

# DredgerNaut

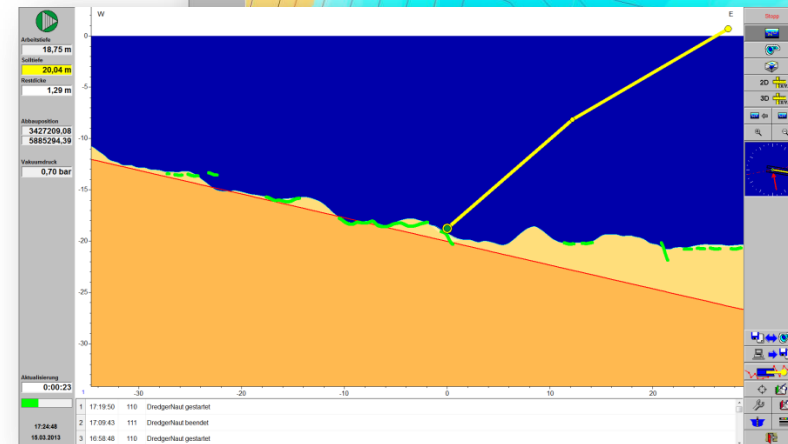
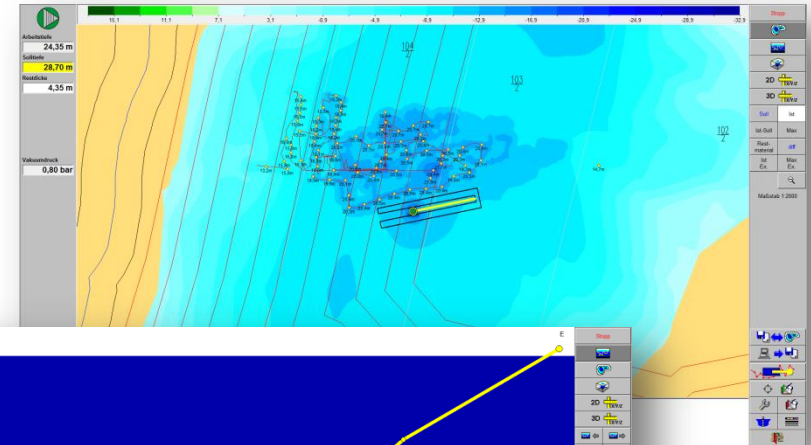


## DXF-export (Isolines)

Technical brief

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## 1 Introduction

**DredgerNaut** is a measuring and visualization system for the positioning of dredgers and the continuous documentation of mining operations in sand and gravel mines.

This technical brief contains explanations how to use the *Isolines* or *DXF-export* function.

**DXF** (Drawing Interchange Format, or Drawing Exchange Format) is a CAD data file format developed by Autodesk for enabling data interoperability between AutoCAD and other programs.

In **DredgerNaut** this file format is used to export isolines, i.e. lines connecting points of the same depth, to share that data with the surveyor.

## 2 Go to ,Documentation functions‘

The **DXF-export** is part of the Documentation functions, so you have to select the marked icon on the main screen first.

The screenshot displays the DredgerNaut software interface. On the left, there are several input fields for parameters:

- Water line: 151,30 m
- working depth: ---
- Target depth: 0,30 m
- Remaining thickness: ---
- Position: ---
- working level: ---
- Target height: 151,00 m

At the bottom left, the date and time are shown: 16:21:55, 21.04.2017.

The main area features a color scale bar at the top, ranging from 159 m ü.A. (dark green) to 115 m ü.A. (dark blue). Below the scale is a large empty grey area.

On the right side, there is a vertical toolbar with various icons. A red arrow points to the icon representing a computer monitor and a document, which is the DXF-export function.

At the bottom right, there is a log table with the following data:

1	16:21:29	110	DredgerNaut started
2	16:20:11	111	DredgerNaut ended
3	16:00:20	110	DredgerNaut started

## 3 Menu ,Documentation functions‘

The buttons in the upper right hand corner change to present the following Documentation functions:  
(from top to bottom)

- **Print**
- **Isolines (DXF-export)**
- **Plot**

Select **Isolines (DXF-export)** by pressing the marked button.

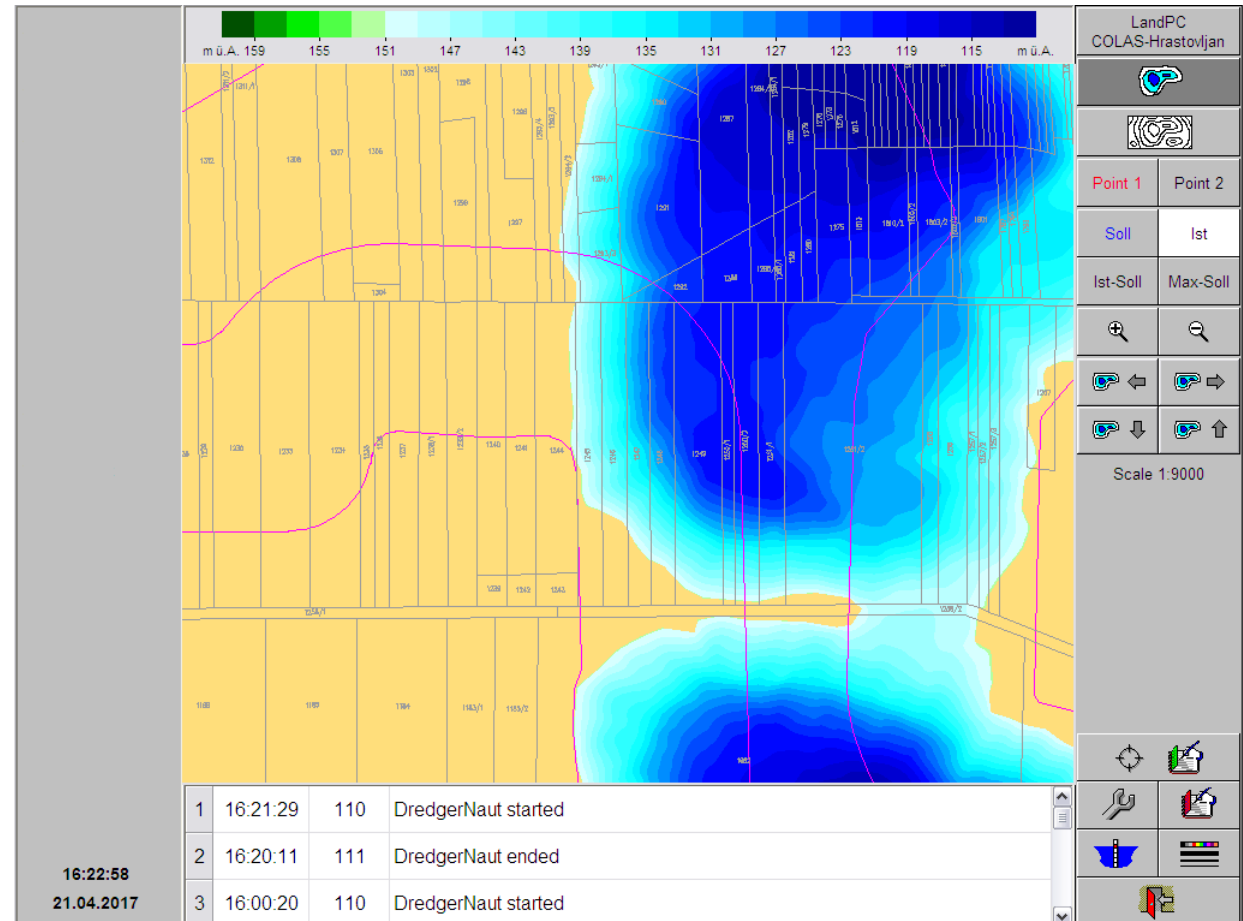
The screenshot displays the DredgerNaut software interface. On the left, there are input fields for 'Water line' (151,30 m), 'working depth', 'Target depth' (0,30 m), 'Remaining thickness', 'Position', 'working level', and 'Target height' (151,00 m). The main area shows a bathymetric map with a color scale from 159 m ü.A. (yellow) to 115 m ü.A. (dark blue). A red arrow points to the 'Isolines (DXF-export)' button in the top right corner of the interface. Below the map is a log table with the following data:

1	16:21:29	110	DredgerNaut started
2	16:20:11	111	DredgerNaut ended
3	16:00:20	110	DredgerNaut started

The bottom left corner shows the time 16:22:34 and the date 21.04.2017. The bottom right corner shows the scale 1:9000 and various navigation and tool icons.

## 4 Isolines (DXF-export)

The buttons in the upper right hand corner change again, you are presented with two buttons named **Point 1** and **Point 2**, used to select the area (rectangle) to export.



## 5 Selecting an area, Point 1

Select button **Point 1** and the last used rectangle will be redrawn on the map. Click anywhere onto the map to set the **red** upper left corner of the rectangle to that position.

The screenshot displays the DredgerNaut software interface. At the top, a color scale bar indicates depth in meters above sea level (m ü.A.), ranging from 159 to 115. The main map area shows a yellow background with a blue and cyan bathymetric area. A black rectangle is drawn on the map, with a red dot at its upper-left corner. The left panel shows the coordinates for Point 1 (502413,95; 5129374,94) and Point 2 (502652,62; 5128879,45), along with a distance of 549,97m and a direction of 154°. The right panel includes a toolbar with various navigation and tool icons, and a scale of 1:18000. The bottom panel shows a log of events:

1	16:21:29	110	DredgerNaut started
2	16:20:11	111	DredgerNaut ended
3	16:00:20	110	DredgerNaut started

The current time is 16:24:14 and the date is 21.04.2017.

## 6 Selecting an area, Point 2

Next, select button **Point 2** and click onto the map where you want to position the **black** lower right corner of the rectangle.

Every new click will move the currently selected point to that position. Using **Point 1** and **Point 2** you can reposition the rectangle corners as often as you like.

In our example, the whole upper lake area was chosen.

When finished positioning the rectangle click the **Isolines (DXF-export)** button again.

The screenshot displays the DredgerNaut software interface. At the top, a color scale bar indicates elevation in meters above sea level (m ü.A.), ranging from 159 to 115. The main map area shows a topographic map with a blue and cyan shaded area representing a lake or water body. A black rectangle is drawn over the upper part of the lake, with a red arrow pointing to its top-right corner. The interface includes several toolbars and panels:

- Left Panel:** Displays coordinates for Point 1 (502413,95; 5129374,94) and Point 2 (502889,93; 5128769,83), along with Distance (769,87m) and Direction (142°).
- Top Right Panel:** Shows the user profile (LandPC COLAS-Hrastovljan) and a map overview icon.
- Right Panel:** Contains buttons for Point 1, Point 2, Soll, Ist, Ist-Soll, and Max-Soll, along with navigation icons (zoom in, zoom out, pan, etc.) and a scale of 1:18000.
- Bottom Panel:** A log table with the following data:

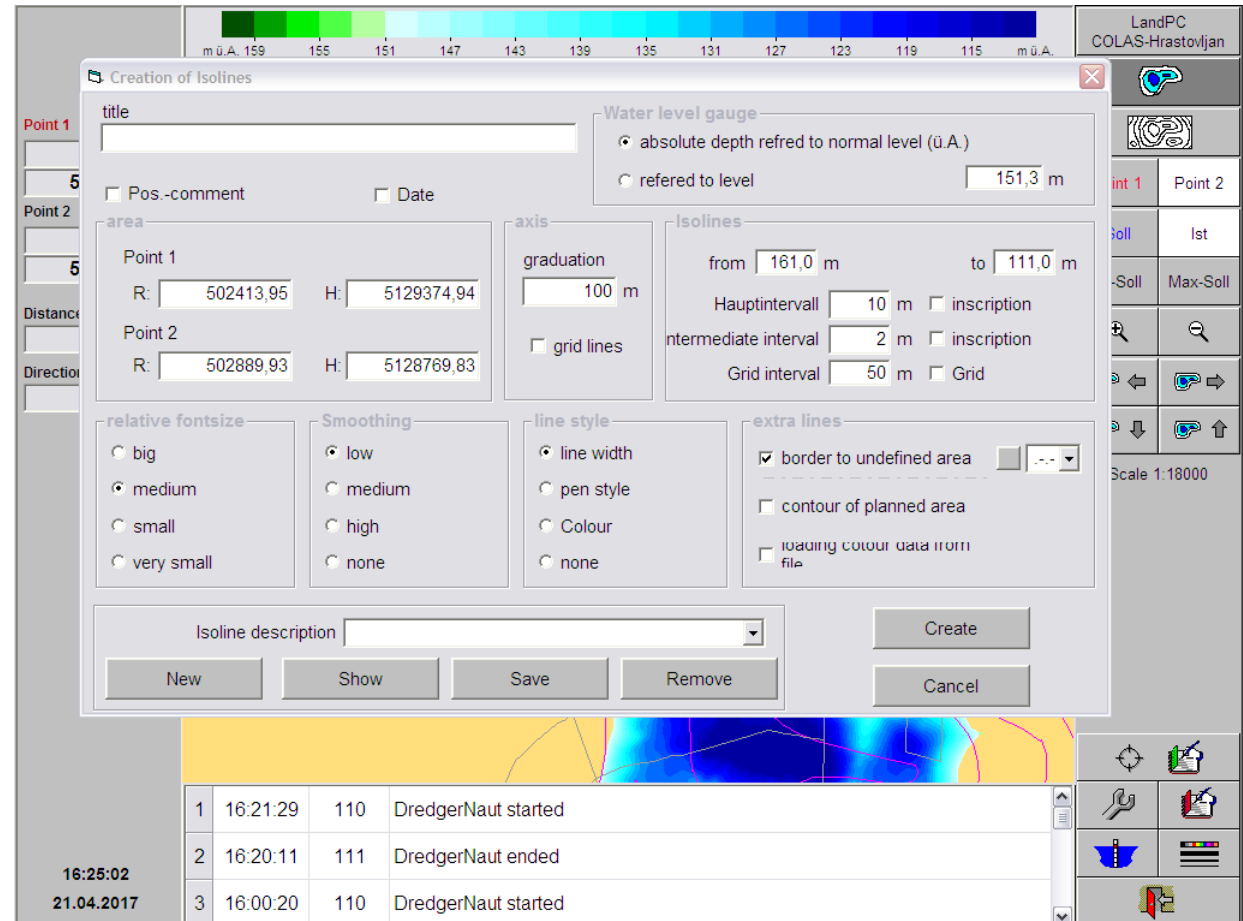
ID	Time	Value	Description
1	16:21:29	110	DredgerNaut started
2	16:20:11	111	DredgerNaut ended
3	16:00:20	110	DredgerNaut started

Additional information at the bottom left shows the current time as 16:24:41 and the date as 21.04.2017.



## 7 Export parameters

In the window presented several parameters for the export can be set or changed.



## 8 Export parameters (example)

Normally you will only have to enter a 'title' (top left) and a description (bottom middle).

When all parameters are set click the **Create** button (right bottom corner)

The screenshot shows the 'Creation of Isolines' dialog box with the following settings:

- title:** Test Colas
- Water level gauge:** absolute depth refred to normal level (ü.A.) (selected), 151,3 m
- area:** Point 1 (R: 502413,95, H: 5129374,94), Point 2 (R: 502889,93, H: 5128769,83)
- axis:** graduation 100 m, grid lines (unchecked)
- isolines:** from 161,0 m to 111,0 m, Hauptintervall 10 m, intermediate interval 2 m, Grid interval 50 m
- relative fontsize:** medium (selected)
- Smoothing:** low (selected)
- line style:** line width (selected)
- extra lines:** border to undefined area (checked), contour of planned area (unchecked), loading colour data from file (unchecked)
- Isoline description:** Upper lake

Buttons: New, Show, Save, Remove, Create, Cancel

## 9 Creating Isolines display

While the Isolines display is being created you will be shown a progress bar

LandPC  
COLAS-Hrastovljan

Point 1  
502413,95  
5129374,94

Point 2  
502889,93  
5128769,83

Distance  
769,87m

Direction  
142°

m ü.A. 159 155 151 147 143 139 135 131 127 123 119 115 m ü.A.

Point 1 Point 2  
Soll Ist  
Ist-Soll Max-Soll

Scale 1:18000

16:26:24  
21.04.2017

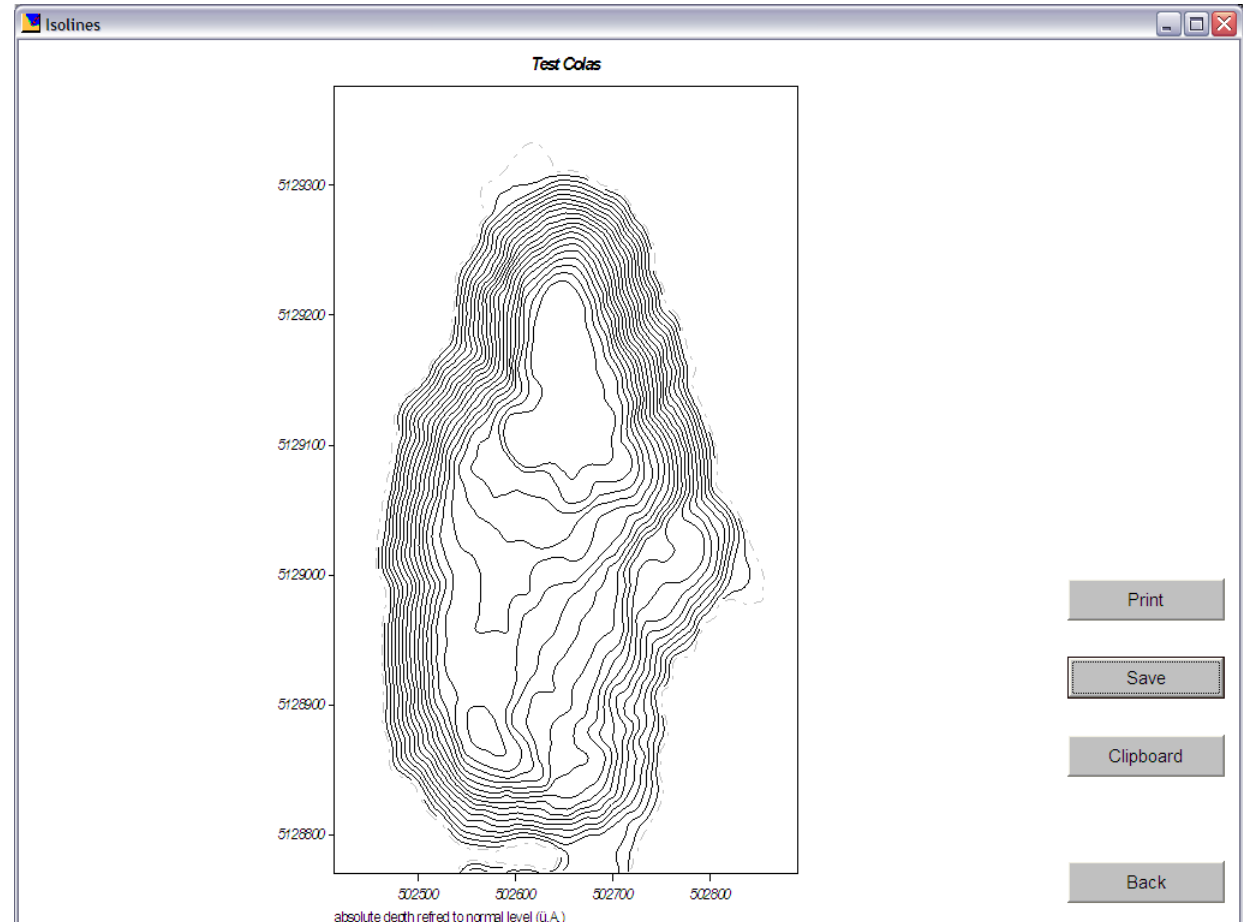
1	16:21:29	110	DredgerNaut started
2	16:20:11	111	DredgerNaut ended
3	16:00:20	110	DredgerNaut started

Creating Isolines  
Calculate depth values 00:00:05  
Cancel

## 10 Isolines display

The result is shown as a black-and-white depiction of the Isolines in the selected area. Using the buttons here the graphic can then be printed, saved to a file in DXF format (export) or transferred to the clipboard to be used by another program.

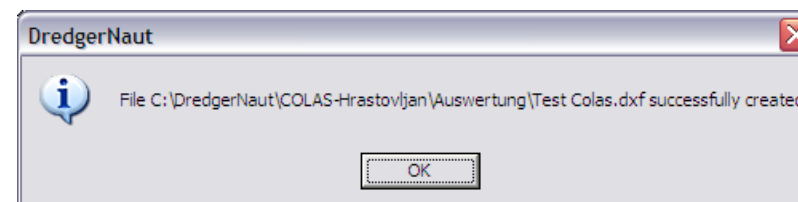
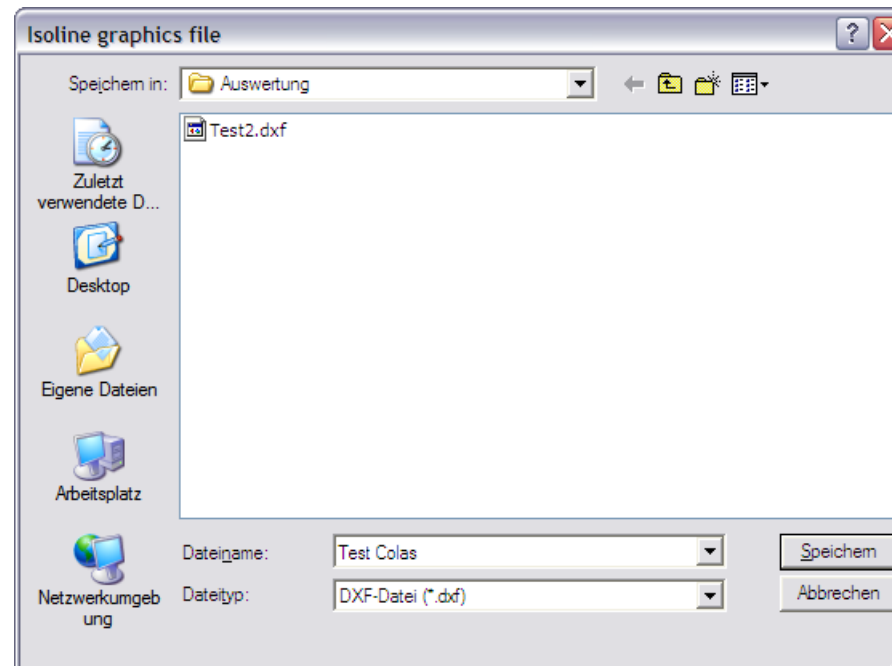
As we are talking **DXF-export** here, we will send the data to a file using the **Save** button.



## 11 Saving to a DXF-file

After clicking the **Save** button a standard dialogue from Windows will appear to select the location the file will be saved to.

A second dialogue window will confirm that the file was saved successfully.



## 12 Finished

After you have acknowledged the above 'success' dialogue you are back to the map display.

As usual use the button with the '*red door*' in the lower right hand corner repeatedly to return to the desired level in **DredgerNaut**.

