



VDR Replay

User Guide

For Use with Replay Software Version v1.3.5.13

COPYRIGHT

Copyright AMI Marine Ltd. 2023

All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, translated, or stored in any form or by any means, without the written permission of AMI Marine Ltd.

Technical details contained in this publication are subject to change without prior notice.

CONTENTS

Application Overview	4
User License	4
Installation of the VDR Replay Application.....	5
X-VDR/X2 & X-MDR Data Selection Wizard.....	6
Minimum Required Folder structure.....	6
Step 1 - Choose Dataset	7
Select New Dataset.....	7
Select New Zip File.....	8
Open Recent Dataset	9
Step 2 - Time Selection.....	10
Navigating the Folder Tree	10
Audio Scan	11
Data Replay.....	13
Media Controls.....	14
Timeline Interaction	14
Audio Controls.....	14
AIS Data	15
Map Symbols	15
Map View, Control and Navigation.....	15
NMEA Data	17
RADAR / ECDIS.....	18
Cameras (X-MDR Only).....	19
Instruments	19
Interfaces	20
X16-A Analogue to NMEA.....	20
X32-D Digital to NMEA.....	20
Docking.....	21
X-VHFR & X-VCR Data Selection Wizard	23
Choose Dataset	23
View Audio Waveforms (X-VHFR Only)	24
AIS Data	25
Map Symbols	25
Map View, Control and Navigation.....	25
NMEA Data	26
Audio Controls.....	26
Instruments	26
Course Recorder.....	27
Document Issue Details	28

Application Overview

The purpose of the VDR Replay application is to give as close an account as possible of the events leading up to an incident involving the vessel.

Accessing the Data

For the X2, X-VDR, X-MDR systems.

Downloading of the data for playback should be carried out using the VDR Remote Software application direct to your PC, or via the USB download option and connecting to your PC.

Further details may be found in the document '08009 - Remote Data Download Tool - User Guide'

For the X-VHFR, X-VCR systems.

Eject the Removable USB drive and connect to your PC.

Recorded Data

The data is recorded in one-minute segments, saved as ZIP files.

The X-VDR.xml configuration file and log files are also downloaded with the data for analysis and playback purposes.

X-VDR/X2 System

Each ZIP file contains:

- 1 x NMEA data file, saved as a text file format.
- Up to 10 x Audio files (1 per channel), saved as WAV files.
- Up to 6 x Radar and ECDIS image files are saved as PNG files.

X-MDR System

Each ZIP file contains:

- 1 x NMEA data file, saved as a text file format.
- Up to 8 x Audio files (1 per channel), saved as WAV files.
- Up to 2 x Radar or ECDIS image files are saved as PNG files.
- Up to 8 x Camera Video saved as MP4 files.

X-VHFR System

Each ZIP file contains:

- 1 x NMEA data file, saved as a text file format.
- 1 x Audio file (Stereo channel), saved as a WAV file.

X-VCR System

Each ZIP file contains:

- 1 x NMEA data file, saved as a text file format.

Replay Installation Requirements

Install the software on a windows computer running Windows 7 or above, with administrator privileges.

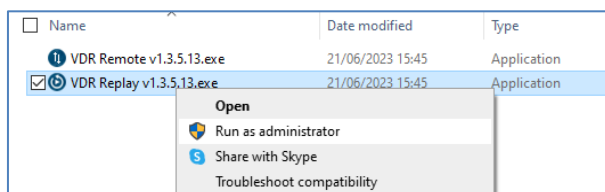
Once installed, click on the program icon to run the software.

User License

The VDR Replay is license free for investigative authorities but should not be reproduced or distributed without prior written consent of AMI Marine Ltd.

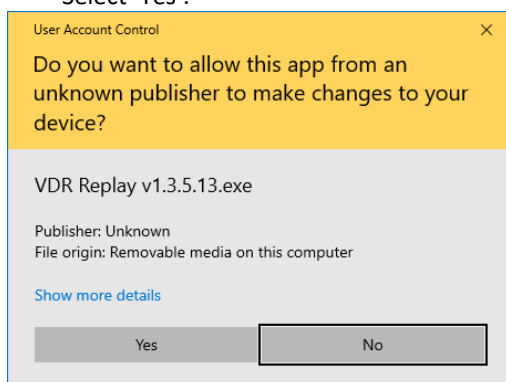
Installation of the VDR Replay Application

Locate the file, right click on the file a select 'Run as Administrator'.

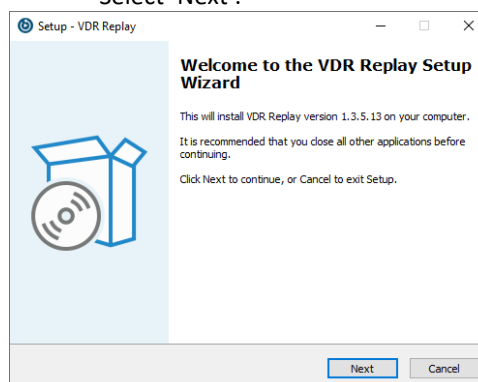


You will then be asked 'Do you want to allow this app from an unknown publisher to make changes to your device?'.

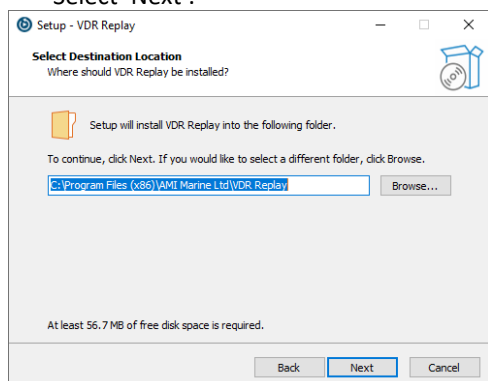
Select 'Yes'.



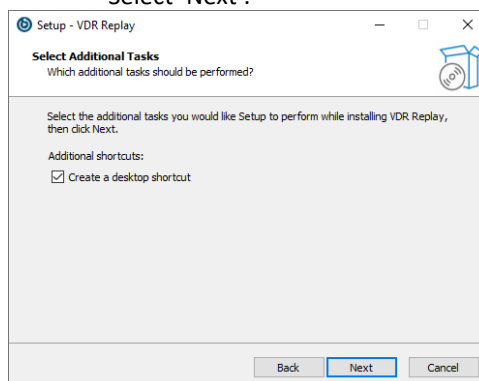
Select 'Next'.



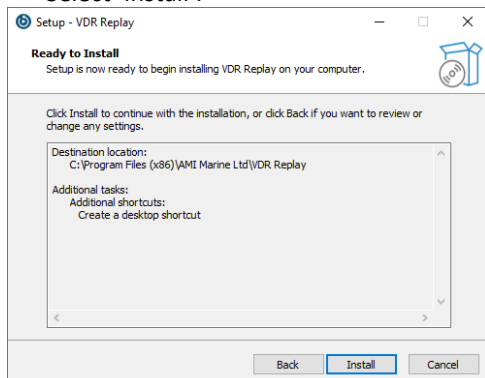
Select 'Next'.



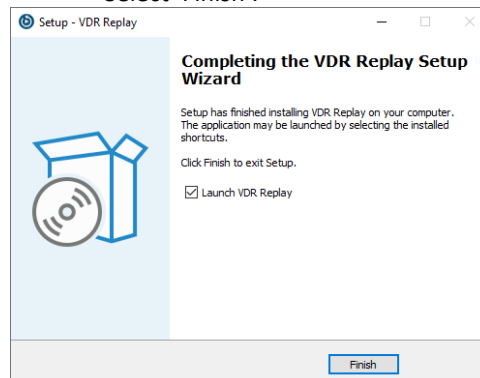
Select 'Next'.



Select 'Install'.



Select 'Finish'.



X-VDR/X2 & X-MDR Data Selection Wizard

The VDR Remote application download procedure allows the complete data set to be downloaded as a single zip file. This option may have been deselected and the data will be downloaded and available as previous releases.

On opening the VDR Replay application, **Step 1** of the Data Selection Wizard will be displayed to assist with selecting the items required for replaying of the data.

The dataset's folder structure for v1.3.5.13, as follows:

The dataset Folder (imonumber-yymmdd-hhmm) Note! This is the date and time is of when the download was conducted, and that older Datasets from v1.3.5.12 and earlier do not have the IMO Number in the folder name.

Minimum Required Folder structure

Occasions have occurred that after a vessel has downloaded the data from the VDR, they have not passed on all the necessary folders and files to a third party i.e., the office or investigating authorities, this section details the minimum data download and folder structure to be able to complete a playback operation.

The Archive folder with the Data and the Config and Master folders, both with the Approvals.xml and X-VDR.xml configuration files.

If for instance you only have data zip files in an hourly data folder '1100'.

This '1100' folder is required to be in a folder named 'YYYYMMDD' for e.g. in the below screen '20230522'.

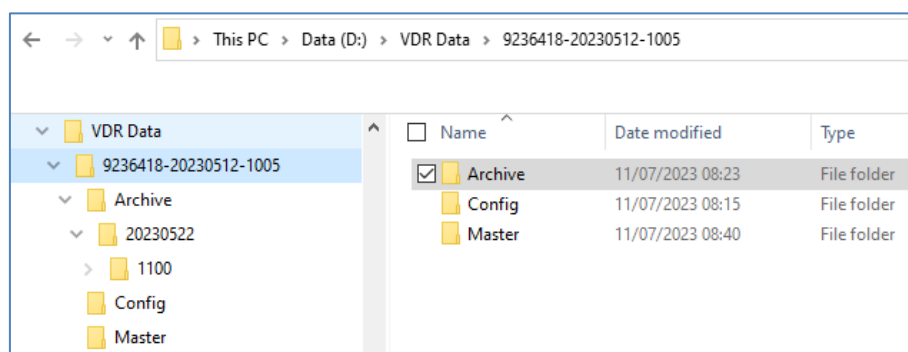
This '20230522' folder is now required to be in a folder named 'Archive'.

The 'Archive' folder is required to be in a root folder e.g. in the below screen '9236418-20230512-1005'.

This folder name is not important and can be the vessels name.

Then into the folder named '9236418-20230512-1005' along with the 'Archive' folder, copy the 'Config' and 'Master' folders.

Note! no other folders are necessary.



Step 1 - Choose Dataset

A dataset can be selected by choosing one of the following 3 options.

1. Select New Dataset ...
2. Select New Zip File ...
3. Selecting a dataset from the 'Open Recent Dataset' list

VDR Replay - Data Selection Wizard

Step 1 - Choose Dataset
Use this page to select the dataset to be replayed

Open Recent Dataset

System Details

System Type:
Serial Number:

Vessel Details

Vessel Name:
IMO Number:
MMSI Number:
Owner:

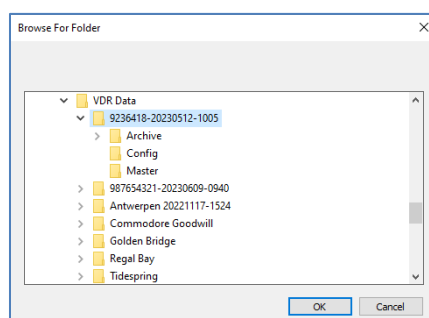
Select New Dataset ... Select New Zip File ... Remove Selected Dataset From Recently Used List

Cancel << Back Next >> Finish

The 'Open Recent Dataset' list is initially empty until at least one dataset has been Replayed.

Select New Dataset.

When Select New Dataset is chosen a folder browser dialog will open, as shown below:



Select the required dataset then press OK. It will now be available in the 'Open Recent Dataset' list and populate the System and Vessels Details as shown below. Now press Next > .

VDR Replay - Data Selection Wizard

Step 1 - Choose Dataset
Use this page to select the dataset to be replayed

Open Recent Dataset

D:\VDR Data\9236418-20230512-1005

System Details

System Type: X2
Serial Number: AMI-33815

Vessel Details

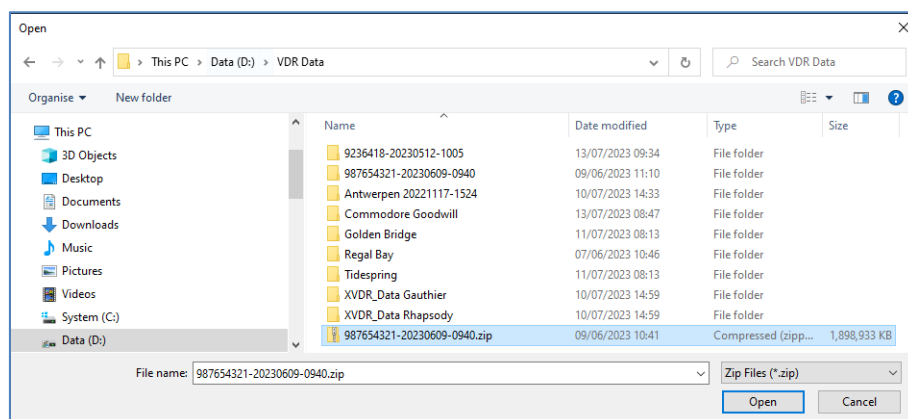
Vessel Name: Castillo de Villalba
IMO Number: 9236418
MMSI Number: 224383000
Owner: Empresa Naviera Elcano

Select New Dataset ... Select New Zip File ... Remove Selected Dataset From Recently Used List

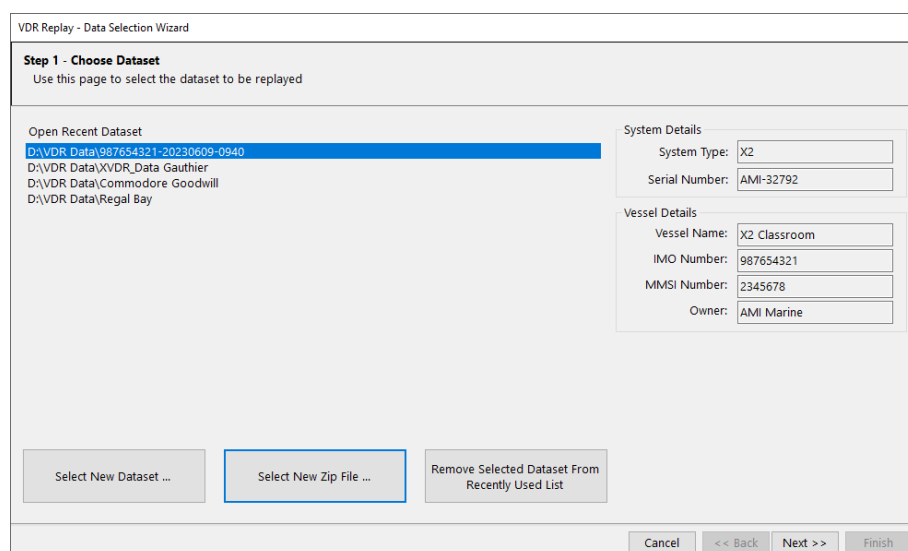
Cancel << Back Next >> Finish

Select New Zip File.

When Select New Zip File is chosen a browser dialog will open, navigate to the location of the zip file as shown below:



Click on Open, the Folders and Files will be extracted from the zip file to a folder of the same name and be made available in the 'Open Recent Dataset' list and populate the System and Vessels Details as shown below.



Select the extracted dataset then press Next > >.

Open Recent Dataset

An example of a populated list is shown below:

VDR Replay - Data Selection Wizard

Step 1 - Choose Dataset
Use this page to select the dataset to be replayed

Open Recent Dataset

- D:\VDR Data\XVDR Data Gauthier
- D:\VDR Data\Commodore Goodwill**
- D:\VDR Data\Regal Bay

System Details

System Type: X2 S-VDR

Serial Number: AMI-34310

Vessel Details

Vessel Name: COMMODORE GOODWILL

IMO Number: 9117985

MMSI Number: 309536000

Owner: CONDOR MARINE

Select New Dataset ... Select New Zip File ... Remove Selected Dataset From Recently Used List

Cancel << Back Next >> Finish

As can be seen above, selecting a dataset populates the System Details and Vessel Details.

The Dataset dropdown window holds up to a maximum of 20 datasets.

If a dataset is no longer needed, it can be removed from the list by selecting the specific dataset in the list, then clicking the 'Remove Selected Dataset from Recently Used List' button.

To proceed with the dataset selected for replay select the Next button to go to the next page of the wizard.

Double-clicking on a dataset in the MRU will select it and go straight to the next page.

If you need to remove Datasets from the list highlight the dataset and select 'Remove Selected Dataset From #Recently Used List'.

Step 2 - Time Selection

The Data Selection Wizard shows an overview of the dataset's structure, as shown below:

VDR Replay - Data Selection Wizard

Step 2 - Time Selection
Use this page to select the time/date range of files within the dataset to replay. You may also perform an optional Audio Scan of the selected files

D:\VDR Data\987654321-20230609-0940

View Audio Waveforms Stop

Archive



- 20230608 : 03 Hours in Day Folder
 - 1600 : 60 Files in Hour Folder
 - 1500 : 60 Files in Hour Folder
 - 1400 : 60 Files in Hour Folder

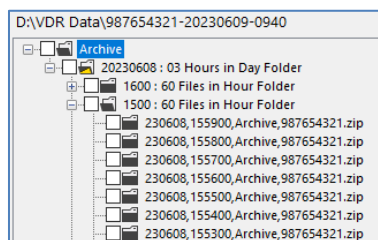
M1	
M2	
M5	
M6	
V9	
V10	

Replay Start: 14:00:00 UTC 2023-06-08 Replay End: 16:59:00 UTC 2023-06-08

Cancel << Back Next >> Finish

Navigating the Folder Tree

Selecting the '+'  next to a folder will expand and the '-'  button will collapse it.



Checking the box next to a folder will select that folder for playback; if no folders are checked, the whole dataset shown will be played back.

VDR Replay - Data Selection Wizard

Step 2 - Time Selection
Use this page to select the time/date range of files within the dataset to replay. You may also perform an optional Audio Scan of the selected files

D:\VDR Data\987654321-20230609-0940

View Audio Waveforms Stop

Archive

- 20230608 : 03 Hours in Day Folder
 - 1600 : 60 Files in Hour Folder
 - 1500 : 60 Files in Hour Folder
 - ☒ 230608,155900,Archive,987654321.zip
 - ☒ 230608,155800,Archive,987654321.zip
 - ☒ 230608,155700,Archive,987654321.zip
 - ☒ 230608,155600,Archive,987654321.zip
 - ☒ 230608,155500,Archive,987654321.zip
 - ☒ 230608,155400,Archive,987654321.zip
 - ☒ 230608,155300,Archive,987654321.zip
 - ☒ 230608,155200,Archive,987654321.zip
 - ☒ 230608,155100,Archive,987654321.zip
 - ☒ 230608,155000,Archive,987654321.zip
 - ☒ 230608,154900,Archive,987654321.zip
 - ☒ 230608,154800,Archive,987654321.zip
 - ☒ 230608,154700,Archive,987654321.zip
 - ☒ 230608,154600,Archive,987654321.zip
 - ☒ 230608,154500,Archive,987654321.zip
 - ☒ 230608,154400,Archive,987654321.zip
 - ☒ 230608,154300,Archive,987654321.zip
 - ☒ 230608,154200,Archive,987654321.zip
 - ☒ 230608,154100,Archive,987654321.zip

M1	
M2	
M5	
M6	
V9	
V10	

Replay Start: 15:00:00 UTC 2023-06-08 Replay End: 15:59:00 UTC 2023-06-08

Cancel << Back Next >> Finish

The Replay Start and Replay End boxes indicate the timespan of the selected data, as shown above.

There are special folder indicators identified by the 📁 or 📁 icons; these indicate that an incident has been logged at the time indicated as shown below.

VDR Replay - Data Selection Wizard

Step 2 - Time Selection
Use this page to select the time/date range of files within the dataset to replay. You may also perform an optional Audio Scan of the selected files

D:\VDR Data\Regal Bay

☐ Archive

☒ 20190408 : 01 Hours in Day Folder

☒ 1500 : 10 Files in Hour Folder

- ☒ 190408,151100,Archive,9053658.zip
- ☒ 190408,151000,Archive,9053658.zip
- ☒ 190408,150900,Archive,9053658.zip
- ☒ 190408,150800,Archive,9053658.zip
- ☒ 190408,150700,Archive,9053658.zip
- ☒ 190408,150600,Archive,9053658.zip
- ☒ 190408,150500,Archive,9053658.zip
- ☒ 190408,150400,Archive,9053658.zip
- ☒ 190408,150300,Archive,9053658.zip
- ☒ 190408,150200,Archive,9053658.zip

View Audio Waveforms Stop

M1

M2

M3

M4

M5

M6

V1

Replay Start: 15:02:00 UTC 2019-04-08 Replay End: 15:11:00 UTC 2019-04-08

Cancel << Back Next >> Finish

Audio Scan

The timespan can be further refined by means of an audio scan of the selected files.

This can be used to highlight periods of high audio activity, which may be of interest when investigating an incident.

To perform an audio scan, select the 'View Audio Waveforms' button.

Please Note: An audio scan is both processor and memory intensive, therefore, it is best to perform scans no longer than 60 minutes, unless the replay application is running on a high spec machine.

The audio scan be stopped at any time by pressing the 'Stop' button.

Once finished the audio scan may look like this:

VDR Replay - Data Selection Wizard

Step 2 - Time Selection
Use this page to select the time/date range of files within the dataset to replay. You may also perform an optional Audio Scan of the selected files

D:\VDR Data\987654321-20230609-0940

☐ Archive

☒ 20230608 : 03 Hours in Day Folder

☒ 1600 : 60 Files in Hour Folder

☒ 1500 : 60 Files in Hour Folder

☒ 1400 : 60 Files in Hour Folder

View Audio Waveforms Stop Rendering complete

M1

M2

M5

M6

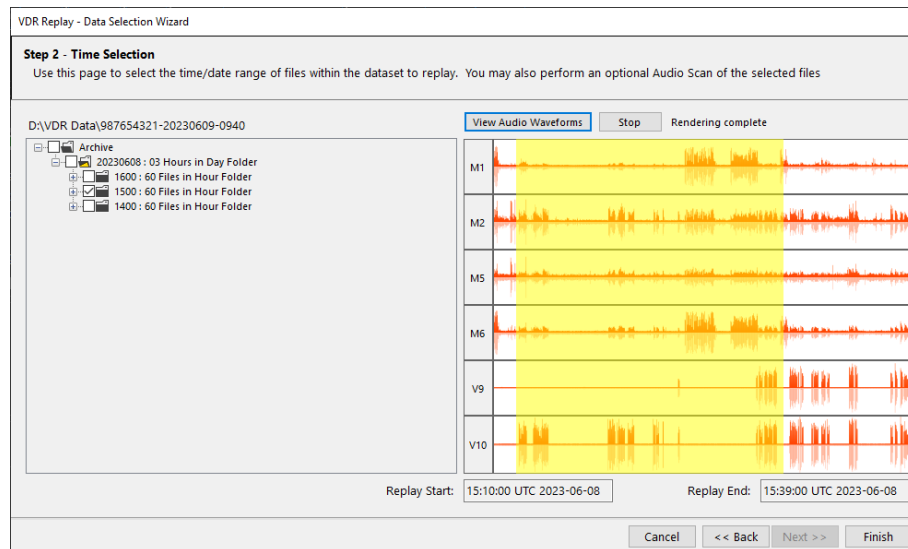
V9

V10

Replay Start: 15:00:00 UTC 2023-06-08 Replay End: 15:59:00 UTC 2023-06-08

Cancel << Back Next >> Finish

If an area of high audio activity is identified for replay, this can be selected by right-clicking and dragging anywhere in the waveform view; the selected area is highlighted in yellow, as shown below:

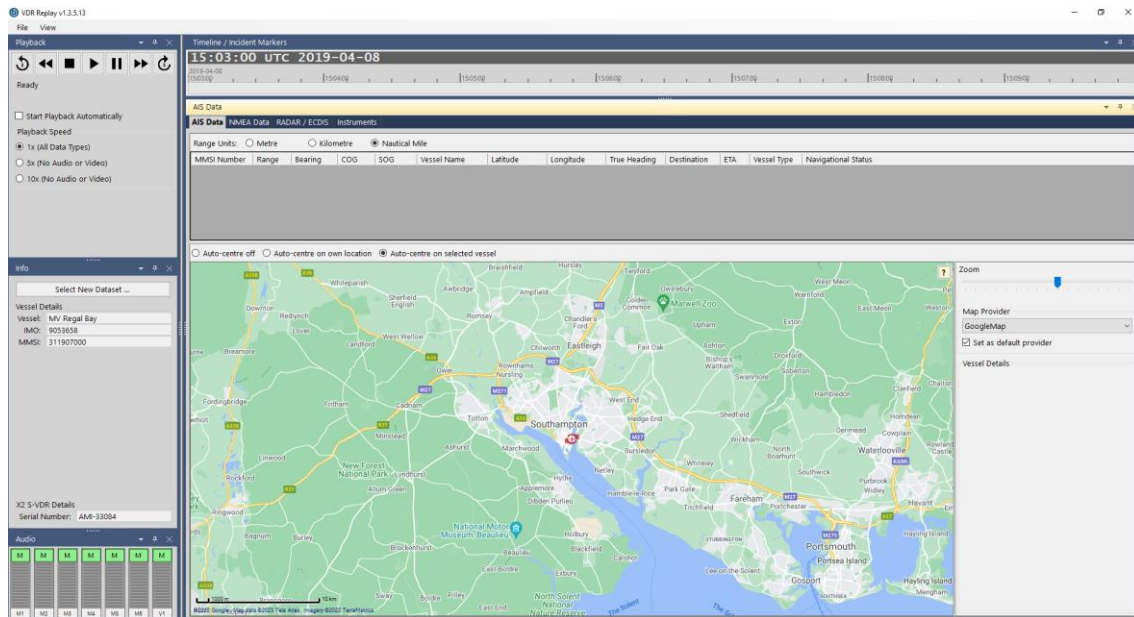


Note also that in the above example the Replay Start and Replay End have again been adjusted to reflect the highlighted area.

Once you are satisfied with the data selected for replay, select 'Finish' to load the data into the main replay window.

Data Replay

The main replay screen is, by default, laid out as shown below:



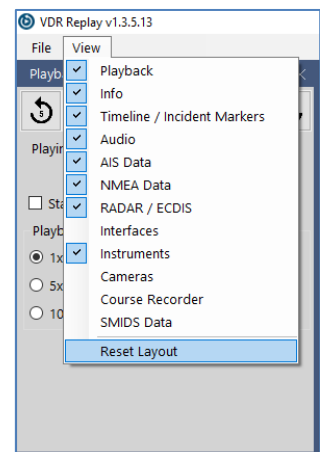
The main sections are:

1. 'Playback' - contains the media controls.
2. 'Info' - Used to display vessel information and to select a new dataset.
3. 'Audio' - shows the audio level of each channel. Each individual channel may be muted.
4. 'Timeline / Incident Markers'
 - a. Shows the UTC time of the data being replayed.
 - b. Shows the time period of the data being played.
 - c. Shows the positions of any incident markers.
 - d. Shows replay progress.
5. 'AIS Data' - displays:
 - a. a table of AIS data received from surrounding vessels.
 - b. a map showing vessel locations and heading.
 - c. chosen vessel details.
6. 'NMEA Data' - shows the raw NMEA data.
7. 'RADAR / ECDIS' - shows each video input RADAR or ECDIS where applicable.
8. 'Instruments' - shows the GPS, Heading, Wind and Rudder data as a GUI.

Other views selectable are.

9. 'Interfaces' - shows decoded information from X32-D, X-16-A interfaces.
10. 'Cameras' - shows each CCTV camera *.
11. 'Course Recorder' - Data is presented in a table format.
12. 'SMIDS Data' - shows the data in the SMIDS format.

* Cameras are only supported in the X-MDR systems.



Media Controls



The Media Control buttons operate as follows:

Button	Operation
	Skip Back 5 Minutes
	Skip Back 1 Minute
	Stop Playback
	Start Playback
	Pause Playback
	Skip Forward 1 Minute
	Skip Forward 5 Minutes

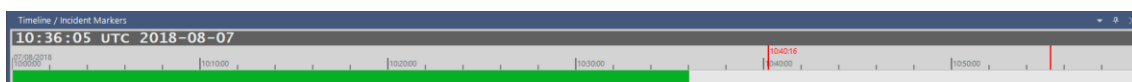
Note: When skipping forwards or backwards, playback will jump to the nearest minute.

Timeline Interaction

The timeline indicates the progress, time and incidents during playback; initially it will show the Replay Start time defined in the Data Selection Wizard.



As playback progresses, the progress bar and time indication will update accordingly:

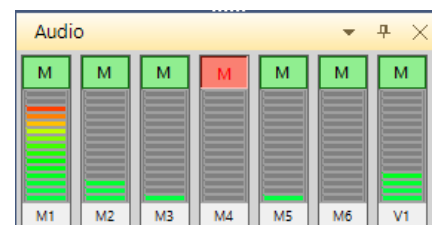


The timeline can also be used to move playback forward or backward by clicking on a point in the timeline.

Note: When clicking on the timeline, playback will jump to start of minute clicked.

Audio Controls

The 'Audio' display shows the audio level of each of the active channels. M1 to M8 are microphones, V1 and V2 are VHF channels.







The 'M' at the top of each level indicator is the 'Mute' control.

Whilst green the audio channel will be active and will be played back.

Clicking on the green 'M' will cause it to turn red and the channel will be muted. The muted channel will no longer be heard during the playback.

Clicking the red 'M' will turn it green and the channel will now be unmuted, and once again become active.

Map Symbols

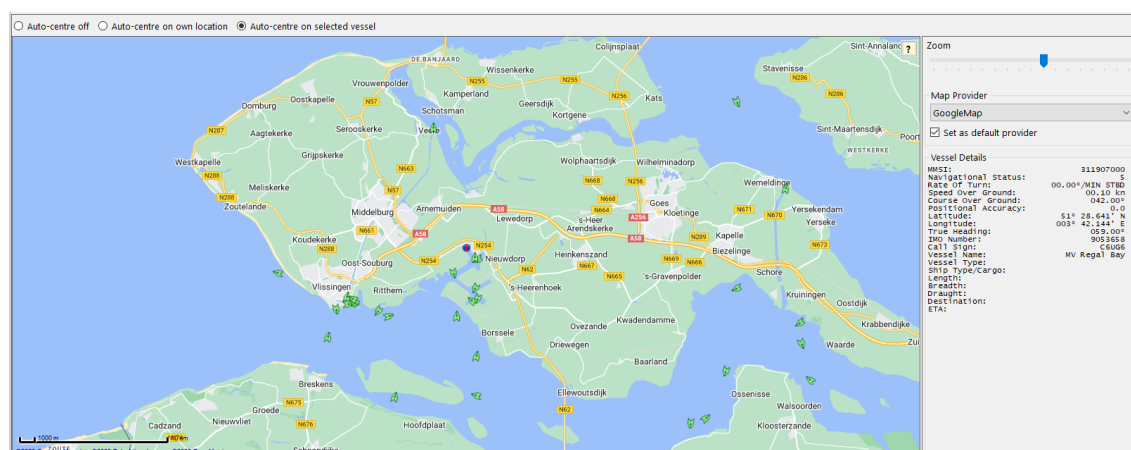
Symbol	Meaning
	Moored, not selected
	Moored, selected
	Moving, not selected
	Moving, selected

1. Clicking on its entry in the table at the top of the AIS display
2. Clicking on the vessel symbol on the map

When a vessel is moving, its icon will be rotated to indicate its course.

AIS Data												
AIS Data NMEA Data RADAR / ECDIS X32-D / X16-A / BNWAS interfaces												
Range Units: <input type="radio"/> Metre <input type="radio"/> Kilometre <input checked="" type="radio"/> Nautical Mile												
MMSI Number	Range	Bearing °	COG °	SOG Kn	Vessel Name	Latitude	Longitude	True Heading	Destination	ETA	Vessel Type	Navigational Status
636017973	3.544	155.85	-098.60	03.00		44° 43.202 N	009° 52.009 E	309				Under way using engine
636016125	43.723	156.55	069.00	00.40		43° 26.379 N	010° 14.048 E	232				Under way using engine
305223000	0	0	180.00	00.20	UAL FORTITUDE	44° 06.431 N	009° 49.993 E	213				Moorred
247064730	9.98	155.07	122.20	03.30		43° 57.394 N	009° 55.636 E	511				
2470079	40.906	176.3				43° 25.674 N	009° 55.648 E					
323017571	22.92	162.45	-085.99	00.00		43° 25.672 N	010° 18.268 E	173				Moorred

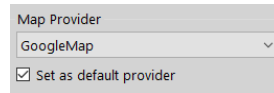
The Map view shows the geographical location of all vessels whose AIS data has been played back.



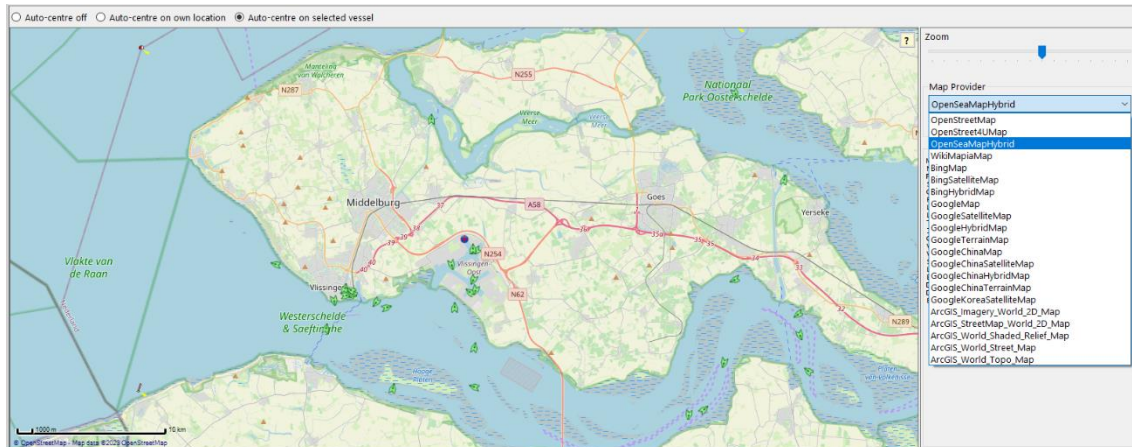
0803 VDR Replay User Guide Iss01 Rev09.docx

The 'Map Provider' menu in the right-hand panel will allow a choice of maps from several providers to allow map display in areas where access to certain mapping sites is limited.

Once a Map Provider has been selected it can be set as the default map provider for future replay sessions.





Selecting e.g. 'OpenSeaMapHybrid' will give a better detail of the marine environment as shown below.



Mouse Controls:

- Holding the Right Button and moving the mouse will allow movement around the map.
- Placing the mouse pointer over a target will display its MMSI number.
- Left clicking on a target will highlight and show details of the chosen target in the right-hand information panel.
- The mouse scroll wheel may be used to zoom in and out of the map.
- The zoom slider in the right-hand panel may also be used to zoom in and out of the map.

Selecting the  button on the map will display a list of Shortcut Keys:

Selecting  will hide the help.

Keyboard Shortcuts:

Shortcut Keys:	
0	Centre Map
+	Zoom In
-	Zoom Out
Left Arrow	Move Left
Right Arrow	Move Right
Up Arrow	Move Up
Down Arrow	Move Down
Mouse Scroll	Zoom In/Out
Right Mouse + Drag	Move Map

Key	Function
0	Centre Map on Own Ship Location
+	Zoom In
-	Zoom Out
Left Arrow	Move Left on Map (with Auto-centre off)
Right Arrow	Move Right on Map (with Auto-centre off)
Up Arrow	Move Up on Map (with Auto-centre off)
Down Arrow	Move Down on Map (with Auto-centre off)

The map can be automatically centred as follows:

1. Auto-centre off No automatic centring takes place.
2. Auto-centre on own location Map remains centred on VDR's location.
3. Auto-centre on selected vessel Map tracks the movement of the selected vessel.

Serial Data messages can be displayed by selecting the 'NMEA Data' tab, as shown below:



Filter: Show Time Pause

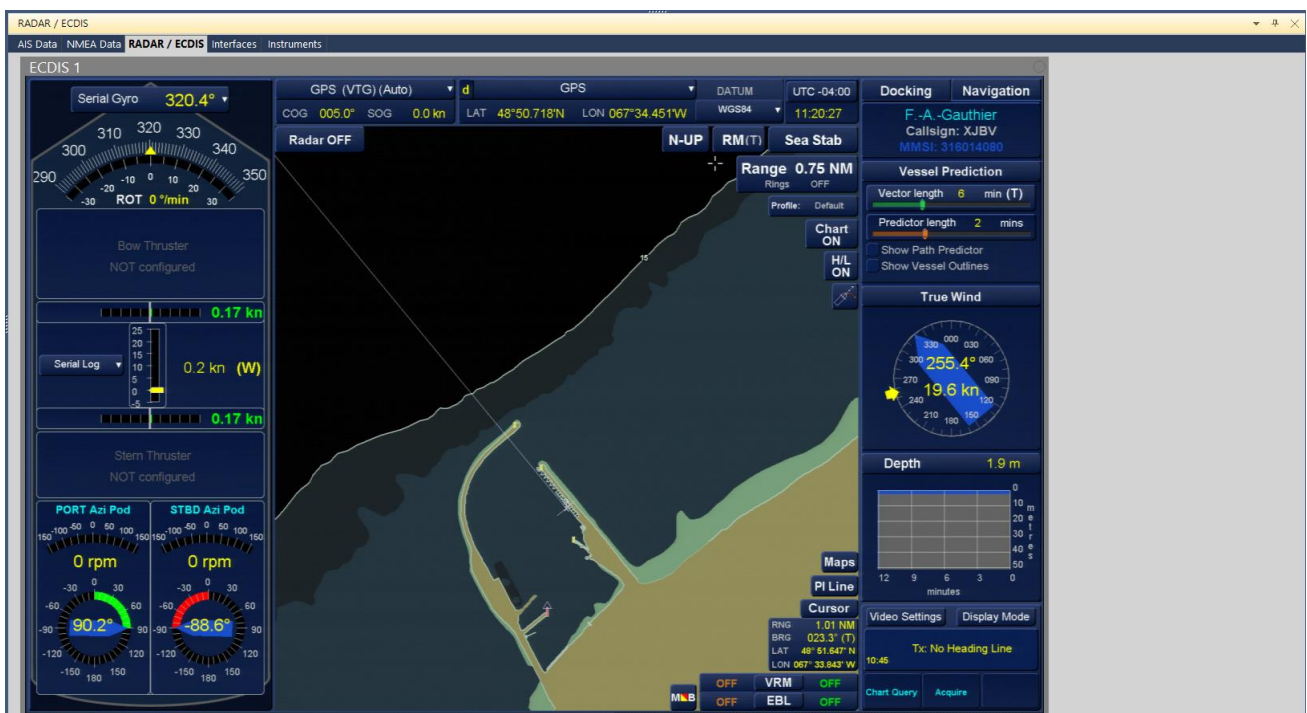


RADAR / ECDIS

RADAR and ECDIS images are displayed by selecting the RADAR / ECDIS tab, as shown below:



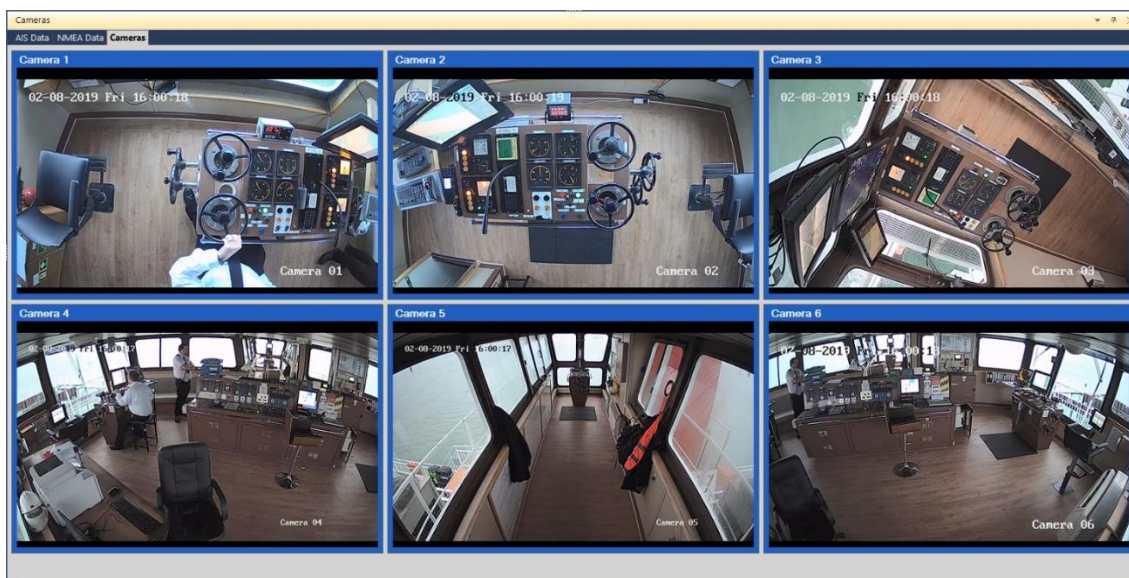
Clicking on an individual thumbnail will maximise it to fill the display area, as shown below:



Clicking again on the display will return the display to show all available images.

Cameras (X-MDR Only)

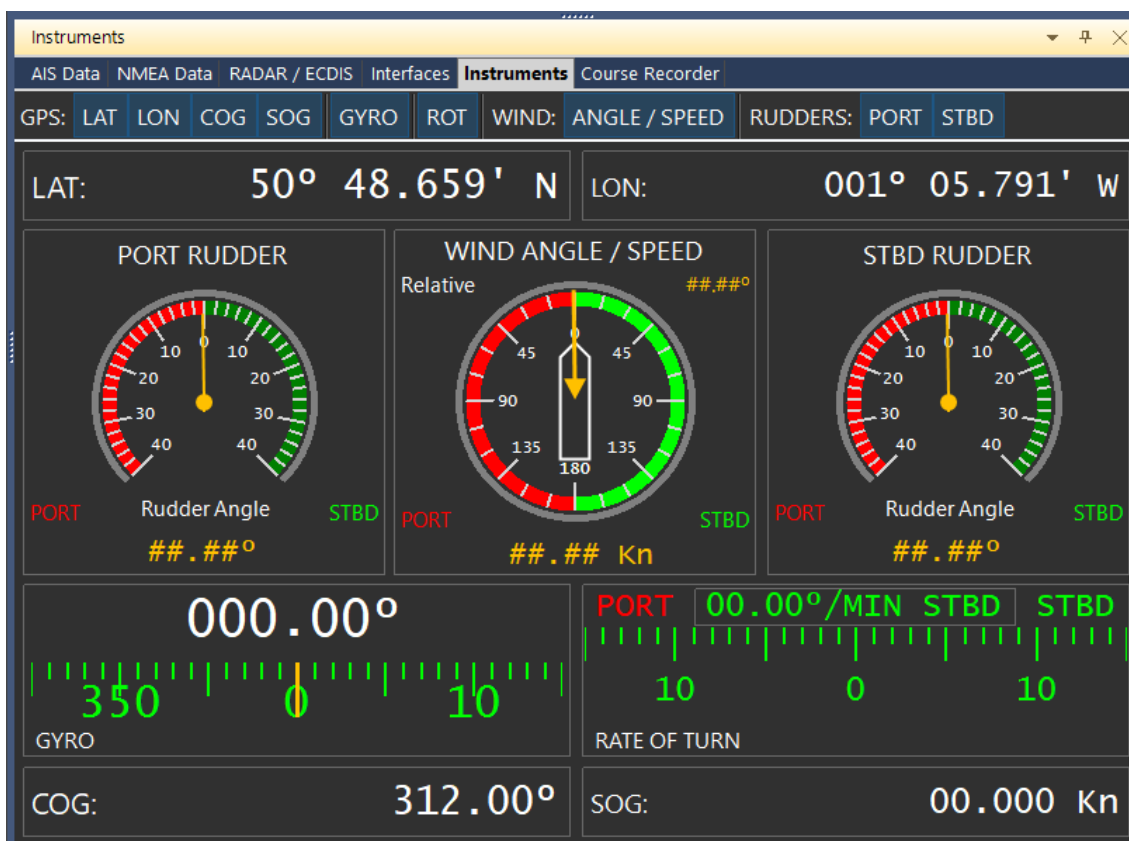
The cameras are displayed by choosing the Cameras tab, as shown below:



Instruments

The instruments are displayed by choosing the Instruments tab, as shown below:

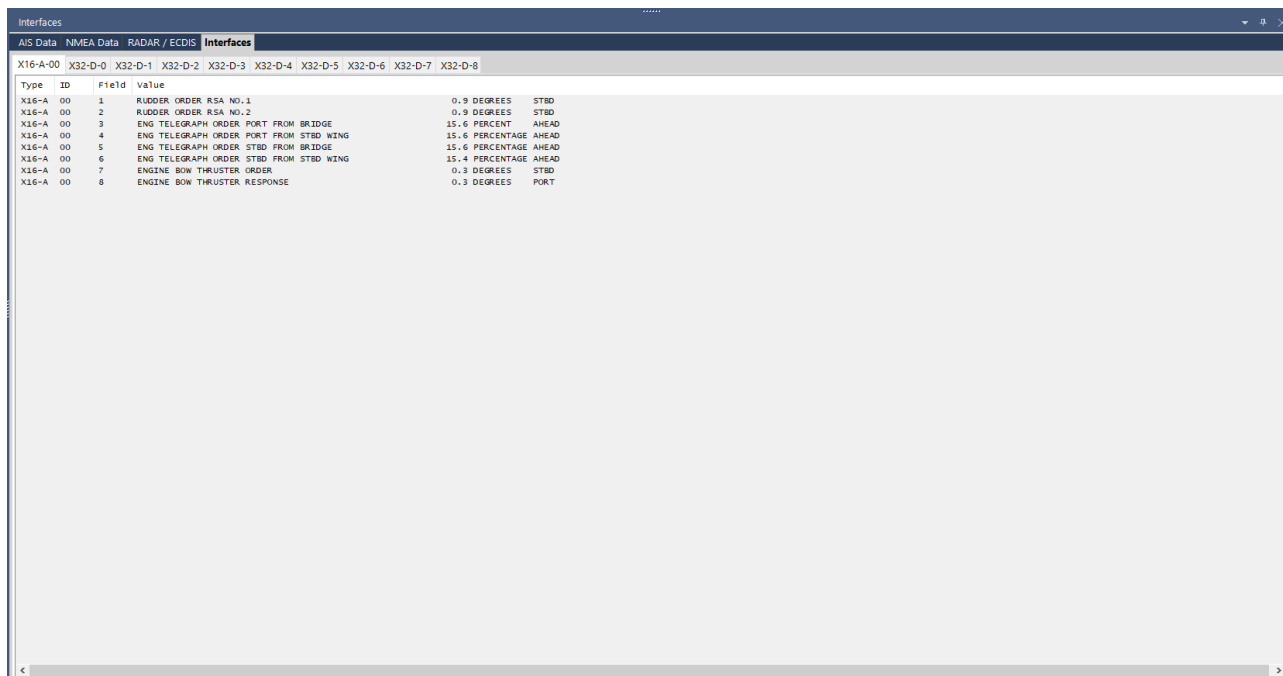
The flashing **###** indicates that the data required for that instrument is not available.



Interfaces

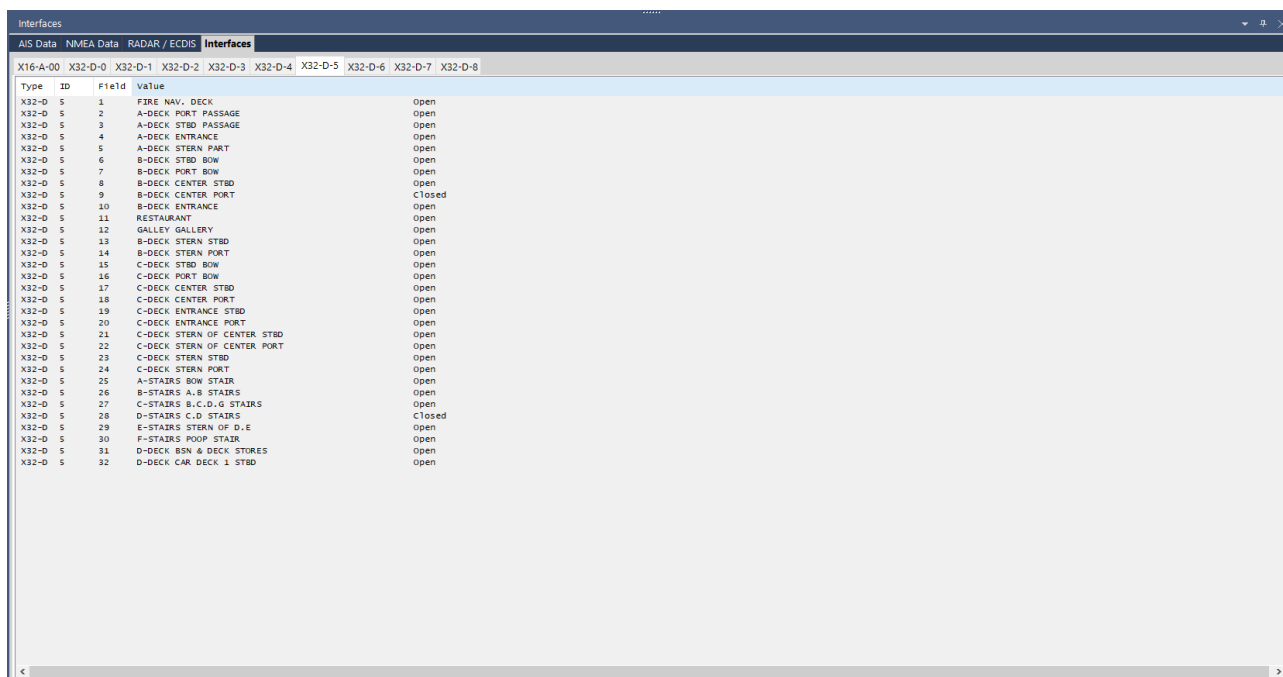
The data from X16-A, X32-D and BNWAS are displayed by selecting the Interfaces tab. Each interface is displayed in a separate tab, as shown in the examples below:

X16-A Analogue to NMEA



Type	ID	Field	Value
X16-A	00	1	RUDDER ORDER RSA NO.1
X16-A	00	2	RUDDER ORDER RSA NO.2
X16-A	00	3	ENG TELEGRAPH ORDER PORT FROM BRIDGE
X16-A	00	4	ENG TELEGRAPH ORDER PORT FROM STBD WING
X16-A	00	5	ENG TELEGRAPH ORDER STBD FROM BRIDGE
X16-A	00	6	ENG TELEGRAPH ORDER STBD FROM STBD WING
X16-A	00	7	ENGINE BOW THRUSTER ORDER
X16-A	00	8	ENGINE BOW THRUSTER RESPONSE

X32-D Digital to NMEA



Type	ID	Field	Value
X32-D	S	1	FIRE NAV. DECK
X32-D	S	2	A-DECK PORT PASSAGE
X32-D	S	3	A-DECK STBD PASSAGE
X32-D	S	4	A-DECK ENTRANCE
X32-D	S	5	A-DECK STERN PART
X32-D	S	6	B-DECK STBD BOW
X32-D	S	7	B-DECK PORT BOW
X32-D	S	8	B-DECK CENTER STBD
X32-D	S	9	B-DECK CENTER PORT
X32-D	S	10	B-DECK ENTRANCE
X32-D	S	11	RESTAURANT
X32-D	S	12	GALLEY GALLERY
X32-D	S	13	B-DECK STERN STBD
X32-D	S	14	B-DECK STERN PORT
X32-D	S	15	C-DECK STBD BOW
X32-D	S	16	C-DECK PORT BOW
X32-D	S	17	C-DECK CENTER STBD
X32-D	S	18	C-DECK CENTER PORT
X32-D	S	19	C-DECK ENTRANCE STBD
X32-D	S	20	C-DECK ENTRANCE PORT
X32-D	S	21	C-DECK STERN OF CENTER STBD
X32-D	S	22	C-DECK STERN OF CENTER PORT
X32-D	S	23	C-DECK STERN STBD
X32-D	S	24	C-DECK STERN PORT
X32-D	S	25	A-STAIRS BOW STAIR
X32-D	S	26	B-STAIRS A.B STAIRS
X32-D	S	27	C-STAIRS B.C.D.G STAIRS
X32-D	S	28	D-STAIRS C.D STAIRS
X32-D	S	29	E-STAIRS STERN OF D.E
X32-D	S	30	F-STAIRS POOP STAIR
X32-D	S	31	D-DECK Bn & DECK STORES
X32-D	S	32	D-DECK CAR DECK 1 STBD

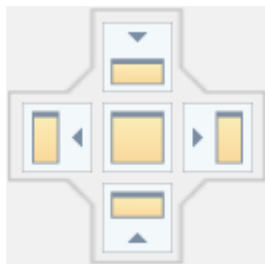
Docking

Each section can be docked and undocked from the main window; this allows users to optimise the layout for their own environment, such as dual screen setups.

Docking positions are stored and restored when the application is re-opened.

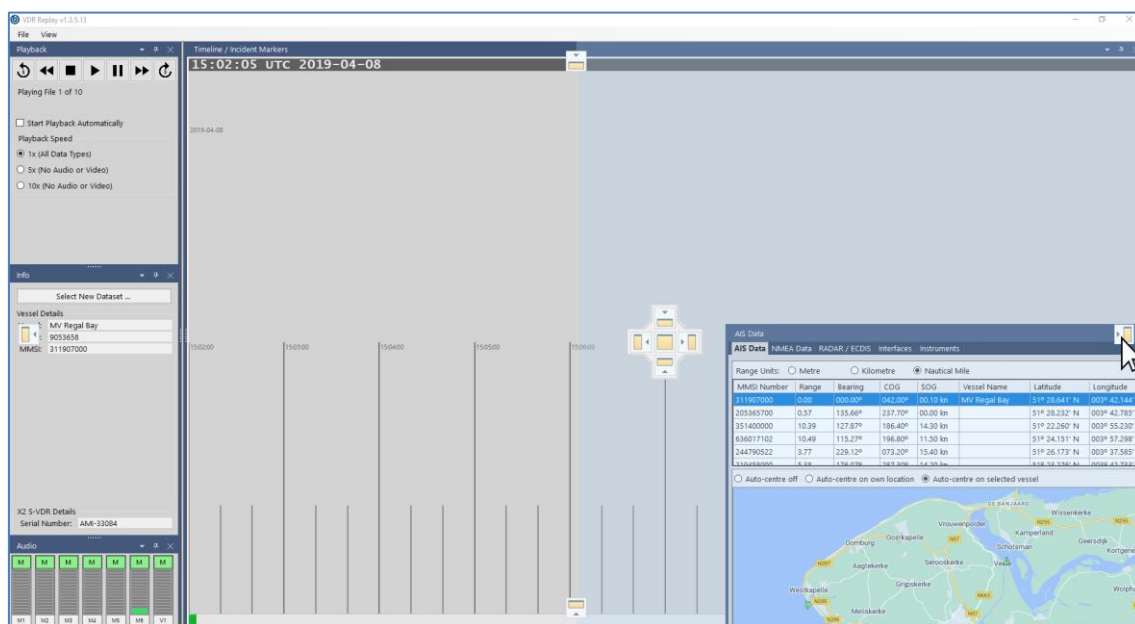
Clicking on the yellow bar of the selected window will allow it to be 'dragged' to a desired position on the screen and can be placed anywhere as a floating window.

If the chosen window is to be 'docked' the docking control feature should be used.

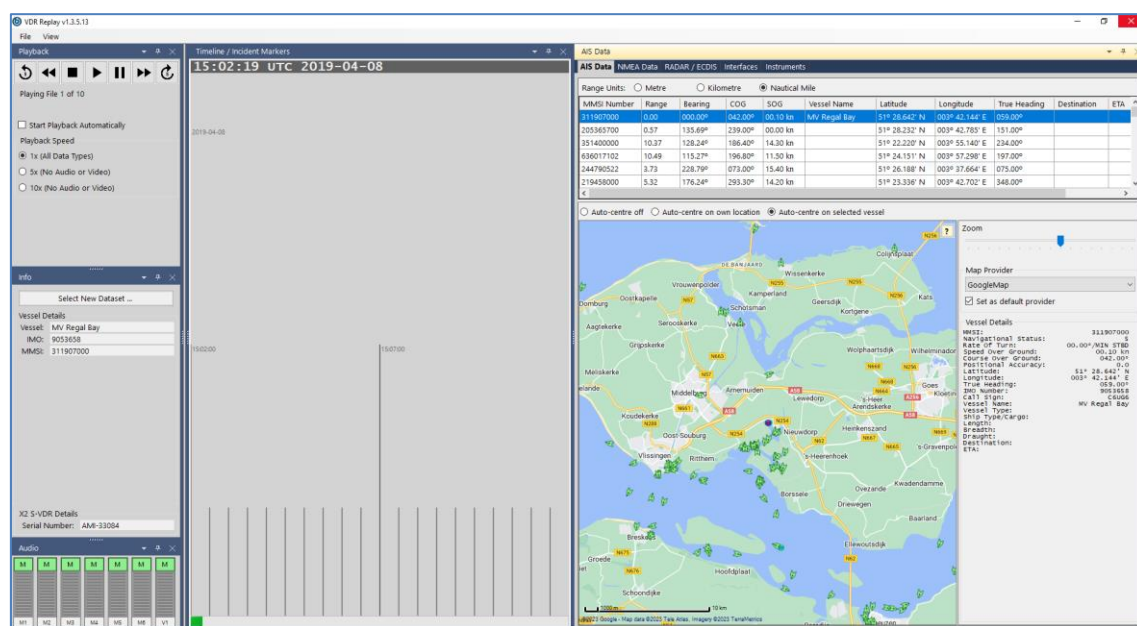


When holding the left button to drag the window, the main docking control will appear in the centre of the screen and local pane selectors at the top/bottom and left/right of the screen. Moving the mouse pointer to either to one of pane selectors on the main docking control or one of the local pane selector icons, a preview of the destination window by way of a blue shaded area in the main window.

In the example below, the local right pane selector has been chosen and the AIS Data display will be 'docked' into the area shown as light blue.

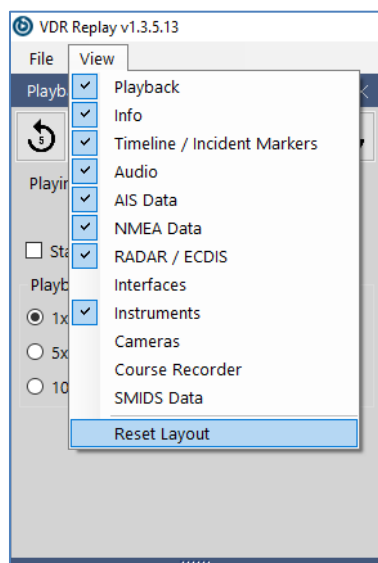


When the mouse is released, the pane will be docked, as shown below:



To reset the view to the default layout, click View > Reset Layout.

Also, here you can select/de-select any of the available windows to your preference. The replay app will remember your preferences each to you start the app.



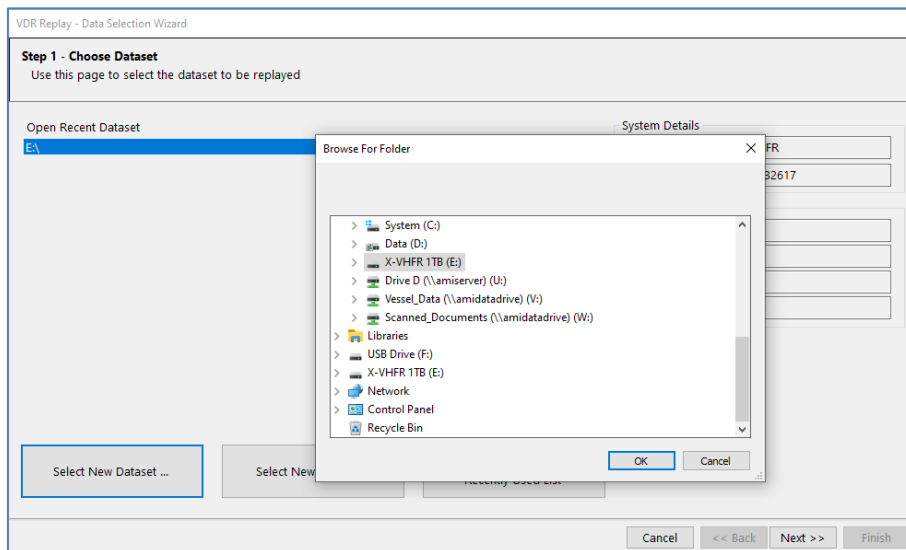
X-VHFR & X-VCR Data Selection Wizard

Connect the Removable USB Drive to your PC.

On opening the replay software, the Data Selection Wizard will be displayed to assist with selecting the items required for replaying of the data.

Choose Dataset

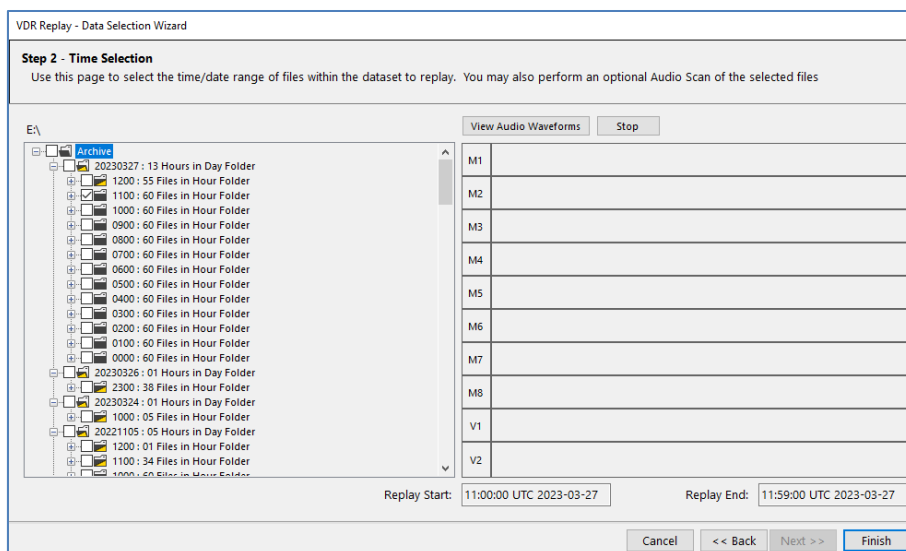
The first step is to browse and select the Removable USB Drive and click on OK. The below screen shows 'X-VHFR 1Tb'.



The complete contents of the USB drive are made available.

'NOTE!' DO NOT PRESS 'Finish' until you have selected the data you wish to playback. As it will extract all the available data and disable your PC.

Select the data you wish to replay select by ticking the adjacent box. Recommended to select an hour of data at most.



View Audio Waveforms (X-VHFR Only)

The timespan can be further refined by means of an audio scan of the selected files.

This can be used to highlight periods of high audio activity, which may be of interest when investigating an incident.

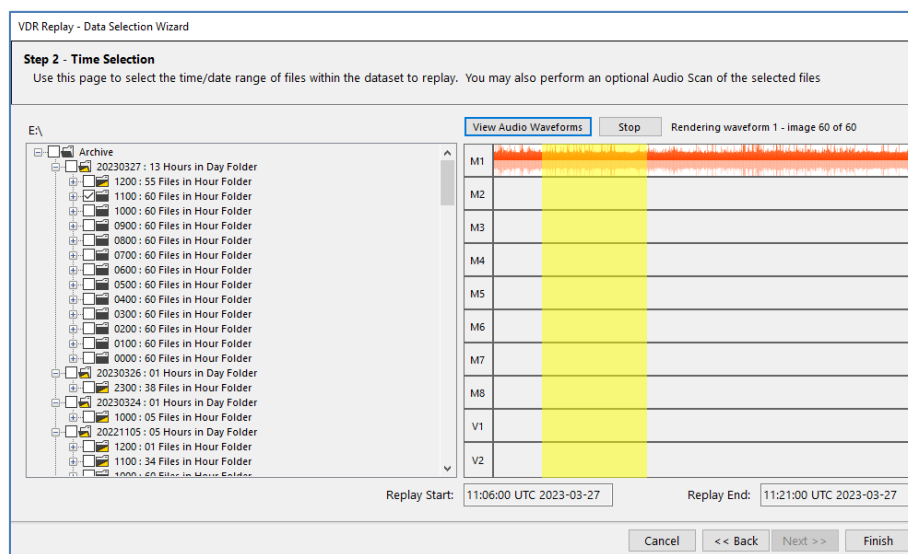
To perform an audio scan, select the 'View Audio Waveforms' (X-VHFR only).

Please Note: Audio scan is both processor and memory intensive, therefore, it is best to perform scans over no longer than 60 minutes of data, unless the replay application is running on a high spec machine.

The audio scan be stopped at any time by pressing the Stop Scan button.

Once finished the audio scan may look like this:

Also note that even when there are 2 audio sources connected to the system it will appear as a single waveform as it uses the 'Stereo In' on the recorder utilising the Left and Right channels for the 2 sources.






Note also that in the above example the Replay Start and Replay End have again been adjusted to reflect the highlighted area.

Once you are satisfied with the data selected for replay, select 'Finish' to load the data into the main replay window.

AIS Data

Map Symbols

On the Map display, vessels are indicated as follows:

Symbol	Meaning
	Moored, not selected
	Moored, selected
	Moving, not selected
	Moving, selected

A target vessel may be selected by:

1. Clicking on its entry in the table at the top of the AIS display
2. Clicking on the vessel symbol on the map

The selected vessel's information will be displayed in the Vessel Details table on the right of the map.

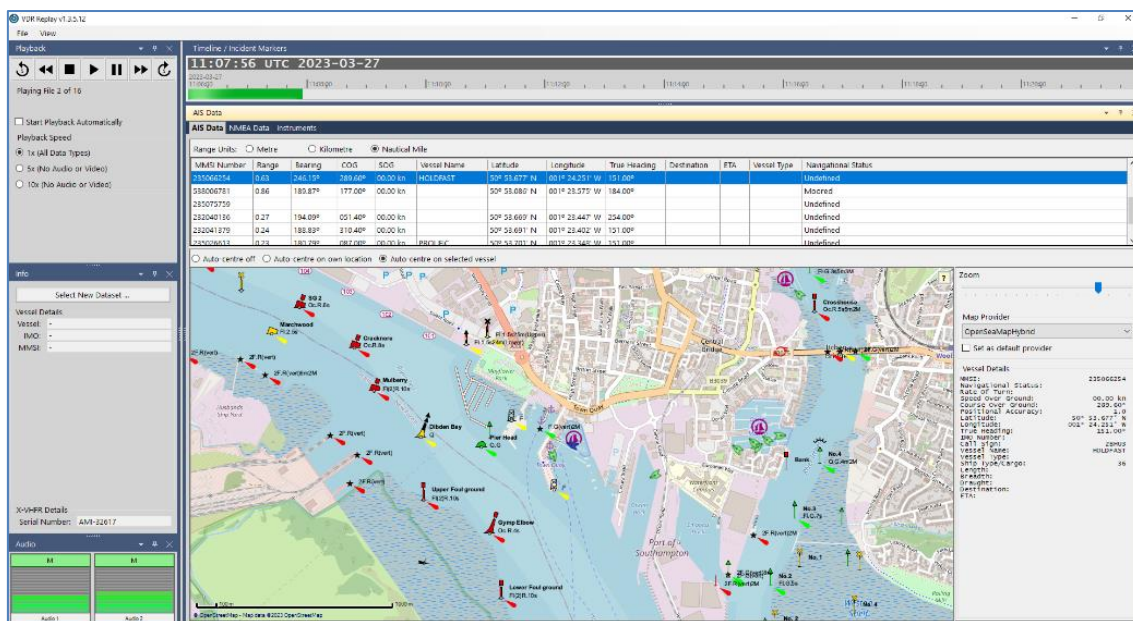
When a vessel is moving, its icon will be rotated to indicate its course.

The table above the map display will show the data received via the AIS transmission for each vessel in range. The 'range units' may be adjusted for user preference.

AIS Data											
AIS Data NMEA Data RADAR / ECDIS X32-D / X16-A / BNMAS interfaces											
Range Units:	Metre	Kilometre	Nautical Mile								
MMSI Number	Range	Bearing °	COG °	SOG kn	Vessel Name	Latitude	Longitude	True Heading	Destination	ETA	Navigational Status
636017973	3.544	155.85	-098.60	03.00		44° 03.202 N	009° 52.009 E	309			Under way using engine
636016125	43.723	156.55	069.00	00.40		43° 26.379 N	010° 14.048 E	232			Under way using engine
305223000	0	0	180.00	00.20	UAL FORTITUDE	44° 06.431 N	009° 49.993 E	213			Moored
247064730	9.98	155.07	122.20	03.30		43° 57.394 N	009° 55.836 E	511			
2470079	40.906	176.3				43° 25.674 N	009° 53.648 E				
232013521	37.97	147.46	-085.90	00.00		43° 34.472 N	010° 18.268 E	173			Moored

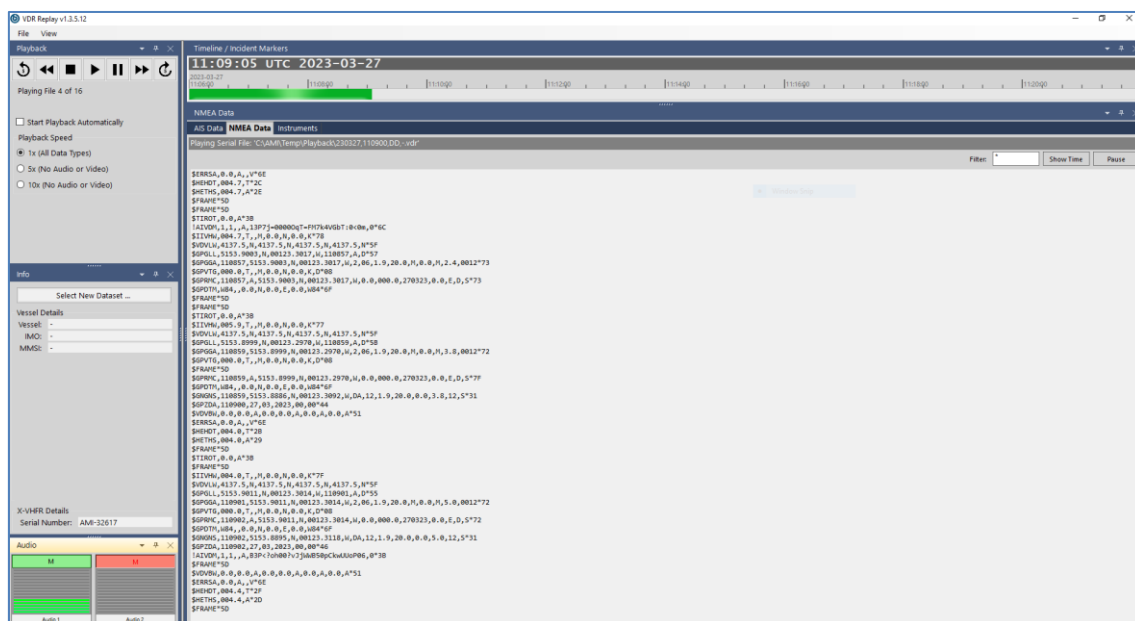
Map View, Control and Navigation

The Map view shows the geographical location of all vessels whose AIS data has been played back.



NMEA Data

Serial Data messages can be displayed by selecting the 'NMEA Data' tab, as shown below:



Audio Controls

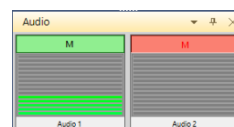
The 'Audio' display shows the level of both Audio 1 and Audio 2 channels.

The 'M' at the top of each level indicator is the 'Mute' control.

Whilst green the audio channel will be active and will be played back.

Clicking on the green 'M' will cause it to turn red and the channel will be muted.

Clicking on the red 'M' will turn it green and the channel will now be unmuted, and once again become active.



Instruments

The instruments are displayed by choosing the Instruments tab, as shown below:

Note that the 'Instruments' will only replay if that specific data has been recorded.



Course Recorder

The course recorder is displayed by choosing the Course recorder tab, as shown below:

Course Recorder							
AIS Data NMEA Data RADAR / ECDIS Interfaces Instruments Course Recorder							
Course Recorder							
DATE : 2020-09-20		S/N : AMI-34310		Vessel Name : COMMODORE GOODWILL			
TIME UTC	LATITUDE	LONGITUDE	HEADING	RSA PORT	RSA STBD	SPEED	COURSE
12:00:59	50° 48.660 N	001° 05.791 W	258.70°	##.##'	##.##'	00.000 Kn	303.00°
12:01:58	50° 48.659 N	001° 05.791 W	258.70°	##.##'	##.##'	00.000 Kn	223.00°

Document Issue	Date	Modification Number (where applicable) Brief Record of Change and Reason for Change
Iss01	12.01.19	Original Issue
Iss01 Rev01	18.01.19	Updated Layout
Iss01 Rev02	21.03.19	Updated to include X-MDR and timeline
Iss01 Rev 03	19.08.19	Added Features and Illustrations. Changed title to VDR Replay
Iss01 Rev04	09.09.19	Correction of Contents and Addition of Recommended Maximum Data Period
Iss01 Rev05	13.02.20	Name changed from AMI Data Replay to VDR Replay
Iss01 Rev06	31.03.20	Updated Data Selection Wizard, Timeline and Interfaces Display
Iss01 Rev07	14.04.21	Correction of Some Images
Iss01 Rev 08	07.12.22	Minor updates for consistency
Iss01 Rev09	13.07.23	Additional Functionality and Updated graphics for v1.3.5.13

Document Issue Details

For the latest Software version, please find our website.

<https://amimarine.com/product/downloads/>



NOTICE

This manual is for informational use only. AMI Marine Ltd continually strives to improve their products and therefor may be changed without prior notice. This manual should not be construed as a commitment of AMI Marine Ltd. Under no circumstances does AMI Marine Ltd assume any responsibility or liability for any errors or inaccuracies that may appear in this document. The equipment should only be used for the purposes intended by the manufacturer; any deviation from this will void the warranty of the product.

NOTE: All alterations must be verified by re-authorisation and approval of the complete document.



AMI MARINE LTD

Unit 9
Crosshouse Centre
Crosshouse Road
Southampton
Hampshire
SO14 5GZ
UK

Tel No: +44 (0) 23 8048 0450
Email: technical@amimarine.com
Web: www.amimarine.com