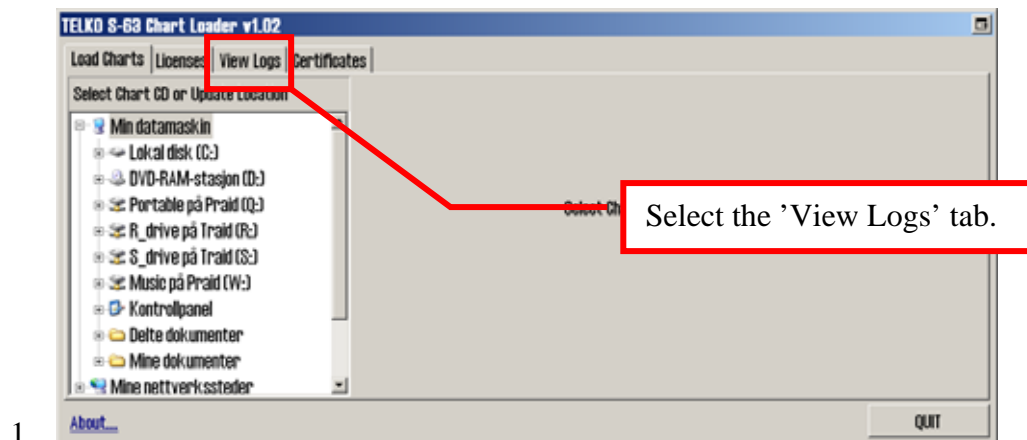
The loaded charts are now available as a chart database from within TECDIS. A separate database will be produced for each S63 chart supplier charts have been loaded from.

The database name follows the following form: “(S63-XX)”, where XX is the chart supplier code. For instance, charts loaded from the chart supplier Primar will be available in the database (S63-PM).

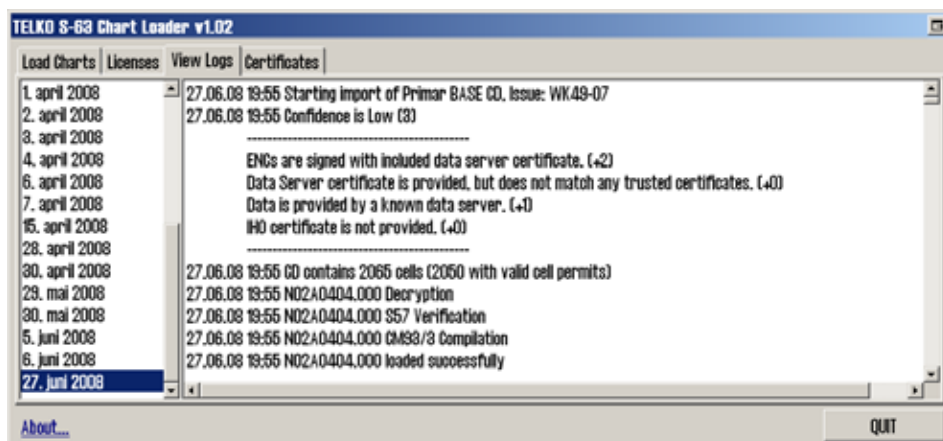
The database will be available for display selection in the ‘Setup’ folder in the TECDIS menus.

1.6. How to review logs and updates

Chart loading logs are available from within the Telko S63 Loader. These logs contain all the details of the S63 loading sessions that have been performed.



3. S63 loading logs for the selected date is displayed. Note that this window may be resized if needed.



4. Details on chart updates installed are available from within TECDIS, in the 'C-Map chart update' interface, under 'Updating Log Review Updates'. Refer to the TECDIS Operator's Guide, section 3.1.7 for details.

1.7. How to install certificates

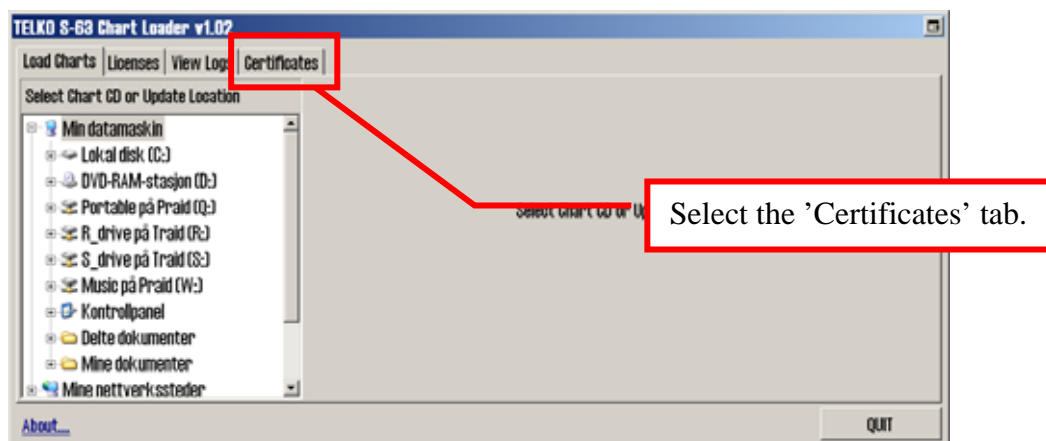
Certificates are used by S63 Loader to verify signatures and authenticity of chart cells and media. Two preinstalled certificates are provided, from IHO and PRIMAR.

If charts are to be loaded from other suppliers, it is strongly advisable that the certificate of the chart supplier is installed prior to starting chart loading.

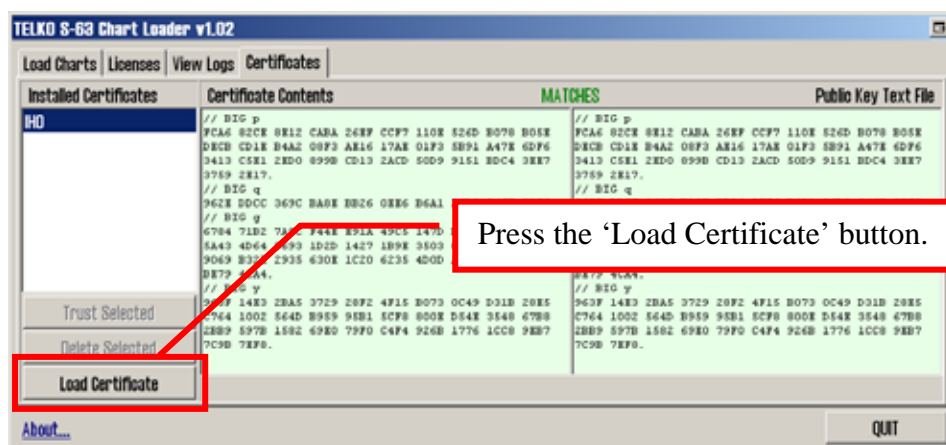
S63 Loader requires two files to install a certificate: 1. A .CRT certificate file, and 2. A public key .txt file. **These files should be obtained from the chart supplier.** They should both be named with the name of the chart supplier in upper case.

Use the following procedure to load the certificate:

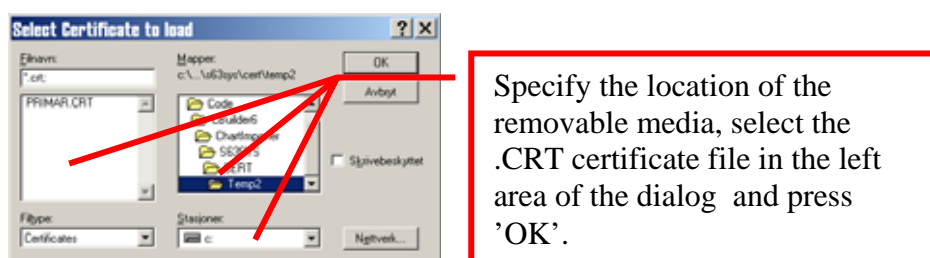
1. Place the certificate files provided by the chart supplier on removable media such as a USB memory stick, and insert this into the TECDIS system.



2.

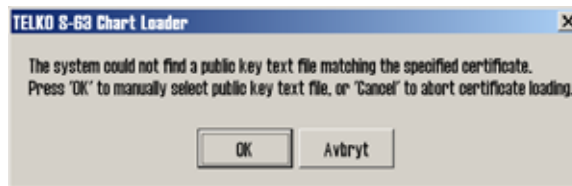


3.

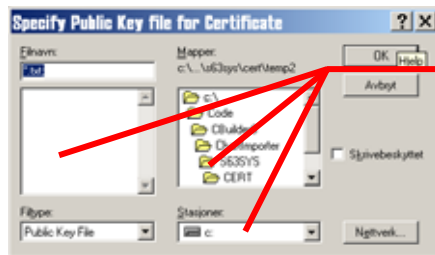


4.

5. If S63 Loader cannot find the public key .txt file in the same location as the certificate file, the following message is displayed:

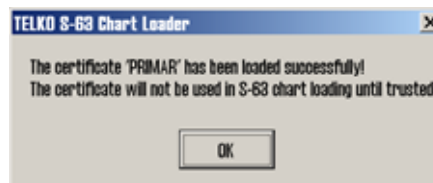


Press 'OK' to specify the location of the public key .txt file.

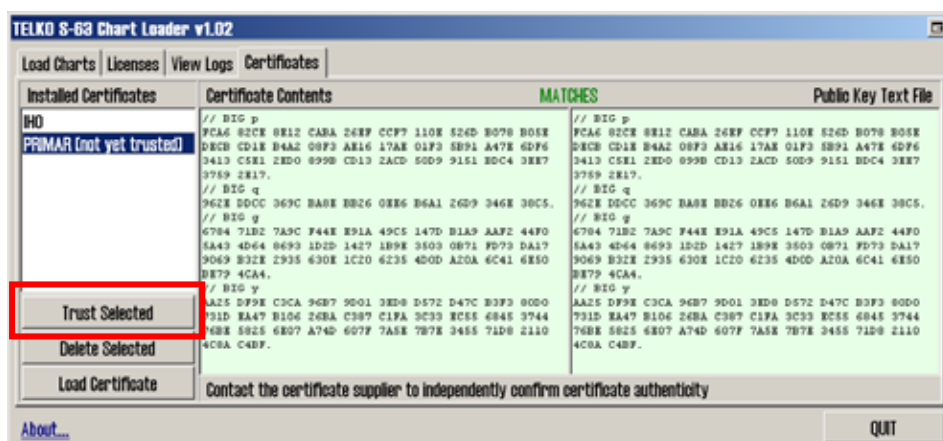


Specify the location of the removable media, select the .TXT public key file in the left area of the dialog and press 'OK'.

6. If the certificate is valid and the public key file matches, the following message is displayed:



8. The certificate has now been loaded, but will not be used in S63 loading until the operator has specified that it is trusted. The contents of the certificate and the public key text file is shown side by side in the main area of the display. These displays will match if the certificate is valid. These displays are green if the certificate matches the public key file and 'MATCHES' is displayed above the contents. If the contents does not match, these displays are red and 'MISMATCH' is displayed above the contents.



If desired, this certificate content can be verified directly with the certificate supplier as well. Once the operator is confident that the certificate can be trusted, this is done by pressing 'Trust Selected'.

9. Once the certificate has been trusted, the following message is shown, and certificate loading is complete.



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Section 2: Troubleshooting

Consult this section if any errors are encountered during chart loading or other S63 Loader operations.

2.1. Chart Loading

During S63 chart loading, the progress log may indicate warnings, errors or critical errors with a chart cell. Details regarding these warnings and errors can be looked up in the log viewer interface in S63 Loader.

If unsure about the significance of a given warning or error reported in the logs, contact your chart supplier for advice.

If any chart cells are not loaded, the progress window will report any cells with valid cell permits that have not been loaded after completion of the loading process. The detailed log for these cells should be inspected and the chart supplier should be contacted for advice.

2.2. Error Codes

In all cases when S63 Loader fails to perform an action, the reason for the failure is indicated with an error message. Consult the following table for details and remedial action.

Table 2.1: Error Descriptions

Error Message	Reason	Action
System files not found!	The S63 Loader installation is corrupt.	Repeat the installation of S63 Loader, following section 1.1 in this guide.
Format error loading installed cell permits	The cell permit storage has become corrupted.	Exit S63 Loader, delete the file C:\Program Files\TECIDS\S63SYS\PMT.DAT and reload all cell permits.
Failure to access cell permit storage	The cell permit storage has become corrupted.	
No eToken detected	The hardware codeplug in not connected to the system is missing or defective.	Verify that the hardware codeplug is connected to the system. If so, contact your TECDIS support contact.
Etoken interface error	The hardware codeplug driver and support files on the system are missing or corrupt.	Contact your TECDIS support contact.
Error initializing C-Map interfaces	Critical system components are missing or corrupt.	
Detected codeplug is not a Telko eToken	The hardware codeplug connected does not contain a valid TECDIS license.	

Error in C-Map registry settings	System settings for the hardware codeplug are missing or corrupt.	Contact your TECDIS support contact.
Error reading data from eToken	The hardware codeplug in not connected to the system is defective.	
Error writing data to eToken	The hardware codeplug in not connected to the system is defective.	
EToken has not been prepared for S63 use	The hardware codeplug need to be updated by Telko AS before it can be used for S63 chart loading.	
Unable to initialize GeoDatabase components	Critical system components are missing or corrupt.	
SSE 03 - Certificate is invalid	<p>During application startup: The affected certificate file or it's accompanying public key text file has become corrupted.</p> <p>During loading: The specified certificate file does not match the specified public key text file.</p>	<p>During application startup: Remove the affected certificate, obtain a new copy of the certificate and public key text file from the chart supplier or your TECDIS support contact and load the new certificate.</p> <p>During loading: Obtain a new copy of the certificate and public key text file from the chart supplier or your TECDIS support contact and attempt certicficate loading again.</p>
SSE 04 - Format of Certificate is incorrect	<p>During application startup: The affected certificate file has become corrupted.</p> <p>During loading: The specified certificate file is corrupt or not a valid certificate file.</p>	
SSE 05 - SA Digital Certificate file is not available	<p>During application startup: The application can not find the IHO certificate file.</p> <p>During loading: The application can not find the specified IHO certificate file name.</p>	
SSE 06 - SA Digital Certificate is invalid	<p>During application startup: The IHO certificate file or it's accompanying public key text file has become corrupted.</p> <p>During loading: The specified IHO certificate file does not match the specified IHO public key text file.</p>	
SSE 07 - Certificate file is not available	<p>During application startup: The application can not find the specified certificate file.</p> <p>During loading: The application can not find the specified certificate file name.</p>	

SSE 09 - Signature is invalid (format)	The signature file for an S63 encrypted cell on the chart media is invalid.	Contact your chart supplier.
SSE 09 - Signature is invalid (checksum)	The signature file for an S63 encrypted cell on the chart media is corrupt.	
SSE 09 - Signature is invalid (validation)	Signature authentication has failed for an S63 encrypted cell on the chart media is invalid.	
SSE 11 - Cell Permit file not found	<p>During loading: The specified cell permit file was not found or was not possible to load.</p> <p>During deletion: The specified cell permit was not found in internal cell permit storage (already deleted).</p>	<p>Loading: Verify that the specified file name exists and is readable by the system (try copying the file to another location to verify this).</p> <p>Deletion: Exit and restart S63 Loader and recheck the cell permit list. If the cell permit in question is still present on the list, delete the file C:\Program Files\TECIDS\S63SYS\PMT.DAT and reload all cell permits.</p>
SSE 12 - Cell Permit format is incorrect	<p>During application startup: The cell permit storage has become corrupted.</p> <p>During loading: The cell permit file being loaded is corrupted or incorrectly formatted.</p>	<p>During application startup: Exit S63 Loader, delete the file C:\Program Files\TECIDS\S63SYS\PMT.DAT and reload all cell permits.</p> <p>During loading: Verify that the specified file is a permit file. If so, contact the source of the permit file and request a new permit file.</p>
SSE 13 - Cell Permit is invalid (checksum is incorrect)	<p>During application startup: The cell permit storage has become corrupted.</p> <p>During loading: The cell permit file being loaded is corrupted.</p>	<p>During application startup: Exit S63 Loader, delete the file C:\Program Files\TECIDS\S63SYS\PMT.DAT and reload all cell permits.</p> <p>During loading: Contact the source of the permit file and request a new permit file.</p>
SSE 14 - Incorrect system date	The system date has been set back.	Restore the correct system date. If the problem is still present, contact your TECDIS support contact.
SSE 16 - ENC CRC value is incorrect	The S63 encrypted cell file for a chart cell is corrupt.	Contact your chart supplier.
ENC File not found	The S63 encrypted cell file for a chart cell is missing from the installation media.	

Cell signature file not found	The signature file for an S63 encrypted cell on the chart media is missing.	Contact your chart supplier.
ENC Edition number is invalid	The ENC edition number for a chart cell on the chart media is invalid.	
ENC Update number is invalid	The ENC update number for a chart cell on the chart media is invalid.	
SERIAL.ENC file is invalid	An essential file in the S63 data source is corrupt or invalid.	
CATALOG.031 file is invalid	The S63 data source catalog file is invalid or corrupt.	
Specified path does not contain valid S63 data	The specified path does not contain a valid S63 data source.	Verify that the specified path contains an S63 data source.
This system does not support the S63 version of specified data	S63 Loader only supports S63 data format version 1.0 of the S63 standard. The specified S63 source uses a different version.	Contact your chart supplier and request S63 media following version 1.0.
This system does not support this cell permit version	S63 Loader only supports cell permit format version 1 of the S63 standard. The specified cell permit file uses a different version.	Contact your chart supplier and request cell permits following version 1.
SA digital certificate has not yet been trusted	An IHO certificate has been loaded, but has not yet been marked as trusted.	Inspect the certificate in the S63 Loader certificate interface and mark it as trusted, according to step 8 of the certificate installation procedure in section 1.7.
Certificate has not yet been trusted	The specified certificate has been loaded, but has not yet been marked as trusted.	
Critical unspecified error	An unexpected internal error has occurred.	Exit and restart S63 Loader, and try the operation again. If the error occurs again, contact your TECDIS support contact.
Unspecified error		
Invalid argument		
Exception occurred		
Cryptographic error	The cryptographic subsystem of S63 Loader has encountered an internal problem.	
Secret key type mismatch	A problem with the internal cryptography logic has been encountered by S63 Loader.	
Checksum incorrect	Corruption of internal data or data being loaded has occurred.	

Appendix A: Revision History

Revision 1.0 (06.06.2008)

- First edition



M/V BOURBON TOPAZ



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