DredgerNaut

Data Transfer

Technical brief

Version: **10-9-4**

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DredgerNaut

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 concerning the *Data Transfer functions*.

The *Data Transfer functions* comprise exporting and importing depth values from and to map coordinates.

The export part is called *ASCII export*, the import part *Import scan*.

The data for one point on the map consists of at least 3 values:

X and Y   geo position coordinates (longitude and latitude)

Z   depth

A data file containing a number of such coordinate-triples, one per line, is called *scan file* in the nomenclature of **DredgerNaut**, not regarding if the data comes from an actual *scan* (i.e. a survey of the excavation site, or part of it, by boat) or from a map export or similar.
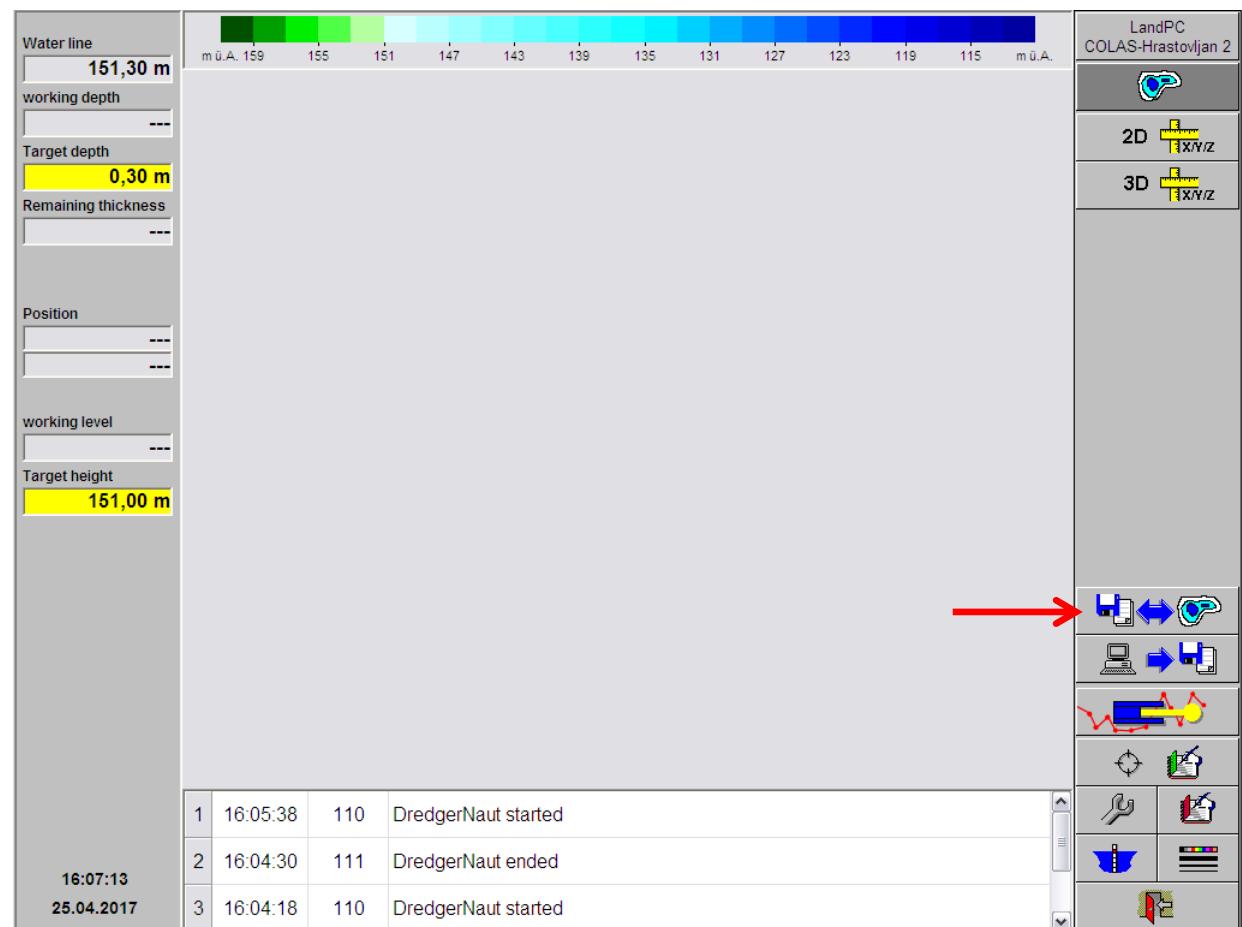
Several file formats are possible for scan files, distinguished by their file extension as usual in Windows. Most of these files formats are basically text files and contain data compatible with the CSV standard (**c**omma **s**eparated **v**alues).

This means that the 3 values mentioned above are put on one line, each separated by a comma: X, Y, Z

Instead of actual commas several other separators can be used, including tabulator, semicolon and so on. The preferred separator in **DredgerNaut** is the tabulator, as it will be handled the same by Windows no matter, which regional settings are used.

2   Go to ‚Data Transfer functions'

To go to Data Transfer functions you have to select the marked icon on the main screen first.
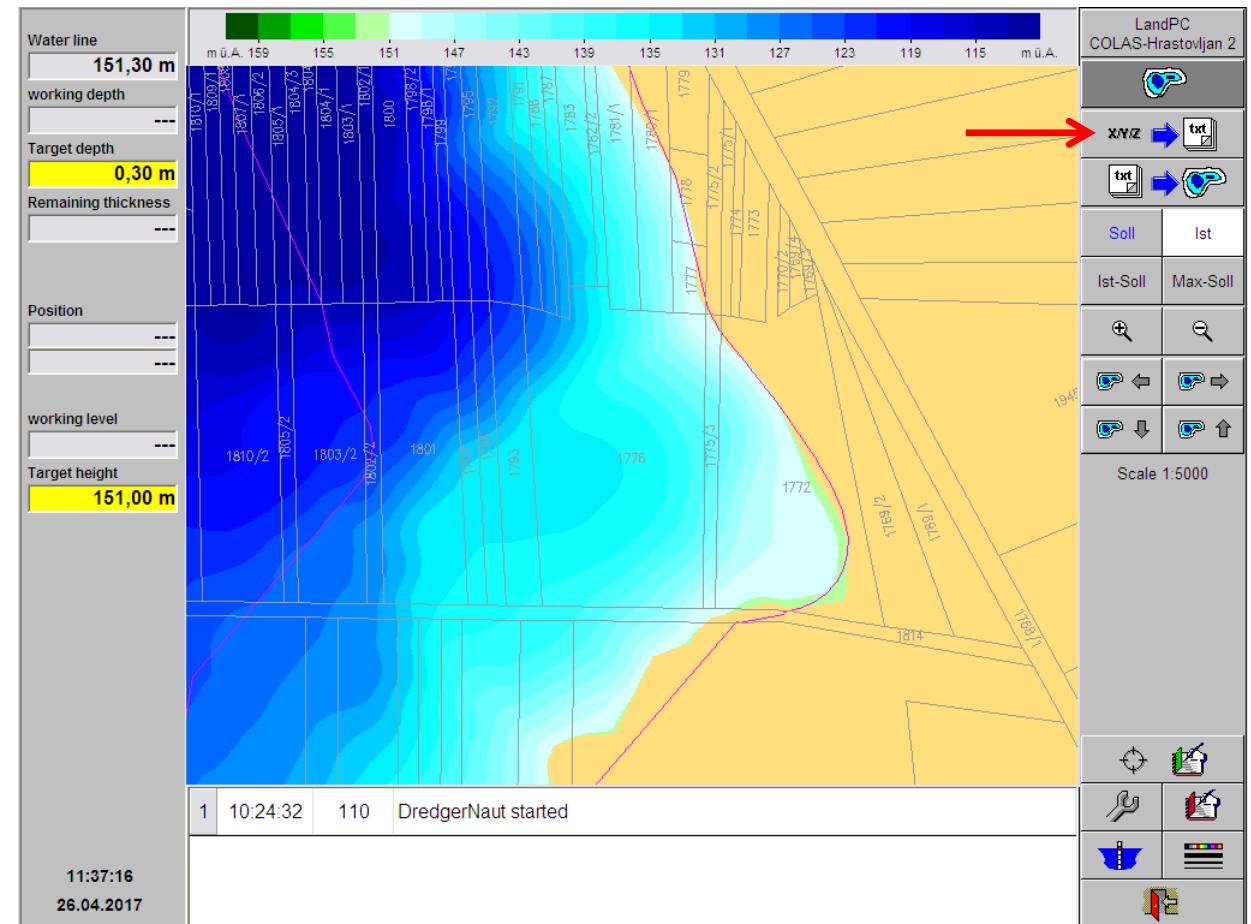
3   Menu 'Data Transfer functions', start ASCII export

The buttons in the upper right hand corner change

to present the following Data Transfer functions:

(from top to bottom)
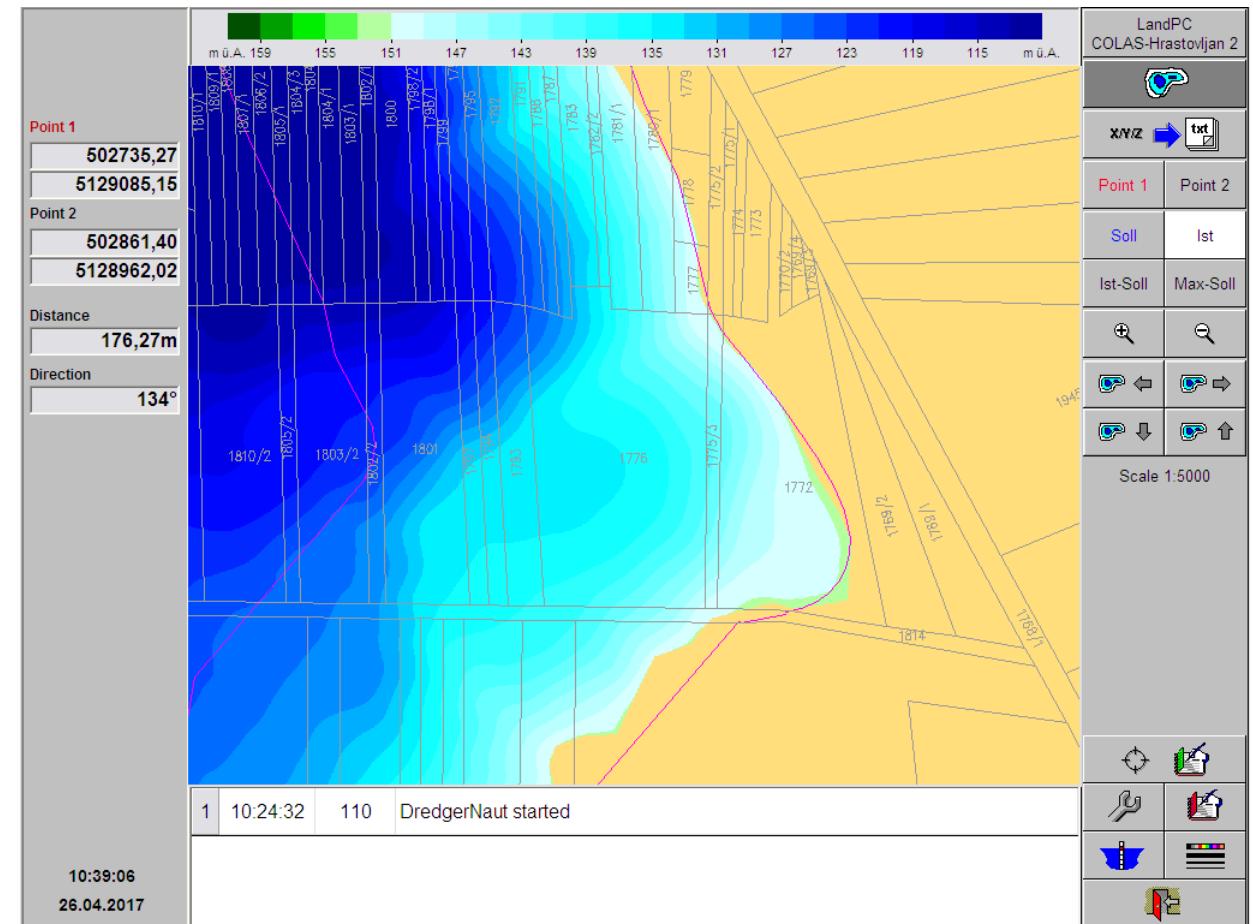
- *ASCII export*
- *Import scan*

We will explain *ASCII export* first, so please select it

by pressing the marked button.
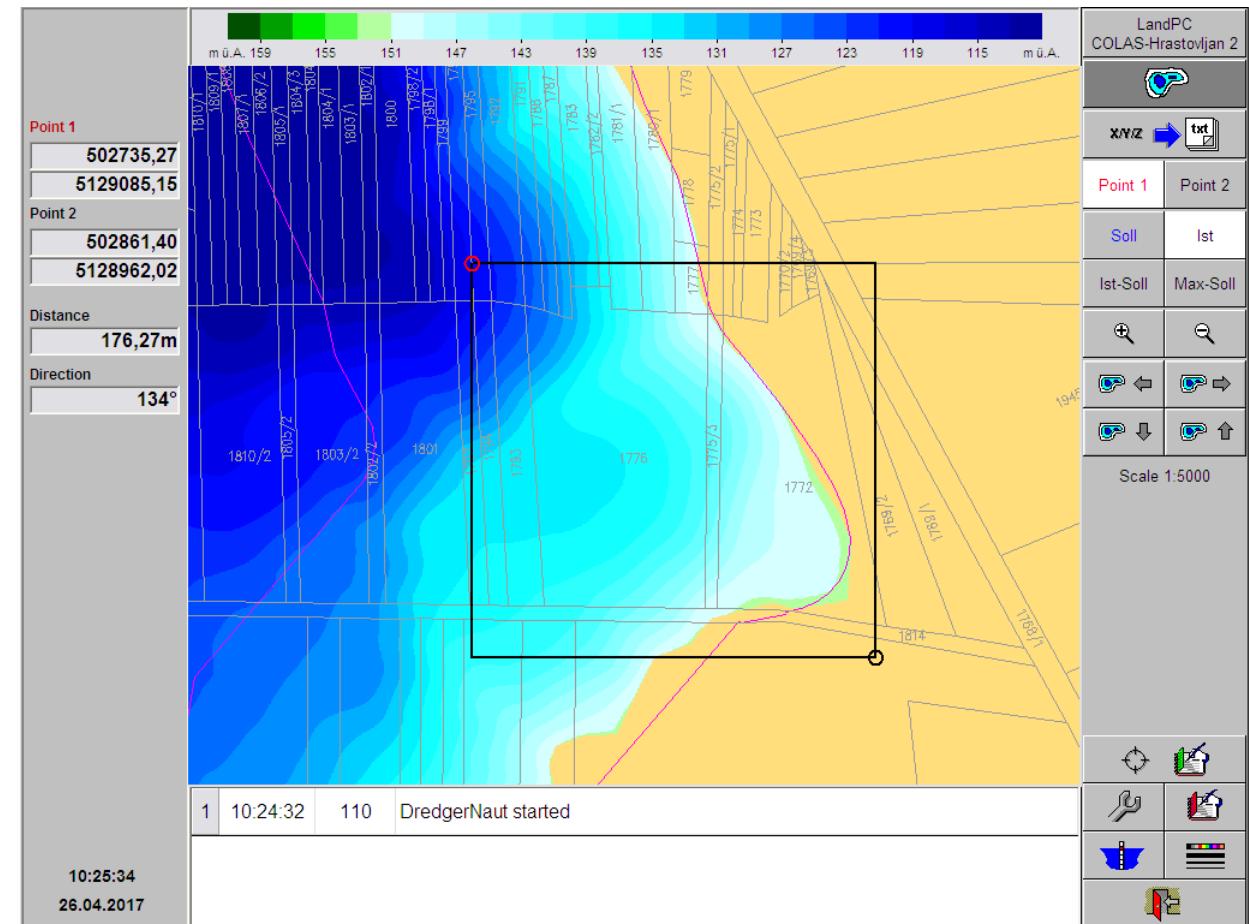
4 ASCII export

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.

Data Transfer

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.

# Data Transfer

DredgerNaut
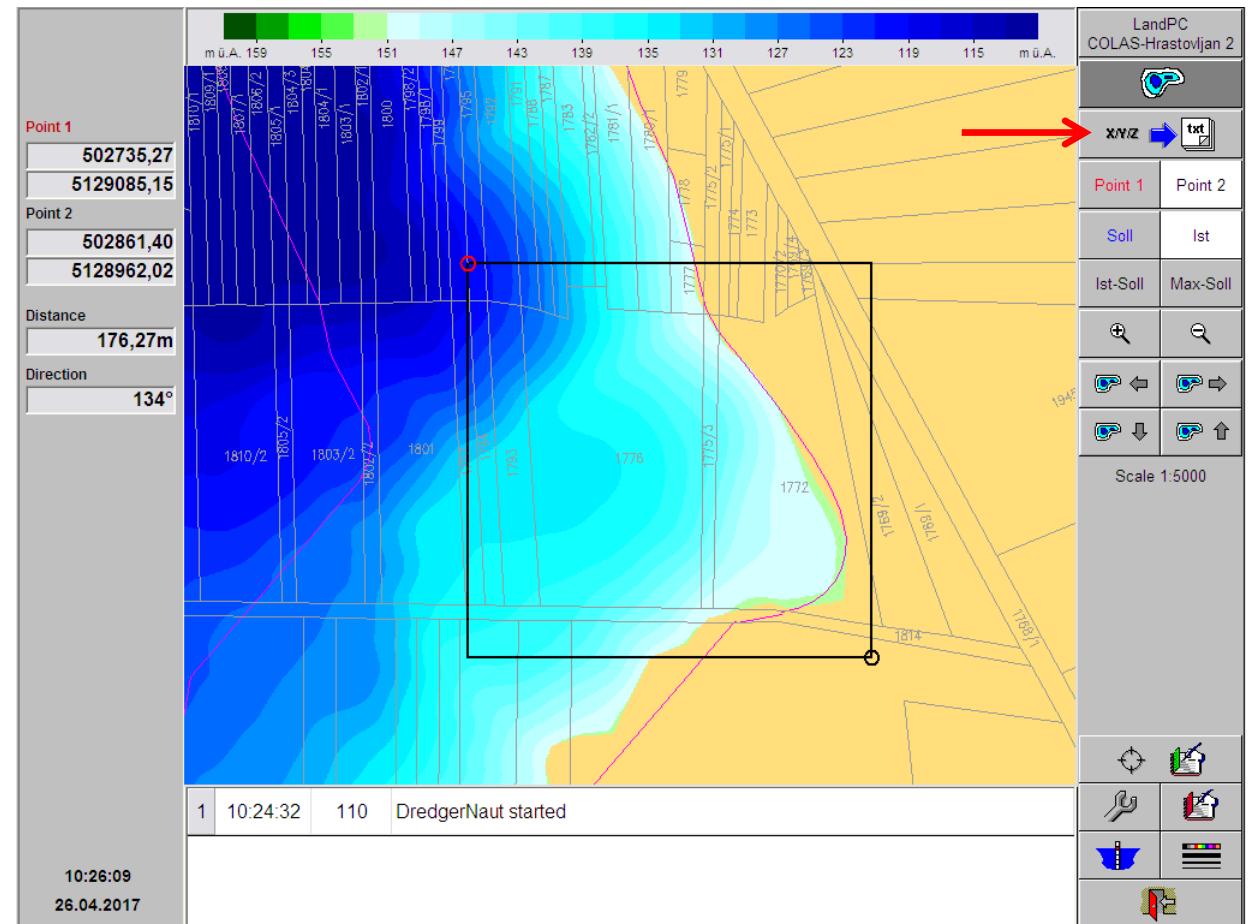
6 Selecting an area, Point 2

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.
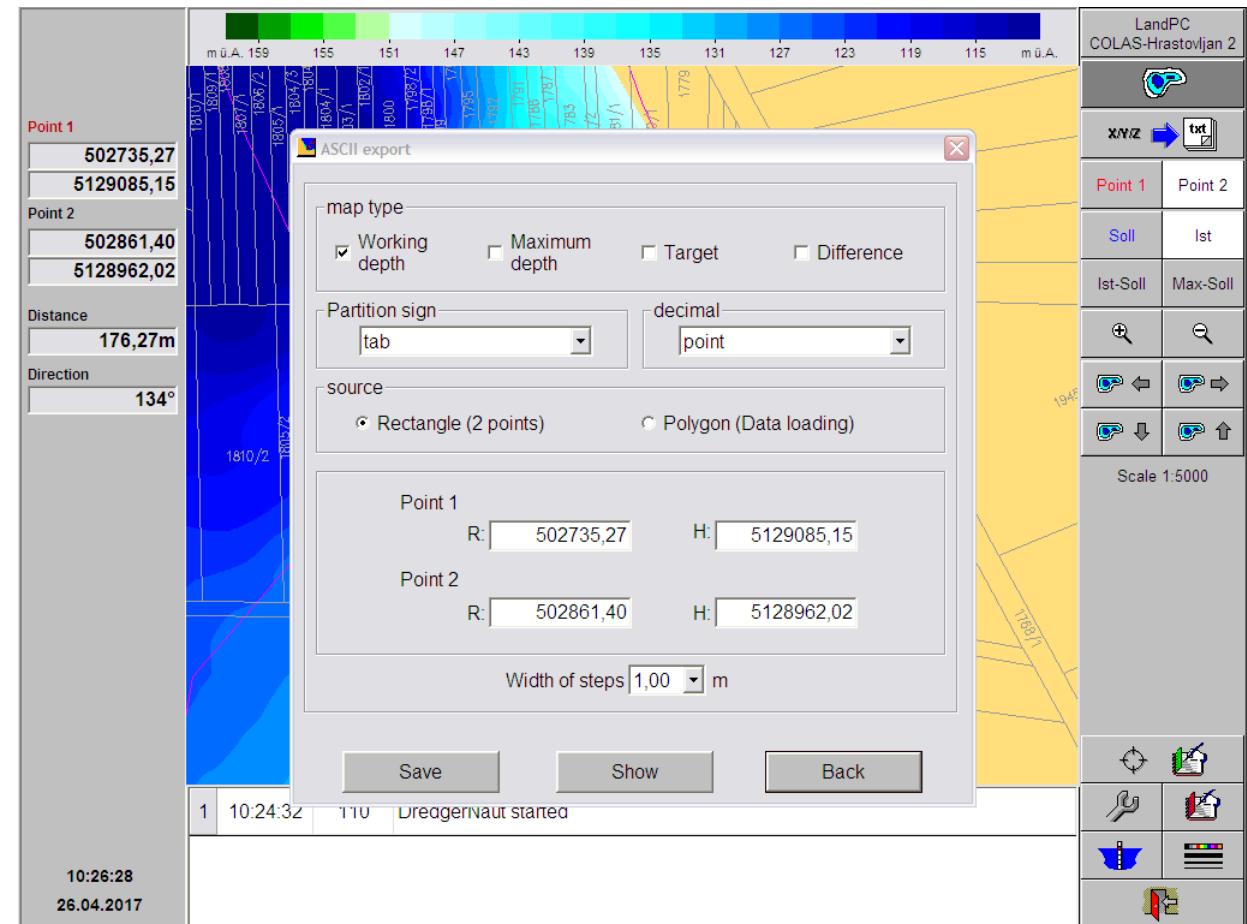
Note: the data that is exported from the area chosen here will be used as example **scan file** when explaining the import function below.

When finished positioning the rectangle click the **ASCII export** button again.

7   Export parameters

In the window presented several parameters for the export can be set or changed.
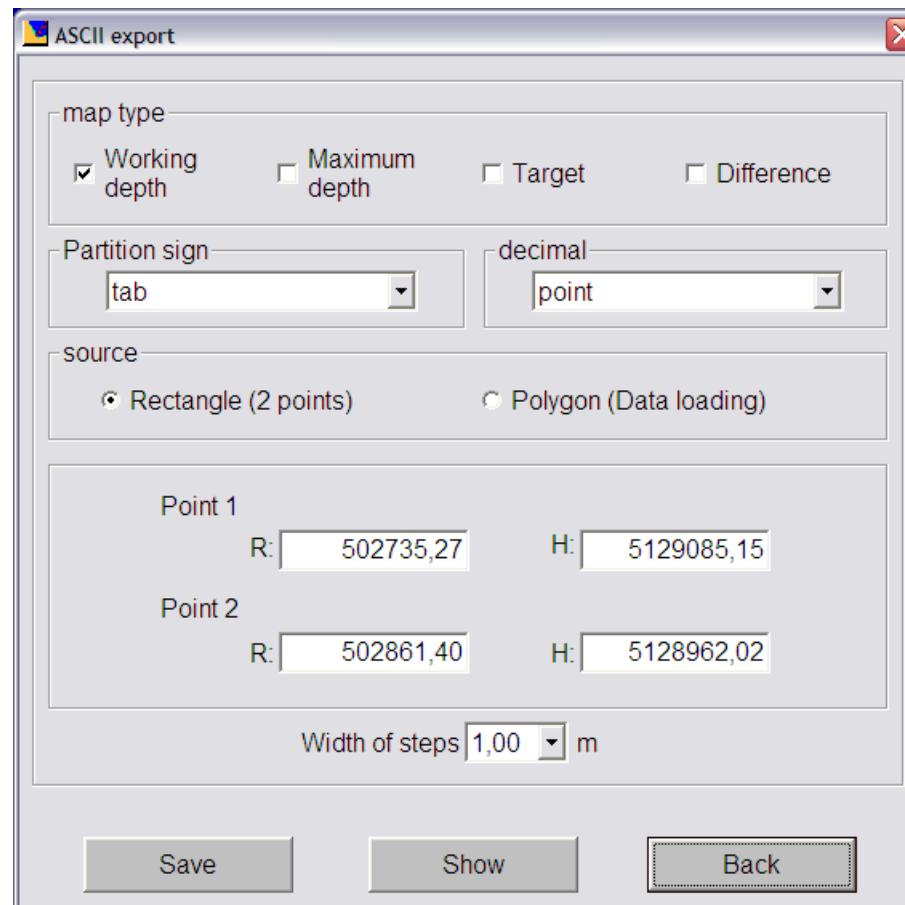
8   Export parameters (example)

First, select at least one of the 4 standard maps to export depth data from (multiple maps are possible). As said above, "tab" is our preferred separator (or 'Partition sign').

Another important parameter is "Width of steps" at the bottom. The default value of 1 m is suitable when exporting parts of the map but may lead to quite a big file when applied to the complete excavation site.

When all parameters are set click the **Save** button (left bottom corner)
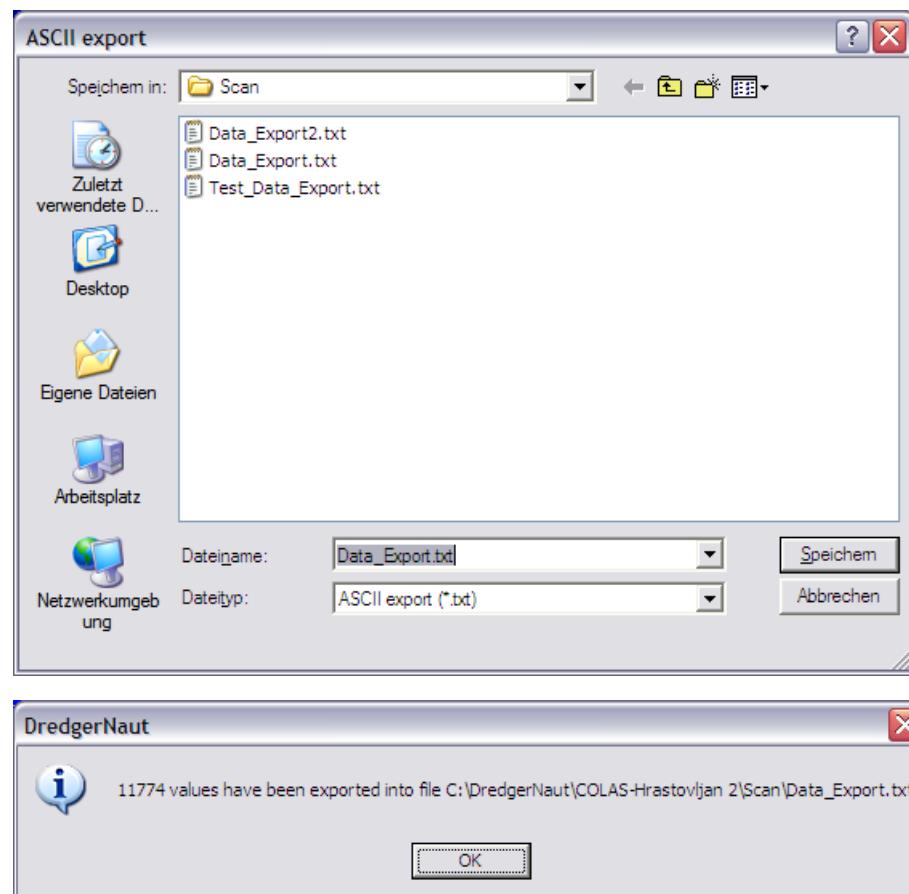
9 Saving to a file

After clicking the *Save* button a standard dialogue from Windows will appear to select the location and name the file will be saved to. By default the directory *Scan* in the DredgerNaut data directory will be suggested. On your system that is:

C:\DredgerNaut\COLAS-Hrastovljan\Scan
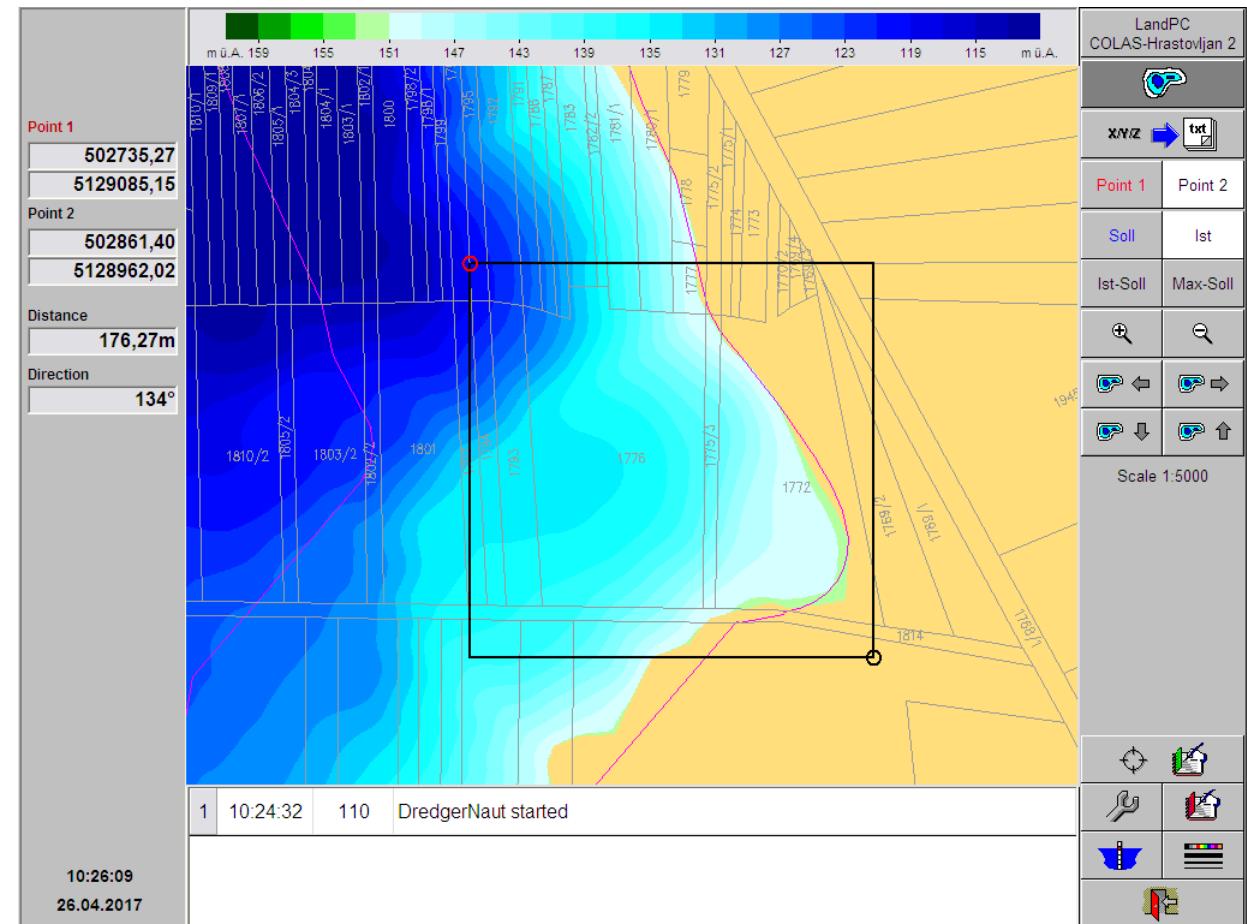
A second dialogue window will confirm that the file was saved succesfully.

Data Transfer

10 ASCII export 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**.
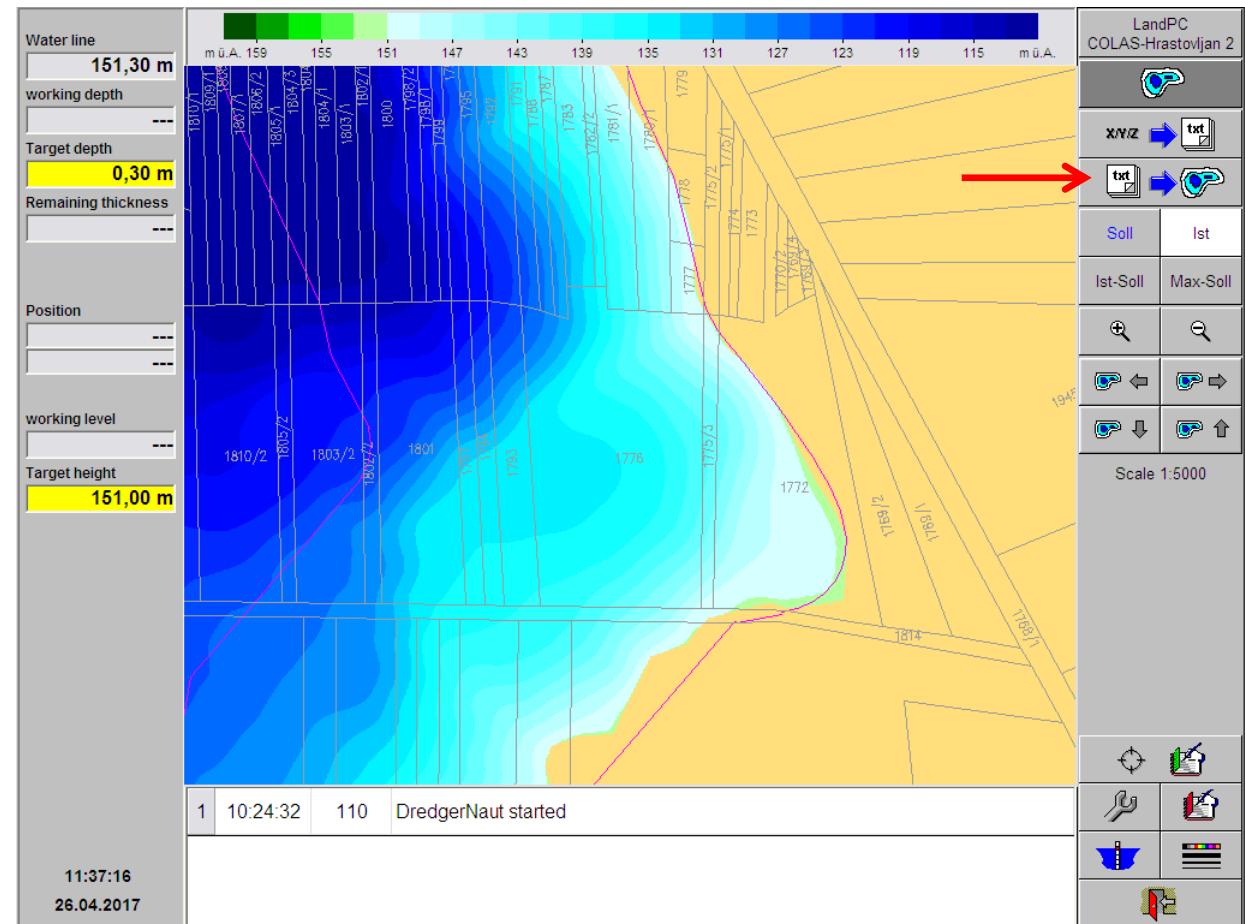
11 Menu ‚Data Transfer functions', start Import scan'

To select **Import scan** from the **Data Transfer** screen press the marked button.
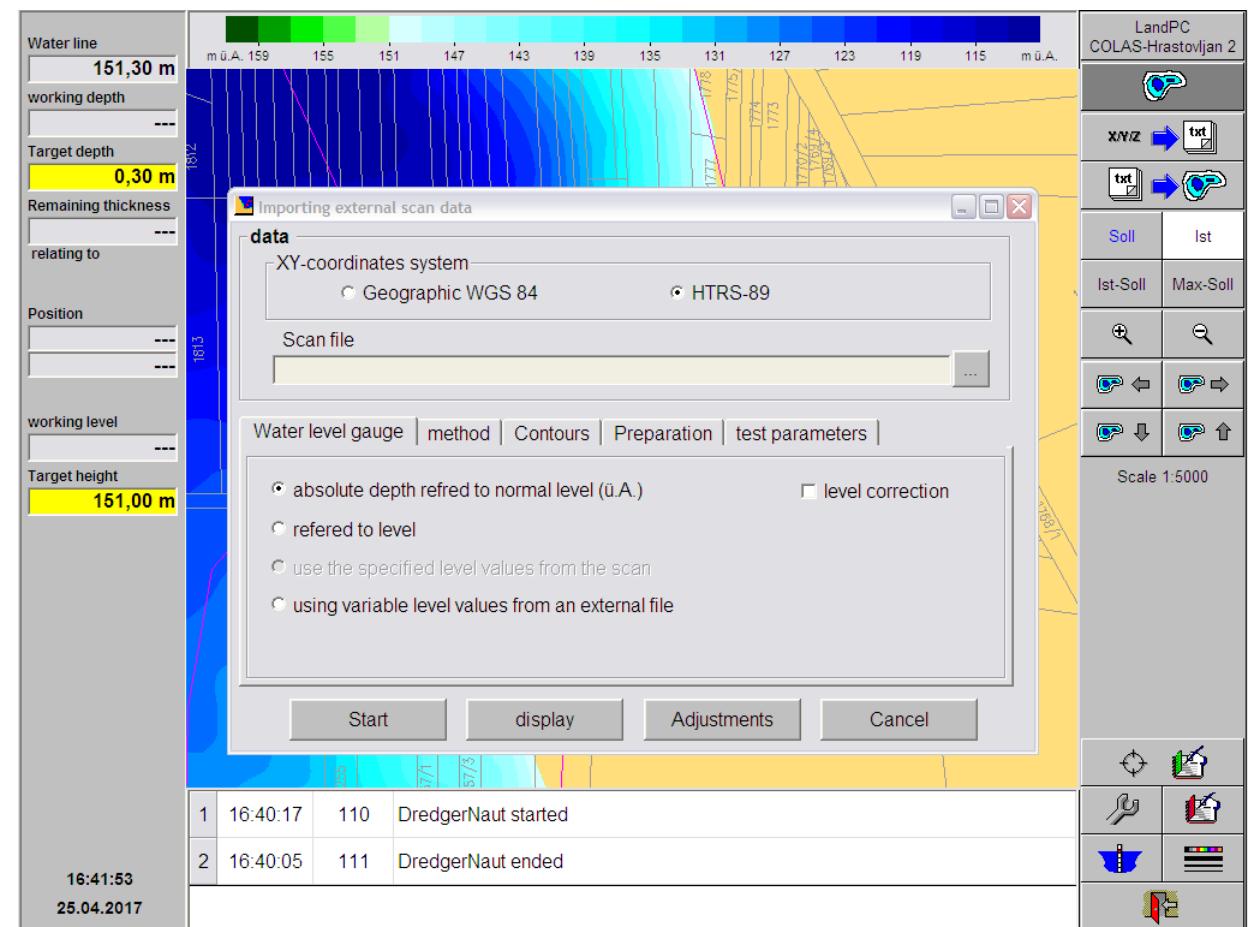
1 ASCII export

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.

12   Import scan
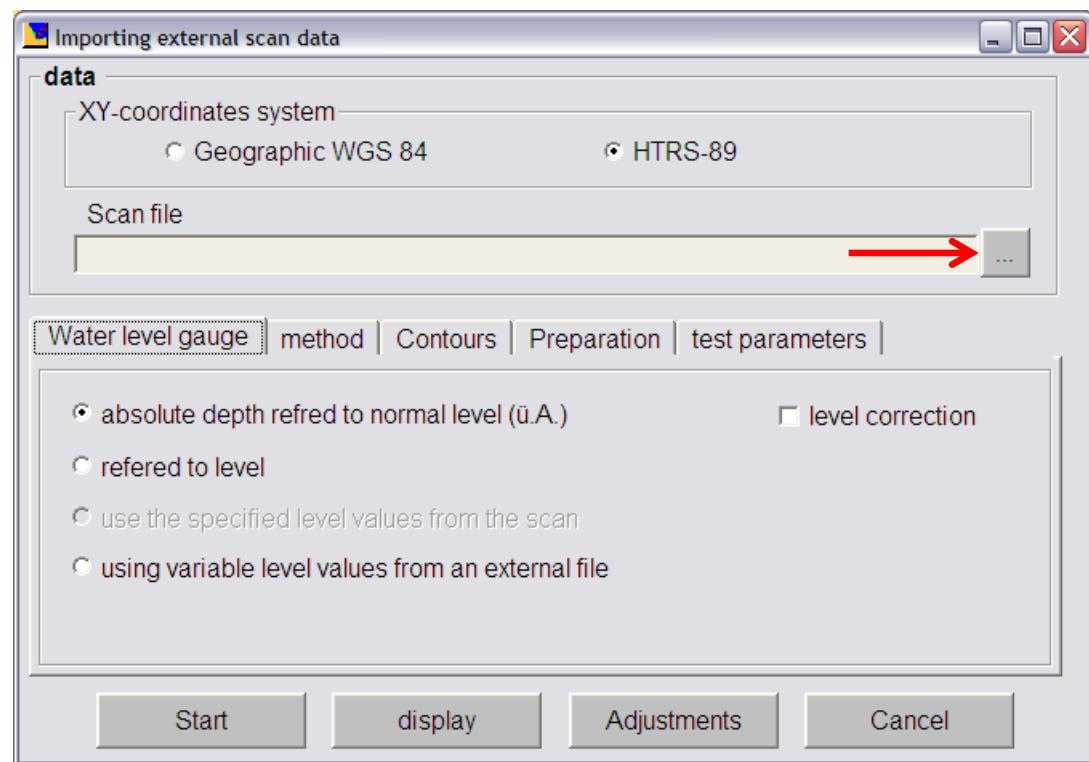
Here, we are directly presented with the window to choose the *scan file* to import and set the parameters for the action.

## 13 Import parameters

Press the marked button '...' to open the file selection

Dialogue. By default the directory **Scan** in the

DredgerNaut data directory will be opened.

On your dredger-PC system that is:

C:\DredgerNaut\COLAS-Hrastovljan\Scan

14   Select Scan file
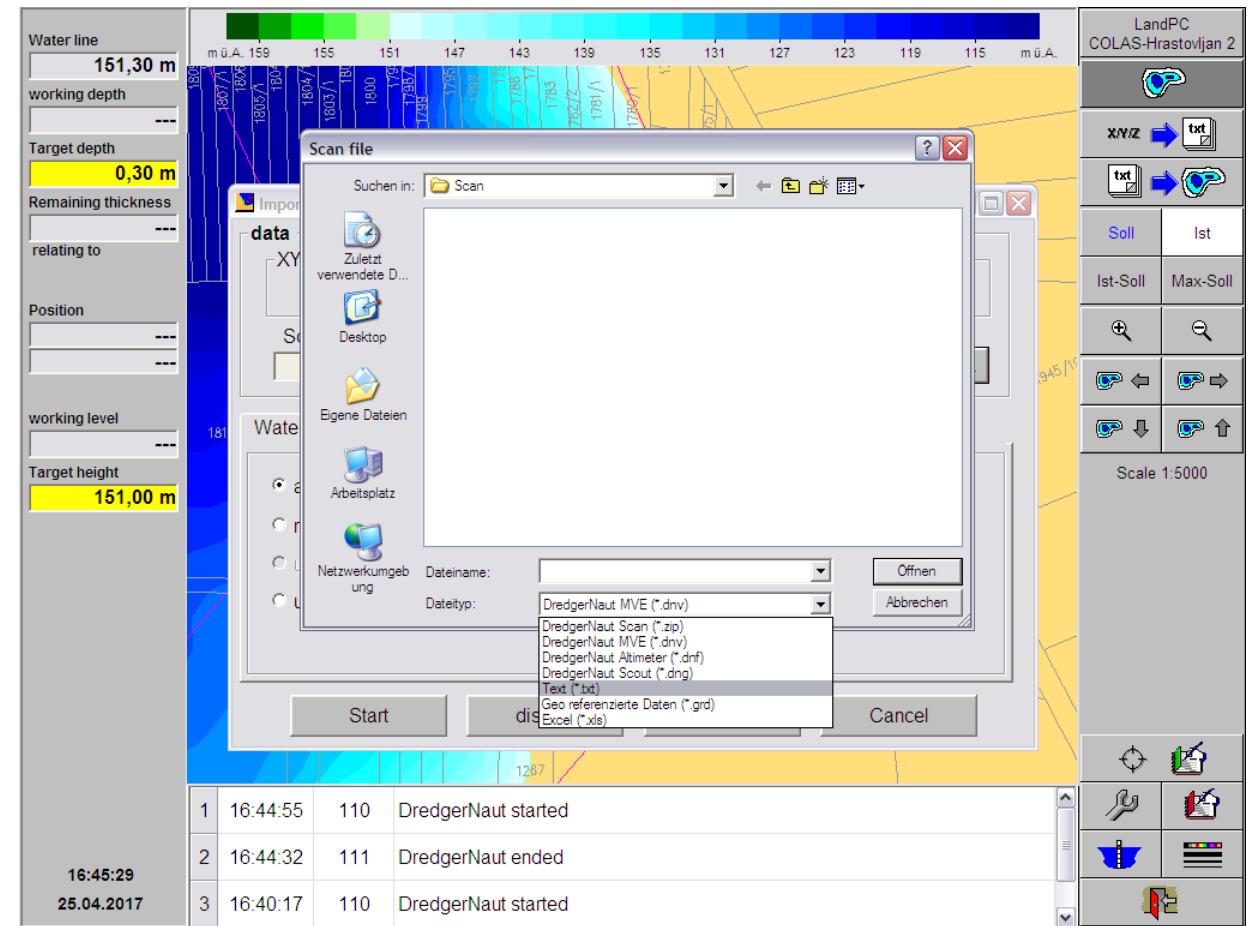
The directory **Scan** is shown (default, see above)
but there are no files visible in it in this picture.
At the bottom of the dialogue window there is a field
showing the selected file *extension* (= file format).
In DredgerNaut this is *.DNV for scan files generated by
the DredgerNaut mobile survey unit or MVE (German
abbreviation) and there are no *.dnv files present.
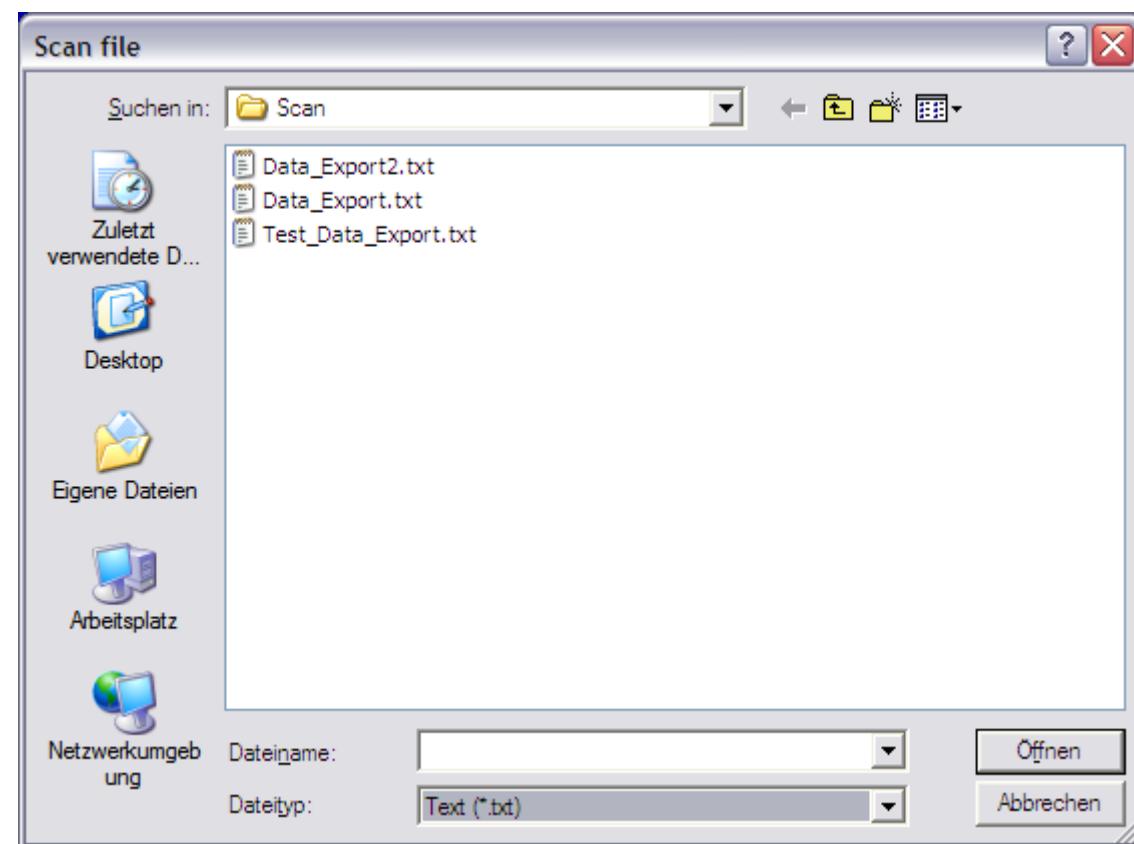
To see the text file we generated above by ASCII export
as an example we first have to change the selected
extension to *.TXT by choosing that from the drop-down
list of usable extensions.

Data Transfer
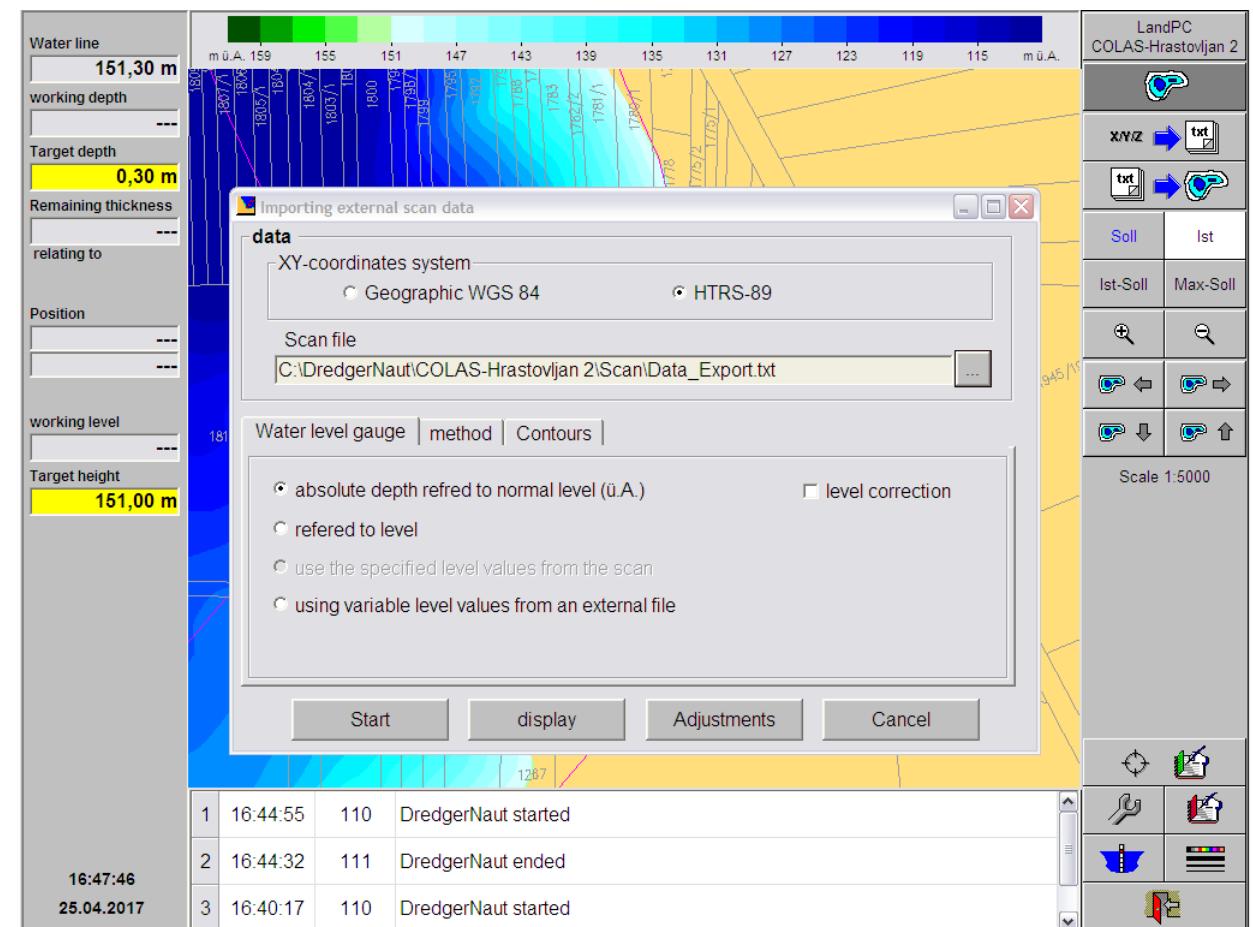
15   Select Scan file dialogue

Now that we have selected the extension *.TXT
we can choose 'Data_Export.txt' and click the
'open' button.

16 Start Import scan

By clicking the 'Start' button in the lower left corner of the parameter window the import of the scan file shown is started.
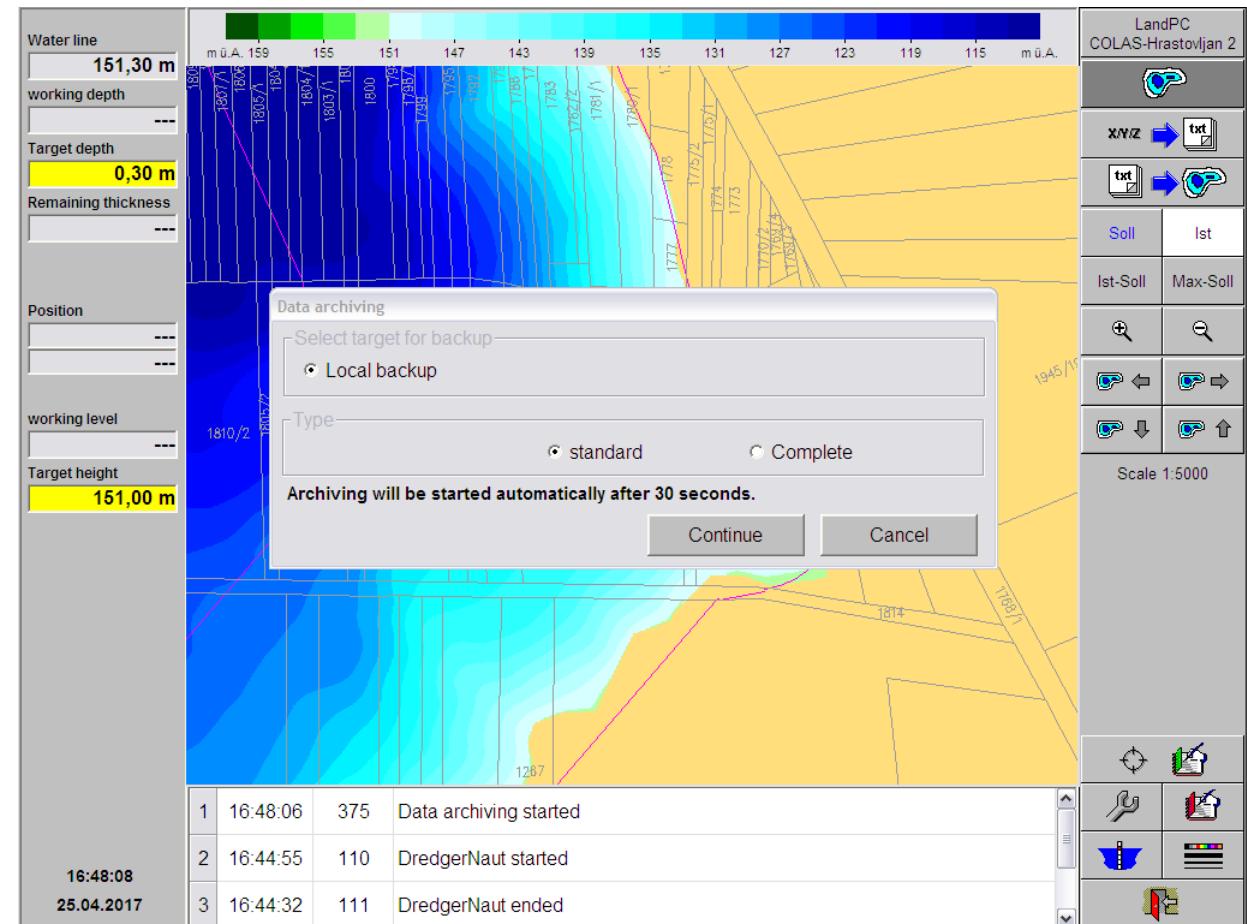
17 Precautionary Data archiving

Errors in the scan file (water level or coordinate problems) or the import settings (coordinate system, water level) may cause false and unwanted changes to the map. Therefore the system suggests to make a precautionary archive of the map data first.

Should something go wrong it is always possible to return to the map status before the import.
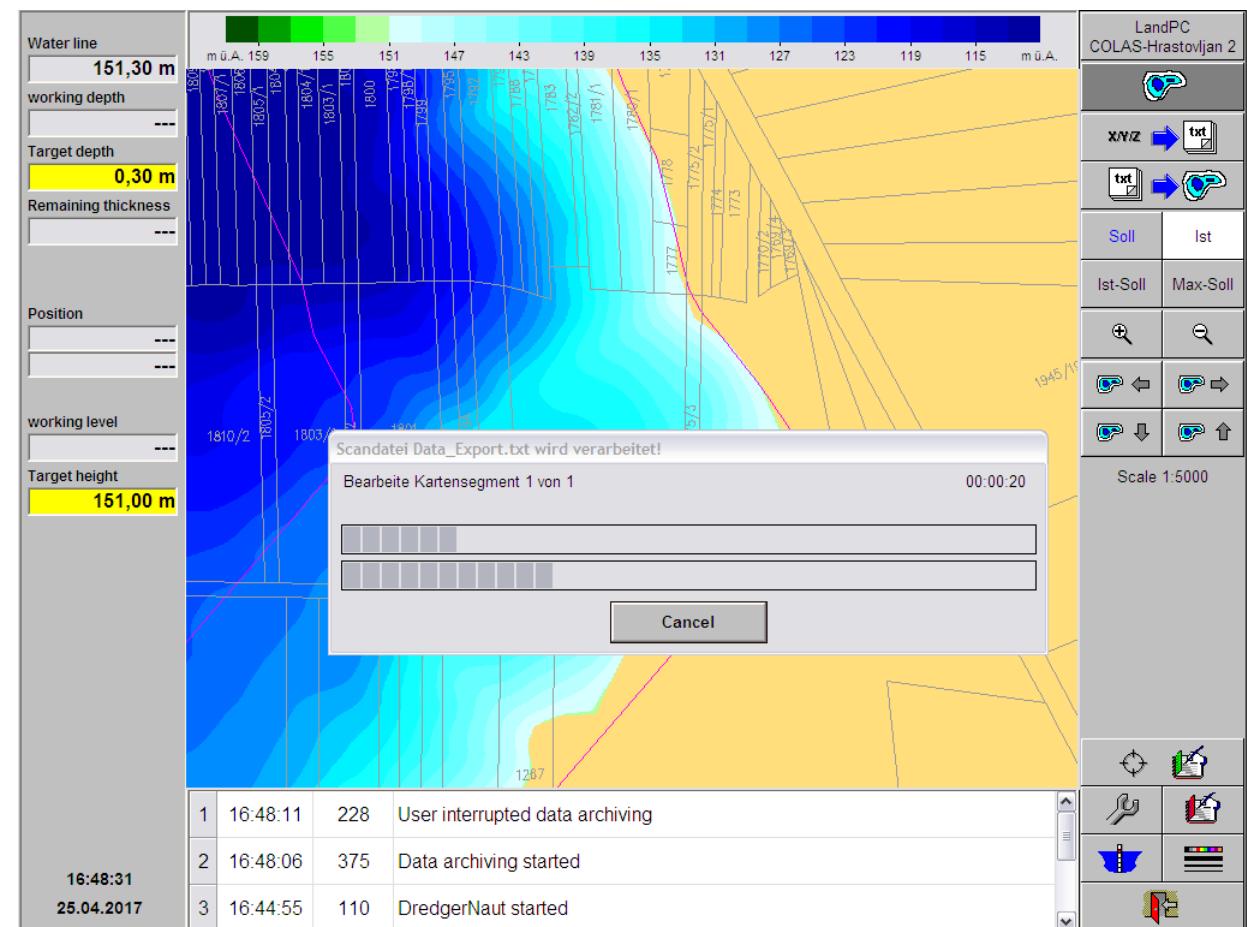
If you are sure that you need no archive (e.g. because you already have generated one) click onto 'Cancel' to go on without archiving.

18 Import scan data starts

After the archiving is either canceled or completed the actual import of the scan data from the file begins.
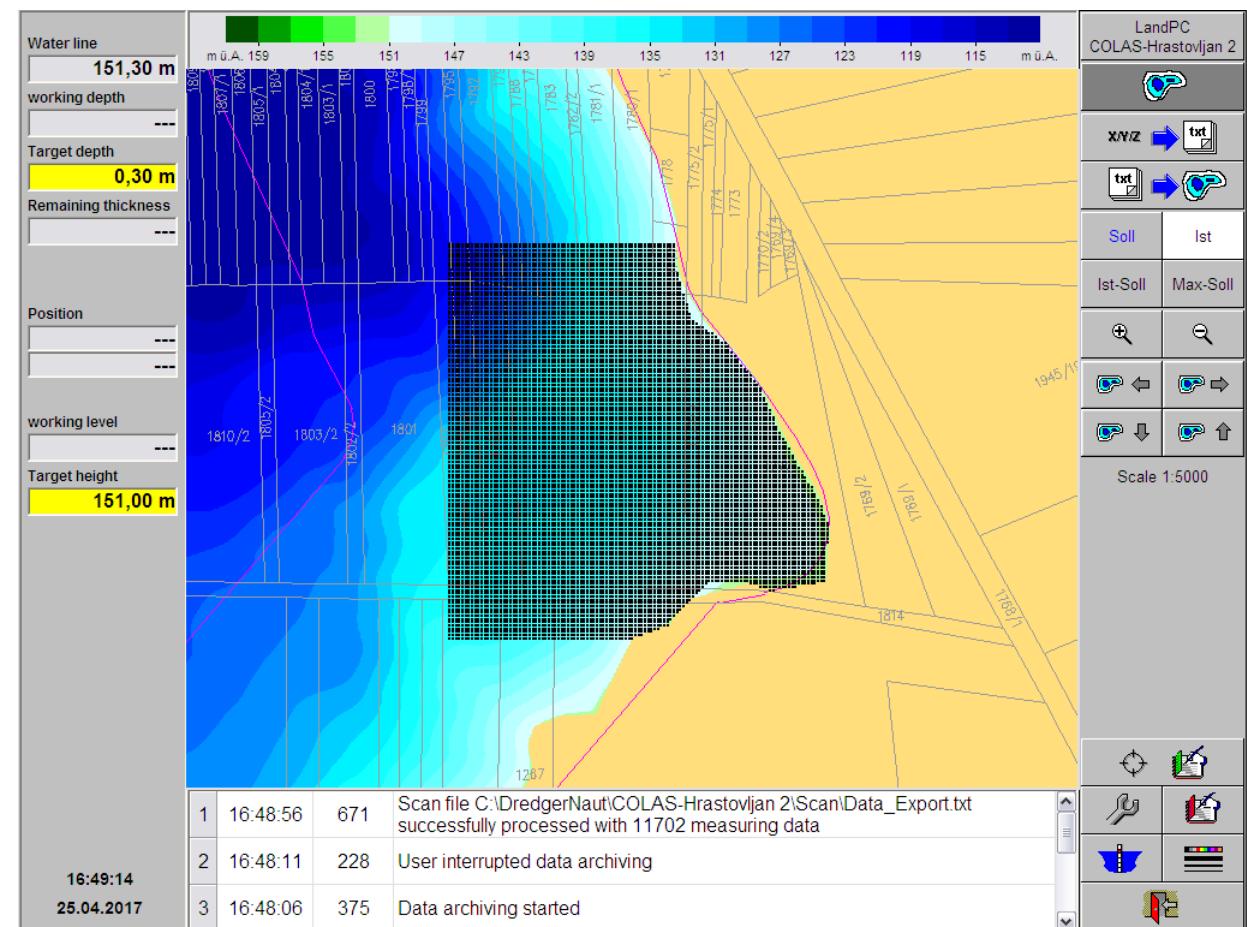
A window containing two progress bars keeps you Informed about the ongoing work.

19 Import scan finished

When the import is finished successfully you will see an according message in the message area at the bottom under the map, including the number of imported coordinate triples.

A black dot is shown at each processed position to Indicate the area influenced by the import.

20   Import scan finished (details)

In this picture the largest scale 1:3000 is chosen,

Better showing the black indicators at the processed

Positions.

The indicators will remain visible until DredgerNaut is

re-started next time.

As usual use the button with the '*red door*' in the

lower right hand corner repeatedly to return to the

desired level in **DredgerNaut**.