



# **DSHIP V3**

## **User Manual**

**WER-PLFDSH-SUM-00020**

**2018-11-08**

**Version 1.10**

## 3.7.6 MapViewer

### 3.7.6.1 Overview

The **MapViewer** can display the current ship position, passed and next waypoints, and the heading of the ship. It may also display positions for ROVs (Remotely Operated Vehicles), if these are operated from the ship.

Besides this basic information, the MapViewer offers further (menu) settings to display additional vehicle-related information (for the ship or the ROVs), to select a certain time range of interest, and to choose different background maps, e.g. with depth information.

Moreover, it is possible to select a parameter from which data can be displayed along the ship track.

In configurations with the MapViewer-NRT extension, it is also possible to display NRT data on the map, ranging from current satellite and ship-recorded imagery and forecast models.

#### **Important**

Upon starting the MapViewer, a Windows security warning might appear because MapViewer wants to connect to the so-called "geoserver" to receive the required map data. The internet security settings of the local computer might restrict this access. Chapter 3.7.6.5 Description of Displayed NRT Data (MapViewer-NRT configuration only) provides information about how to adapt these security settings.

The following figure shows the MapViewer display:

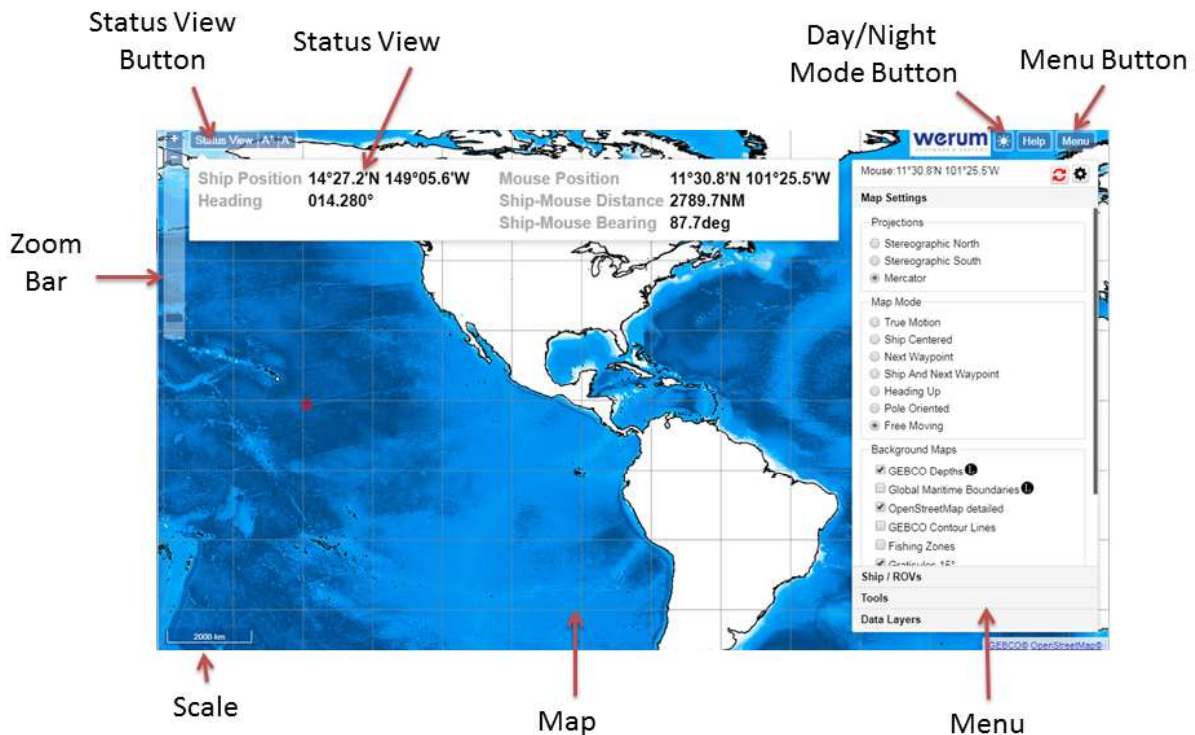





Figure 37: MapViewer with settings menu

In addition to the map, the MapViewer has a variety of other features.

The Status View provides a view of certain values. It displays the ship position and heading, as well as the mouse position and the distance and bearing between the mouse and the ship. It can be shown or hidden using the **Status View** button .

The MapViewer can be set to night-mode in order to dim the display. The night mode can be turned off and on using the button .

The **Help** button  opens a dialog displaying information about the MapViewer.

The MapViewer starts with a default setting. In the upper right corner of the map there is the **Menu** button  to show or hide the settings for the map.

An example of a more detailed view of the plotted information on the map can be seen in the next figure:

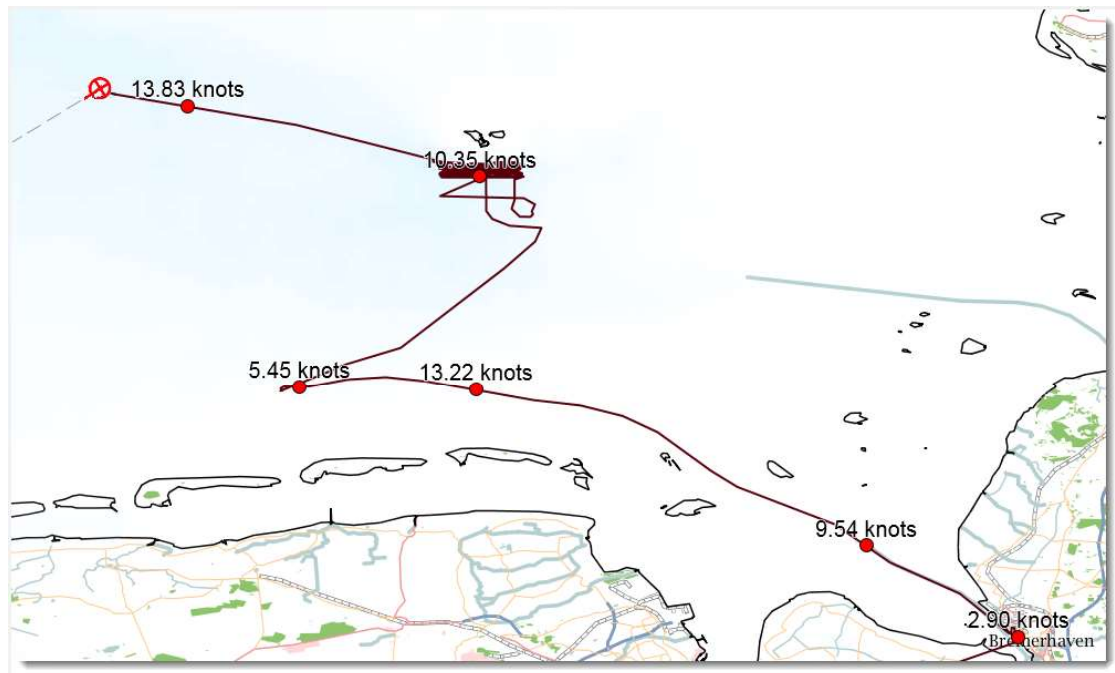


Figure 38: Map with ship position, track, track samples, and waypoint line

Further information about what you can visualize on the map you can read in chapter 3.7.6.3 Plotted information.

### 3.7.6.2 Menu

Whether useful information can be seen on the map or not, depends on the selected settings. The **Menu** provides the fields to set date and time for the time of interest. Further, it provides settings to select which data shall be displayed and which additional map data shall be visible.

For a better overview and handling, these settings are grouped in a so-called accordion menu. If you click on a group, the menu expands and shows the available entries/options.

#### Menu Settings

##### Mouse

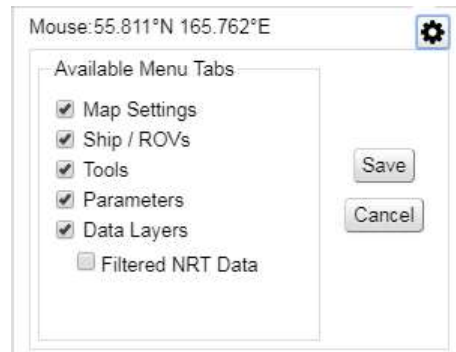
Shows the current latitude, longitude position of the mouse pointer on the map.



(MapViewer-NRT only) Resets the NRT retrieval after it has timed out. A timeout occurs for non-prioritized clients after a certain amount of time, preventing NRT data from being updated. When this button appears, no more NRT data will be retrieved until the button has been clicked.



Opens the configuration dialog of the menu:



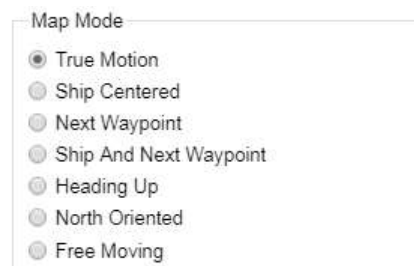
The dialog allows the configuration of the visible tabs in the menu. For the "Data Layers" tab, it is also possible to select whether the available NRT data is to be filtered (no forecast data). Please note that not all functionality will be available in all MapViewer configurations.

**Map Settings...** Section defining the Map representation.

**Projections** One of the following projection types can be selected:




**Map Mode** One of the following map modes can be selected:



### Background Maps


Check buttons to show or hide the available background maps and to show or hide graticules (lat./long. grid lines): (please note that the available selection may differ between the configurations)




Provides the legend of the selected layer

### Degree Formatting

Choose a format for degrees to be displayed (decimal degrees are in the form: 5.432°, while decimal minutes are displayed in the form 6° 45.543')



### Ship / ROVs...

Configure date and vehicle-related (ship/ROVs) information:

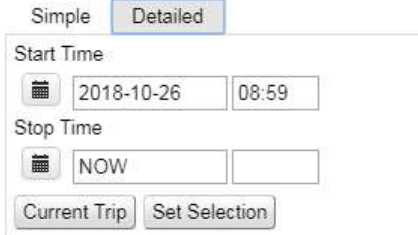
#### Simple

Simple date selection



#### Detailed

Detailed date selection




Open the Date/time-picker (dialog).

### Start Time

Fields to enter the start date and time.

**Stop Time** Fields to enter the stop date and time.

**Current Trip** Fill **Start Time** and **Stop Time** with the according data of the current trip.

**Set Selection** Sets the entered date/time, and then shows the track and parameter data for this period in time (see group **Parameters**).

**Ship / ROVs** Check boxes to show or hide vehicle-related (ship/ROVs) information:

- Noon Positions
- Ship Track
- ROV1 Track
- Ship Track Samples
- Waypoints

**Tools...** Tool selection



Measures distances and angles on the map. If activated, you can click on a position one on the map, then on a position two, and draw a straight line. If you hold the SHIFT-button, you can draw freehand shapes.




Figure 39: Example of measuring a distance



Opens a dialog to print the map.

**Parameters...** Options for showing parameter data (granularity, decimal places, parameters). The track is labeled with parameter values for selected points. By clicking on the track, the parameter value for the specified position can also be displayed.

**Granularity** Options to define the granularity (data resolution, i.e. the number of values and their distance to each other) for parameter data shown on the track.



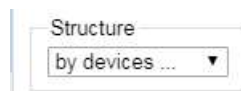
A widget titled "Granularity" containing three radio button options: "Low" (selected), "Medium", and "High".

**Decimal Places** Drop-down combo box to define the decimal places to be displayed.



A widget titled "Decimal Places" containing a drop-down menu with the value "2" selected.

**Structure** Drop-down menu to select the structure in which the parameter names are to be displayed. This functionality corresponds to the functionality in the **Select Parameter** dialog in chapter 3.6.12 *Configuring a Widget (for a Display)*.



A widget titled "Structure" containing a drop-down menu with the value "by devices ..." selected.

**Parameters** Check boxes to select the parameters for which data shall be displayed.



A widget containing a list of four parameters, each with an unchecked checkbox: "ADCP38kHz.VDDBT.DepthFat", "ADCP38kHz.VDDBT.DepthFee", "ADCP38kHz.VDDBT.DepthMei", and "ADCP38kHz.VDDBT.DepthMei".

(For parameter selection, see section *Selecting Parameters* in chapter 3.6.12 *Configuring a Widget (for a Display)*)

**Data Layers...** Configure which data layers are to be shown. The availability of features in this section greatly depends on the MapViewer configuration.

**View Local KML Layer** Opens a dialog to view a local KML file. Please note that this file must not contain any external URLs.

**"List of Layers"** Contains the list of data layers available on the map. The layers can be activated by selecting the check box beside the layer name.

Data layers vary from data uploaded by the administrator to data uploaded by the user (only seen locally), and NRT data.

Data layers are shown in a list in the menu.





For certain layers, tools exist in order to obtain information about the layer or change the appearance of the layer on the map. Each layer has its own toolbar, which is depicted below:



The available tools depend on the selected layer and the MapViewer configuration.



Change the layer order on the map by moving menu elements up or down the list.

Changing the layer order is also possible using drag-and-drop.



The age of the newest dataset for this data type. The age refers to the point in time at which the file was made available to the GeoViewer. If the data type is not an NRT datatype, the label "static" is displayed.



Zooms to the selected layer.



Show or hide the legend of the selected layer.



Open a PDF file with information about the layer.



Change the opacity of a selected layer.



Adjust the gamma value and contrast settings of the selected image.

**Gamma Value:** A factor that affects the brightness of the image. Values smaller than 1 darken the image and values larger than 1 brighten the image.

**Histogram:** Applies an algorithm to the image, which attempts to produce an equal number of pixels at all brightness levels.

**Normalize:** Applies an algorithm to stretch or clip the histogram values. The following three algorithms are supported:

**Stretch to Minimum / Maximum:** The minimum specified value is mapped to 0 and the maximum specified value is mapped to 255. The values in between are stretched and the values outside are clipped.

**Clip To Minimum Maximum:** Values smaller than the specified minimum value are forced to the minimum and values larger than the maximum value are forced to the maximum value. The values in between are left unchanged.

**Clip to Zero:** Values smaller than the specified minimum and values larger than the specified maximum are forced to zero. All other values are left unchanged.

**"Data Selection"** To show or hide a data layer on the map, the checkbox beside the data type name must be selected or cleared, respectively.

For NRT data, for each layer data for different points in time can be displayed. This selection can be made using the corresponding radio button or check box. Some data types are grouped by region or by type. For these layers, it is possible to select more than one layer.



### 3.7.6.3 Plotted information



#### Ship symbol

Current position and heading of the ship.



#### Ship contour

Depending on the scale, which is defined by the map width, the ship is indicated at its current position either as symbol or as true-to-scale contour.

The dot in the middle of the ship contour is the GPS position (location of the GPS antenna(s) on board).



#### ROV

If there is more than one ROV, they are automatically shown in different colors (currently, a maximum of 8 ROVs can be distinguished by color).



#### Track

The ship's track appears on the map as colored line. If a parameter is selected, the track is colored according to the parameter values along the track.



#### Data

Displayed parameter values.

**Waypoint line**

Line (and direction) between the ship and the waypoints. (The line may appear dashed or solid, depending on the default browser used on the computer).

**Waypoints**

Position of the waypoints for the current cruise, including future waypoints as well as the last waypoint (currently configured) passed.

### 3.7.6.4 Navigating on the map

1. Use one of the following mouse/keyboard actions or display functions to see a certain point or area of interest on your map.

#### Mouse/Keyboard or button actions



Zoom in/out in small steps.



"Zoom slider"

Zoom continuously in/out.

**Double-click**

Zoom in in small steps.

**SHIFT + Double-click**

Zoom out in small steps.

**Pressed left mouse button + move**

Grab the map and move it within the map area. (Useful only when **Map Mode** is set to **Free Moving!**)

**SHIFT + pressed left mouse button + move**

Used to draw a square. If the mouse button is released, the drawn square is used as new map section.

### 3.7.6.5 Description of Displayed NRT Data (MapViewer-NRT configuration only)

In MapViewer configuration with the MapViewer-NRT extension, NRT data is updated in regular intervals. The following image shows the MapViewer with NRT data.

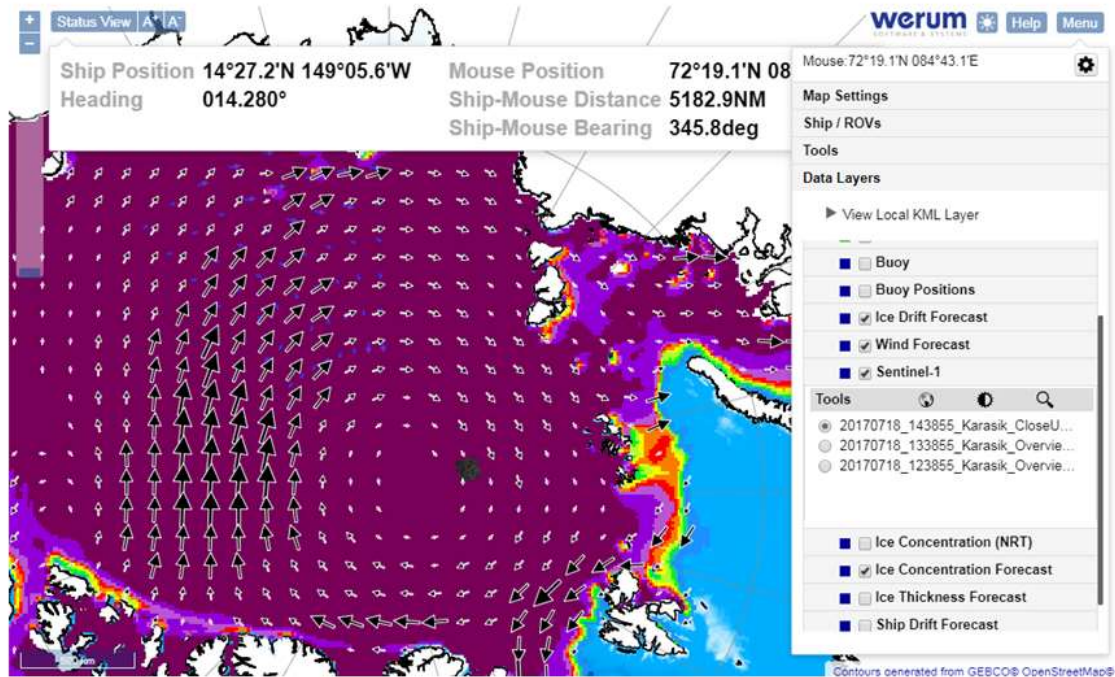


Figure 40 The MapViewer with NRT data


The data displayed in the MapViewer consists of the data described in the following table. In addition to this data, the system administrator can make additional data types available.

Data Type	Description
Sentinel 1 SAR	Radar images from the Sentinel 1 satellite. This data is generally available for the location of the vessel, as well as different areas of interest.
Sea Ice Concentration	Information on the sea-ice concentration by the SMSR2 sensor of the GCIM-W1 mission.
Drift Forecast	Different forecast models to predict the drift for the coming 24 hours. The models use remote sensing or model data.
Buoy Drift	Positional data of buoys deployed around the vessel.
Ice (WAMOS) Radar	Images of the ship's radar system.
Ice Forecast	The HYCOM sea ice forecast model. It provides a forecast for the ice concentration, ice drift and ice thickness.
Sea Ice Drift	The ice drift calculated from difference of an AMSR2 from the current day and three days past.
AVHRR / MODIS	Data provided by the onboard AVHRR / MODIS system.
DWD Weather / Wind	The wind forecast (speed and direction) provided by the DWD.
TerraSAR-X	TerraSAR-X data. This data is only available to select users. Please contact the system administrator if you wish to access this data.

Table 3: Types of NRT data

### 3.7.6.6 Adapting security settings for MapViewer

Upon starting the **MapViewer**, a Windows security warning might appear. In this case, your internet security settings do not allow the **MapViewer** to connect to the so-called "geoserver" to receive the required map data.


 **Note**

Whether the security warning appears or not, also depends on how the DSHIP server machines are integrated into the ship's network environment.

- If you
  - do not mind to confirm the warning when you start the MapViewer, click **Yes**.

- want to adapt the security settings, follow the next steps.

### Adapting security settings for Windows 7

 **Note**

The following steps explain how to adapt the security settings for Windows 7. For other Windows versions, the steps might be slightly different.

If you use another operating system, please refer to your operating system manual to adapt the security settings to allow "access on data sources across domain boundaries" (also named "Secure Cross-Domain Communication").

1. On your local computer, open the **Internet options** dialog.

A quick way to open the dialog is to click on the Windows icon on your taskbar, then type "Internet options" in the appearing search field, and then press RETURN.

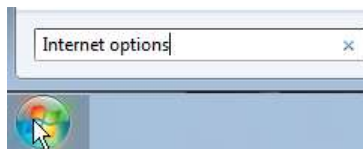


Figure 41: Windows 7 – Search field

Windows now offers one or more search results. Among these you will find "Internet options".

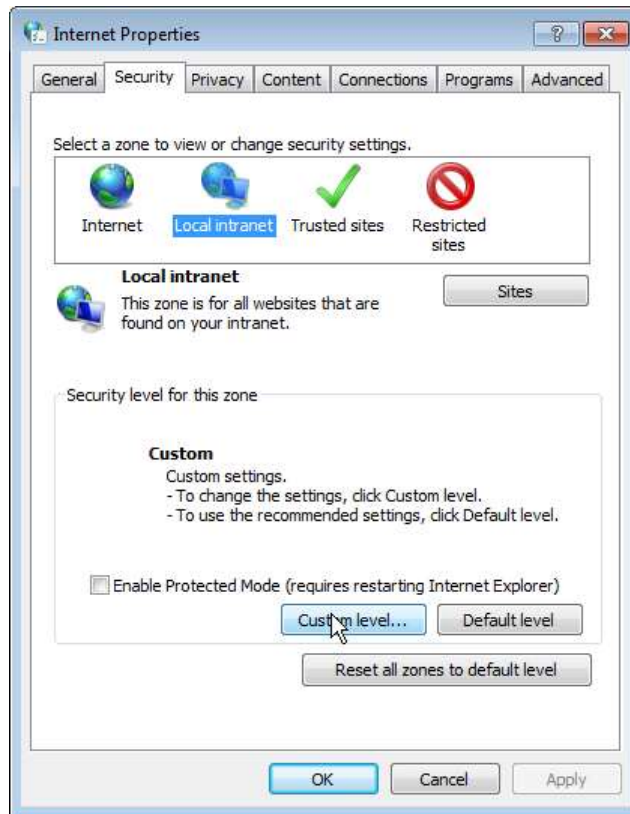


Figure 42: Properties dialog for Internet settings

2. Click the **Security** tab, select **Local intranet**, and then click **Custom level...**

The dialog **Security settings - Local Intranet Zone** appears:

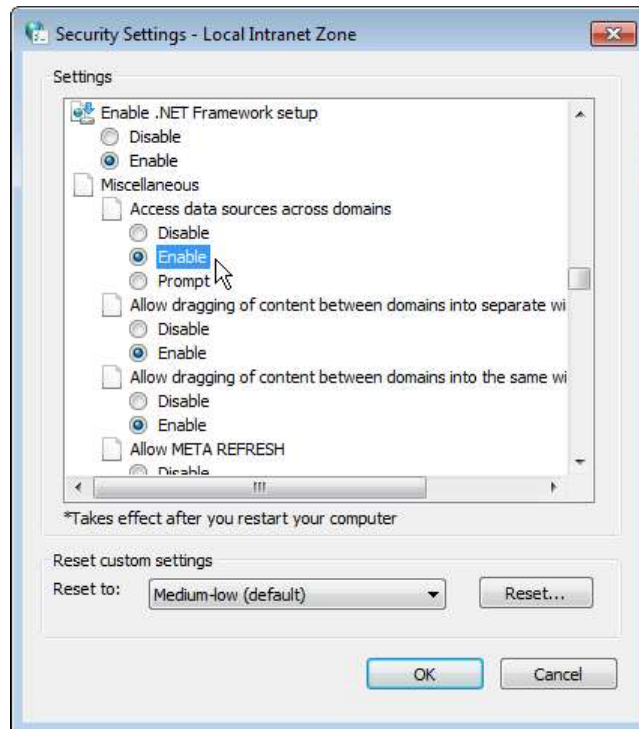


Figure 43: Security settings for local intranet zone

3. Navigate to **Miscellaneous >> Access data sources across domains**, and then activate **Enable**.
  4. Confirm the settings with **OK**, and then close the other settings dialogs with **OK**.
  5. In dialog **Internet Properties**, select the zone "Internet" on the **Security** tab, and then repeat step 3 and 4.
- ✓ The next time you call the MapViewer, it should start without security warning.



