

Leica DX Office Vision

How-To Guide



Version 1.0
English

- when it has to be **right**


Leica
Geosystems

Introduction

Purchase Congratulations on the purchase of the DX Office Vision software.

Validity of this manual This manual applies to the Leica DX Office Vision software.

Symbols The symbols used in this manual have the following meanings:

Type	Description
	Important paragraphs which must be adhered to in practice as they enable the product to be used in a technically correct and efficient manner.

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Heerbrugg, 25 March 2013

2 Getting Started

2.1 Software Installation

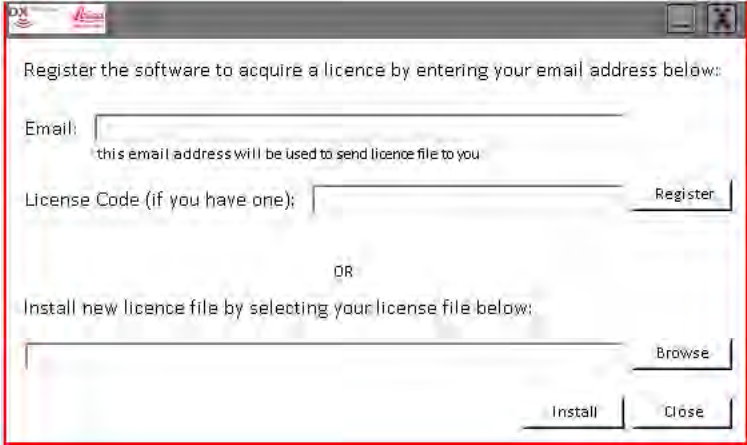
Requirements

To install the DX Office Vision software, a database server needs to be installed, too. By default, the database PostgreSQL is used for installation. PostgreSQL is an open-source, fully functional relational database server and is free to use.

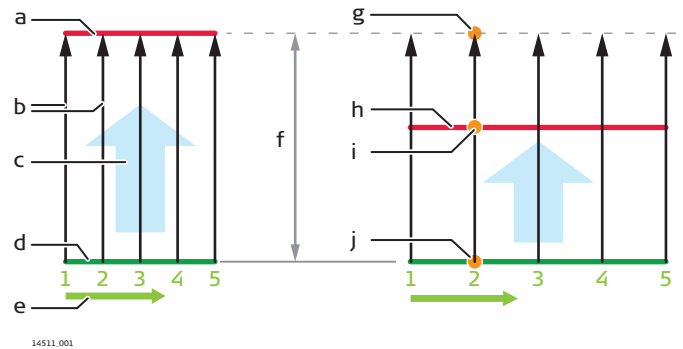
☞ If you perform the full installation of DX Office Vision, PostgreSQL is automatically installed and configured on the same workstation.

Licensing

After purchasing the DX Office Vision software, you receive an e-mail with installation instructions and a 5-digit licence key.

1.	Go to myWorld@Leica Geosystems. (https://myworld.leica-geosystems.com)
2.	Download the DX Office Vision installation file.
3.	Run the installation and follow the instructions of the installation wizard. <i>At the end of the installation process, the following dialogue is displayed:</i>
	
4.	Enter your e-mail address and the 5-digit licence key.
5.	Click Register to start the registration process. Click Close to close the dialogue.
6.	<i>After successful registration, you receive a second e-mail with the licence file.</i> Save the file to your computer.
7.	Start DX Office Vision to display the licence dialogue again.
8.	Click Browse to load the licence file.
9.	Click Install to complete the installation.

General principles for collecting radar data



- a) "End" line
- b) Scan lines
- c) Direction of travel (scan direction)
- d) Baseline
- e) Sequence of measurements along the baseline
- f) Scan length
- g) End point of a scan line
- h) "Through" line
- i) Intersection point
- j) Start point of a scan line



To use the DX Office Vision software effectively, adhere to the following directions when collecting radar data on site.

Baseline

Always collect single or dual channel radar data starting from a baseline, with each scan line starting at equal intervals along that baseline. The baseline can be of any length as long as each scan line is started at equally spaced intervals along the line.



In the software, a baseline is referenced by "S" and a number. For example, "S1" indicates the first baseline, whereas "S78" indicates the 78th baseline. Every baseline must have a corresponding "end" or "through" line.

"End" or "Through" line

The scan lines of a phase must intersect or be terminated by a second line.

- If the scan lines are terminated by the line, it is called "end" line.
- If the scan lines intersect the line, it is called "through" line. The trajectory of a scan line is determined by assuming that the measurement continues in a straight line from the intersection point on the "through" line.

The intersection points on the "end" or "through" line must be placed at equally spaced intervals, but it is not necessary that these intervals are equal to the intervals on the baseline.



In the software, "end"/"through" lines are referenced by "E" and a number. For example, "E1" indicates the first "end"/"through" line, whereas "E78" indicates the 78th "end"/"through" line.

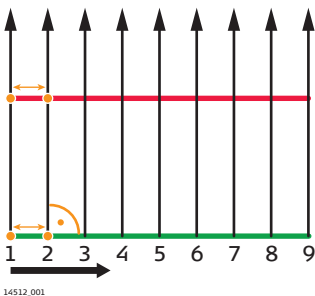
Sequence of measurements along the baseline

Facing the direction of travel (scan direction), record all single channel radar data from left to right along the baseline. Although the system can handle radar data recorded in either direction, we recommend maintaining a consistent approach by starting the first measurement always at the left of the baseline. Thus, if there should be a problem with the field notes, the scan positions can be determined easily.

Example 1

Baseline and “through” line have equal lengths, scan lines are perpendicular to baseline

 This approach allows you to investigate complex structures or curves and to reduce “missed” areas.




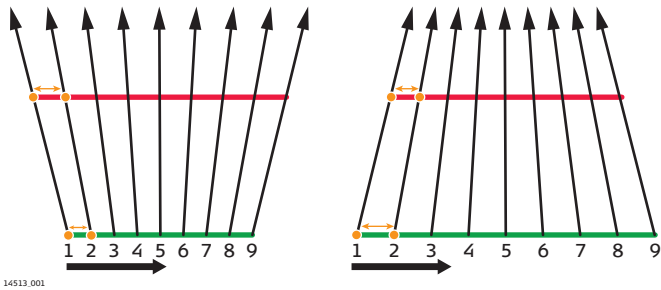
In this example, a sequence of 9 scan lines is recorded along a 4 m long baseline. The scan lines start at intervals of 0.5 m.

1.	Use spray paint to mark the start point of each scan line on site. Together, the spray paint dots represent the baseline.
2.	Draw another set of spray paint dots at equal intervals to represent the “through” line.
3.	Starting from a baseline dot, move the detection radar along a straight line toward the corresponding dot on the “through” line. If necessary, continue the measurement beyond the “through” line dot for as long as required.

Example 2

Baseline is shorter or longer than “through” line, scan lines diverge or converge

 This approach provides greater flexibility for investigating locations such as “bell mouth” junctions of carriageways or areas between converging walls or building lines.




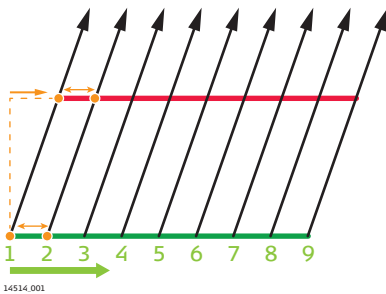
In this example, a sequence of 9 scan lines is recorded along a 4 m long baseline. The scan lines start at intervals of 0.5 m. The intervals on the “through” line are smaller or greater than 0.5 m, as required.

1.	Use spray paint to mark the start point of each scan line on site. Together, the spray paint dots represent the baseline.
2.	Draw another set of spray paint dots at equal intervals to represent the “through” line. These intervals are smaller or greater compared to the intervals on the baseline.
3.	Starting from a baseline dot, move the detection radar along a straight line toward the corresponding dot on the “through” line. If necessary, continue the measurement beyond the “through” line dot for as long as required.

Example 3

Baseline and “through” line have equal lengths, with the “through” line shifted sideways

 This approach is recommended for investigating narrow footpaths or small gaps.



In this example, a sequence of 9 scan lines is recorded along a 4 m long baseline. The scan lines start at intervals of 0.5 m. The “through” line is shifted sideways, causing diagonal scan lines.

1.	Use spray paint to mark the start point of each scan line on site. Together, the spray paint dots represent the baseline.
2.	Draw another set of spray paint dots at equal intervals to represent the “through” line. The position of the first dot is shifted sideways in relation to the first dot on the baseline.
3.	Starting from a baseline dot, move the detection radar along a straight line toward the corresponding dot on the “through” line. If necessary, continue the measurement beyond the “through” line dot for as long as required.

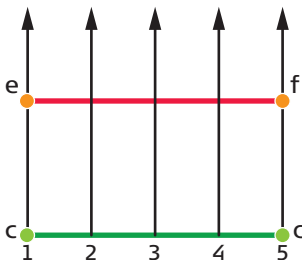
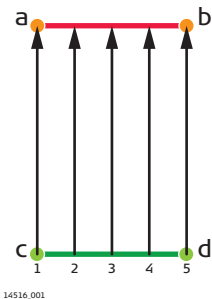
Recording positional data

Using GPS

Generally, the positions of the scan lines are recorded topographically using a surveyors Total Station.

Using a tape

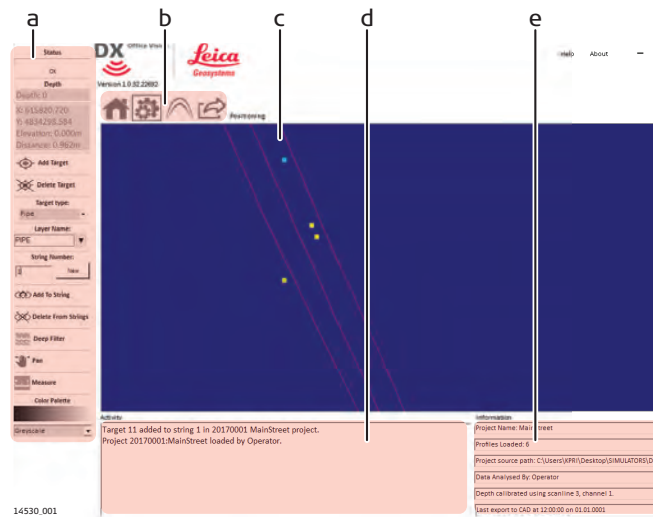
Optionally, the position of a scan line grid can also be measured by tape referring to local above-ground features. In this case, only the start and end point of both the baseline and the “end” or “through” line need to be measured.



- a) Start point of “end” line
- b) End point of “end” line
- c) Start point of baseline
- d) End point of baseline
- e) Start point of “through” line
- f) End point of “through” line

Overview

After launching DX Office Vision, the main screen is displayed.







- a) Main toolbar
- b) Menu bar
- c) Positioning plan view
- d) Area for logging messages
- e) Area for project Information

The Main Toolbar

The main toolbar provides functions for working with profiles. Refer to "5.3 Working with Profiles Using the Main Toolbar".

The Menu Bar

Button	Description
	Click the "Home" button to display the main menu. Refer to "3.3 The Main Menu".
	Click the "Settings" button to display the Configuration Options dialogue. Refer to "6 How to Change the Software Configuration Options".
	Click the "Open Profiles" button to open profiles for analysis. Refer to "5.1 Selecting and Opening a Profile".
	Click the "Export" button to export the project data to CAD. Refer to "4.5 Exporting Project Data to CAD".

Positioning Plan View

The plan view displays the data loaded into a project, such as scan lines and recorded positional points. The plan view also displays data created by working with profiles, for example target points or string lines.

Activity area

This area displays activity logging messages for an open project.

Information area

This area displays information about an open project:

- Project name
- Number of profiles loaded
- Source path of the original data
- Name of user who loaded the data for analysis


- Information about when and where a depth calibration was performed
- Date and time of the last export to CAD

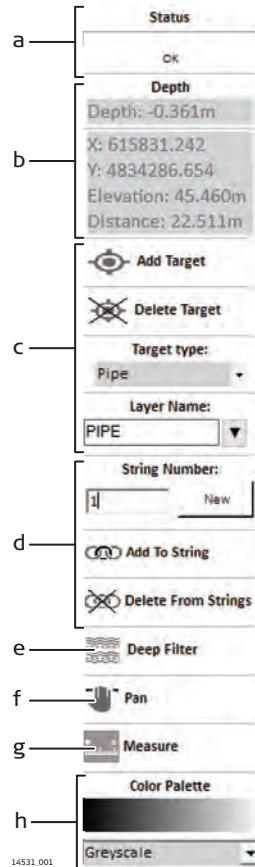
3.2

The Main Toolbar

Overview

The main toolbar is displayed to the left of the main screen. This toolbar provides several tools for working with profiles.

 When a tool button is active, it is highlighted red.



- a) Progress bar
- b) Position information area
- c) Target tools
- d) String tools
- e) **Deep Filter** tool
- f) **Pan** tool
- g) **Measure** tool
- h) **Color Palette**

Progress bar

The progress bar indicates the progress for background or workflow tasks that may be running, such as data import.

Position information area

Whenever you move the cursor over a profile or the Positioning plan view, this information area is being updated. The following information is displayed:

- Depth from surface (if available).
- X and Y coordinates.
- Elevation (if available).
- Distance from the start of a profile (if available and if the cursor is over an open profile).

Target tools

- **Add Target:** Allows you to add targets to a profile.
- **Delete Target:** Allows you to delete targets from a profile.
- **Target Type:** Allows you to define the target type when adding a target.
- **Layer Name:** Allows you to define the layer to which a target should be added.

For a detailed description on how to use these tools, refer to "5.3.1 Adding Targets to a Profile".

For a detailed description on how to configure target types and layers, refer to "6.1 Changing the General Options".

String tools

- **String Number:** This field displays the currently active string number which is applied when using the **Add To String** function. To define a new string number, click **New**.
- **Add To String:** Allows you to link targets to a string.
- **Delete From String:** Allows you to delete target from a string.

For a detailed description on how to use these tools, refer to "5.3.2 Stringing Targets Together".

Deep Filter tool

This tool allows you to define and apply a custom gain filter to the scan data, if necessary. Refer to "5.3.3 Applying a Custom Gain Profile".

Pan tool

This tool allows you to pan the Positioning plan view.

Click to activate panning, then drag the plan view in the desired direction.

Click again to deactivate panning.

Measure tool

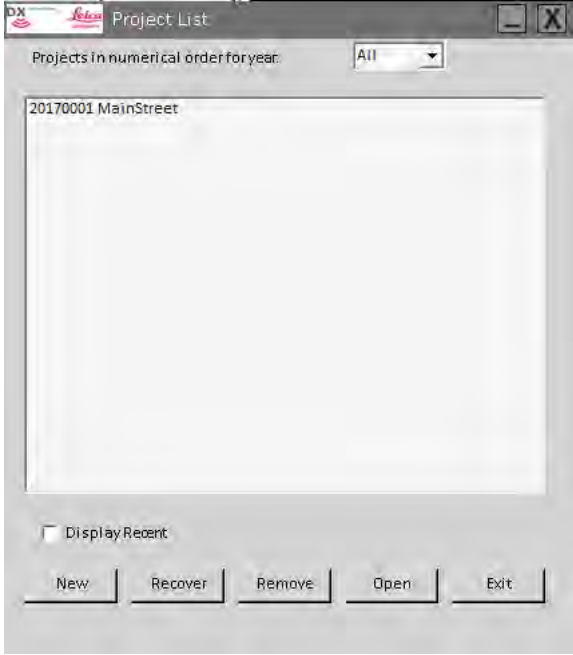
This tool allows you to measure the distance between two points in the Positioning plan view. Refer to "5.3.4 Measuring Distances in the Positioning Plan View".

Color Palette

This tool allows you to define the colour palette to be used for the profile image display.

Menu Options

The main menu provides functions for managing projects and project data.

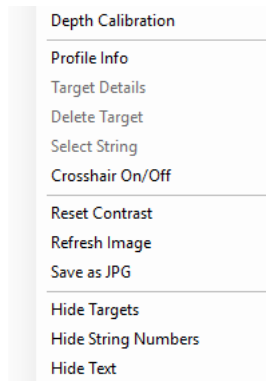
Button	Description
Load Data	Click to load data into the currently open project. Refer to "4.2 Loading Data Into an Existing Project".
Open Project	<p>Click to display the Project List dialogue.</p>  <p>In this dialogue, the following options are available:</p> <ul style="list-style-type: none"> • New: Create a project. Refer to "4.1 Creating a Project". • Recover: Recover an archived project. Refer to "4.7 Recovering an Archived Project". • Remove: Remove an existing project. • Open: Open an existing project. • Exit: Exit the DX Office Vision software.
Close All Profiles	Click to close all open profile windows.
Archive Project	Click to archive the currently open project. Refer to "4.6 Archiving a Project for Backup".
Close Project	Click to close the currently open project. The project is automatically saved.


Overview

To display the profile context menu, right-click on a profile.



Note: The functions **Target Details**, **Delete Target** and **Select String** are only available if you right-click directly on a target in the profile.

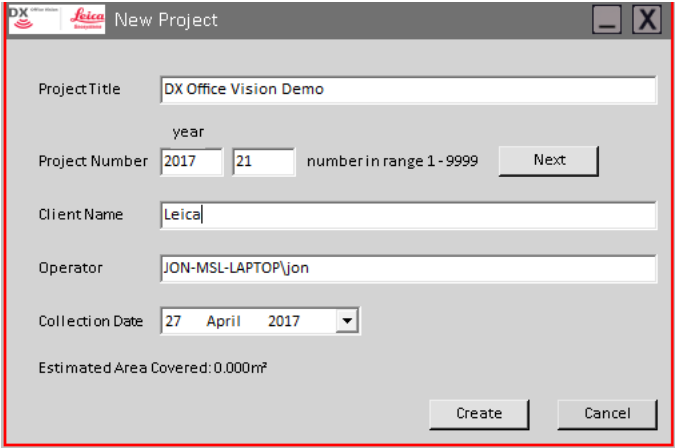




Function	Description
Depth Calibration	Performs a depth calibration. For a detailed description, refer to "5.4.1 Performing a Profile Depth Calibration".
Profile Info	Displays detailed information about the currently active profile, such as frequency, number of recorded scans and length of profile. 
Target Details	Displays detailed information about the target. For information about changing the layer name or adding a comment, refer to "5.4.2 Editing the Target Details".
Delete Target	Deletes the selected target from the profile.
Select String	Selects the primary string to which the target is assigned.
Crosshair On/Off	Toggles the crosshair cursor for profiles on or off.
Reset Contrast	Resets the contrast value for all profiles. Refer to "5.2 Changing the Profile Contrast Settings".
Refresh Image	Refreshes or redraws the profile data image.
Save as JPG	Saves the profile image as a JPG or another image format.
Hide Targets	Hides the targets on the profiles.
Hide String Numbers	Hides the primary string numbers on the profiles.
Hide Text	Hides the target-related comment text on the profiles.

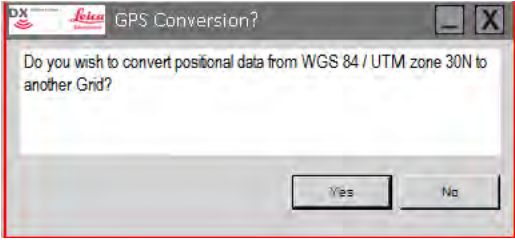
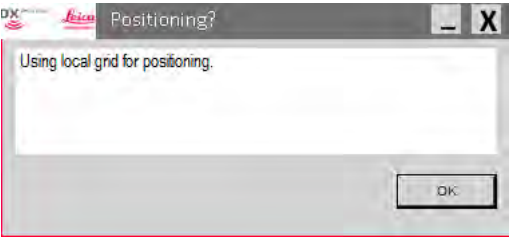
4 How to Manage Projects

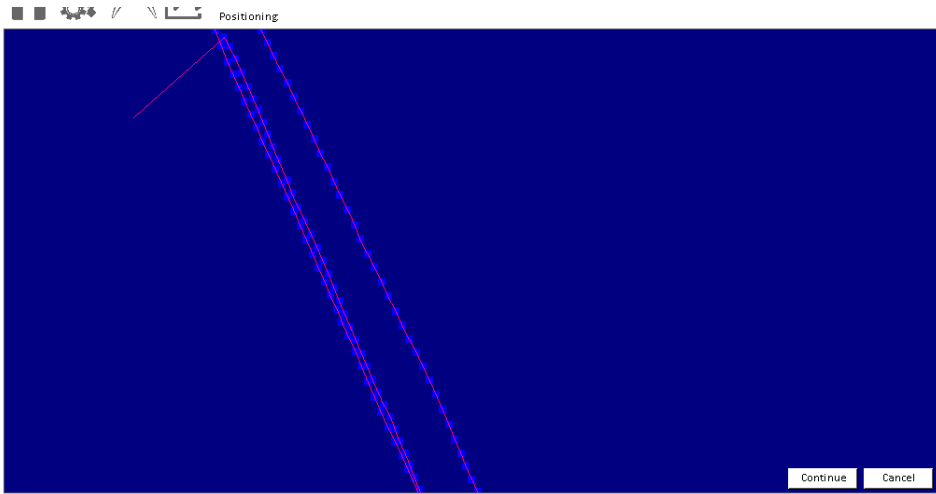
4.1 Creating a Project

Create a project

1.	Click the "Home" button in the main screen to display the main menu.
2.	Click Open Project in the main menu to display the Project List dialogue.
3.	Click New to display the New Project dialogue. <div data-bbox="491 359 1169 804"></div>
4.	Enter the necessary project information: <ul style="list-style-type: none">• Project Title• Project Number: Click Next to populate the field with the next available project number for the current year based on the projects which are currently loaded in the database. The software automatically combines the year and project number as an internal project number for the database, for example "20160001" or "20170035".• Client Name: This field is optional.• Operator: This field is automatically set to the current Windows user details.• Collection Date: By default, this field is set to the current date. Set this field to the date on which the data was collected. This date is used as default value, when importing more phases of scan data to a project. If necessary, the collection dates for each phase can be set to a different date.
	To close the New Project dialogue without creating the project, click Cancel .
5.	To create the project, click Create . <i>The project is created and ready for data import.</i>
	For information about importing data, refer to "4.2 Loading Data Into an Existing Project".

Open a project and load data into it

☞	<p>If necessary, open the project into which you want to import data.</p> <ul style="list-style-type: none"> Click the "Home" button to display the main menu. Click Open Project in the main menu to display the Project List dialogue. Select an existing project and click Open. <p><i>The project is opened and ready for data import.</i></p>
1.	Click the "Home" button to display the main menu.
2.	Click Load Data to load data into the project. <i>The dialogue for importing project data is displayed.</i>
3.	Select the folder with the project data that was collected on site and click OK . <i>The software performs several background checks to ensure that the folder contains valid data. The data is loaded and displayed in the Positioning plan view.</i>
☞	<p>If the data was collected using GPS positioning, the GPS Conversion? dialogue is displayed.</p> <div data-bbox="491 688 1008 926">  </div> <ul style="list-style-type: none"> To convert the positional data to another national or international grid system, click Yes. For a detailed description, refer to "4.3 Converting Positional Data to Another Grid System". To continue the import process without converting the positional data, click No. <p><i>The data is loaded and displayed in the Positioning plan view.</i></p>
☞	<p>If the data was collected using a local or assisted grid, the Positioning? dialogue is displayed.</p> <div data-bbox="491 1209 1002 1446">  </div> <p>To continue the import process, click OK. <i>The data is loaded and displayed in the Positioning plan view.</i></p>


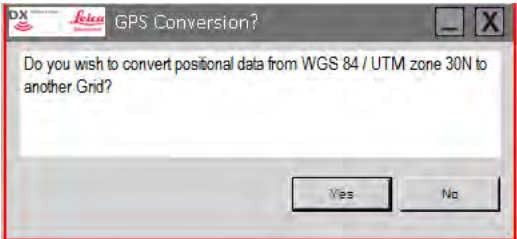
4.	<p>Positioning plan view: Scan lines are represented by a red line. Positional points are represented by a blue square.</p>  <p>The screenshot shows a dark blue rectangular area representing a plan view. A red line, representing a scan line, enters from the top left and extends diagonally towards the bottom right. Along this red line, there are several small blue squares, representing positional points. Above the main area, there is a toolbar with various icons and the word 'Positioning'. In the bottom right corner of the main area, there are two buttons: 'Continue' and 'Cancel'.</p> <ul style="list-style-type: none"> • If necessary, correct the positional data. Refer to "4.4 Correcting Positional Data". • To cancel the import process, click Cancel. • To complete the import process, click Continue. <p><i>The data is loaded and processed ready for analysis.</i></p>
----	--

4.3

Converting Positional Data to Another Grid System

Convert positional data

When loading data into a new or existing project, the software checks if the data folder contains positional data.

	<p>If the data was collected using GPS positioning, the GPS Conversion? dialogue is displayed during the import process.</p>  <p>The dialog box is titled 'GPS Conversion?' and has a Leica logo in the top left corner. The text inside asks: 'Do you wish to convert positional data from WGS 84 / UTM zone 30N to another Grid?'. At the bottom, there are two buttons: 'Yes' and 'No'.</p>
1.	<p>To convert the positional data to another national or international grid system, click Yes.</p>

2. The **GPS to Local Grid Conversion** dialogue is displayed.



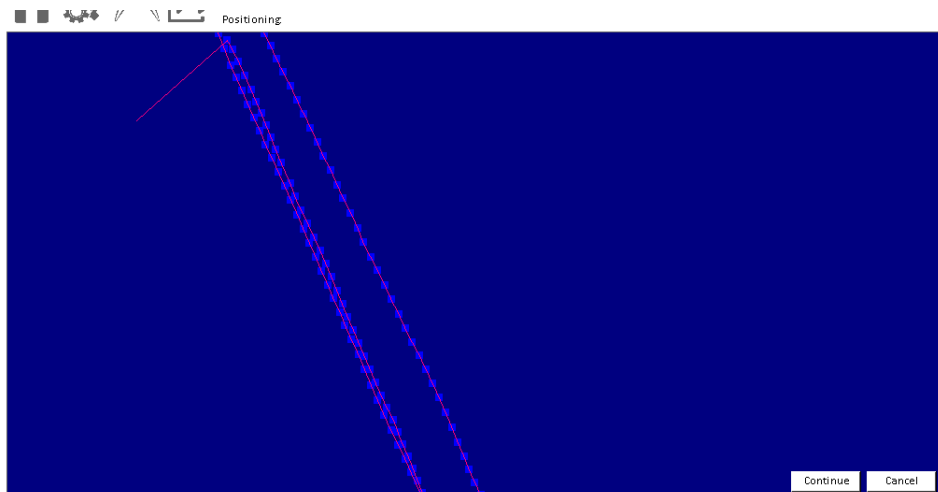
3. Select the desired grid system to which the data should be converted.



If you want to set the selected grid system as default value for the next data import, activate the check box **Set as default**.

4. To convert the positional data, click **OK**.

5. The positional data is converted and displayed in the **Positioning** plan view. Scan lines are represented by a red line. Positional points are represented by a blue square.



6.

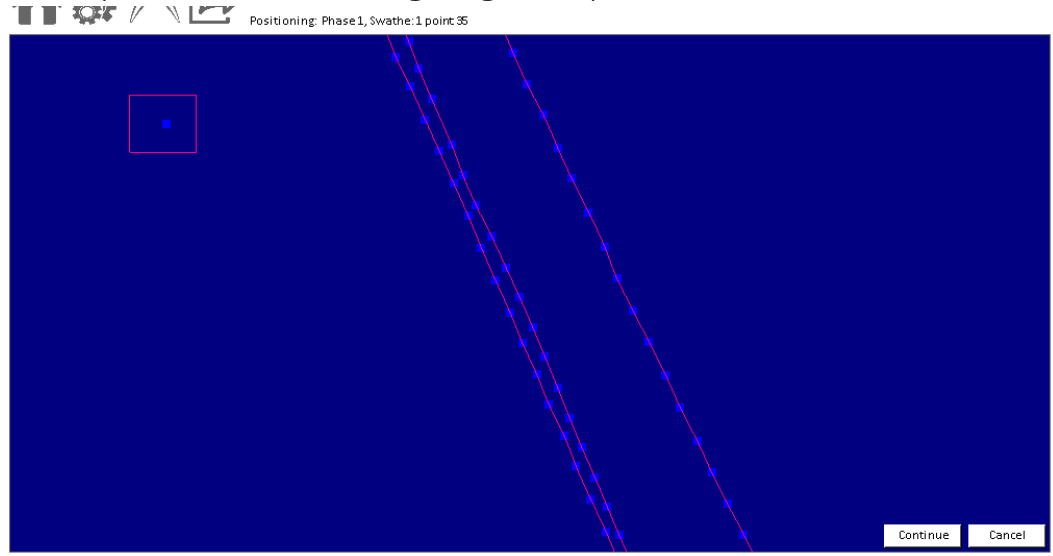
- If necessary, correct the positional data. Refer to "4.4 Correcting Positional Data".
- To cancel the import process, click **Cancel**.
- To complete the import process, click **Continue**.

The data is loaded and processed ready for analysis.

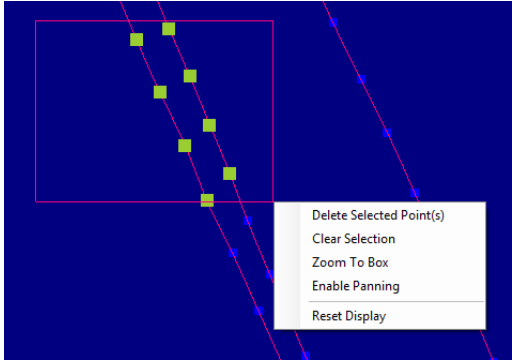
Correct positional data

Sometimes, imported positional data can contain rogue GPS points, for example, points which were recorded after the GPR data recording stopped or which were caused by a reflection from some other object.

Loaded positional data containing a rogue GPS point:



Normally, most of these points are eliminated during import. Rogue points that remain after importing can be removed in the following way.

1.	To delete a single point, right-click on the point and select Delete Selected Point(s) from the context menu.
2.	<p>To delete several points at once, click the Positioning plan view and drag the mouse to draw a selection box around the points to be deleted. Release the left mouse button to display the following context menu.</p>  <ul style="list-style-type: none"> • Delete Selected Point(s): Select this option to remove any highlighted points within the selection box. • Clear Selection: Select this option to remove the selection box and the highlighting of the points within this box. • Zoom To Box: Select this option to zoom the plain view to focus on the points within the selection box. • Enable Panning: Select this option to activate panning and drag the plan view in the desired direction. • Reset Display: If the plan view was zoomed or panned, select this option to reset the plan view back to the initial setting.

4.5

Exporting Project Data to CAD

Export data to CAD



Before export, make sure that the export settings suit your specific needs. Refer to "6.4 Changing the Export Options".

Direct export to CAD



To export data directly to CAD, make sure that **AutoCAD** (version 2010 or higher) or **BricsCAD** (version 16 or higher) is installed on your computer.

1.	To start the export process, click the "Export" button in the menu bar.
2.	<div>If the necessary software is installed, the following steps are performed:<ul style="list-style-type: none">• If the selected CAD package is not already running, it is opened and the data is exported into a new drawing.• If the selected CAD package is already running, the data is exported into the current drawing.<div> During the export process, the CAD package is hidden from view to prevent any conflicts caused by editing data in the meantime. As soon as the export process is complete, the CAD package is displayed again on the screen.</div></div>

Export to DXF File



To export data to a DXF file, set the export type to **DXF File**. DXF files can be imported into **AutoCAD** or any other CAD or GIS application that supports DXF R14 or higher.

1.	To start the export process, click the "Export" button in the menu bar.
2.	A dialogue for selecting the export location is displayed. Select any desired location and click OK . The data is exported to a DXF file and stored at the defined location.

4.6

Archiving a Project for Backup

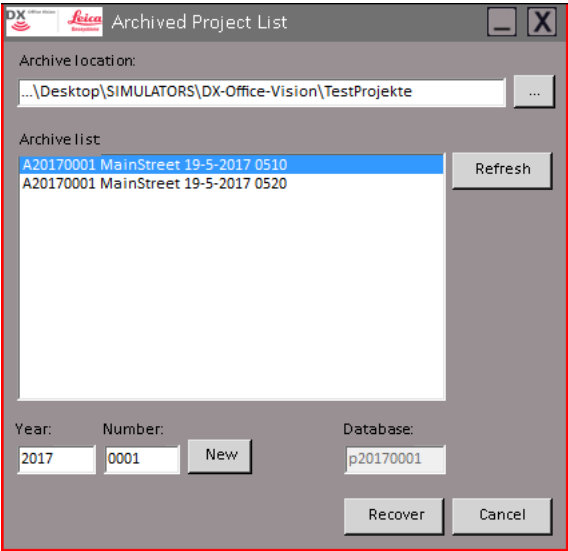


Save project data for backup



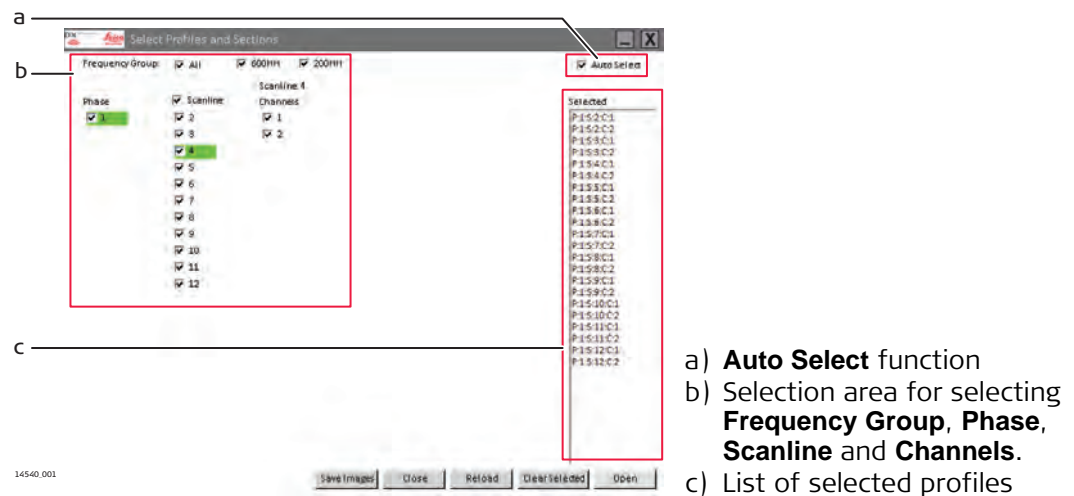
Make sure that the archive location is set to the desired directory. By default, the archive location is set to **C:\DXOffice Archives**. For information about changing the archive location, refer to "6.5 Changing the Archive Options".

1.	Click the "Home" button in the main screen to display the main menu.
2.	Click Archive Project to save the data of the currently open project to the defined archive location.

Recover an archived project

1.	Click the "Home" button in the main screen to display the main menu.
2.	Click Open Project to display the Project List dialogue.
3.	Click Recover to display the Archived Project List dialogue.
	
	<p> By default, the archive location is set to the directory defined in the Archive Options. To select another location, click the "... " button. The list of archived projects within the archive location is displayed.</p>
4.	<p>Select a project from the list.</p> <p> Click New to change the project number of the selected project, if desired.</p>
5.	<p>Click Recover.</p> <p>The selected project is added to the Project List dialogue and can be opened.</p>

The "Select Profiles and Sections" dialogue



Frequency Group

A frequency group is determined by the antenna's frequency and orientation.
Example: "600HH" stands for a 600 MHz horizontally orientated antenna.

Phase

A phase is a set of imported radar data. If a project contains multiple sets of imported data, several check boxes are displayed for each phase (data set). Each phase consists of one or more scan lines.




Coding for selected profiles

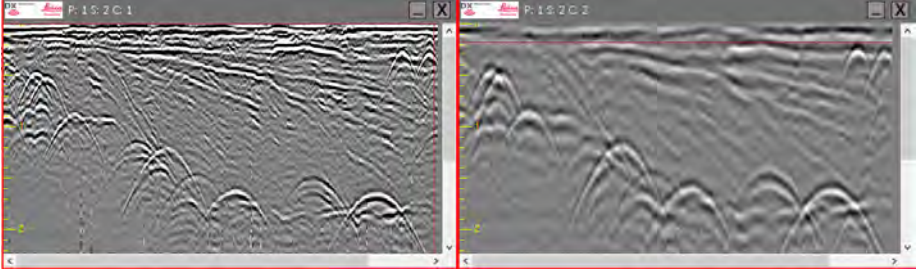
The coding used in the list of select profiles is as follows:

- P: for the phase
- S: for the scan line
- C: for the channel

Example: "P:1:S:4:C:2" stands for phase 1, scan line 4, channel 2.

Opening profiles for analysis

1.	Click the "Open Profiles" button to display the dialogue for profile selection.
	If more data is added to the project after opening this dialogue, click Reload to refresh the dialogue.
2.	Select or deselect the desired frequency groups. By default, the All check box is selected.  To select automatically the channels of a selected phase and scan line within a selected frequency group, activate the Auto Select check box.
3.	Select the desired phase or phases to be displayed. When a phase is selected, more check boxes are displayed to represent the scan lines that were imported for that phase.
4.	To select all available scan lines at once, select the global check box at the top of the Scanline column. Otherwise, select the desired scan lines individually.  If the Auto Select check box is active, all available channels for each scan line are automatically selected. If the Auto Select check box is inactive, you need to select individually the channel for each selected scan line.

5.	<p>Once a channel is selected, it is added to the list of selected profiles at the right.</p> <ul style="list-style-type: none"> • To save images of the selected profiles, click Save. • To clear the selected list of profiles and reset the dialogue, click Clear Selected. • To close the dialogue without opening the selected profiles, click Close. • To open the selected list of profiles, click Open.
6.	<p>When opening the selected profiles, each profile opens in a separate window. The title bar of a window contains the coding of the displayed profile: phase number, scan line number, channel number.</p> 

5.2

Changing the Profile Contrast Settings

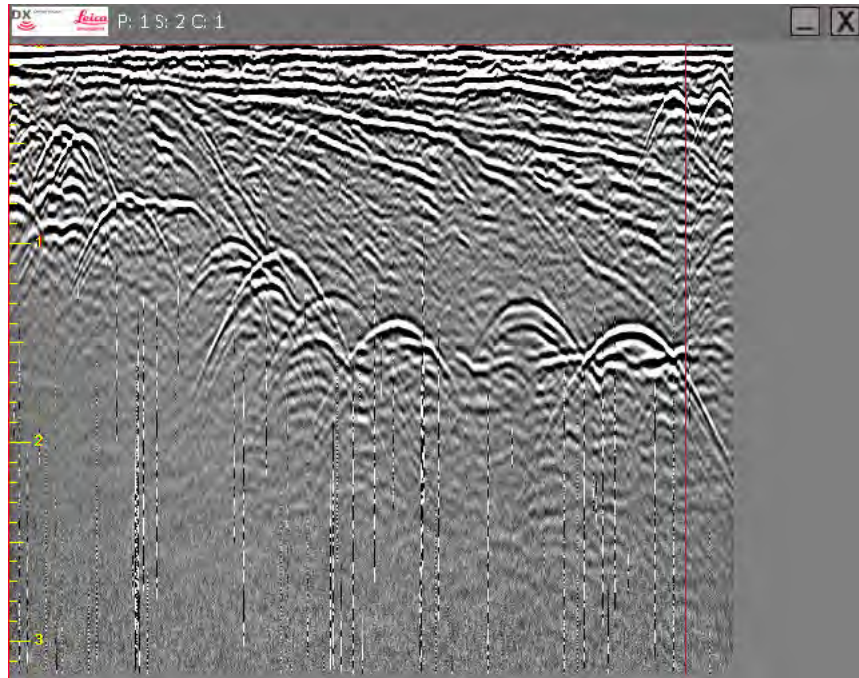
Increase, decrease or reset the contrast

To increase the contrast of all open profiles, use the plus key.
 To decrease the contrast of all open profiles, use the minus key.
 To reset the contrast settings to default, right-click on a profile and select **Reset Contrast** from the context menu.



The contrast settings value is maintained when closing and restarting DX Office Vision, but it is not saved to the data in the database.

Profile with increased contrast:



5.3

Working with Profiles Using the Main Toolbar

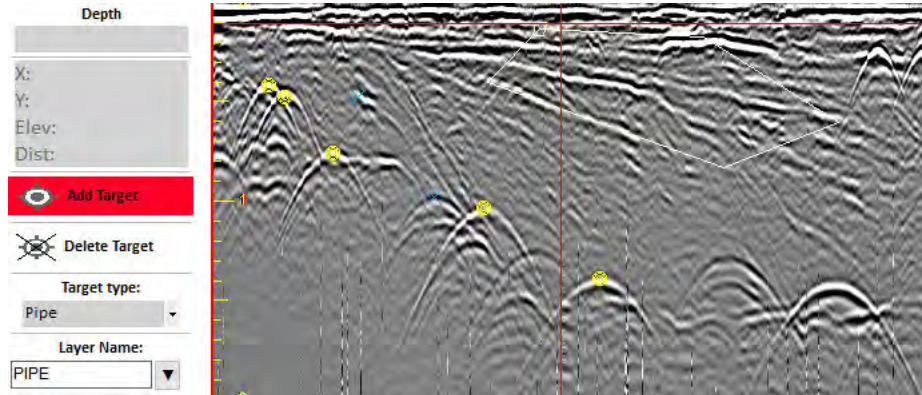
5.3.1


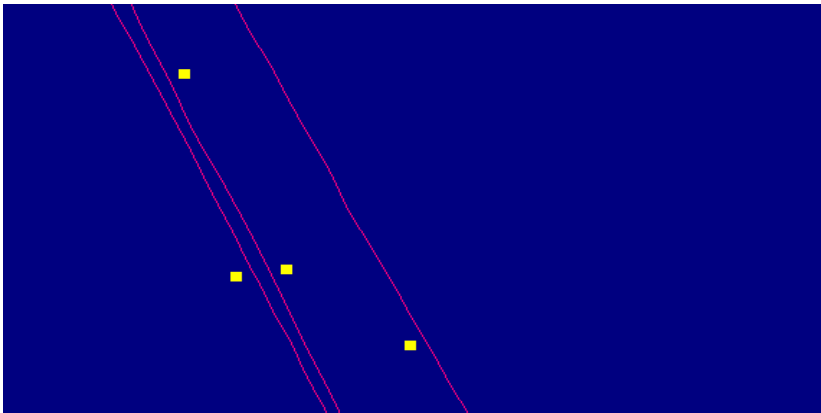


Adding Targets to a Profile

Using the target tools

Using the target tools you can add targets to any desired position within a profile image. To distinguish between different targets, you can assign a specific layer and a target type to the targets.

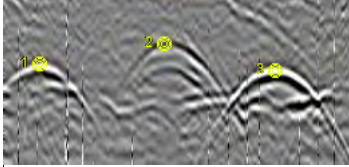
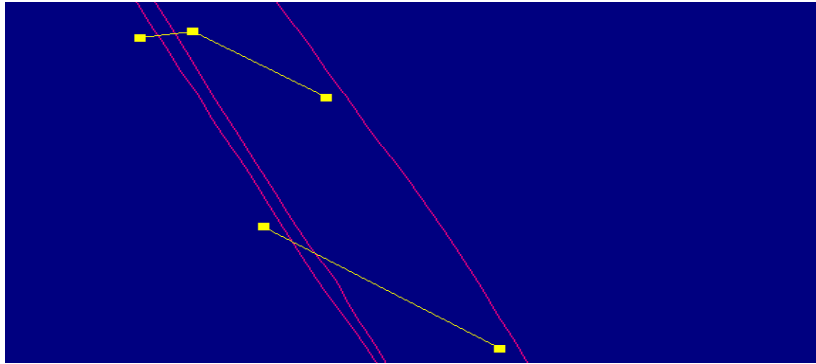



Profile image with targets:



1.	Select the desired target type and layer from the drop-down lists in the main toolbar. There are six basic target types available: <ul style="list-style-type: none">• Point• Cross• Multipoint• Closed polyline• Rectangle• Circle• Open Polyline  For a detailed description on how to configure target types and layers, refer to "Configure target types".
2.	Click the Add Target button in the main toolbar to activate the tool.
3.	To add a target on the profile, click the profile image at the desired position. <i>When a target is added to the profile, the Positioning plan view is updated accordingly to show the position of the placed target.</i> 
	To delete an existing target, activate the Delete Target tool and click any target you want to delete. Or right-click on a target and select Delete Target from the context menu.
	For more information on working with targets, refer to "5.4 Working with Profiles Using the Profile Context Menu".


Using the string tools

Using the string tools you can add targets to a string to mark them as related.

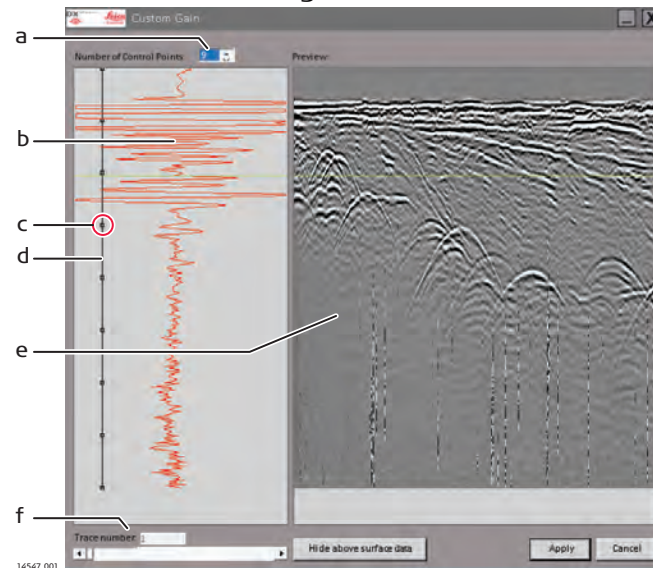
1.	Open the profiles containing the targets which you want to string together.
2.	Click the Add To String button in the main toolbar to activate the tool.
3.	<p>Click a target to add it to the string. <i>The currently active string number is displayed next to the target to indicate it has been added to the string.</i></p>  <p><i>The Positioning plan view is updated accordingly - all targets belonging to the same string are connected by a line.</i></p> 
	To define a new string number, click New in the main toolbar.
	To remove a target from a string, activate the Delete From String tool and click any target you want to remove.
	For more information on working with targets and strings, refer to "5.4 Working with Profiles Using the Profile Context Menu".

Using the Deep Filter tool

Using the **Deep Filter** tool you can define a custom gain filter and apply it to all profiles in an open project. The custom gain filter allows you to increase the visibility of targets which are at a specific depth of the scan profile.

 Note: If you apply a filter to profiles, the project data in the database change.


The **Custom Gain** dialogue:

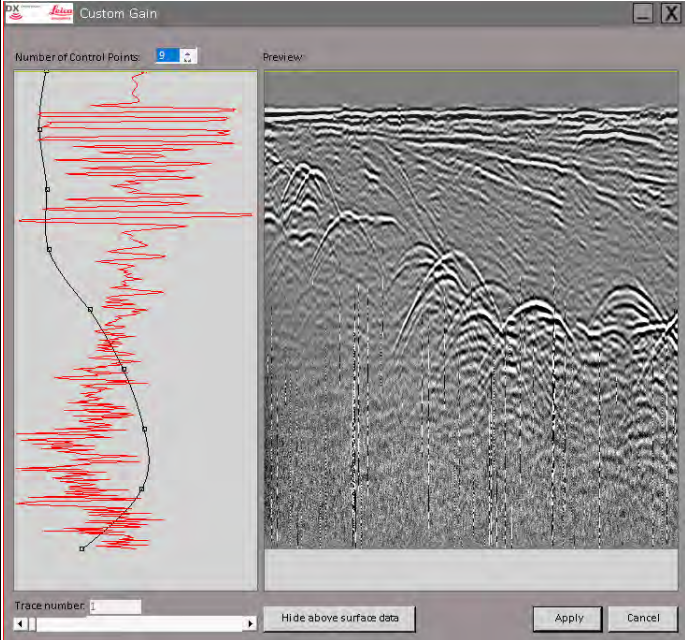



- a) Combo box for defining the number of control points
- b) Gain curve of the selected scan line (Trace number)
- c) Control point
- d) Gain control line
- e) Scan profile of the selected scan line (Trace number)
- f) Trace number: Displays the currently selected scan line.

A custom gain filter consists of several control points on a gain control line. The position of a control point corresponds to a specific depth of the scan profile.

For each control point, a gain value can be defined. Each data value of the scan profile, which is at the depth of this specific control point is multiplied by the gain value defined for this control point.

1.	Click the Deep Filter button in the main toolbar to display the Custom Gain dialogue.
2.	By default, the dialogue displays the gain curve and scan profile for the first channel of the first scan line. To select a different scan line, move the slider below the Trace number field or click the arrow buttons. <i>The preview window is updated to show the selected scan profile.</i>
	If the surface of the recorded area was not totally flat, the software interprets some of the data as being recorded above ground. Click Hide above surface data to set the ground surface at the top of the profile view and hide any data recorded above ground.
3.	Use the drop-down list to define the necessary number of control points: <ul style="list-style-type: none"> • 3 • 5 • 9 (default value) • 17 • 33

<p>4.</p>	<p>To adjust the gain curve, select a control point and drag it to the left or right.</p> <ul style="list-style-type: none"> • Move a control point to the right to increase the gain value which is applied to the scan data at the depth of this control point. • Move a control point to the left to decrease the gain value. <p>The preview of the gain curve and the scan profile is updated according to the new control point position.</p> <p>Preview of a custom gain curve profile:</p> 
<p>5.</p>	<p>Once you are happy with the resulting gain curve and scan profile, click Apply to apply the custom gain filter to all profiles in the project.</p>
	<p>To close the Custom Gain dialogue without applying the filter, click Cancel.</p>

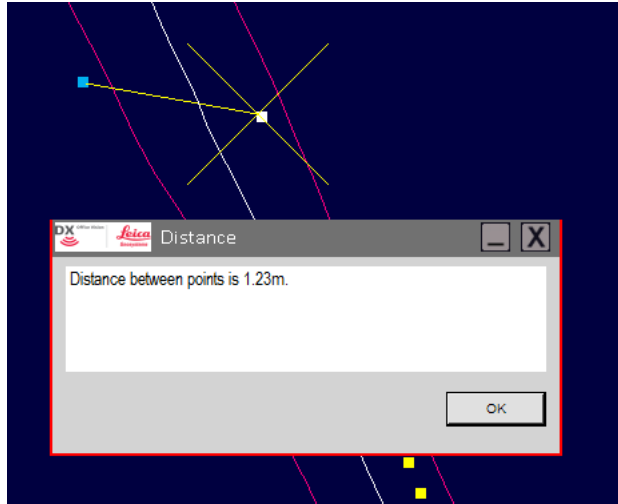
5.3.4

Measuring Distances in the Positioning Plan View

Using the Measure tool

Use the Measure tool to measure the distance between two points in the **Positioning** plan view.

1. Click the **Measure** button in the main toolbar to activate the tool.
2. Click two points in the **Positioning** plan view to measure the distance between them.
The measured distance is displayed in a dialogue.



5.4

Working with Profiles Using the Profile Context Menu

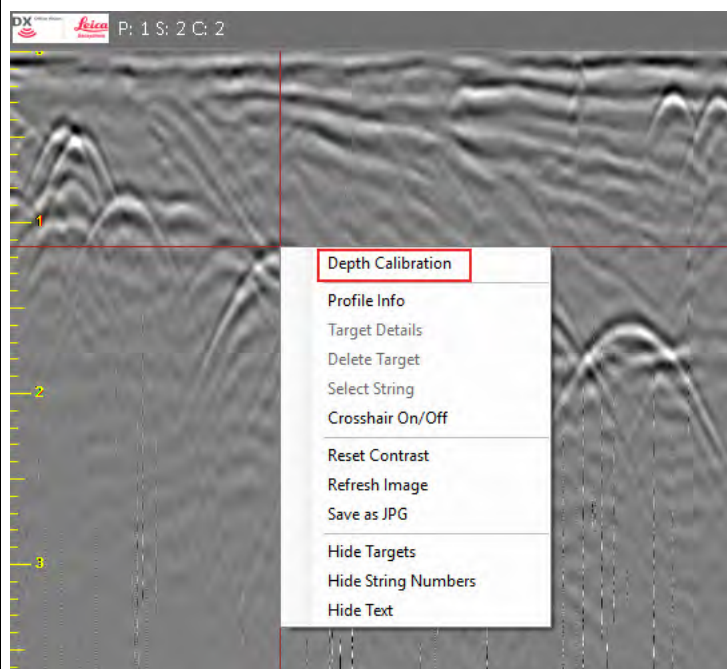
5.4.1

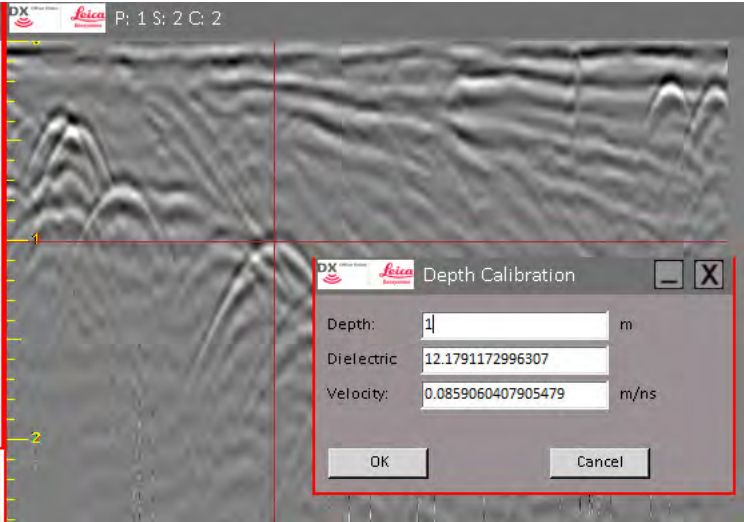
Performing a Profile Depth Calibration

Set the dielectric constant to a known target

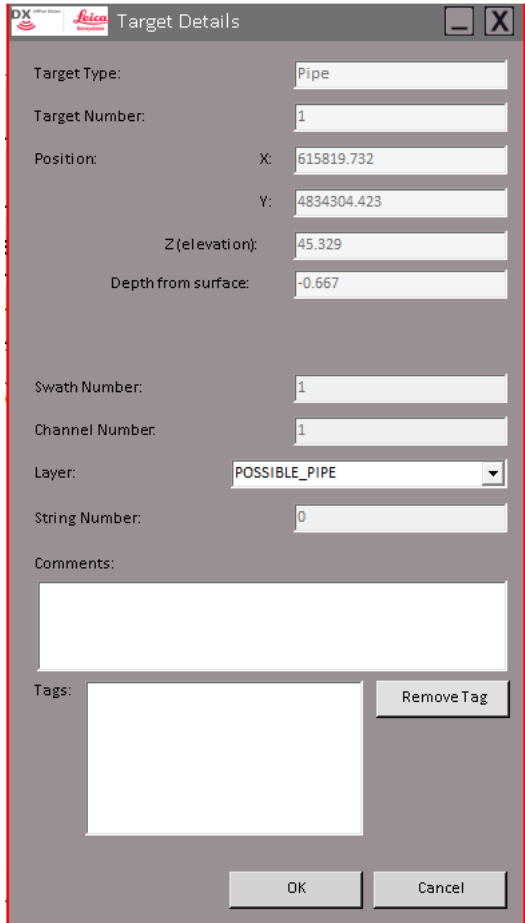


The **Depth Calibration** function allows you to adjust the dielectric constant to a specific ground type.

1. Right-click a known target point on the profile to display the profile context menu.



2.	<p>Select Depth Calibration to display the Depth Calibration dialogue.</p> 
3.	<p>Enter the depth of the target. <i>The fields Dielectric and Velocity are populated automatically according to the entered depth.</i></p>
4.	<p>To perform the depth calibration, click OK. The depth calibration is applied to the profile. The depth scale to the left of the profile is updated accordingly.</p>

Display and edit the target details

1.	Right-click a target on the profile context menu.
2.	<p>Select Target Details to display the Target Details dialogue.</p> 
3.	<ul style="list-style-type: none"> • If necessary, you can assign the target to a different layer. Select the desired layer name from the drop-down list. • If necessary, you can add a comment to the target. • If necessary, you can remove tags that are assigned to the target.
4.	<p>To discard the changes and close the dialogue, click Cancel.</p> <p>To save the changes and close the dialogue, click OK.</p>
	<p>If a comment is added to the target, the text is displayed next to the target in the profile view.</p>  <p>To hide the text, right-click the profile and select Hide Text.</p>

6 How to Change the Software Configuration Options

Overview

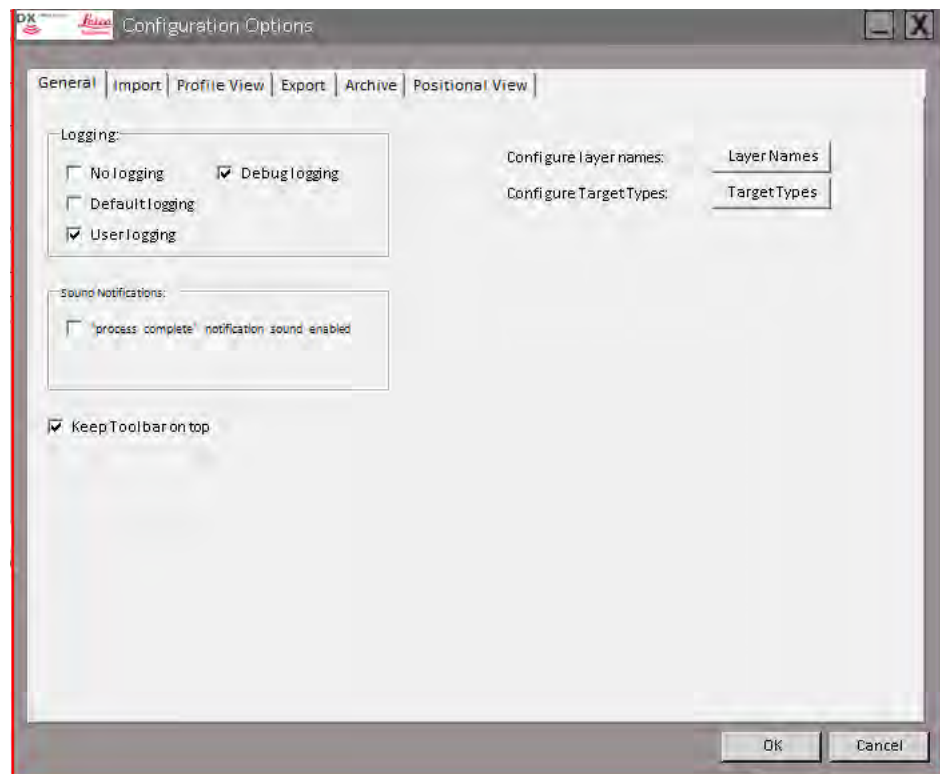
Using the **Configuration Options** dialogue, you can configure the DX Office Vision software to your specifications. The dialogue has several tabs for configuring different parts of the software. By default, the **General** tab is displayed when opening the dialogue.

To display the **Configuration Options** dialogue, click the “Settings” button in the menu bar.



6.1 Changing the General Options

The “General” tab



The **General** tab allows you to configure the following options.

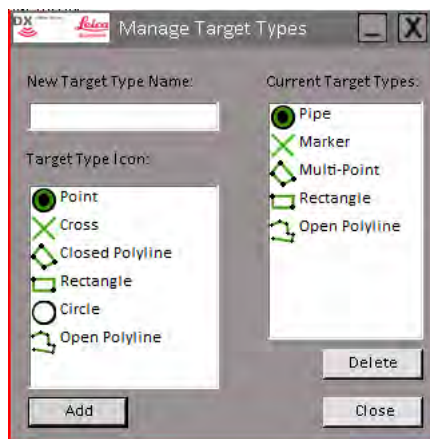
Option	Description
Logging area	<ul style="list-style-type: none">It is recommended to keep the default settings for this option, in case there is a need for problem diagnosis later.To display all logging messages, open the Windows Event Viewer on your PC. The messages are logged in the GPRCAD log within “Applications and Services Logs”. Additionally, all logging messages are stored in the DX Office Vision database.
No Logging	No activity or debug logging is performed.
Default Logging	Activity logging is performed, but not visible for the user.
User Logging	Activity logging is performed and displayed in the Activity area in the main screen.

Option	Description
Debug Logging	Logging of internal values and errors is performed, but not visible for the user. These logging messages are used for debugging any errors that may occur.
Sound Notifications	Enable this option to receive an audible notification when certain tasks are completed or when notifications are displayed.
Keep Toolbar on top	Enable this option to ensure that the main toolbar is always displayed on top of any other open windows.
Layer Names	This option allows you to define new layer names for the toolbar function Layer Name . Click Layer Names to display the dialogue for configuration. Refer to "6.1.1 Configuring Target Types and Layers".
Target Types	This option allows you to define new target types for the toolbar function Target Type . Click Target Types to display the dialogue for configuration. Refer to "6.1.1 Configuring Target Types and Layers".

6.1.1

Configuring Target Types and Layers

Configure target types

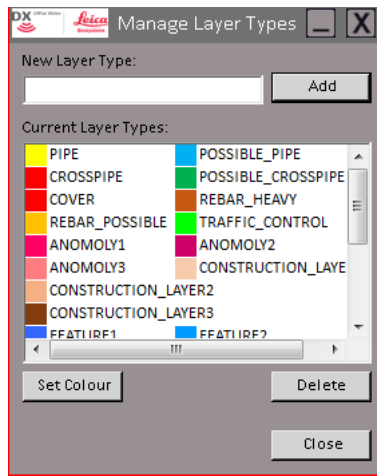



- To define a new target type, enter a name, select the desired icon and click **Add**.
- To delete an existing target type, select it from the list and click **Delete**.
- Click **Close** to return to the **Configuration Options** dialogue.



Note: To save all changes, the **Configuration Options** dialogue must be closed by clicking **OK**.

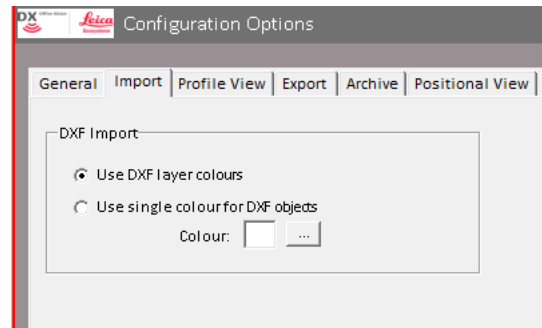
Configure layers



- To define a new layer, enter a name and click **Add**.
 - To change the colour of a layer, select it from the list and click **Set Colour**.
 - To delete an existing layer, select it from the list and click **Delete**.
 - Click **Close** to return to the **Configuration Options** dialogue.
-  Note: To save all changes, the **Configuration Options** dialogue must be closed by clicking **OK**.

6.2 Changing the Import Options

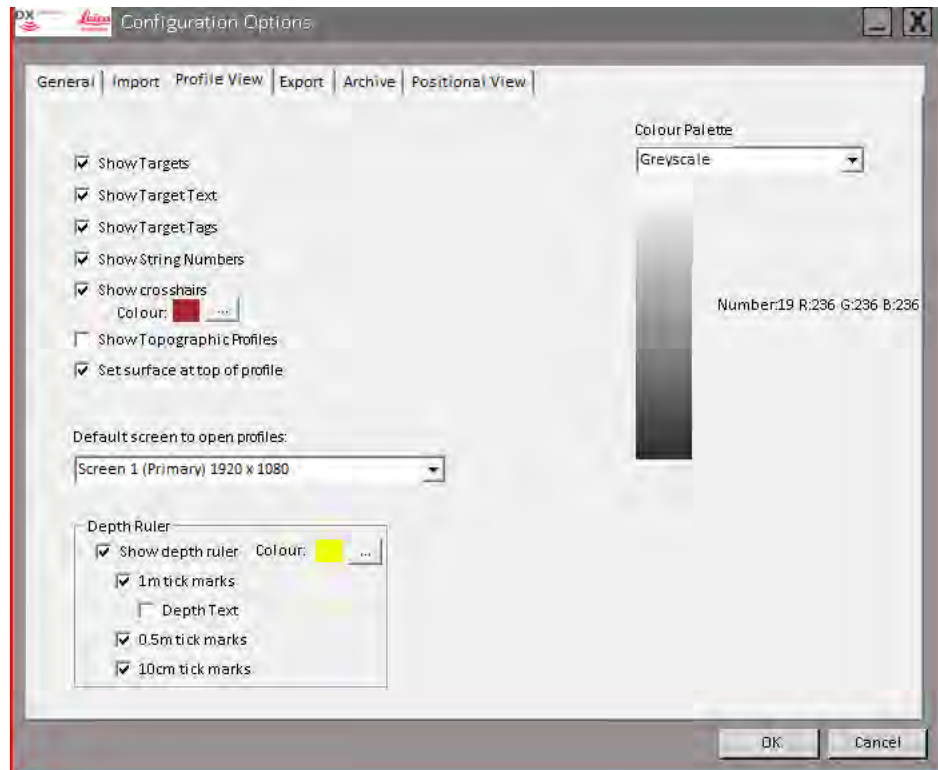
The Import tab



The **Import** tab allows you to configure the **DXF Import** options:

- **Use DXF layer colours**
If this option is enabled, the software sets the layer colours to the colours used in the imported DXF file.
- **Use single colour for DXF objects**
If this option is enabled, the software sets the colour of all objects within the imported DXF file to a single, user-defined colour. To define the colour, click the ... button.

The Profile View tab



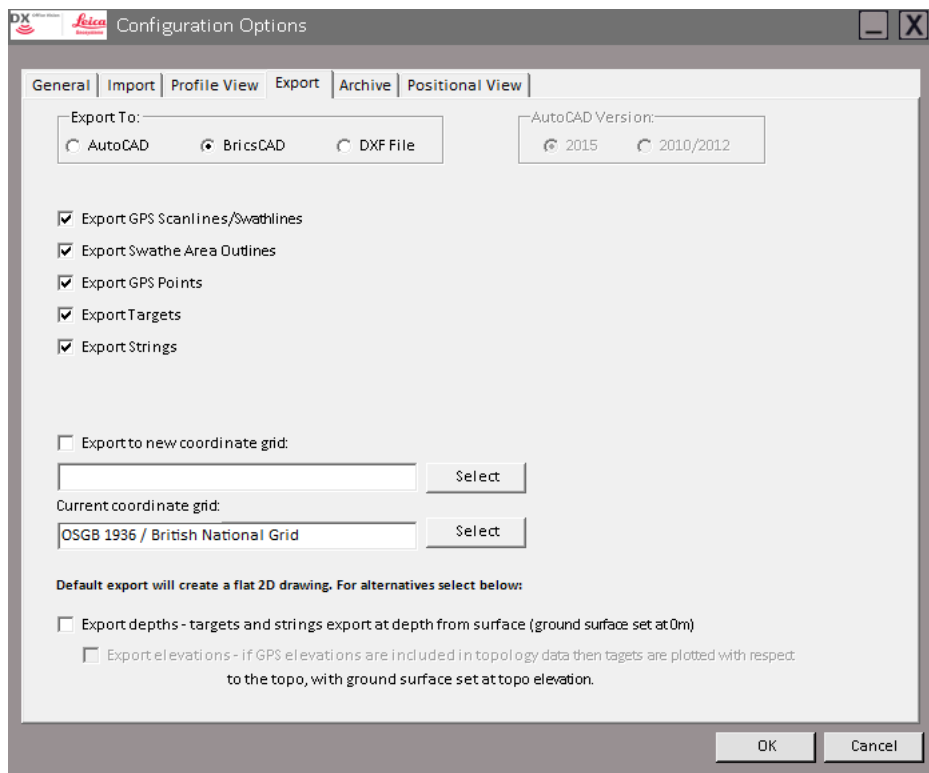
The **Profile View** tab allows you to configure the following options.

Option	Description
<ul style="list-style-type: none"> • Show Targets • Show Target Text • Show Target Tags • Show String Numbers • Show Crosshairs 	<p>Enable these options to display the objects in the profile view.</p> <p>Click the ... button to define the colour.</p>
Show Topographic Profiles	If this option is enabled, the profiles are displayed topographically.
Set surface at top of profile	If this option is enabled, the ground surface is set at the top of the profile view. Any data recorded above ground is eliminated.
Default screen to open profiles	<p>This option allows you to enable multiple-screen display. By default, all software dialogues are displayed on the primary screen upon opening.</p> <p>If multiple monitors are available, select the secondary screen to display profiles on this screen upon opening. Thus, the DX Office Vision main screen and toolbar remain visible on the primary screen.</p>


Option	Description
Depth Ruler	<ul style="list-style-type: none"> • Show depth ruler Enable this option to display the depth scale at the left of the profile view. Click the "..." button to define the colour. • Define the intervals at which the tick marks of the depth scale are displayed: <ul style="list-style-type: none"> - 1 m - 0.5 m - 10 cm • Define whether the numeric text labels for the 1 m tick marks are displayed or not.
Colour Palette	Define the colour palette to be used for the profile image display.

6.4 Changing the Export Options

The Export tab



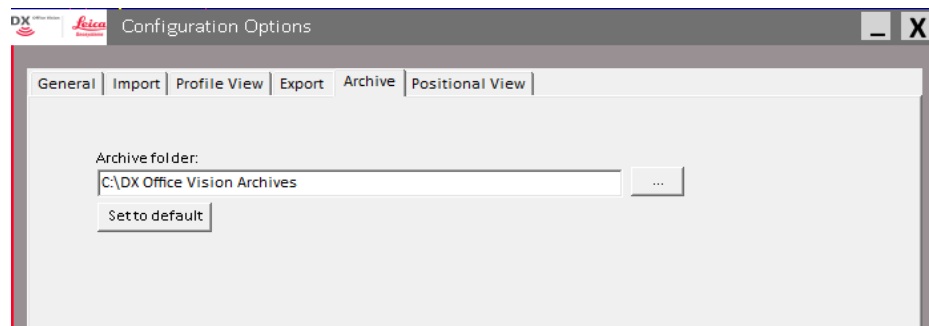
The **Export** tab allows you to configure the options for exporting project data to CAD.

Option	Description
Export To	Select the export type.
AutoCAD Version	 Only available if AutoCAD is selected. Select the version of the AutoCAD export type.

Option	Description
List of check boxes "Export..."	Use these check boxes to define which data is included in the export file: <ul style="list-style-type: none"> • Scan lines/swathe lines • Swathe area outlines • GPS points • Targets • Strings
Export to new coordinate grid	Enable this option to convert and export data to a different coordinate grid. Click Select to select a coordinate grid.
Current coordinate grid	Displays the currently used coordinate grid, normally the grid the data was loaded with. If no grid name is displayed, click Select to select a coordinate grid.
Export depths (3D export)	Enable this option to export 3D data instead of a 2D plan view of the data. Targets and string connections are exported at their true depth. If 3D export is enabled and the project contains positional data, you can also choose to export elevations. Depths are exported at the correct elevation, with the ground surface set to the correct topographic elevation instead to 0 m.

6.5 Changing the Archive Options

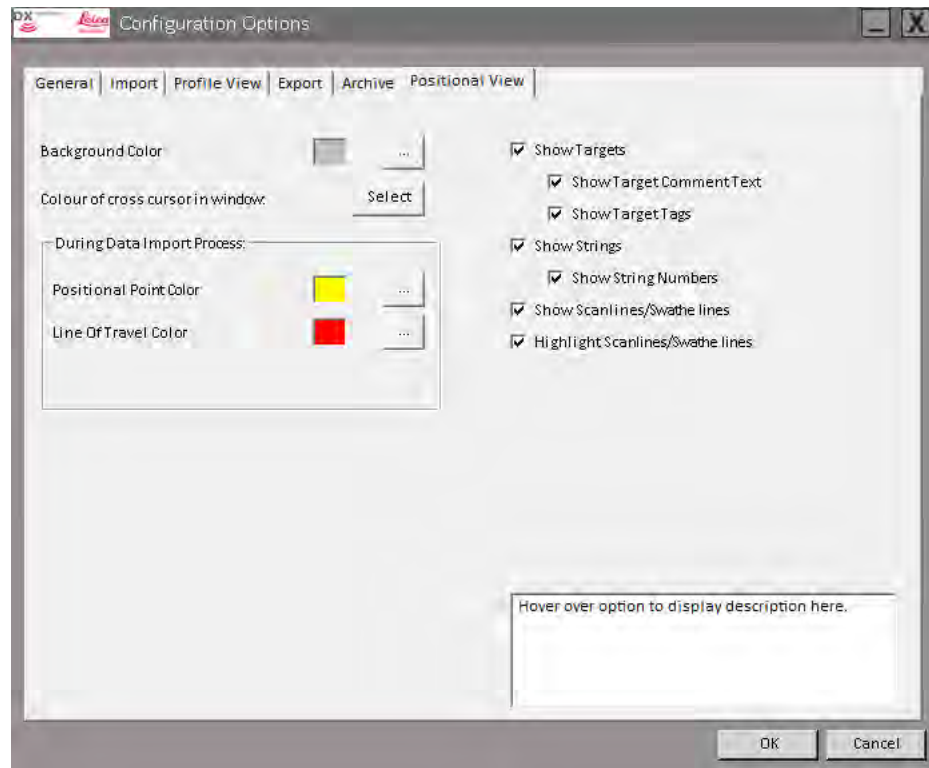
The Archive tab



The **Archive** tab allows you to define the archive location to which project data is saved.

- To set the archive location to any desired location, click the "..." button and select the desired folder from the directory.
- To set the archive location to system default (C:\GPROffice Archives), click **Set to default**.

The Positional View tab



The **Positional View** tab allows you to configure the display options for the **Positioning** plan view.

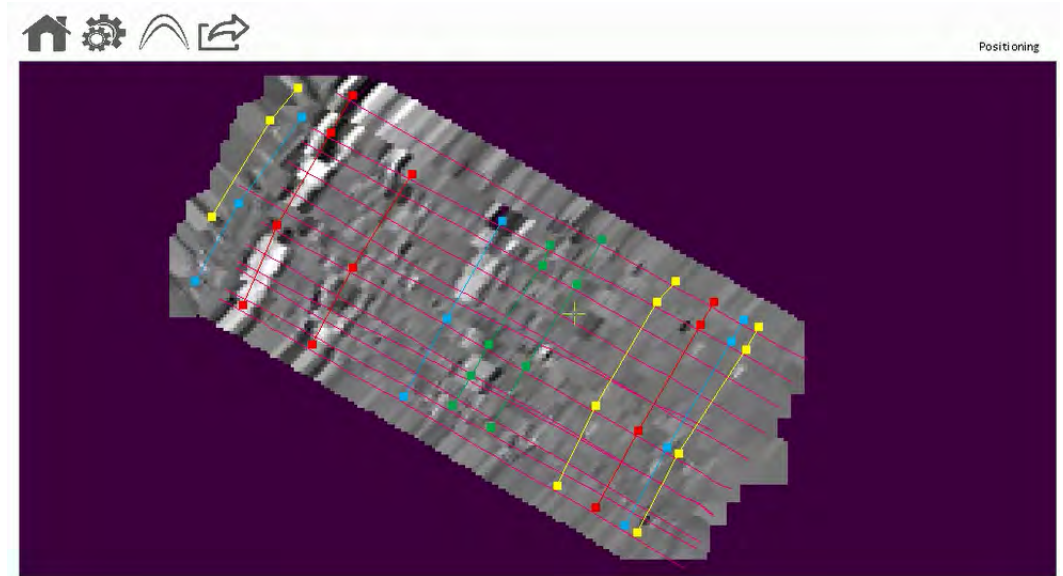
Option	Description
Background Colour	Define the background colour of the Positioning plan view. By default, the colour is grey. Click the ... button to define another colour.
Colour of cross cursor in window	Define the crosshair colour. By default, the colour is yellow. Click the Select button to define another colour.
During Data Import Process	When loading data to a project, only the positional information is displayed in the Positioning plan view. This option allows you to define the colours used for GPS points and for the line of travel (scan line).
List of check boxes "Show..."	Use these options to define which objects are to be displayed in the Positioning plan view.

The Time Slice function



To work with the Time Slice function, purchase and activate the DX Office Vision X-Section licence.

When loading data into a project, the Time Slice function automatically merges the frequencies and creates a time slice of the measurement data. This time slice is displayed in the Positioning plan view.



How to display the different layers of the Time Slice:

- Use the up or down arrow keys to move up or down through the layers.
- Use the "slideshow" feature to move down automatically through the layers.
Press the "S" key to start the slideshow.
Press the "T" key to stop the slideshow.
- To jump directly to a particular layer, press the "L" key and enter the depth or a layer number (between 0 and 512).

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- when it has to be **right**

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