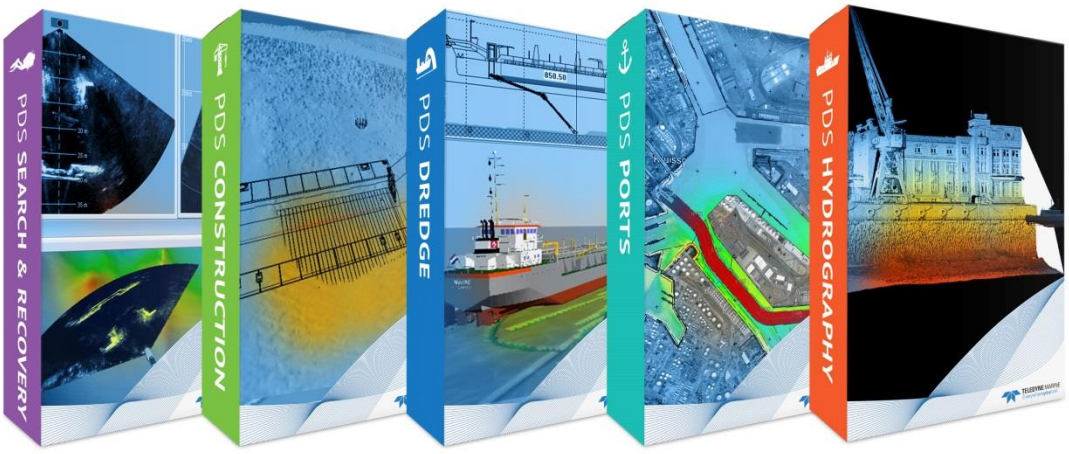
Vessel Contour Editor

Teledyne PDS

Version 1.0.1

July 2015



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Amendment Record Sheet

Rev.	Date	Reason for Modifications
1.0.1	09/07/2015	Version after review RDG.
1.0.0	07/07/2015	First version of the Manual.

Contents

Figures

1 Introduction

1.1 Vessel Contour Editor

This manual describes the new vessel contour editor added from of PDS version 4.x.x.x.

The vessel contour editor consists of: a selection pane for vessel contour file selection, and other functions, three contour shape views to visualize the contour shapes, and a numerics pane view to display the numerical values of the selected vessel contour shape view.

This manual consists of two more chapters:

- Vessel Contour Editor; describes the views and the functions of the vessel contour editor views.
- Operate; describes how to use the vessel contour editor.

This manual will only explain parts related to the Vessel contour Editor. For other information about Teledyne PDS see the Teledyne PDS User Manual (the file Teledyne PDS User Manual.pdf in the folder 'manuals') Teledyne PDS.

All Teledyne PDS related manuals are available from the Teledyne PDS Control Center Help menu '*Help>Open Manuals folder'.*

This manual is also available as a HTML Help file and can be opened with F1 or with *Help > Help Topics* from the menu bar.

Teledyne PDS Instruction movies are available on the Teledyne PDS YouTube channel. Watch Teledyne PDS instruction movies.

2 Vessel Contour Editor

2.1 General

It is possible to start the vessel contour editor from:

- The vessel configuration – Custom shape button.
  Select from the Vessel Configuration – Geometry tab, *Custom shape* and as 2D shape type: *Vessel contours*.

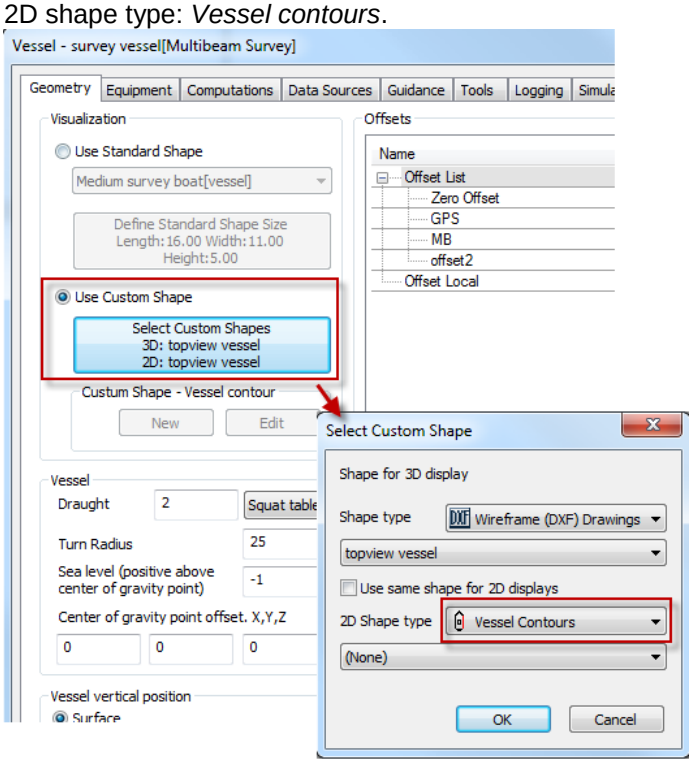


Figure 2-1 Custom shape

- The vessel configuration - Overview button.
  Press the overview button. The vessel contour editor opens with the device offsets listed in the numeric view and the offsets displayed in the vessel

contour shape view(s). See Device Overview on page 15.

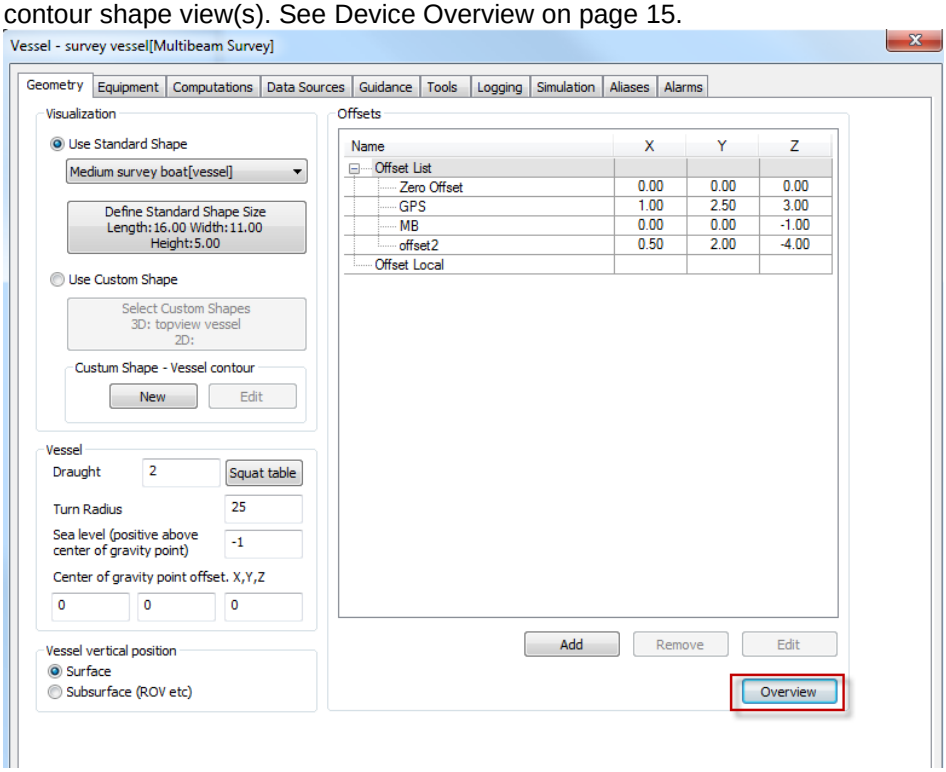


Figure 2-2 Overview

- The PDS Explorer – Projects Common – Vessel contours folder.
  Expand the *Vessel Contours* node and select an existing vessel contour, or right click at the vessel contour folder for a context menu and select *New File*.

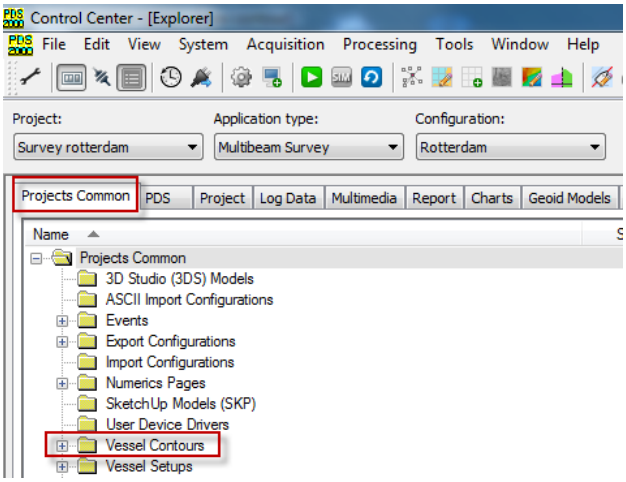


Figure 2-3 PDS Explorer

The vessel contour editor is an application. This means it is possible to run it simultaneously with other PDS modules.

The units used in the vessel contour editor are the system units defined in the used coordinate system.

The vessel contour editor opens with the main window.

2.2 Main Window

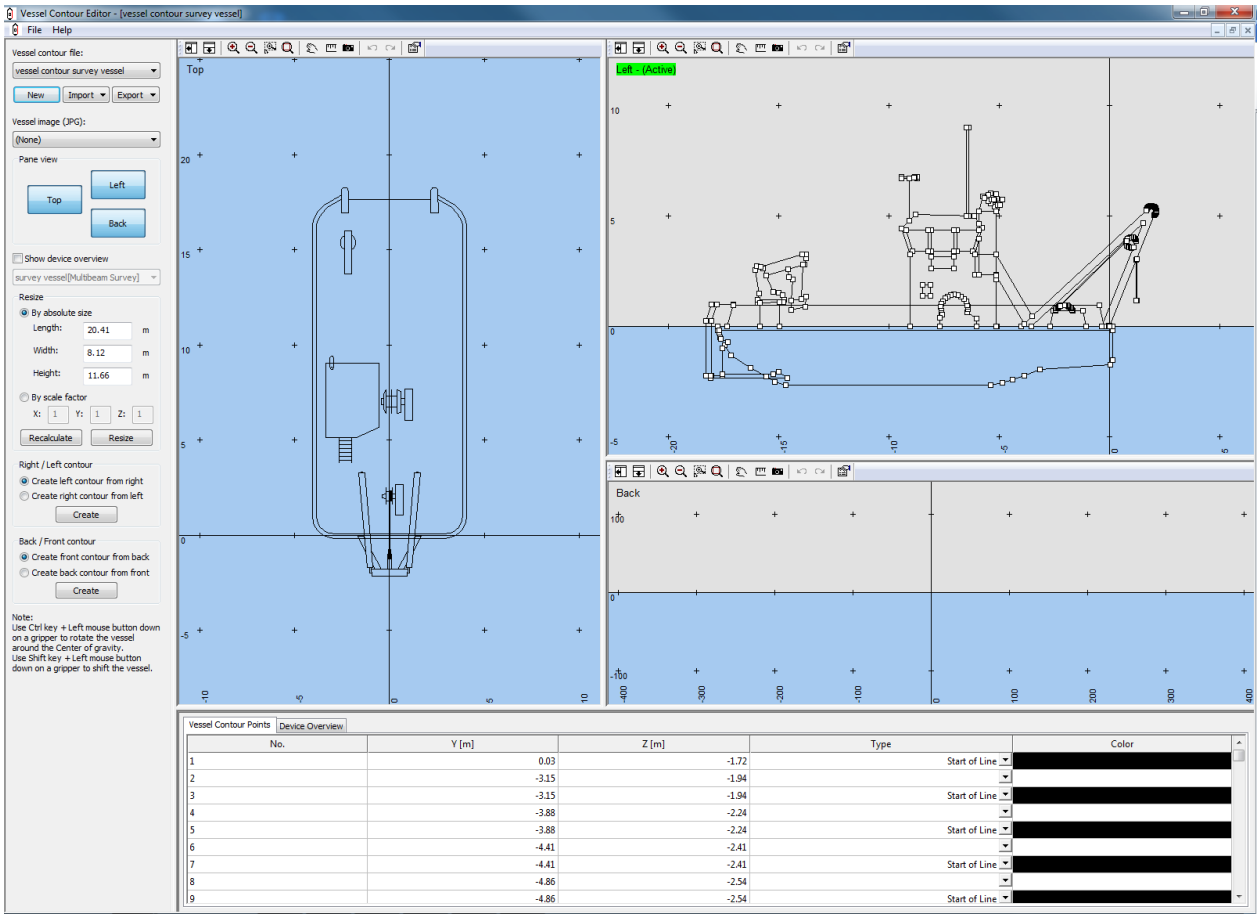


Figure 2-4 Main window vessel contour editor

The vessel contour editor has the following menu bar.

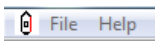


Figure 2-5 Menu bar

The next table lists the functions of the menu bar.

Menu	Function
File	• Save Save the vessel contour file with a name of the opened vessel contour file name. • Save As… Save the vessel contour file with an entered file name. • Exit Exit the vessel contour editor.
Help	Version number vessel contour editor

The main window of the vessel contour editor includes:

- Selection pane view
- Three vessel contour shape views
- Numerics bottom pane view

2.3 Selection Pane View

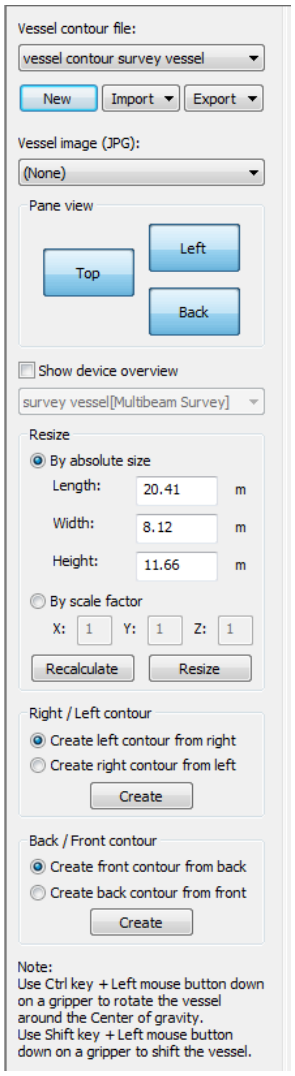
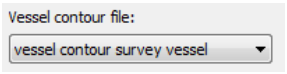
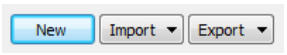
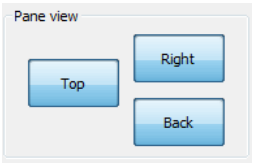
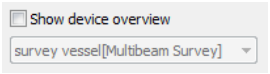


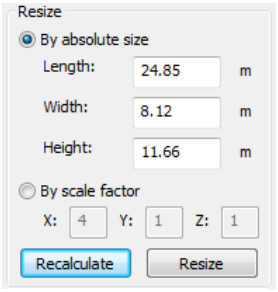
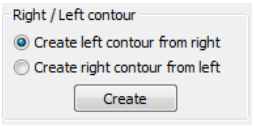
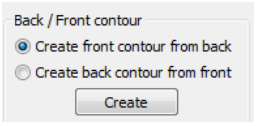
Figure 2-6 Selection pane

From the selection pane view it is possible to:

- Select a vessel contour file
- Generate a new, import or export a vessel contour
- Select a vessel image
- Enable or disable shape views
- Enable or disable a device overview
- Resize a vessel contour
- Create a contour from a right / left or back / front contour

The next table describes the functions of the selection pane.

Function	Description
Vessel contour file 	From the drop down list it is possible to select a vessel contour file. The file must be available in the PDS project.
New, Import and Export 	• Press the New button to generate a new vessel contour. • Press the Import button to import a DXF drawing. The vessel contour points will be extracted from the DXF file and mapped onto the corresponding vessel contour sides (Top(x,y) right/Left(y,z) back/Front(x,z). Explode blocks of the DXF drawing prior to import it to PDS. • Press the export button to export the vessel contour to a DXF file. The vessel contour of the active pane view is exported.
Vessel image 	Select from the drown list a vessel photo image. The photo image must be available in or copied to the PDS Explorer – Multimedia folder. The image is displayed in the background of the current selected pane view. The image can serve as a template for easily drawing of the vessel contour.
Pane view 	With the pane view buttons it is possible to show or hide the top view, the right/left or the back/front views. This buttons have a round robin mechanism, this means a button may pressed repeatedly to have another view hide or displayed again. For example with a button it is possible to show the right view, to show the left view and to hide the pane view.
Show device overview 	Select this option to visualize the position (offsets) of the devices in the vessel contour shape views and have the device offsets listed in the numeric view. (See page 15.) The offsets of the devices are defined in the vessel configuration geometry page. Select from the drop down list the vessel configuration containing the device offsets. Only vessel configurations which are defined in the project are listed.

Function	Description
Resize 	It is possible to resize the vessel contour: • Absolutely Select the *absolute size* radio button. The contour will be sized to the entered length, width and height (meters). • By scale factor Select the *scale factor* radio button. The X,Y and Z dimension of the contour will be sized relative by the entered scale factor for the X, Y and / or Z. Press the Resize  button to resize the contour with the new values. **All view shapes (top, left, right, back and forward) are resized.** Press the Recalculate button to recalculate the absolute sizes when the contour was edited.
Right/Left contour 	With this function it is possible to create a mirror image of a contour. A left contour from a right contour, or a right contour from a left contour. Select the associated radio button and press the create button to create the contour.
Back/Front contour 	With this function it is possible to create a mirror image of a contour. A front contour from a back contour, or a back contour from a front contour. Select the associated radio button and press the create button to create the contour.

2.4 Vessel Contour Shape View(s)

2.4.1 General

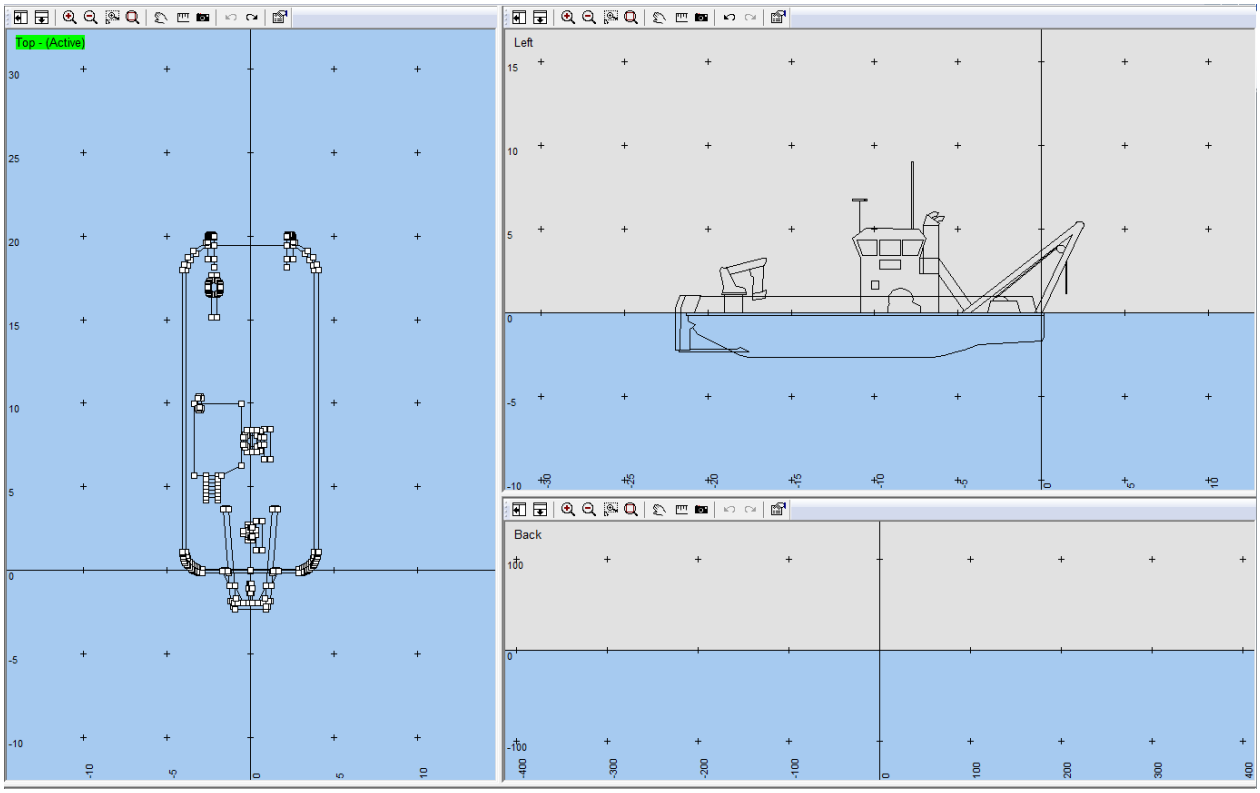


Figure 2-7 Shape views

There are three vessel contour shape views. A contour shape view displays graphically the vessel contour. It is possible to select from the selection pane view the contour shape view:

- Top
- Right or Left
- Front or Back

It is possible to draw a new contour or edit a vessel contour by means of grippers. Refer to section Operate on page 17 for a description how to create or edit a contour.

2.4.2 Active Shape View

In the top left corner of the shape view it is indicated if the view is active.

For an active view:

- The numeric values are indicated. See numeric view on page 14.
- The vessel contour has grippers
- The vessel contour can exported to a DXF

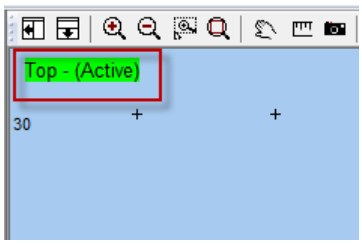


Figure 2-8 Active shape view

Click in the shape view to make it active.

2.4.3 Shape View Toolbar

The shape view(s) includes a toolbar.

Figure 2-9 Toolbar

The next table describes the functions of the toolbar.

Function	Description
Hide pane 	Press this button to open or close the left selection pane to have more space for comfort.
Hide bottom pane 	Press this button to open or close the bottom numeric view to have more space for comfort.
Zoom in, zoom out 	Press these buttons to zoom in or zoom out. It is also possible to zoom, by using the scroll wheel.
Zoom window 	Zoom window. When this button is pressed, the cursor will change in a selection symbol (arrow with square), hold the left mouse button and draw an area. This area will zoom in when the mouse button is released. Press the button again to deactivate the mode.
Zoom Extents 	Zoom extents. Press this button to zoom extents. When for example the crane was zoomed in a lot, the crane becomes visible again when the zoom extents button is pressed.
Pan 	Pan mode. When this button is pressed, the cursor changes into a pan symbol. Hold the left mouse button and move the mouse to move the information displayed in the view.

Function	Description
Measure 	Measure. Press this button to measure a distance and bearing between two points. Click in the view and move the cursor to the next point. The measurement between these two points is indicated in the measurement box.
Save snapshot 	Save snapshot Press this button to save an image of the view as JPG or BMP file.
Undo, Redo 	Undo or redo Press these buttons to reverse a last action or to reverse the last undo action.
Layer Properties 	Layer properties Press this button to edit the properties of the layers.

2.4.4 Context Menu

There are two context menus available:

- A context menu when right clicked in the view;
- A context menu when right clicked at a point (gripper) of the vessel contour in the view.

Figure 2-10 Context menu view (left) and point (right)

The next table describes the functions of the context menu.

Function	Description
Redo	Redo last undo action.
Undo	Undo last action.
Start of Line	Draw a line.
Start of filled polygon	Draw a (filled) polygon.
Insert Point	Insert a new point.
Delete Point	Delete a selected point.

2.4.5 Grippers

Grippers become available on the points of an active contour shape. Grippers are used to edit the vessel contour. See Graphical Editing on page 25.

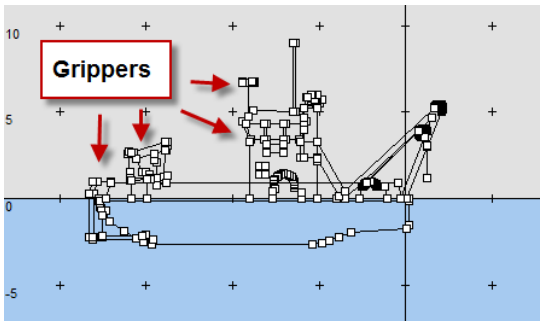


Figure 2-11 Grippers

When a gripper is selected it is red colored.

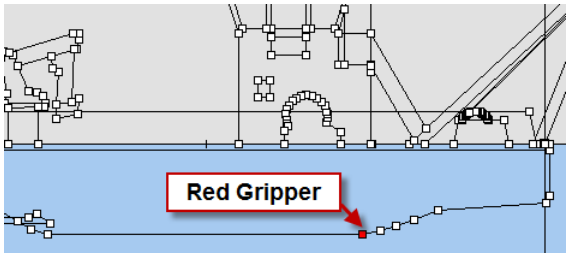
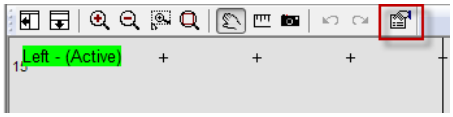
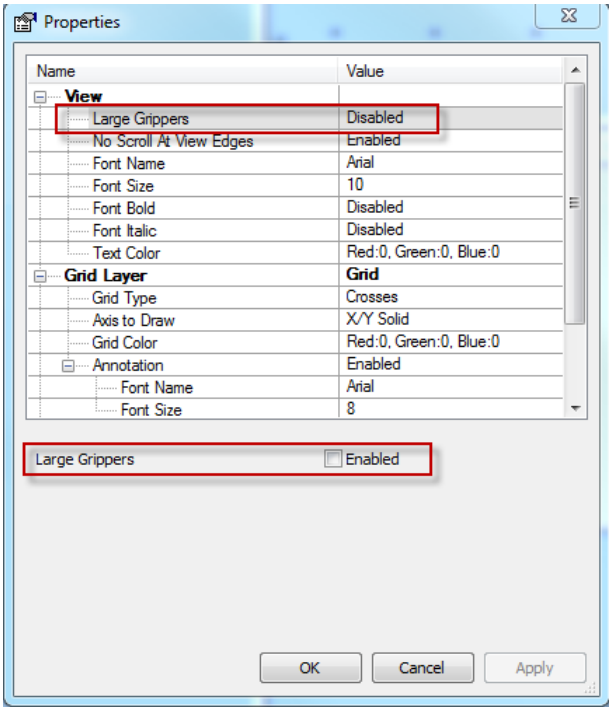


Figure 2-12 Red Gripper

It is possible to change the size of the grippers (large or small) from the Layer properties.

The next table lists the steps to change the gripper size.

Step	Action
1	Press the Layer properties button from the active shape view toolbar. 

Step	Action
2	Disable *Large Grippers* to have small grippers displayed in the view. 

2.5 Numeric View

The numeric view has two tabs:

- Vessel Contour Points;
- Device Overview.

2.5.1 Vessel Contour Points

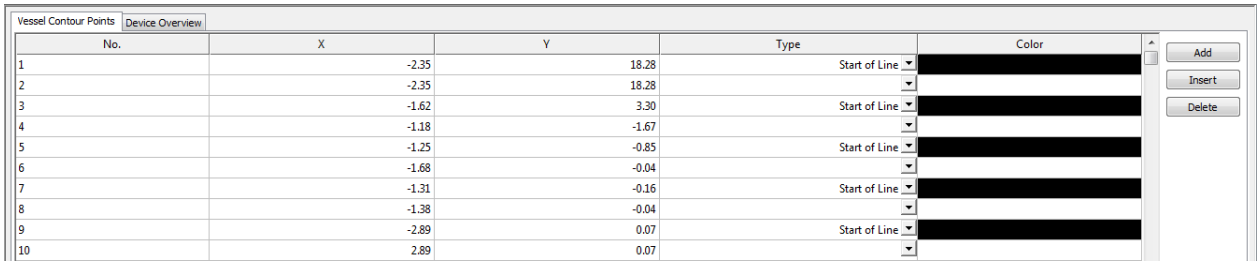


Figure 2-13 Numeric view – Contour Points

The numeric view lists the vessel contour's points numerically (X,Y), the type (point, start of line, start of filled polygon) and the color.

When a point is selected in the vessel contour shape view, the associated field in the numeric view is blue highlighted.

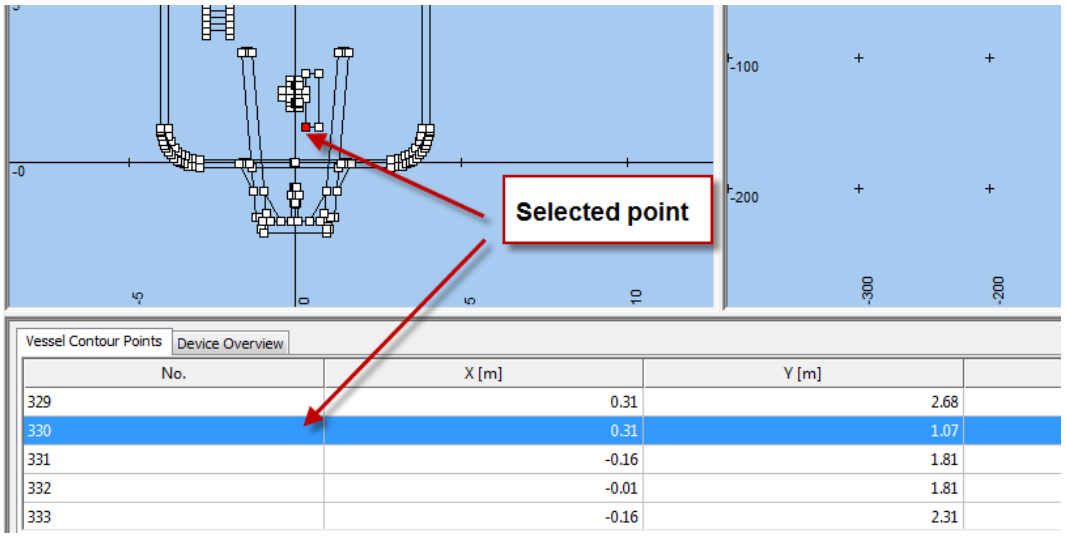


Figure 2-14 Point selection

It is possible to edit a point coordinate, type, color of the line or the fill color of the polygon by clicking in the associated field and editing the value.

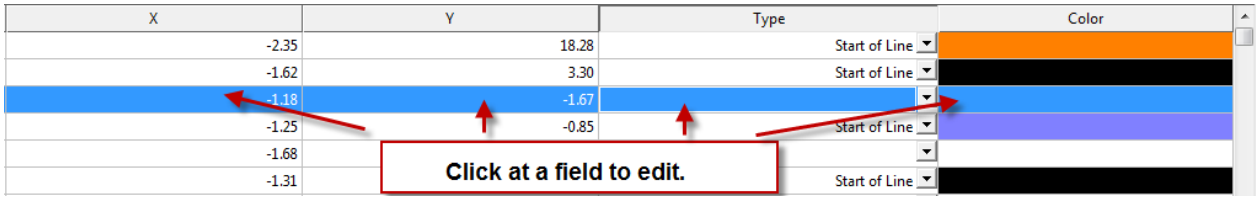


Figure 2-15 Edit a field

2.5.2 Device Overview

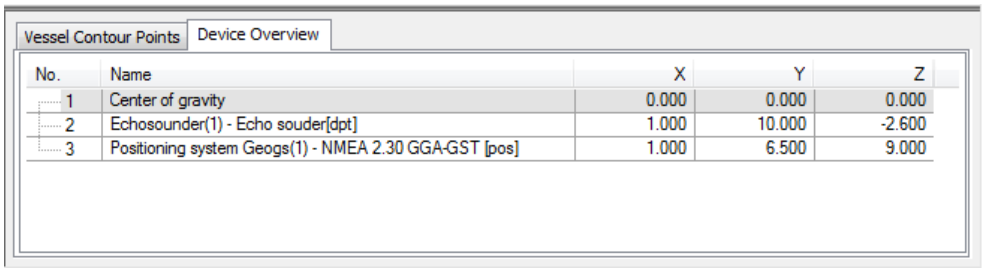


Figure 2-16 Numeric view – Device overview

When from the selection pane view the *Show device overview* checkbox is selected (see page 6), than the device overview tab listed the defined devices including their offsets.

The device offset locations are indicated in the vessel contour shape view as blue crosses. The number at the blue cross corresponds with the number of the device from the device overview list.

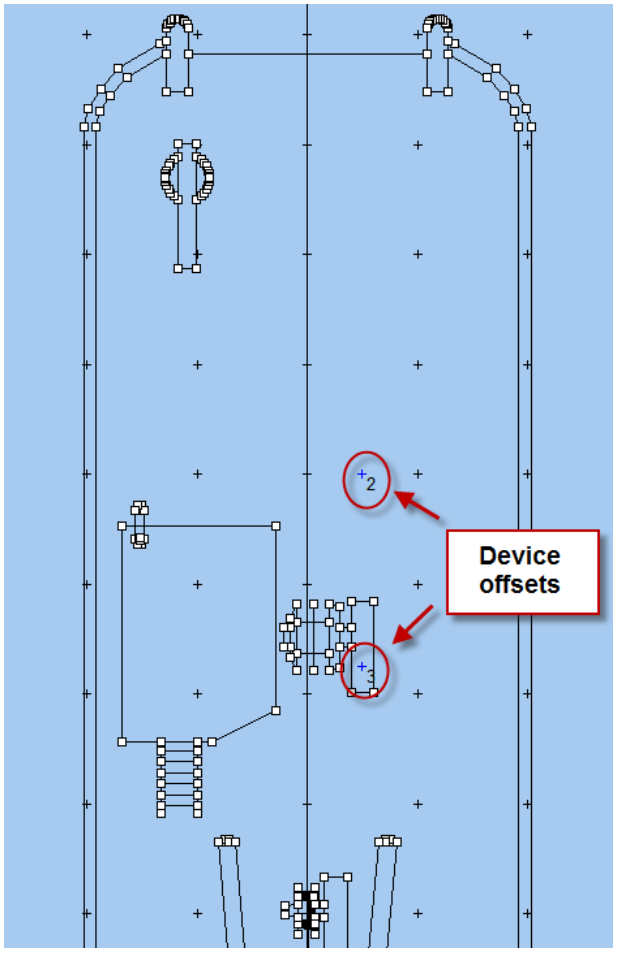


Figure 2-17 Device offsets

3 Operate

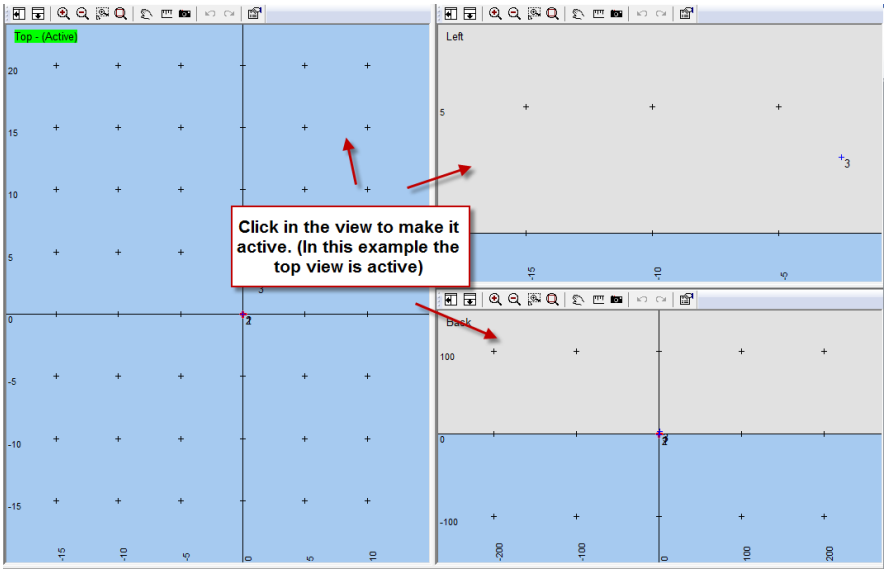
3.1 General

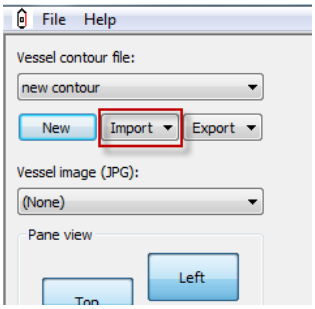
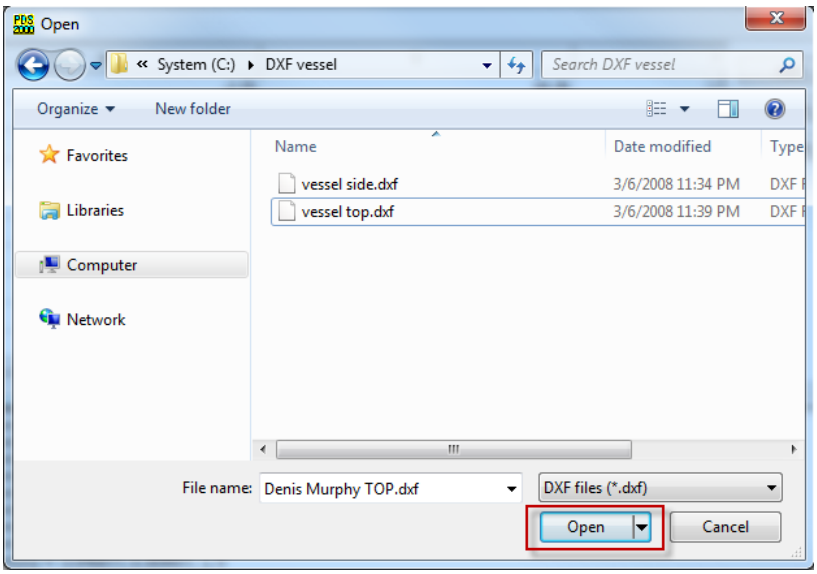
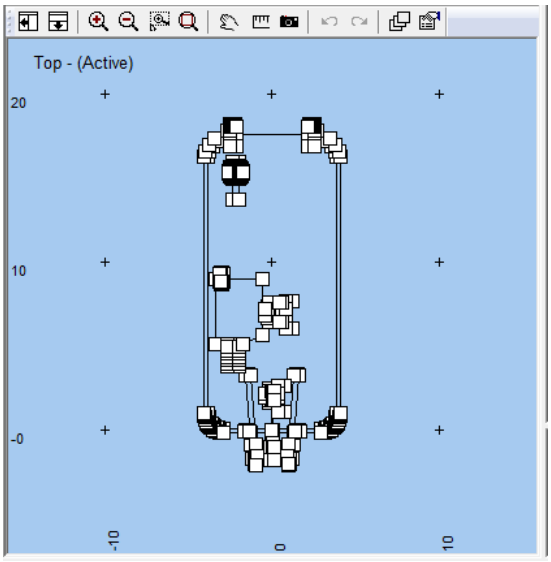
This chapter describes operational procedures for creating or editing a vessel contour with the vessel contour editor. It is possible to use a DXF drawing as a vessel contour or export a vessel contour as a DXF drawing.

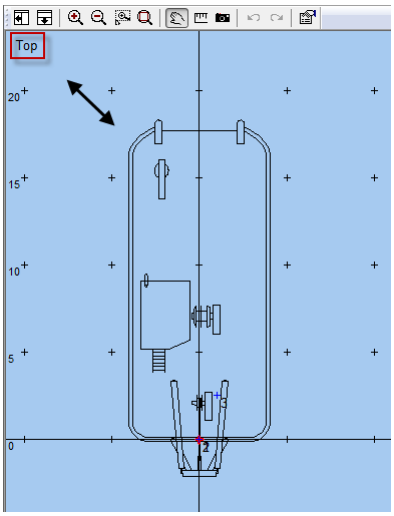
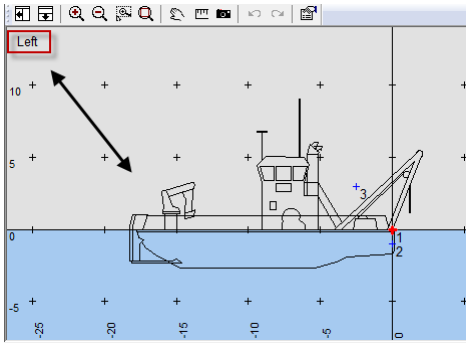
3.2 Import a DXF drawing

Explode blocks of the DXF drawing prior to import the drawing into PDS. The DXF drawing must consists of poly lines. Circles will not be displayed in the wireframe.

The next table describes the steps to import a DXF drawing.

Step	Action
1	Click on the correct vessel shape to make it the active view. The active vessel shape view should: • Top when the DXF drawing is a top view drawing; • Right or Left when the DXF drawing is a left or right side view drawing; • Front or back when the DXF drawing is a front or back side view drawing. 

Step	Action
2	Press from the selection pane the *Import* button and select *From DXF...* 
3	Browse to the DXF file and press the *Open* button.  Select the DXF file corresponding with the active shape view. (See step 1)
4	The drawing is loaded into the shape view.  Be aware the imported DXF drawing corresponds with the selected pane

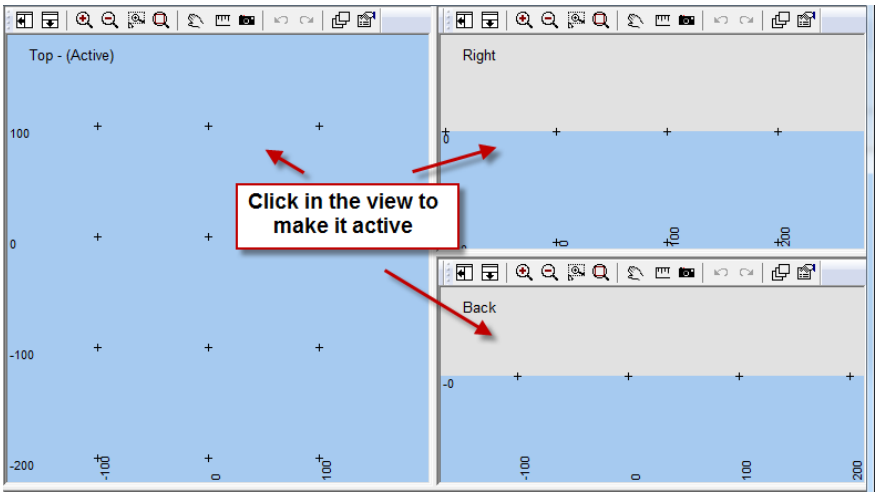
Step	Action
	view. (E.g. a top shape view displays the top DXF drawing and a left shape view the left DXF drawing.)  

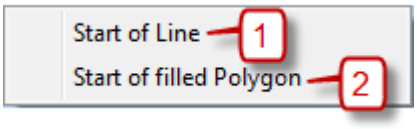
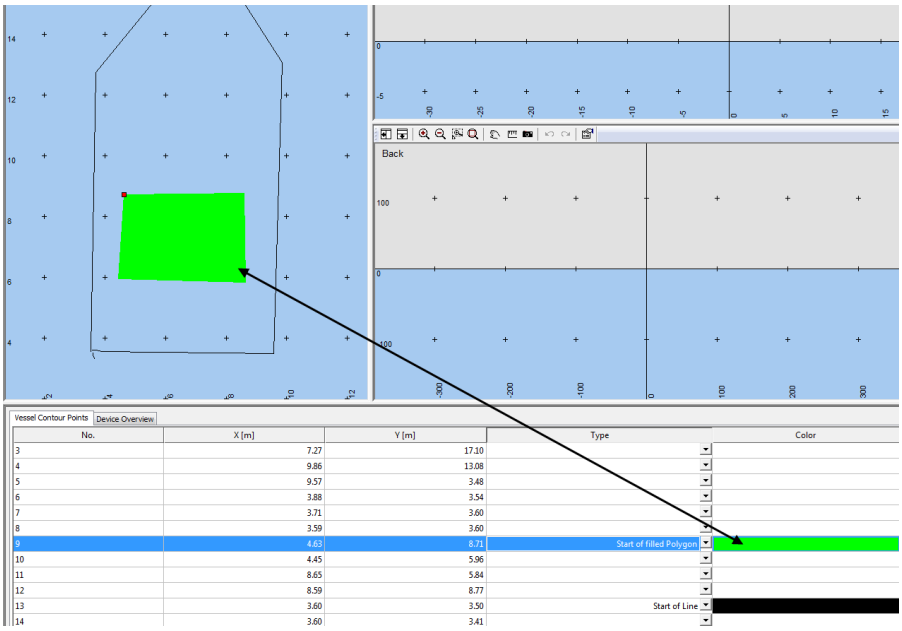
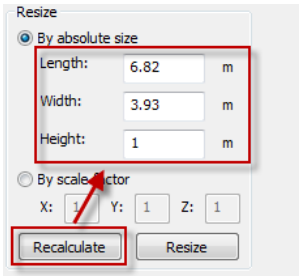
3.3 Drawing a Contour

3.3.1 General

It is only possible to draw a vessel contour graphically. When a picture of the vessel or for example the deck plan is available, it is possible to use this as a background. A vessel contour can draw from it.

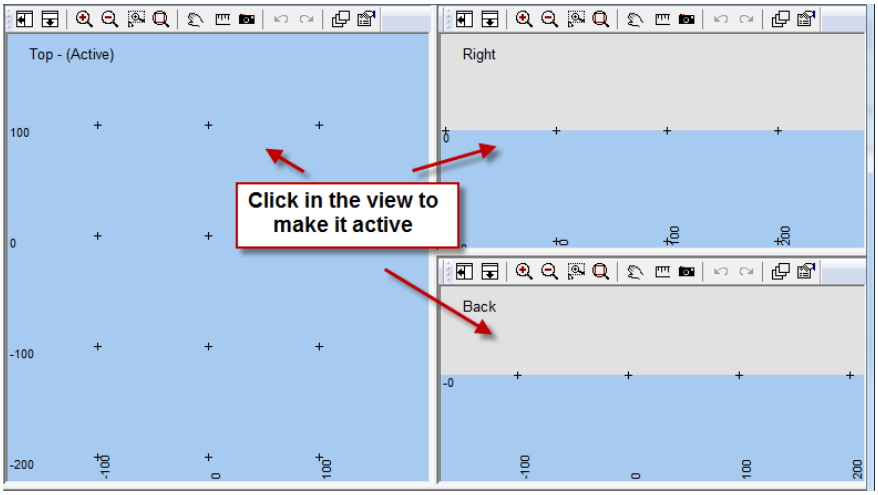
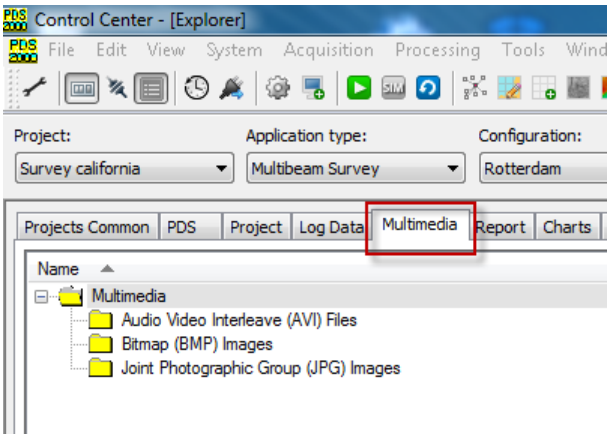
The next table describes the steps to draw a vessel contour.

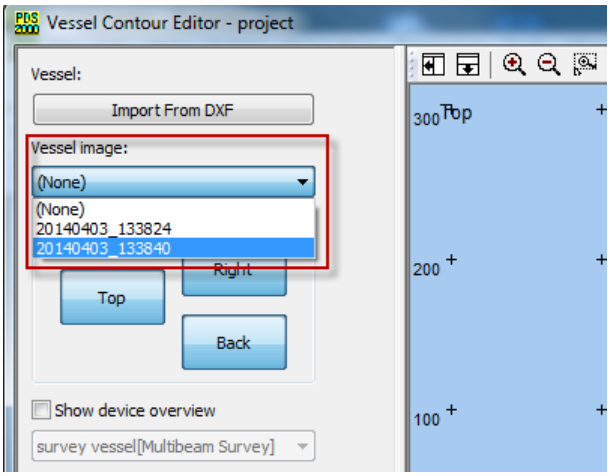
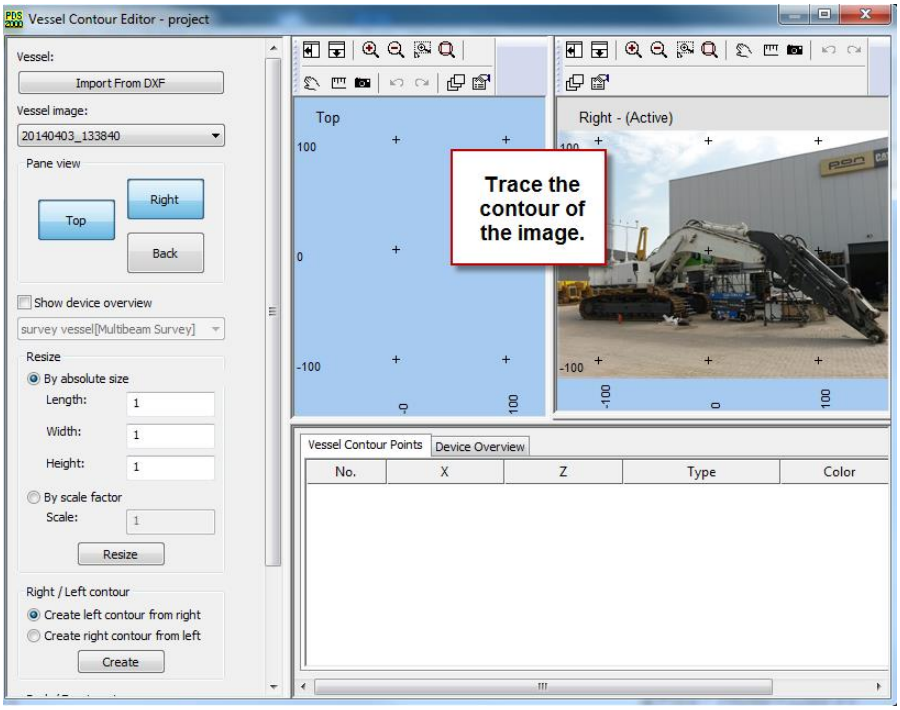
Step	Action
1	Click on the correct vessel shape to make it the active view. The active vessel shape view should: • Top when a top view is to be drawn; • Right or Left when a left or right side view is to be drawn; • Front or back when a front or back side view is to be drawn. 

Step	Action
2	Right-click in the corresponding shape view to open a context menu.
3	Select from the context menu. (See the next figure.) 1. Start of line to draw a line 2. Start of filled Polygon to draw a polygon.  Move and click the mouse button to draw the contour. Right click when finished. It is possible to change the color of the polygon from the numeric view. 
4	Press the *Recalculate* button to see the length, width and height of the created vessel contour. 

3.3.2 Using a JPG picture as background

Load a JPG image of the vessel or a deck plan and draw a vessel contour from it. It is possible to scale the contour in an X,Y and Z direction afterwards. The next table describes these steps.

Step	Action
1	Click on the correct vessel shape to make it the active view. The active vessel shape view should: • Top when a top view should be drawn; • Right or Left when a left or right side view should be drawn; • Front or back when a front or back side view should be drawn. 
2	Copy the JPG picture in the PDS explorer – Multimedia folder. It is possible to drag and drop a file into the Multimedia tab. PDS will place it automatically in the correct folder. 

Step	Action
3	Select from the vessel image drop down list the JPG image. Beware the image has the same side view as the active shape view. (See step 1) For example use a JPG image from the top of the vessel for the top shape view. Or a JPG image from the side of the vessel for the left shape view. 
4	The JPG image is displayed in the active shape view. It is now possible to trace graphically the contour by using the image as a background. (See section 3.3)  Select from the image drop down list *None* (see step 3) to display the drawn contour only.

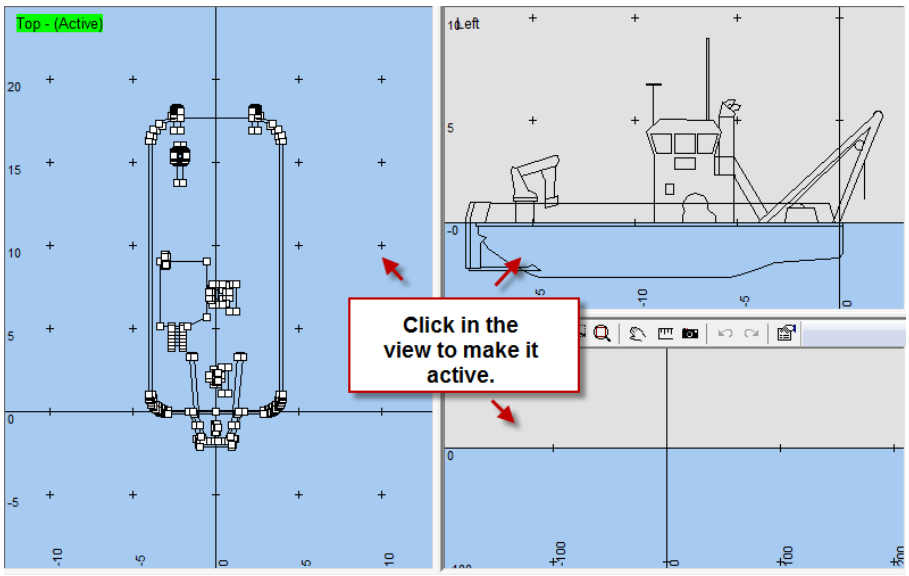
3.4 Edit a Contour

It is possible to edit the vessel contour:

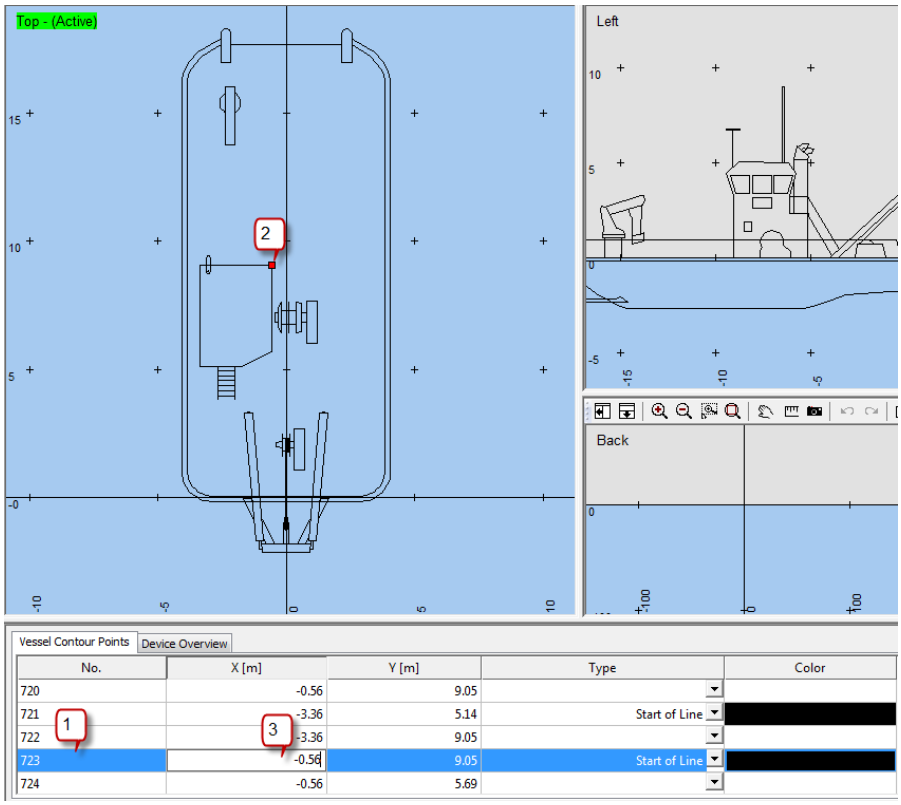
- Numerical;
- Graphical.

3.4.1 Numerical Editing

The next table describes the steps to edit a vessel shape numerical.

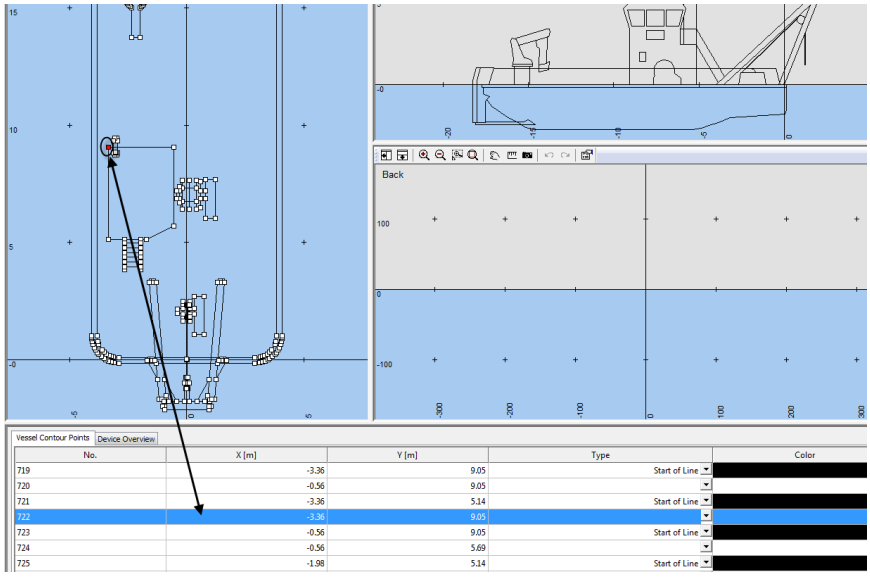
Step	Action
1	Click on the correct vessel shape to make it the active view. The active vessel shape view should: • Top when a top view is to be edited; • Right or Left when a left or right side view is to be edited; • Front or back when a front or back side view is to be edited. 

Step	Action
2	See the next figure.



1. Select the point from the Numeric view.
2. In the shape view this point is indicated by a red gripper.
3. Click in the corresponding field to change the setting (E.g. the X value.)

When a gripper is selected from the shape view then this point is highlighted in the numeric view.



3.4.2 Graphical Editing

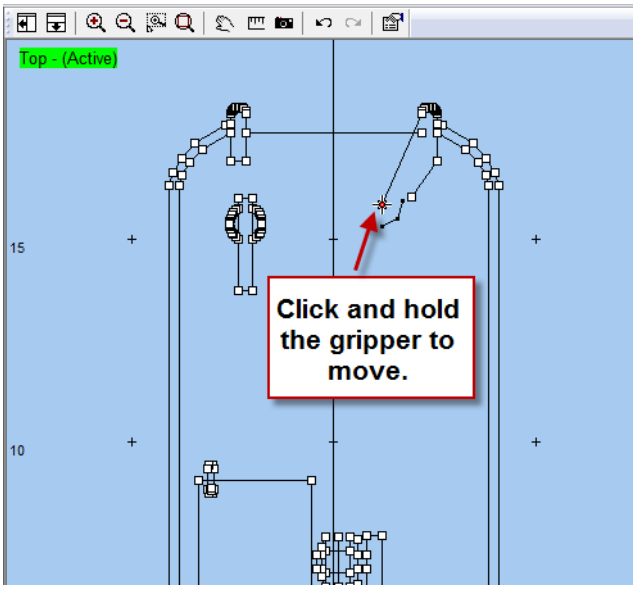
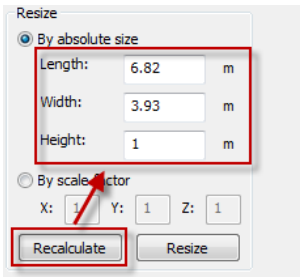
Graphically it is possible to:

- Move a point by moving a gripper
- Shift a vessel contour
- Rotate a vessel contour

Click in the view to have grippers on the vessel contour displayed. It is possible to change the size of the grippers from the layer properties.

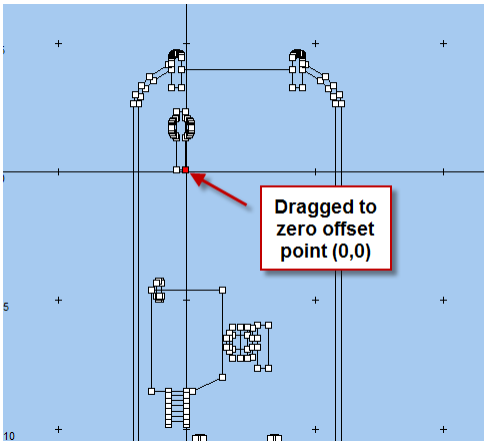
3.4.2.1 Move a point by a gripper

The next table describes the steps to move a gripper

Step	Action
1	Click on the gripper and hold the button pressed. 
2	Drag the gripper to the desired location. On this way it is possible to change the vessel contour shape.
3	Press the *Recalculate* button to see the new length, width and height of the edited vessel contour. 

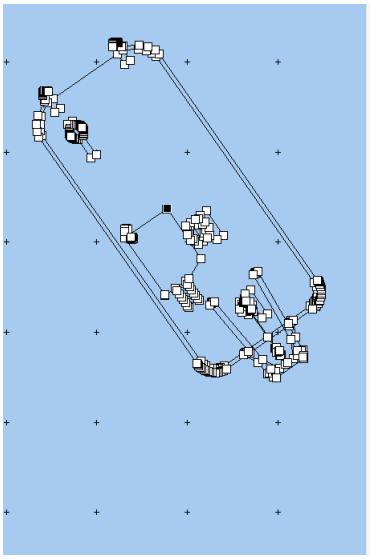
3.4.2.2 Shift a Vessel contour

The next table describes the steps to shift a vessel contour.

Step	Action
1	Press and hold the keyboard <SHIFT> key.
2	Click and hold the gripper.
3	Move the mousse to drag the vessel contour. On this way it is possible to set the zero offset point on a different location. 

3.4.2.3 Rotate a Vessel Contour

The next table describes the steps to rotate a vessel contour.

Step	Action
1	Press and old the keyboard <CONTROL> (CTRL) key and click and hold a gripper simultaneously.
2	Move the mouse.
3	The vessel contour rotates around its zero reference point. 

3.5 Scale a Vessel Contour

It is possible to scale a vessel contour:

- Absolute
- By X,Y and Z scale factor

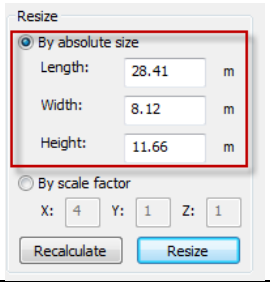
Scaling applies for all vessel shape views (top, left, right, forward and back).

3.5.1 Absolute Scaling

For absolute scaling the vessel contour will get the entered values for the:

- Length
- Width
- Height.

The next table describes the steps to scale a vessel contour absolute

Step	Action
1	Enter the new value for the vessel contour length, width and / or height in the box. 
2	Press the *Resize* button.

3.5.2 Scaling by Scale Factor

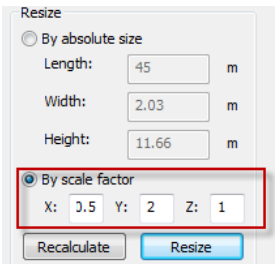
It is possible to scale the X,Y and Z distance of the vessel contour by an entered factor.

X = distance port side <->starboard side.

Y = distance bow <->aft.

Z = distance highest point vessel (e.g. top mast) <->lowest point vessel (e.g. keel).

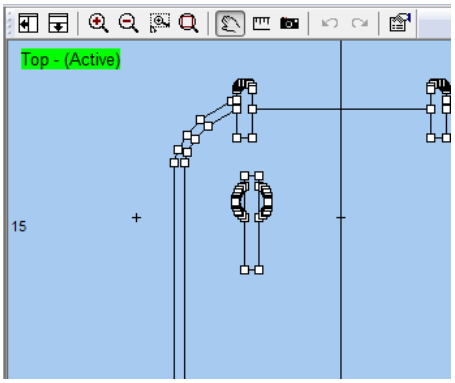
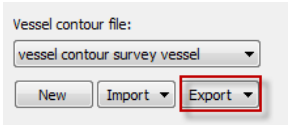
The next table describes the steps to scale the contour by a scale factor.

Step	Action
1	Enter the scale factor for the X,Y,Z in the box. 
2	Press the *Resize* button.

3.6 Export a Contour to DXF

It is possible to export a created vessel contour as a DXF drawing.

The next table describes the steps to export a vessel contour to a DXF file.

Step	Action
1	Click on the vessel shape view to be exported. (This is the active shape view.) 
2	Press the *Export* button.  Select the *To DXF…* button.
3	Select the folder and file name. Press *Save*. The vessel contour is saved as a DXF drawing.

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