DeepVision

DeepView 4.x

3.2 Measuring distance and height in Side Scan Sonar files

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Introduction

When using the DeepView Side Scan module, it is often useful to measure the size of objects in the picture. This document will guide you through the features and tools for measuring height and length of objects in a side scan image.

To handle Side Scan Sonar data you will need a license for the Side Scan module. For more information about licenses, please refer to the user guide *1 System Requirements and Installation.*

If you are new to DeepView or Side Scan Sonar, it is recommended to get familiar with the software and the basics of Side Scan Sonar before you proceed with this user guide.

DeepView is a complete environment for recording, processing and handling sonar data. The picture below displays the DeepView environment.
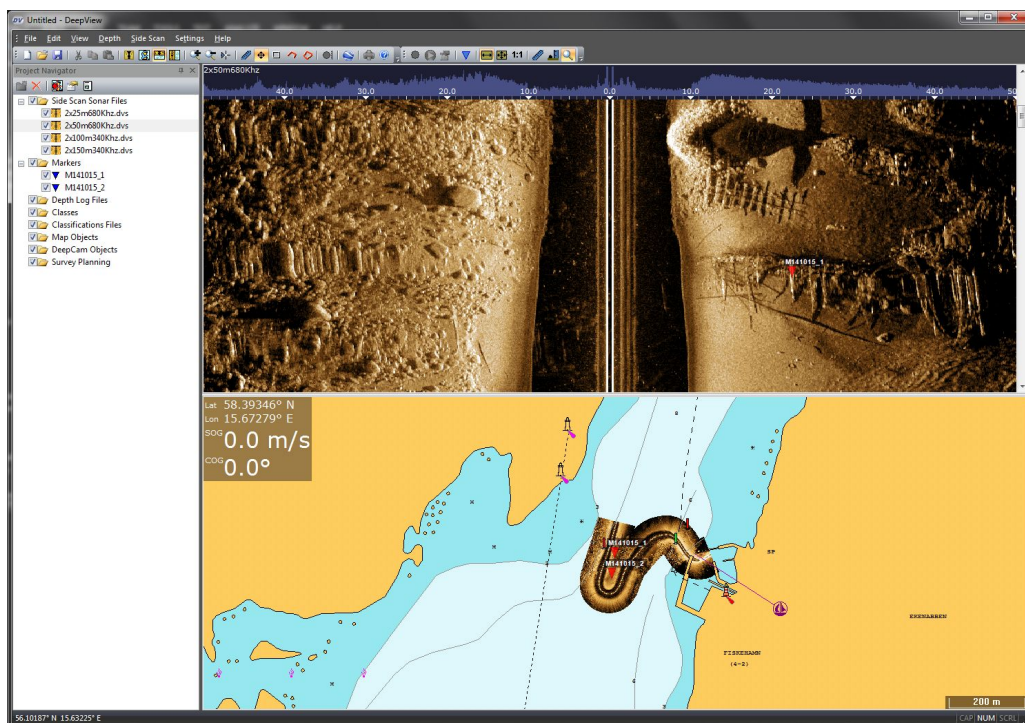

Figure 1: *The DeepView software environment.*

Measure Distances

The distance measuring tool is located in the Side Scan toolbar. This tool makes it possible for the user to measure distances in a Side Scan file. You can also use it to measure the length of an object that is displayed in the object view.

To use this tool follow the step by step instructions.

- Select 📐 in the Side Scan toolbar.

- Press and hold the left mouse button at the starting point of the measurement.

- Hold the left mouse button as you drag the mouse to the end point.

- The length and compass direction of the measurement are displayed in a black box in the object view.
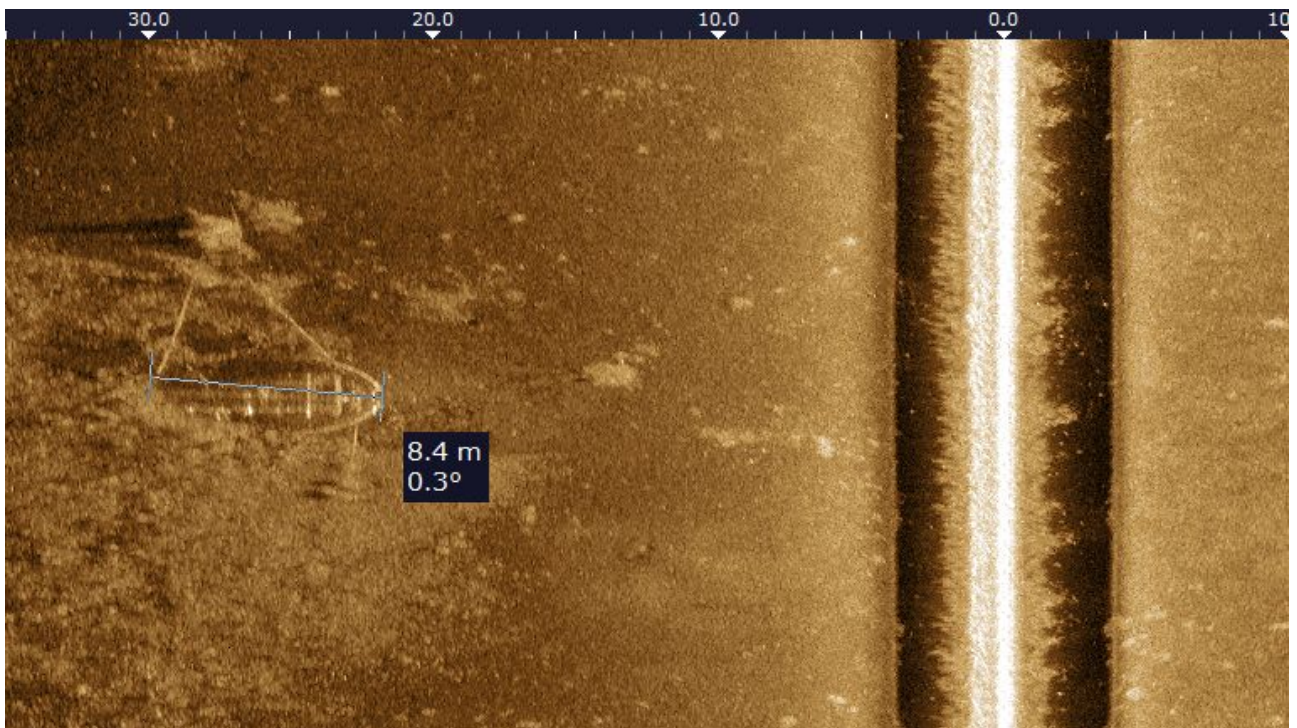

Figure 2: Distance measurement of an object in a Side Scan file.

The angle displayed in the black box tells you the orientation of the measured object in the map. Zero degrees corresponds to north in the map. The angle increases clockwise, which means east will be at ninety degrees. The object in the picture above has an angle of 0.3 degrees, which means that it is pointing to the north.

Measure Heights

To the right of the measure distance tool, the measure height tool, ▲▌, is located. This tool makes it possible for the user to measure the height of an object in a Side Scan Sonar file. As Side Scan Sonar data is a 2D representation of the sea bottom, it is a bit more complex to measure heights compared to measuring distances.

The method of measuring heights in DeepView is to measure the shadow of an object. The Side Scan Sonar transmits signals in the form of fan, which means objects will be hit at an angle. This will result in an area behind the object which will not get hit and therefore will be seen as a shadow in the Side Scan Sonar image. The size of the area depends on the angle at which the object is hit. Greater angles result in larger areas. The DeepView Software calculates the height using trigonometry. This method is the most trustworthy when the Side Scan Sonar file is of a plain bottom. The more complex structure of the surveyed sea bottom, the less precise the measured height.

To measure height, perform the following instructions step by step:

- Select ▲▌ in the Side Scan toolbar.

- Select the bottom line where the object is by left clicking at the end of the water column.

- Select the start of the object's shadow by pressing the left mouse button.

- Left click at the end of the shadow. A black box with information about the height appears in the Object View.
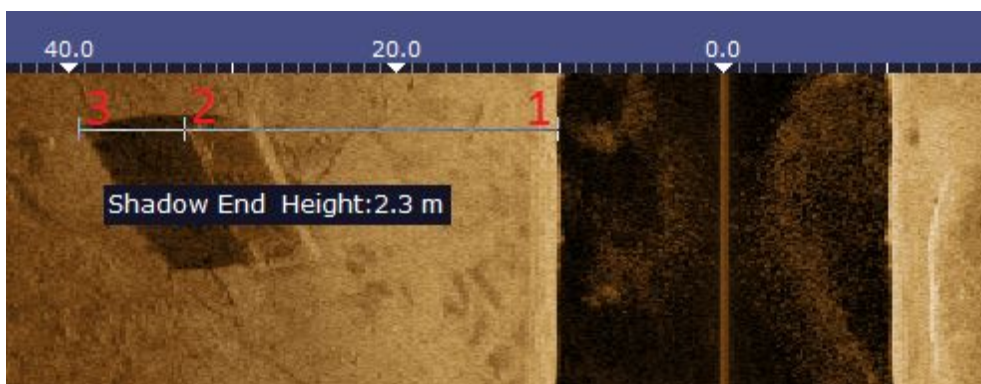

Figure 3: Height measurement of an object in the object view. The bottom line (1) is the first echo after the water column. The shadow start (2) is the part of the shadow closest to the water column. The shadow end is the part of the shadow furthest away from the water column.