

# 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.

## Trademarks

- Windows is a registered trademark of Microsoft Corporation in the United States and other countries
- All other trademarks are the property of their respective owners.



myWorld@Leica Geosystems (<https://myworld.leica-geosystems.com>) offers a wide range of services, information and training material. With direct access to myWorld, you are able to access all relevant services whenever it is convenient for you.

Service	Description
myProducts	Add all products that you and your company own and explore your world of Leica Geosystems: View detailed information on your products and update your products with the latest software and keep up-to-date with the latest documentation.
myService	View the current service status and full service history of your products in Leica Geosystems service centres. Access detailed information on the services performed and download your latest calibration certificates and service reports.
mySupport	View the current service status and full service history of your products in Leica Geosystems service centres. Access detailed information on the services performed and download your latest calibration certificates and service reports.
myTraining	Enhance your product knowledge with Leica Geosystems Campus - Information, Knowledge, Training. Study the latest online training material on your products and register for seminars or courses in your country.
myTrustedServices	Add your subscriptions and manage users for Leica Geosystems Trusted Services, the secure software services, that assist you to optimise your workflow and increase your efficiency.

## Leica Geosystems Address Book

On the last page of this manual, you can find the address of Leica Geosystems headquarters. For a list of regional contacts, please visit [https://leica-geosystems.com/contact-us/sales\\_support](https://leica-geosystems.com/contact-us/sales_support).

# Table of Contents

In this manual	Chapter	Page
	<b>1 Leica Geosystems Software Licence Agreement</b>	<b>4</b>
	<b>2 Getting Started</b>	<b>11</b>
	2.1 Software Installation	11
	2.2 Important Notes for Using This Software Effectively	12
	<b>3 The Software User Interface</b>	<b>15</b>
	3.1 The Main Screen	15
	3.2 The Main Toolbar	16
	3.3 The Main Menu	18
	3.4 The Profile Context Menu	19
	<b>4 How to Manage Projects</b>	<b>20</b>
	4.1 Creating a Project	20
	4.2 Loading Data Into an Existing Project	21
	4.3 Converting Positional Data to Another Grid System	22
	4.4 Correcting Positional Data	24
	4.5 Exporting Project Data to CAD	25
	4.6 Archiving a Project for Backup	25
	4.7 Recovering an Archived Project	26
	<b>5 How to Work with Profiles</b>	<b>27</b>
	5.1 Selecting and Opening a Profile	27
	5.2 Changing the Profile Contrast Settings	28
	5.3 Working with Profiles Using the Main Toolbar	29
	5.3.1 Adding Targets to a Profile	29
	5.3.2 Stringing Targets Together	30
	5.3.3 Applying a Custom Gain Profile	31
	5.3.4 Measuring Distances in the Positioning Plan View	33
	5.4 Working with Profiles Using the Profile Context Menu	33
	5.4.1 Performing a Profile Depth Calibration	33
	5.4.2 Editing the Target Details	35
	<b>6 How to Change the Software Configuration Options</b>	<b>36</b>
	6.1 Changing the General Options	36
	6.1.1 Configuring Target Types and Layers	37
	6.2 Changing the Import Options	38
	6.3 Changing the Profile Viewing Options	39
	6.4 Changing the Export Options	40
	6.5 Changing the Archive Options	41
	6.6 Changing the Viewing Options for the Positioning Plan View	42
	<b>7 How to Work with the Time Slice Function</b>	<b>43</b>

\*Please read this License Agreement thoroughly before using the Software\*

PLEASE READ THE FOLLOWING TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT (THE "LICENSE AGREEMENT") CAREFULLY BEFORE USING THIS PRODUCT (AS DEFINED IN SECTION 1). THE PRODUCT INCLUDES SOFTWARE, WHICH LEICA GEOSYSTEMS WILL LICENSE TO YOU FOR USE ONLY IN THE MANNER DETAILED BELOW. YOU MUST NOT INSTALL OR USE THE SOFTWARE UNLESS YOU HAVE READ AND ACCEPTED THE TERMS AND CONDITIONS HEREIN; BY PROCEEDING WITH THE INSTALLATION OR THE USE OF THE SOFTWARE OR ANY PART THEREOF, YOU SHALL BE DEEMED TO HAVE AGREED TO ALL THE TERMS AND CONDITIONS OF THE LICENSE, THE WARRANTY, THE LIMITATION OF LIABILITY AND THE OTHER PROVISIONS OF THIS LICENSE AGREEMENT.

IN THE EVENT THAT YOU DO NOT AGREE TO THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT, YOU SHALL NOT BE PERMITTED TO USE THE SOFTWARE, AND YOU MUST RETURN THE UNUSED SOFTWARE TOGETHER WITH ITS ACCOMPANYING DOCUMENTATION AND THE PURCHASE RECEIPT TO THE DEALER FROM WHOM YOU PURCHASED THE PRODUCT WITHIN TEN (10) DAYS OF PURCHASE TO OBTAIN A FULL REFUND OF THE PURCHASE PRICE.

THIS SOFTWARE MAY INCLUDE PRODUCT ACTIVATION AND OTHER TECHNOLOGY DESIGNED TO PREVENT UNAUTHORIZED USE AND COPYING OR TO PROVIDE TECHNICAL OR SUPPORT SERVICES REMOTELY BY LEICA GEOSYSTEMS OR ITS AUTHORIZED RESELLER. THIS TECHNOLOGY MAY CAUSE YOUR COMPUTER OR DEVICE TO AUTOMATICALLY CONNECT TO THE INTERNET. ADDITIONALLY, ONCE CONNECTED, THE SOFTWARE MAY TRANSMIT YOUR SERIAL NUMBER/LICENSE NUMBER TO LEICA GEOSYSTEMS AND IN DOING SO MAY PREVENT USES OF THE SOFTWARE WHICH ARE NOT PERMITTED; ALSO, THE SOFTWARE MAY TRANSMIT OTHER SUPPORT-RELATED INFORMATION, SUCH AS CONFIGURATIONS, USAGE STATISTICS, OR ALLOW OR PUSH DOWNLOADS OF UPDATES TO PRODUCT SOFTWARE.

## 1 Definitions

**"Patches"** shall mean the fixing of a programming error (bug) or a wrong behaviour of the software or the related software code.

**"Product"** shall mean (a) the Leica Geosystems instrument you have purchased for use with the Software, if any, or (b) the Software itself, if you have purchased the Software on a stand-alone basis.

**"Purchase Agreement"** shall mean the purchase order, agreement or other document pursuant to which you purchased the Product.

**"Software"** shall, depending on the case, mean the Leica Geosystems software and the related documentation (in electronic or in paper form) (a) that is supplied to you on a data carrier medium, or (b) that is pre-installed on the Product (if the Product is not the Software itself), or (c) that can be downloaded by you online pursuant to prior authorization from Leica Geosystems.

**"Specifications"** shall mean the functionality of the Software as described in the Product description and the help functions, if any, provided in electronic or in paper form by Leica Geosystems in conjunction with the Software.

**"Specified Computer Facility"** shall mean the computer or server environment defined in the Product description that is required for the proper functioning of the Software.

**"Updates"** shall mean software that correct faults in the Software or that, pursuant to no obligation hereunder, enhances the functionality of the Software by providing additional functions or any other increases in performance.

## 2 Scope of the License

Leica Geosystems AG, Heinrich-Wild-Strasse, CH-9435 Heerbrugg, Switzerland (alternatively, the "Licensor" or "Leica Geosystems") hereby grants to you (the "Licensee") subject to payment of the applicable license fee and to continuous compliance with all the provisions hereinafter, the **non-exclusive, non-transferable, non-sublicenseable and non-assignable right, to use in the manner set forth herein** the Software on one (1) application, unless otherwise agreed upon in the Purchase Agreement. The use of the Software for a purpose other than as licensed herein shall not be permitted.

The foregoing license is **limited as follows**: (a) the Software will only be used on such permitted number of applications and in a mechanically readable form; (b) the Software will as a whole or in part be installed, saved and run only on the Specified Computer Facility in accordance with the installation instructions of Licensor; and (c) one (1) copy of the Software may be made exclusively for security and archiving purposes, provided that such copy carries a comprehensive copyright notice together with all additional references to the rights of Licensor to the Software and the designation of the original version. In the event that the Software is an update or an additional module for an already licensed system, instrument or facility, Licensee may make only as many copies as previously authorized by Licensor. Certain Software supplied by Licensor may contain a special program that regulates and monitors the number of simultaneous users of the Software in a network environment together with the number of the licensed copies of the Software, excluding back-up copies (the "Special Program"). Licensee hereby consents to the inclusion and operation of such Special Program and to the use of other security devices in connection with the Software and Licensee shall be prohibited from circumventing, reverse-engineering or copying such Special Program or any other security devices.

Licensee will only use the Software in the manner permitted under the foregoing license and will not (a) alter the Software or any part thereof in any manner (including, without limitation, through modifications, adaptations, translations, or second-hand versions.), (b) decompile the Software or any part thereof, (c) reverse-engineer or disassemble the Software or any part thereof or manipulate the Software in any other way into a form that persons can read, (d) transfer the Software or any part thereof to another operating system, (e) pass on the Software or any part thereof to a third party or make it available to a third party in any other manner (including, without limitation, for testing or by gift, lease, loan or sublicense, or via a service bureau) without the prior written consent of Licensor, (f) use the Software or any part thereof on a computer facility other than the Specified Computer Facility, or on more than one work station, on networks, on a client server system or on mobile additional instruments without the prior written consent of Licensor, (g) remove, alter, or obscure any proprietary notices, labels, or marks from the Software, (h) use any equipment, device, software, or other means designed to circumvent or remove any form of copy protection used by Leica Geosystems in connection with the Software, or use the Software together with any authorization code, serial number, or other copy-protection device not supplied by Leica Geosystems directly or through an authorized distributor; or (i) use any equipment, device, software, or other means designed to circumvent or remove any usage restrictions, or to enable functionality disabled by Leica Geosystems.

Installation, access, and continued use of the Software may require an entitlement number. Registration may be required for certain features or before an entitlement number is issued by Leica Geosystems. Licensee agrees that Leica Geosystems may use data and information provided by Licensee, an authorized reseller, or any other third party acting on behalf of Licensee in connection with the purchase of the software license to register the Software. Licensee agrees to provide Leica Geosystems, an authorized reseller, or any other third party acting on Licensee's behalf with accurate and current registration information, and Licensee further agrees to maintain and update this registration information through customer data registration processes that may be provided by Leica Geosystems. By installing and using the Software, Licensee consents to Leica Geosystems using any personal information provided at

registration, or updated thereafter, to issue entitlement numbers, to manage Leica Geosystems's relationship with Licensee (including automating the issuance of entitlement numbers for future purchases), and to otherwise use any such personal information in conformance with its privacy policy –if applicable-, which is available on request.

The activation security mechanisms may disable the Software if Licensee attempts without Leica Geosystems' consent or authorisation to transfer it to another computer or device, if the date-setting mechanisms on the computer or device is tampered with, if Licensee uses the Software past an applicable evaluation period or limited term, or if Licensee undertakes certain other actions that may offset the security mode.

This Software may cause the Specified Computer Facility to automatically connect to the Internet and to communicate with Leica Geosystems and or with third parties connected with the development and/or the validation of the Software.

This Software license does not cover or include the use of **third party software**. Licensee's right to use any such software shall be governed by the provisions set forth by such third party.

This Software license shall also apply to **Open Source Software (OSS)**. In case of conflict with the terms of this Software License Agreement, the terms of the respective OSS license agreement shall govern.

### 3 Warranty

**Express Warranty.** Licensor warrants to the original Licensee that (a) the **data carrier medium** on which the Software is stored shall be free from defects in workmanship and material at the time of delivery to Licensee, and (b) for the warranty period specified in the relevant Purchase Order, the Software (but not Updates) shall function in material accordance with the Specifications, provided the Software is used in the manner permitted in the foregoing license, on the Specified Computer Facility and in accordance with the conditions of installation, use and operation set forth in the Product description. **Licensor does not warrant** that the Software will be free of defects, run without interruption, meet the expectations of Licensee, or function in combination with the hardware or software products of third parties, or that all program errors will be corrected. In addition to the foregoing, in order for a defect in the Software to be sufficiently material so as to violate the warranty set forth in letter (b) above of this paragraph, the defect must cause the Software - while being used in the manner permitted in the foregoing license - to function in a way so divergent from the Specifications that it is unsuitable for the purpose described in the Product description. Furthermore, if the required functionality can be achieved by the Licensee indirectly (through a so called "work-around"), then the applicable impairment shall not constitute a defect giving rise to duties under the foregoing warranty. **Licensor's sole obligation** under the foregoing warranty shall be, at Licensor's sole option and expense, to either (a) **replace** the data carrier and/or the Software, so as to materially conform with the Specifications (including, without limitation, replacement with a more recent version or equivalent software); or (b) **repair** the Software by providing, correction codes, work-around solutions and/or Updates, including updated documentation and other documents; or (c) **terminate** this License Agreement and refund all license fees received following the return of the Software in accordance with Section 7 below. The foregoing warranty will apply to any replaced data carriers and Software until expiry of the original warranty period. The costs and risk of any delivery of Software to the service point nominated by Licensor shall be borne by Licensee.

**Obtaining warranty service.** If Licensee detects a defect in the Software that may give rise to a duty under the foregoing warranty, it will cease using the Software immediately and notify Licensor or its local sales partner in writing of the defect and provide sufficient supporting documentation within the period for notifying defects. Such period for notifying defects is ninety (90) days from the date of delivery of the data carrier medium (for a defect in the data carrier medium) and one (1) year from the date of delivery of the Software (for a defect in the Software). The written supporting

documentation relating to the defect will be sufficient if it permits the defect detected by Licensee to be capable of reproduction by Licensor. Licensee will annex the relevant purchase receipt so that Licensor can determine compliance with the periods for notifying defects. Licensee will not carry out modifications or repairs itself or permit such modifications or repairs to be carried out by unauthorized third parties. If requested by Licensor, Licensee will support Licensor in the analysis of the causes and conditions giving rise to the defect, as well as in the development and testing of correction codes or a work-around solution.

**Warranty exclusive.** Licensee's sole remedy for Software defects is set forth in the foregoing express warranty. The Software is licensed with its current features "as is" and with no warranty or guarantee of whatever nature, other than the foregoing express warranty. Such express warranty is in lieu of all other warranties, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties, terms or conditions of merchantability, fitness for a particular purpose, satisfactory quality and non-infringement, all of which are expressly disclaimed. Licensee acknowledges that Licensor's sales partner or dealers are not allowed to provide any warranty, guarantee or assurance with regard to the use, suitability, or results of use of the Software, or with regard to the precision, accuracy or reliability thereof, and any such warranty, guarantee or assurance is of no effect. It shall be the responsibility of Licensee to select the Software that fulfils its requirements. Licensee shall bear the full risk for the performance of and results achieved by the Software and for its suitability for the use that Licensee has planned for it, even when Licensor has been informed of the planned use of the Software.

**Licensor shall be relieved of its obligations under the foregoing express warranty** to the extent that any defect is caused by circumstances for which it is not responsible, including, without limitation, (a) non-compliance with the conditions of use and operation contained in the Product description or the documentation; (b) non-compliance with the provisions of this License Agreement; (c) unauthorized modifications to or interference with the Software by Licensee or third parties; (d) errors in the operation of the Software by Licensee or by third party staff; (e) influences from systems or programs that have not been supplied by Licensor; or (f) use on a computer facility other than the Specified Computer Facility.

In the event that Licensor is not responsible for a defect pursuant to these warranty provisions or that Licensor incurs additional expenditure as a result of the failure of Licensee to comply fully with its obligations under this Section 3 (including, without limitation, its obligation to support and provide documentation to Licensor), Licensor shall have the right to charge Licensee for the costs that it incurs for the analysis and rectification of the defect according to the time and materials required and in accordance with the applicable rates charged by Licensor at the time.

#### **4 Intellectual Property Rights**

Licensee shall only hold those rights to the Software that are expressly described in Section 2 of this License Agreement. Any other rights with regard to the Software, including without limitation, **ownership rights and patent, copyright, trademark, trade secret and other intellectual property rights**, shall remain the sole **property of Licensor**. Licensee will not remove from the Software any references to copyrights, trademarks or other ownership rights, or cover up or alter any such references.

Licensee will take all reasonable steps to prevent any unauthorized use, reproduction, sale, or publication of the Software or the unauthorized provision of access thereto. Licensee will indemnify and hold harmless Licensor from any losses, damages, claims and expenses (including, without limitation, reasonable legal expenses) relating to any infringement of the rights of Licensor caused by Licensee, Licensee's breach of this License Agreement or Licensee's use of the Software in a manner not authorized under this license agreement.

**In the event that Licensee faces legal proceedings** based on the allegation that Licensee's use of a valid, unmodified version of the Software in accordance with the terms and conditions of this License Agreement infringes an existing intellectual prop-

erty right in Switzerland, the European Union, Japan, the USA or in any other countries where Licensor sells the Software, or that such use constitutes unfair competition, Licensor shall defend any such proceedings at its own expense, provided that Licensee has informed Licensor immediately in writing of the proceedings raised, has granted Licensor a Power of Attorney authorizing it to conduct and settle the legal proceedings, and, if requested by Licensor, has provided Licensor with reasonable support in the defence of such proceedings.

In the event that, in the sole opinion of Licensor, the **valid, unmodified version of the Software could infringe the intellectual property rights of third parties**, it shall at its own exclusive discretion (a) either obtain authorization from such third party for the continued use of the Software by Licensee, (b) replace the Software, (c) modify it in such a manner that there is no longer any infringement of intellectual property rights, or (d) if the foregoing measures are not within the bounds of what is reasonably possible, terminate this Agreement effective immediately and refund to Licensee a portion of the license fees paid (after deduction of an appropriate payment for the use already made of the Software by Licensee).

Notwithstanding the foregoing, Licensor shall be relieved of its obligations under the prior two paragraphs of this Section 4 if the infringement claim is based on the allegation or fact that the Software (a) has been modified by Licensee, or (b) is being used with other programs or data and such combination has led to an infringement of a third party right, (c) has been used on a computer facility other than the Specified Computer Facility, or (d) has been used and operated under conditions other than those specified in the Product description.

## **5 Limitation of Liability**

To the extent permitted under applicable law, Licensor shall not be liable for any direct, indirect or consequential loss or damage, including, without limitation, loss of income, loss of business profits or loss of contracts, unrealized cost reductions, loss of data, business interruption, or increased costs on the part of Licensee or any other financial losses, that result from or in connection with the purchase, license, use, breakdown or interruption of operation of the Software. The foregoing limitation of liability shall also apply in the event that Licensor has been notified of the possibility of such losses being incurred. Licensor shall only be liable for loss or damage caused by Licensor's gross negligence or wilful misconduct. This limitation of liability shall apply to all claims for loss and damage irrespective of their legal grounds, including, without limitation, claims based on tort, contract, pre- contract or quasi-contract. This limitation of liability shall also apply to any officers, directors or employees of Licensor, or any representatives or agents of Licensor that are involved in the development, marketing or supply of the Software.

It shall be the exclusive duty of Licensee to ensure that it and its staff possesses the required knowledge to properly install and use the Software. Licensor shall not be liable for problems and defects that arise from insufficient knowledge on the part of the users of the Software.

## **6 Exclusion of other Assurances**

Licensee hereby agrees that no verbal or written assurances, declarations, statements, recommendations or advertising messages have been made by Licensor, its employees, sales partners, agents, dealers or downstream distributors that could give rise to an amendment or extension of the foregoing warranties and limitation of liability. Licensee is hereby given notice that none of the forenamed persons is authorized by Licensor to make any such amendments or to provide any such assurances.

## **7 Duration and Termination**

This License Agreement shall come into force on the agreement of Licensee to the provisions hereof and shall remain in force for the term indicated in the Purchase Order.

In addition to any other right of termination provided in this License Agreement, each party shall be entitled to terminate this License Agreement at any time with immediate effect:

- a) in the event of a material violation of a contractual duty by the other party, including, without limitation, default in payment of the license fee, if the party in breach does not remedy such violation within forty-five (45) days after being served with a notice in writing;
- b) is unable to pay its debts, or becomes insolvent, or is subject to an order or a resolution for its liquidation, administration, winding-up or dissolution (otherwise than for the purposes of a solvent amalgamation or reconstruction), or has an administrative or other receiver, manager, trustee, liquidator, administrator or similar officer appointed over all or any substantial part of its assets, or enters into or proposes any composition or arrangement with its creditors generally, or is subject to any analogous event or proceeding in any applicable jurisdiction.

On any termination of this License Agreement, all rights of use of the Software held by Licensee shall expire. Within thirty (30) days from the date of termination of the License Agreement Licensee will return to Licensor or destroy (and confirm such destruction in writing to Licensor) the Software and all copies or partial copies thereof that have been made, as well as all modified parts of the Software or interfacing parts linking to other programs or data systems, and to the extent available, all security devices.

## **8 Import, Export and Use of the Software**

Licensee shall be exclusively responsible for ensuring compliance with the relevant legislation relating to its rights to import, export or use the Software.

## **9 General Provisions**

If any term or provision of this agreement shall be or shall become invalid or unenforceable for any reason, such term or provision shall be ineffective to the extent of such invalidity or unenforceability without invalidating the remaining terms and provisions hereof, provided, however, that the parties shall replace any such invalid or unenforceable provision by a valid and enforceable provision as comes nearest to the original provision in economic impact and intent. This agreement may only be modified in writing, signed by an authorized officer of Leica Geosystems. This is the entire agreement between Leica Geosystems and Licensee regarding the Software and it supersedes any prior representation, discussions, undertakings, communications or advertising relating to the Software.

## **10 Third Party Beneficiary**

The parties expressly agree that subsidiaries of Leica Geosystems, including the entity from whom the Customer purchased the Product, is a third party beneficiary of this Software License Agreement, and, without limiting the foregoing, such subsidiaries shall have all defences available to Leica Geosystems under this Software License Agreement.

## **11 Governing Law and Place of Jurisdiction**

This Agreement shall be governed by the laws of Switzerland, excluding all conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods. The ordinary courts at the headquarters of Leica Geosystems AG in Balgach, Switzerland shall have jurisdiction. Licensor shall, in its sole discretion, also have the right to invoke the courts of law having jurisdiction at the domicile or place of business of Licensee.

Leica Geosystems AG  
Heinrich-Wild-Strasse 201  
CH - 9435 Heerbrugg  
(Switzerland)

Heerbrugg, 25 March 2013

---

## 2 Getting Started

### 2.1 Software Installation

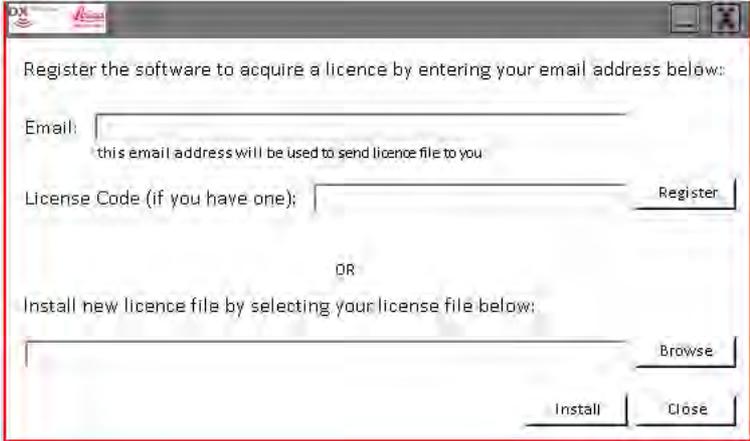
#### Requirements

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.

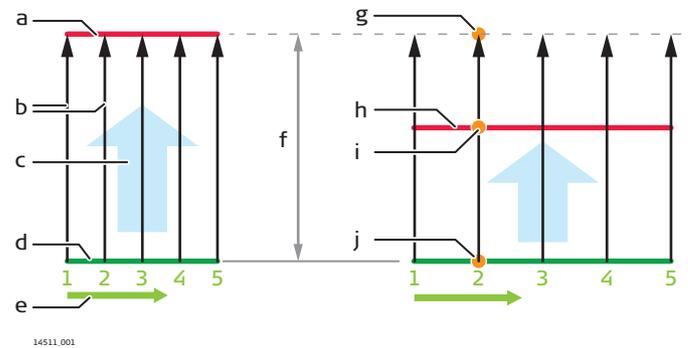
- ☞ If you perform the full installation of DX Office Vision, PostgreSQL is automatically installed and configured on the same workstation.

#### 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. <b>(<a href="https://myworld.leica-geosystems.com">https://myworld.leica-geosystems.com</a>)</b>
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 <b>Register</b> to start the registration process. Click <b>Close</b> 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 <b>Browse</b> to load the licence file.
9.	Click <b>Install</b> 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. Ever 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 "S78" indicates the 78th "end"/"through" line.

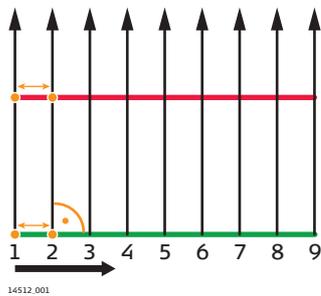
#### Sequence of measurements along the baseline

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.



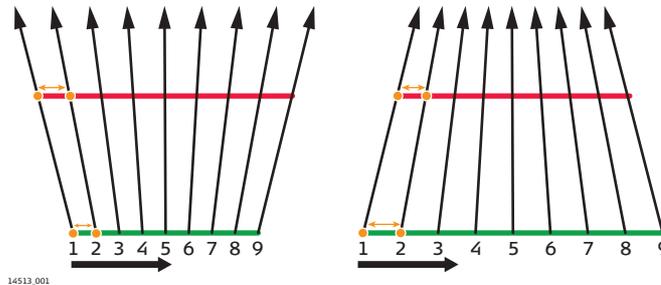
In this example, a sequence of 9 scan lines is recorded along a 4 m long baseline. The scan lines start at intervals of 0.5 m.

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.



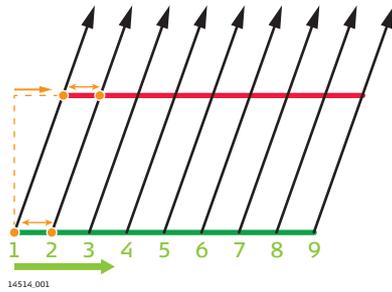
In this example, a sequence of 9 scan lines is recorded along a 4 m long baseline. The scan lines start at intervals of 0.5 m. The intervals on the "through" line are smaller or greater than 0.5 m, as required.

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.

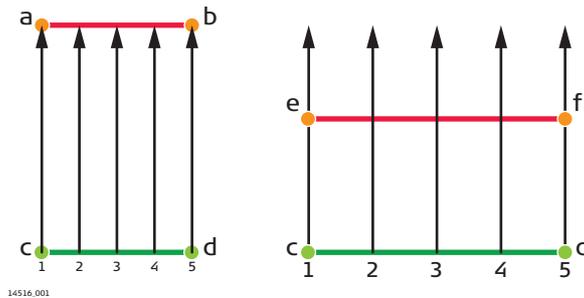
**Recording positional data**

**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.



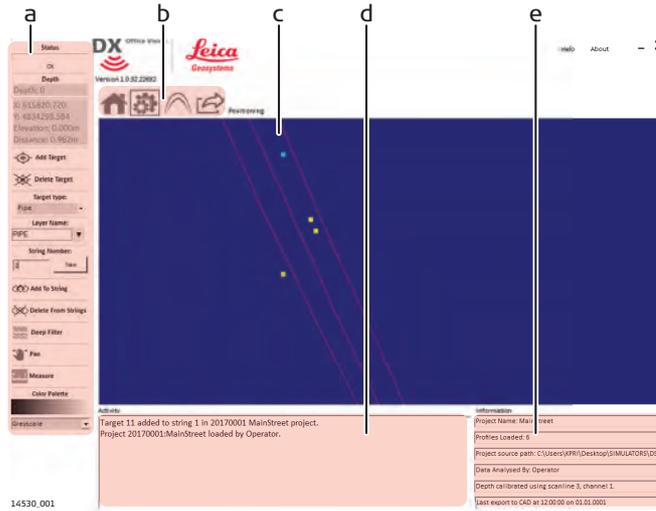
- a) Start point of “end” line
- b) End point of “end” line
- c) Start point of baseline
- d) End point of baseline
- e) Start point of “through” line
- f) End point of “through” line

# 3 The Software User Interface

## 3.1 The Main Screen

### 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 <b>Configuration Options</b> 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

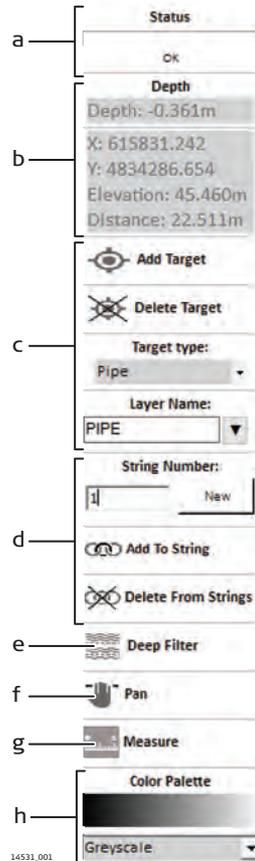
## 3.2

## 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".

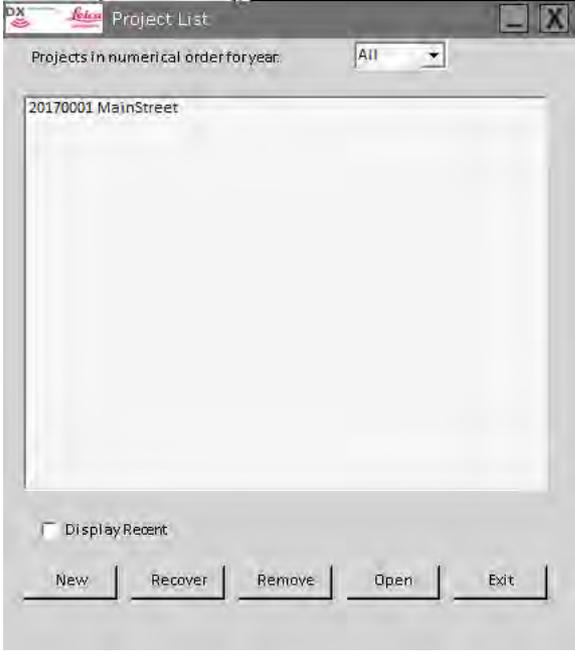
### **Color Palette**

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

---

## Menu Options

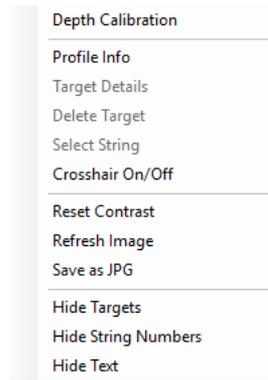
The main menu provides functions for managing projects and project data.

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

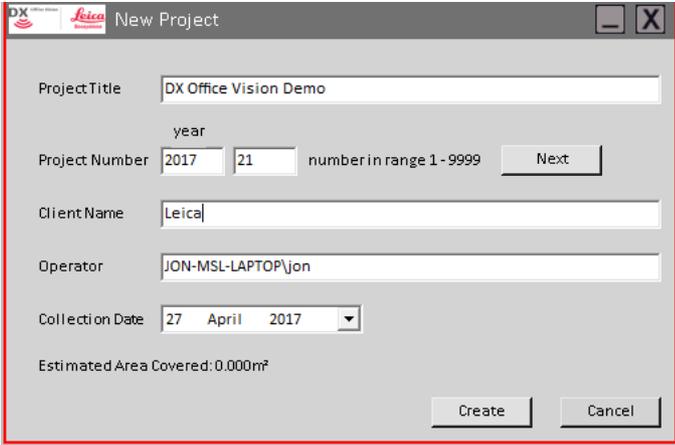


Function	Description
<b>Depth Calibration</b>	Performs a depth calibration. For a detailed description, refer to "5.4.1 Performing a Profile Depth Calibration".
<b>Profile Info</b>	Displays detailed information about the currently active profile, such as frequency, number of recorded scans and length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

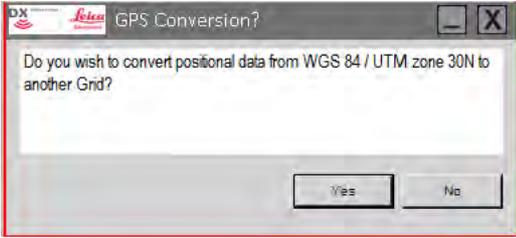
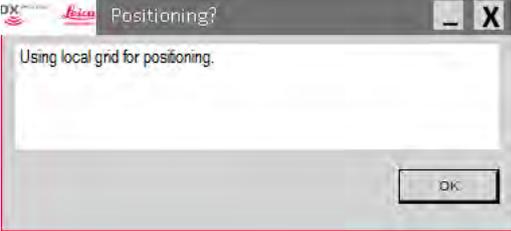
## 4 How to Manage Projects

### 4.1 Creating a Project

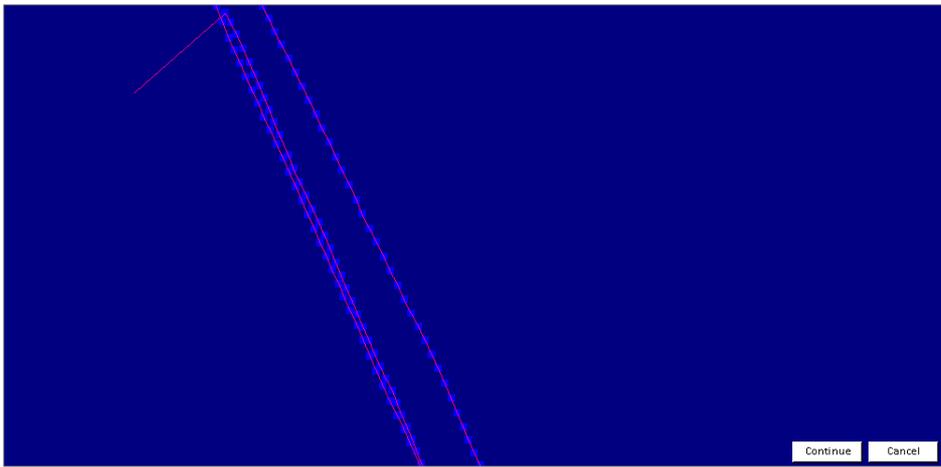
#### Create a project

1.	Click the "Home" button in the main screen to display the main menu.
2.	Click <b>Open Project</b> in the main menu to display the <b>Project List</b> dialogue.
3.	Click <b>New</b> to display the <b>New Project</b> dialogue. 
4.	Enter the necessary project information: <ul style="list-style-type: none"><li>• <b>Project Title</b></li><li>• <b>Project Number:</b> Click <b>Next</b> 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".</li><li>• <b>Client Name:</b> This field is optional.</li><li>• <b>Operator:</b> This field is automatically set to the current Windows user details.</li><li>• <b>Collection Date:</b> 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.</li></ul>
	To close the <b>New Project</b> dialogue without creating the project, click <b>Cancel</b> .
5.	To create the project, click <b>Create</b> . <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"> <li>Click the "Home" button to display the main menu.</li> <li>Click <b>Open Project</b> in the main menu to display the <b>Project List</b> dialogue.</li> <li>Select an existing project and click <b>Open</b>.</li> </ul> <p><i>The project is opened and ready for data import.</i></p>
1.	<p>Click the "Home" button to display the main menu.</p>
2.	<p>Click <b>Load Data</b> to load data into the project.</p> <p><i>The dialogue for importing project data is displayed.</i></p>
3.	<p>Select the folder with the project data that was collected on site and click <b>OK</b>.</p> <p><i>The software performs several background checks to ensure that the folder contains valid data. The data is loaded and displayed in the <b>Positioning</b> plan view.</i></p>
	<p>If the data was collected using GPS positioning, the <b>GPS Conversion?</b> dialogue is displayed.</p> <div data-bbox="491 688 1007 926" data-label="Image">  </div> <ul style="list-style-type: none"> <li>To convert the positional data to another national or international grid system, click <b>Yes</b>. For a detailed description, refer to "4.3 Converting Positional Data to Another Grid System".</li> <li>To continue the import process without converting the positional data, click <b>No</b>.</li> </ul> <p><i>The data is loaded and displayed in the <b>Positioning</b> plan view.</i></p>
	<p>If the data was collected using a local or assisted grid, the <b>Positioning?</b> dialogue is displayed.</p> <div data-bbox="491 1213 1002 1444" data-label="Image">  </div> <p>To continue the import process, click <b>OK</b>.</p> <p><i>The data is loaded and displayed in the <b>Positioning</b> plan view.</i></p>

4. **Positioning** plan view: Scan lines are represented by a red line. Positional points are represented by a blue square.



- 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.*

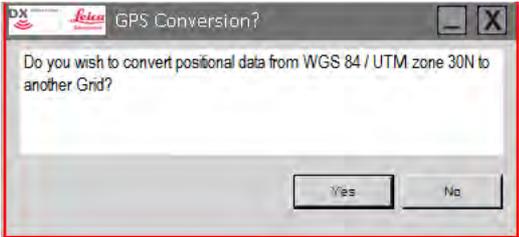
### 4.3

## Converting Positional Data to Another Grid System

### Convert positional data

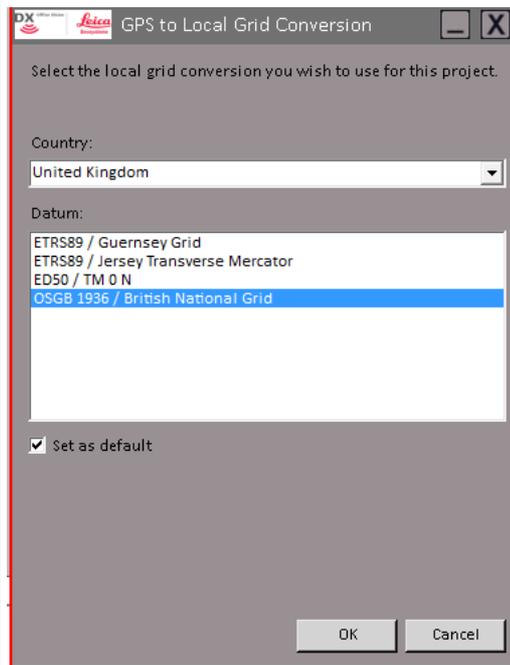
When loading data into a new or existing project, the software checks if the data folder contains positional data.

 If the data was collected using GPS positioning, the **GPS Conversion?** dialogue is displayed during the import process.



1. To convert the positional data to another national or international grid system, click **Yes**.

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

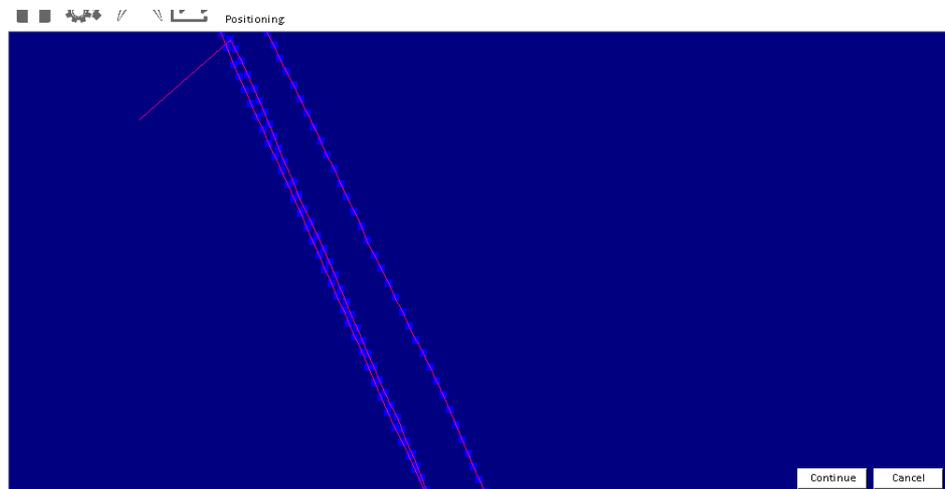


3. Select the desired grid system to which the data should be converted.

 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. 

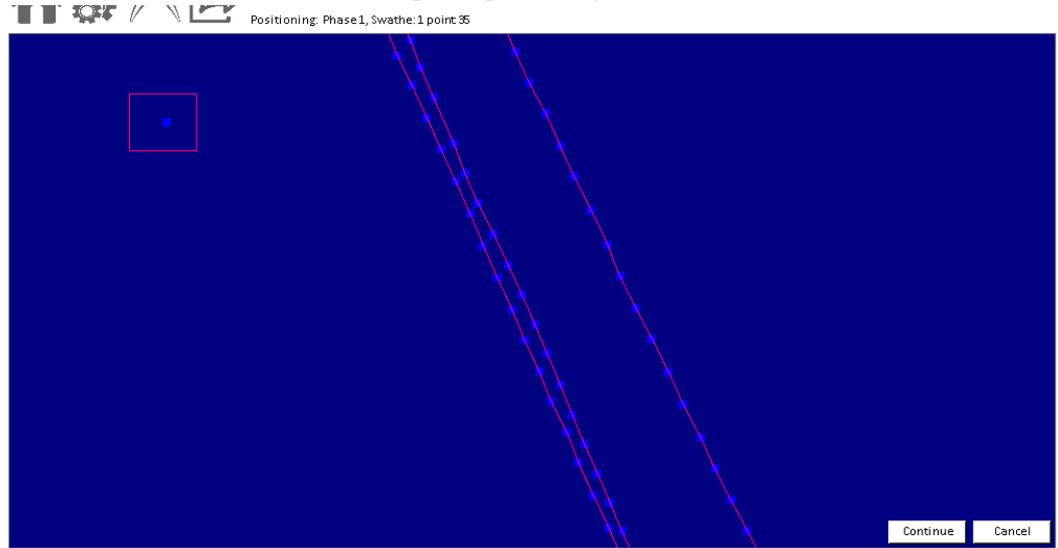
- If necessary, correct the positional data. Refer to "4.4 Correcting Positional Data".
- To cancel the import process, click **Cancel**.
- To complete the import process, click **Continue**.

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

## 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.	If the necessary software is installed, the following steps are performed: <ul style="list-style-type: none"><li>• If the selected CAD package is not already running, it is opened and the data is exported into a new drawing.</li><li>• If the selected CAD package is already running, the data is exported into the current drawing.</li></ul> <p> 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.</p>

#### 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 <b>OK</b> . The data is exported to a DXF file and stored at the defined location.

## 4.6

### Archiving a Project for Backup

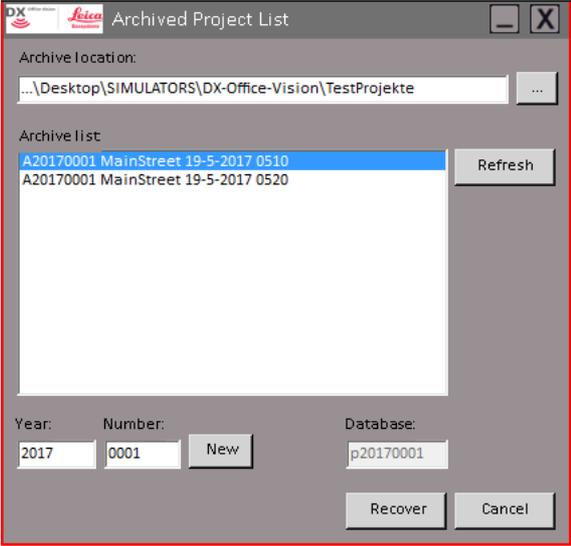
---

#### 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 <b>C:\DXOffice Archives</b> . 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 <b>Archive Project</b> 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 <b>Open Project</b> to display the <b>Project List</b> dialogue.
3.	Click <b>Recover</b> to display the <b>Archived Project List</b> dialogue. 
	<i>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.</i>
4.	Select a project from the list.  Click <b>New</b> to change the project number of the selected project, if desired.
5.	Click <b>Recover</b> . <i>The selected project is added to the <b>Project List</b> dialogue and can be opened.</i>

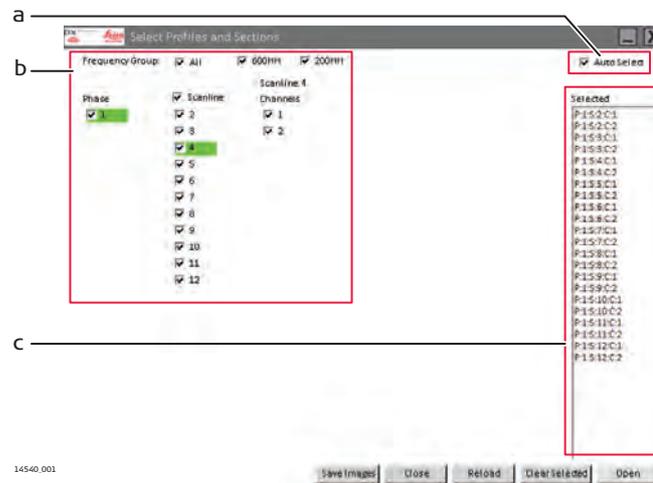
# 5

## How to Work with Profiles

### 5.1

### Selecting and Opening a Profile

#### The "Select Profiles and Sections" dialogue



- a) **Auto Select** function
- b) Selection area for selecting **Frequency Group, Phase, Scanline** and **Channels**.
- c) List of selected profiles

#### 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:

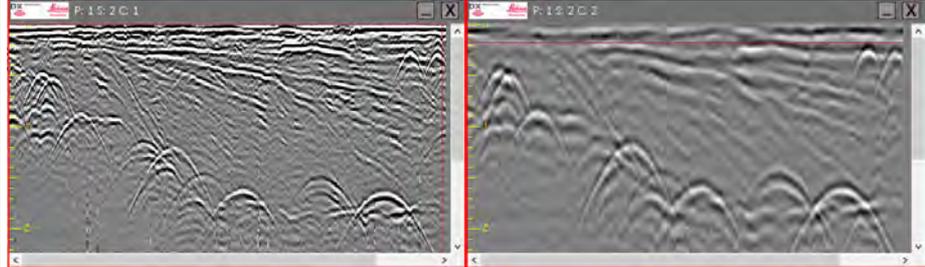
- P: for the phase
- S: for the scan line
- C: for the channel

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 <b>Reload</b> to refresh the dialogue.
2.	Select or deselect the desired frequency groups. By default, the <b>All</b> check box is selected.  To select automatically the channels of a selected phase and scan line within a selected frequency group, activate the <b>Auto Select</b> 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 <b>Scanline</b> column. Otherwise, select the desired scan lines individually.  If the <b>Auto Select</b> check box is active, all available channels for each scan line are automatically selected. If the <b>Auto Select</b> 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"> <li>• To save images of the selected profiles, click <b>Save</b>.</li> <li>• To clear the selected list of profiles and reset the dialogue, click <b>Clear Selected</b>.</li> <li>• To close the dialogue without opening the selected profiles, click <b>Close</b>.</li> <li>• To open the selected list of profiles, click <b>Open</b>.</li> </ul>
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

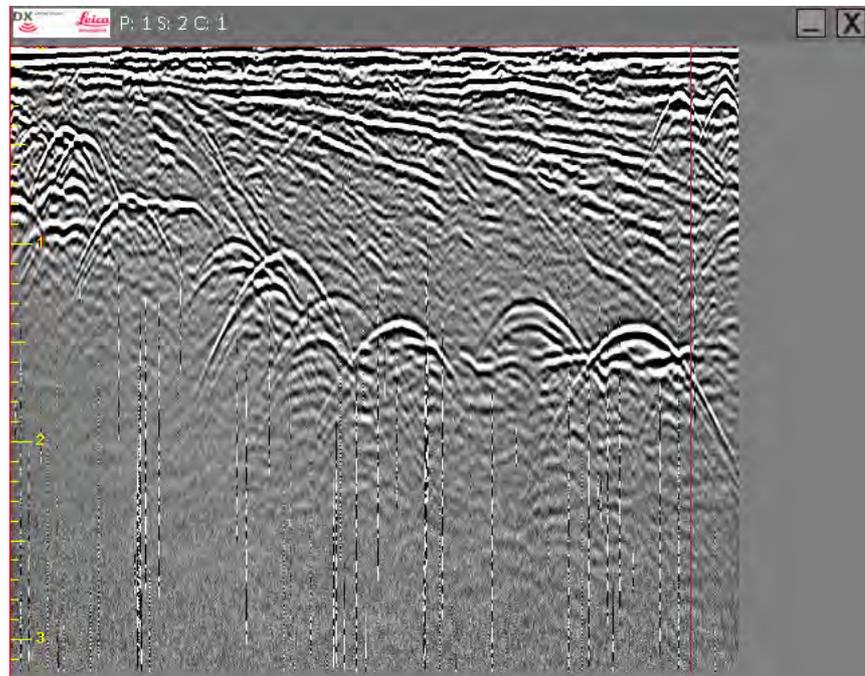
To increase the contrast of all open profiles, use the plus key.

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

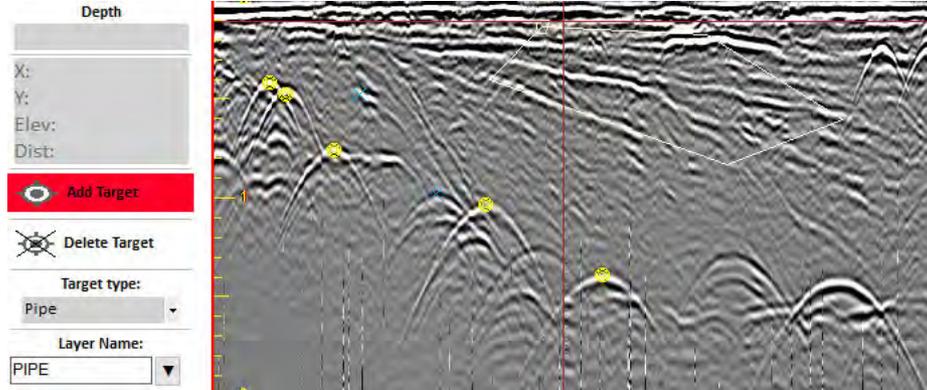
### 5.3.1

### Adding Targets to a Profile

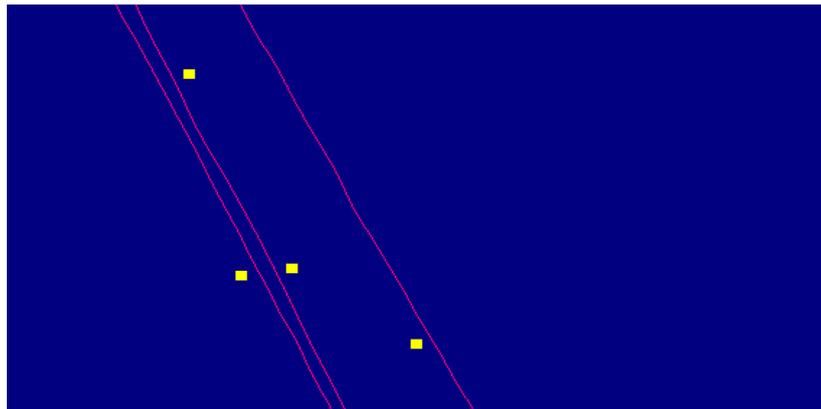
#### Using the target tools

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:

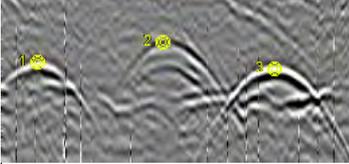
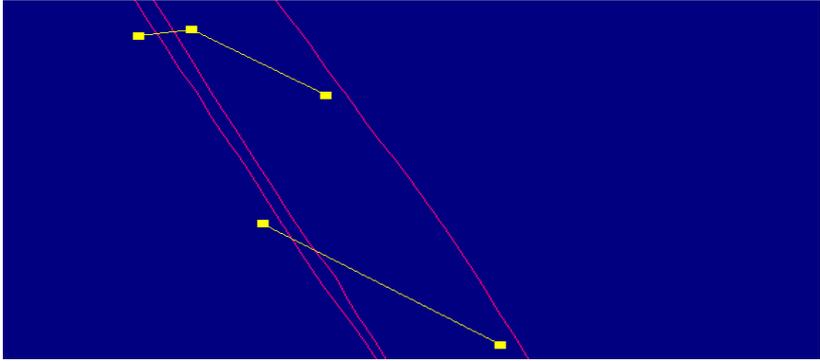


1.	Select the desired target type and layer from the drop-down lists in the main toolbar. There are six basic target types available: <ul style="list-style-type: none"><li>• Point</li><li>• Cross</li><li>• Multipoint</li><li>• Closed polyline</li><li>• Rectangle</li><li>• Circle</li><li>• Open Polyline</li></ul> <p> For a detailed description on how to configure target types and layers, refer to "Configure target types".</p>
2.	Click the <b>Add Target</b> 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 <b>Positioning</b> plan view is updated accordingly to show the position of the placed target.</i>
	To delete an existing target, activate the <b>Delete Target</b> tool and click any target you want to delete. Or right-click on a target and select <b>Delete Target</b> 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.

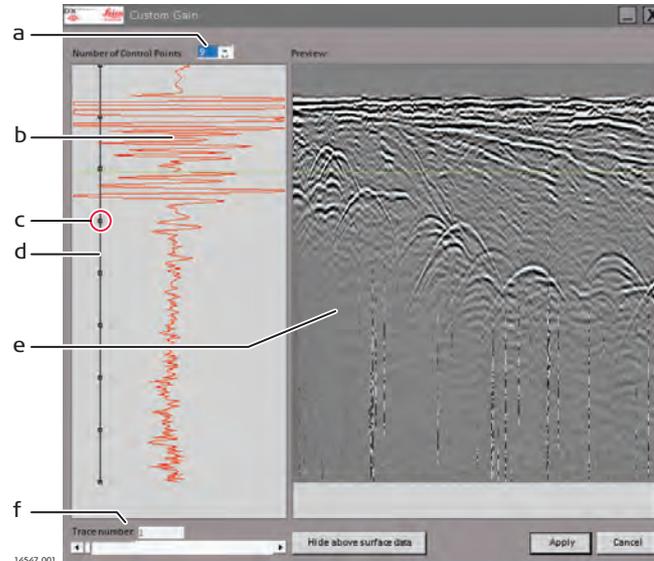
1.	Open the profiles containing the targets which you want to string together.
2.	Click the <b>Add To String</b> button in the main toolbar to activate the tool.
3.	<p>Click a target to add it to the string.  <i>The currently active string number is displayed next to the target to indicate it has been added to the string.</i></p>  <p><i>The <b>Positioning</b> 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 <b>New</b> in the main toolbar.
	To remove a target from a string, activate the <b>Delete From String</b> 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.

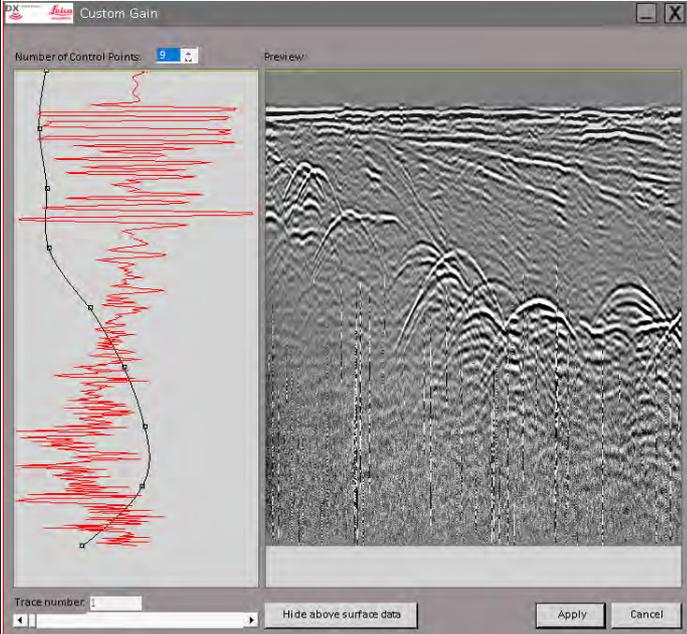
The **Custom Gain** dialogue:



- 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 <b>Deep Filter</b> button in the main toolbar to display the <b>Custom Gain</b> 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 <b>Trace number</b> 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 <b>Hide above surface data</b> 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"> <li>• 3</li> <li>• 5</li> <li>• 9 (default value)</li> <li>• 17</li> <li>• 33</li> </ul>

4.	<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"> <li>• 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.</li> <li>• Move a control point to the left to decrease the gain value.</li> </ul> <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> 
5.	<p>Once you are happy with the resulting gain curve and scan profile, click <b>Apply</b> to apply the custom gain filter to all profiles in the project.</p>
	<p>To close the <b>Custom Gain</b> dialogue without applying the filter, click <b>Cancel</b>.</p>

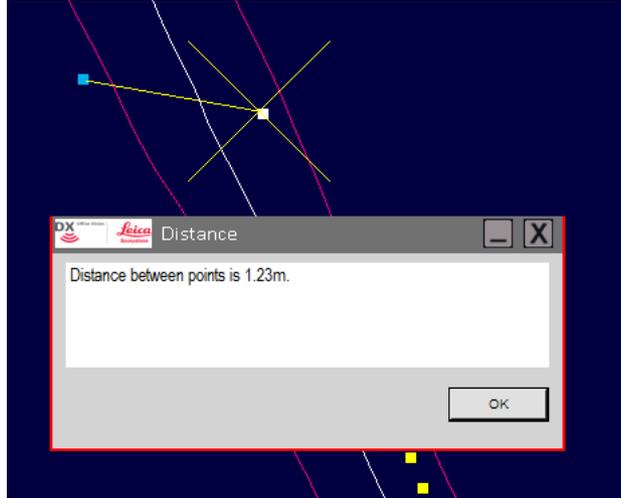
### 5.3.4

## 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

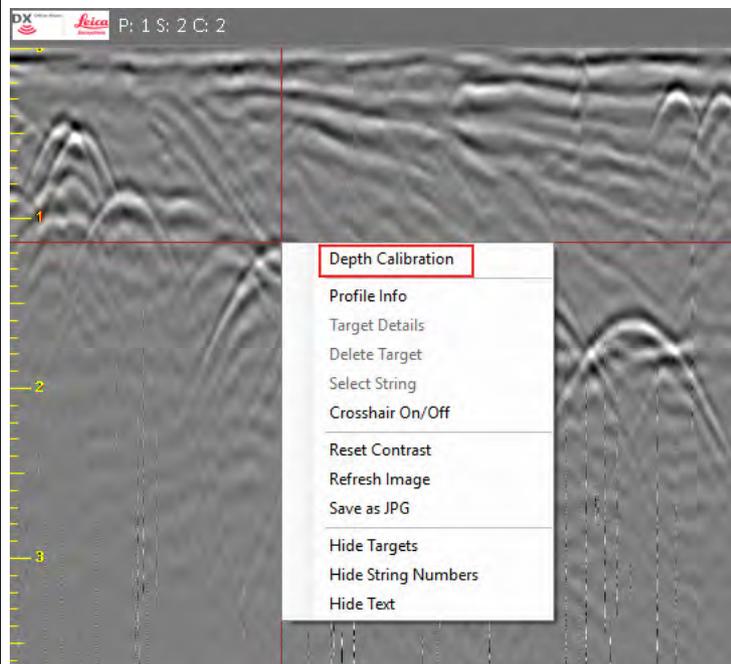
### 5.4.1

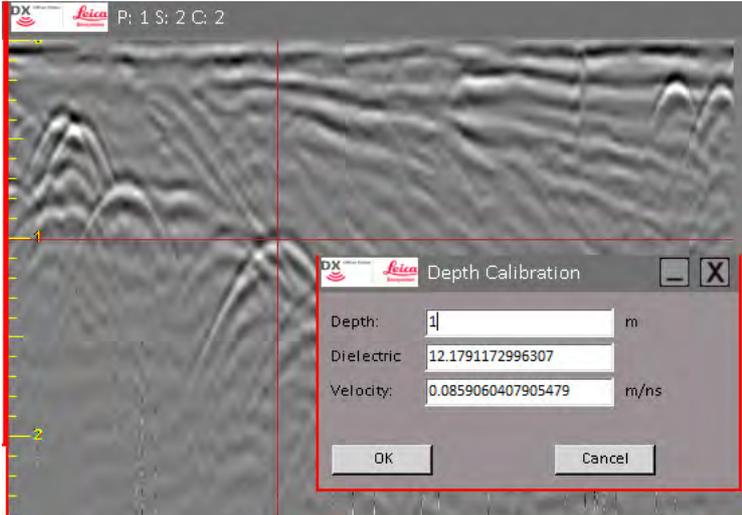
### Performing a Profile Depth Calibration

### Set the dielectric constant to a known target

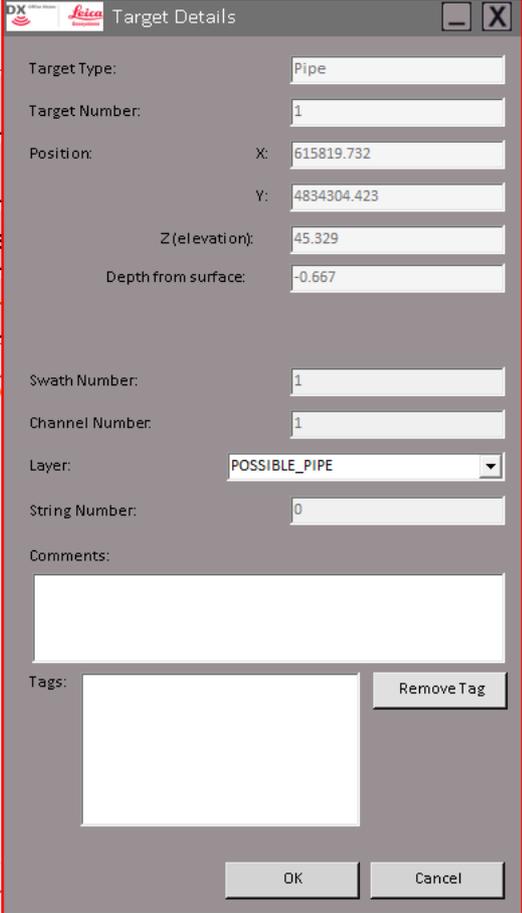
The **Depth Calibration** function allows you to adjust the dielectric constant to a specific ground type.

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



2.	<p>Select <b>Depth Calibration</b> to display the <b>Depth Calibration</b> dialogue.</p> 
3.	<p>Enter the depth of the target.  <i>The fields <b>Dielectric</b> and <b>Velocity</b> are populated automatically according to the entered depth.</i></p>
4.	<p>To perform the depth calibration, click <b>OK</b>.  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 <b>Target Details</b> to display the <b>Target Details</b> dialogue.</p> 
3.	<ul style="list-style-type: none"> <li>• If necessary, you can assign the target to a different layer. Select the desired layer name from the drop-down list.</li> <li>• If necessary, you can add a comment to the target.</li> <li>• If necessary, you can remove tags that are assigned to the target.</li> </ul>
4.	<p>To discard the changes and close the dialogue, click <b>Cancel</b>. To save the changes and close the dialogue, click <b>OK</b>.</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 <b>Hide Text</b>.</p>

# 6 How to Change the Software Configuration Options

## Overview

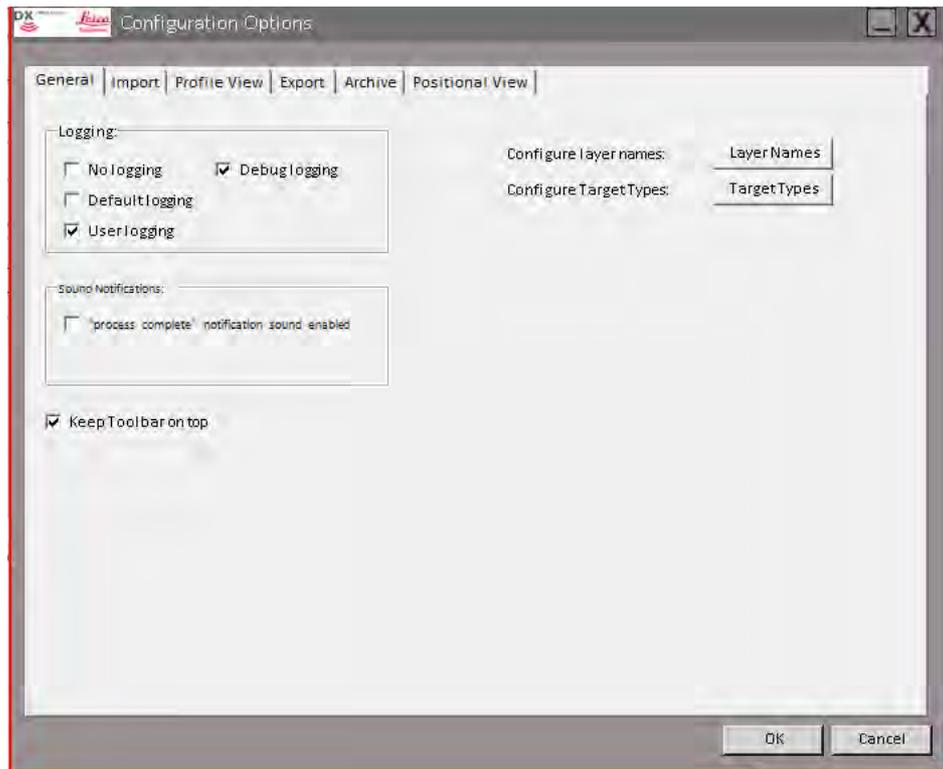
Using the **Configuration Options** dialogue, you can configure the DX Office Vision software to your specifications. The dialogue has several tabs for configuring different parts of the software. By default, the **General** tab is displayed when opening the dialogue.

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.

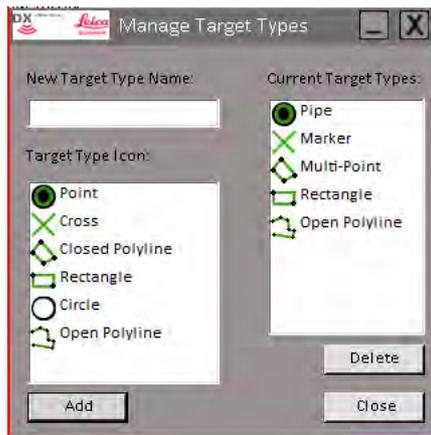
Option	Description
<b>Logging area</b>	<ul style="list-style-type: none"><li>It is recommended to keep the default settings for this option, in case there is a need for problem diagnosis later.</li><li>To display all logging messages, open the Windows Event Viewer on your PC. The messages are logged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

Option	Description
<b>Debug Logging</b>	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.
<b>Sound Notifications</b>	Enable this option to receive an audible notification when certain tasks are completed or when notifications are displayed.
<b>Keep Toolbar on top</b>	Enable this option to ensure that the main toolbar is always displayed on top of any other open windows.
<b>Layer Names</b>	This option allows you to define new layer names for the toolbar function <b>Layer Name</b> . Click <b>Layer Names</b> to display the dialogue for configuration. Refer to "6.1.1 Configuring Target Types and Layers".
<b>Target Types</b>	This option allows you to define new target types for the toolbar function <b>Target Type</b> . Click <b>Target Types</b> to display the dialogue for configuration. Refer to "6.1.1 Configuring Target Types and Layers".

### 6.1.1

### Configuring Target Types and Layers

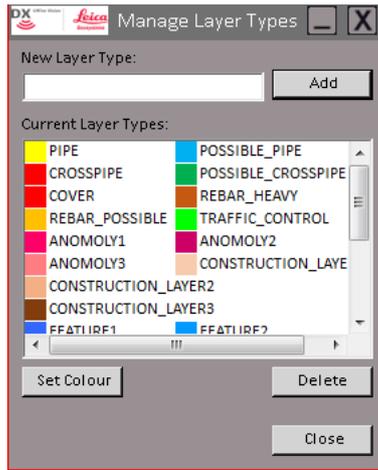
#### Configure target types



- 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

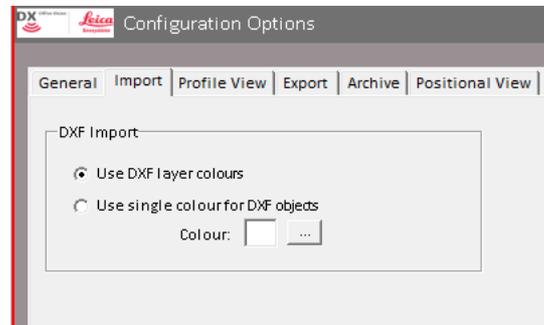


- To define a new layer, enter a name and click **Add**.
- To change the colour of a layer, select it from the list and click **Set Colour**.
- To delete an existing layer, select it from the list and click **Delete**.
- Click **Close** to return to the **Configuration Options** dialogue.

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

## 6.2 Changing the Import Options

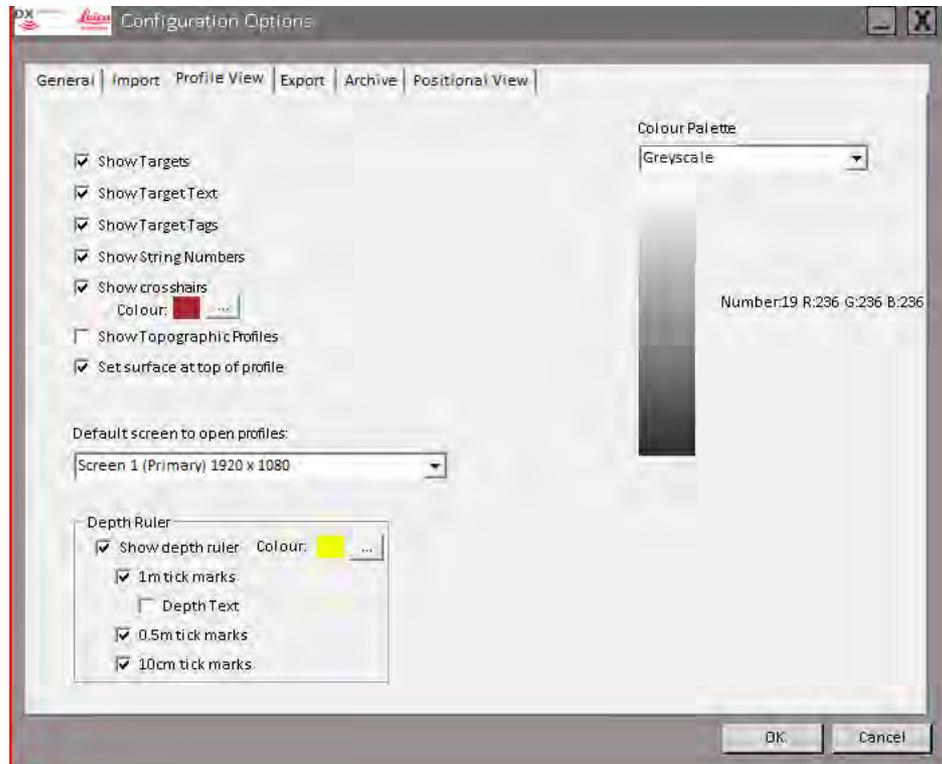
### The Import tab



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



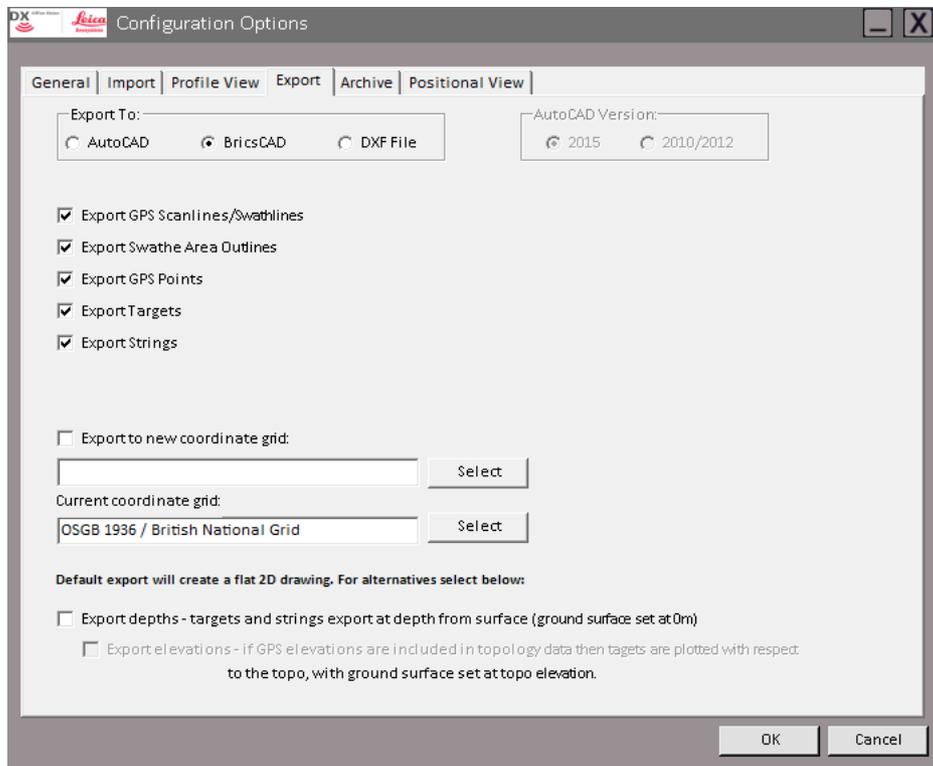
The **Profile View** tab allows you to configure the following options.

Option	Description
<ul style="list-style-type: none"> <li>• <b>Show Targets</b></li> <li>• <b>Show Target Text</b></li> <li>• <b>Show Target Tags</b></li> <li>• <b>Show String Numbers</b></li> <li>• <b>Show Crosshairs</b></li> </ul>	<p>Enable these options to display the objects in the profile view.</p> <p>Click the ... button to define the colour.</p>
<b>Show Topographic Profiles</b>	If this option is enabled, the profiles are displayed topographically.
<b>Set surface at top of profile</b>	If this option is enabled, the ground surface is set at the top of the profile view. Any data recorded above ground is eliminated.
<b>Default screen to open profiles</b>	<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
<b>Depth Ruler</b>	<ul style="list-style-type: none"> <li>• <b>Show depth ruler</b> Enable this option to display the depth scale at the left of the profile view. Click the "..." button to define the colour.</li> <li>• Define the intervals at which the tick marks of the depth scale are displayed: <ul style="list-style-type: none"> <li>- 1 m</li> <li>- 0.5 m</li> <li>- 10 cm</li> </ul> </li> <li>• Define whether the numeric text labels for the 1 m tick marks are displayed or not.</li> </ul>
<b>Colour Palette</b>	Define the colour palette to be used for the profile image display.

## 6.4 Changing the Export Options

### The Export tab



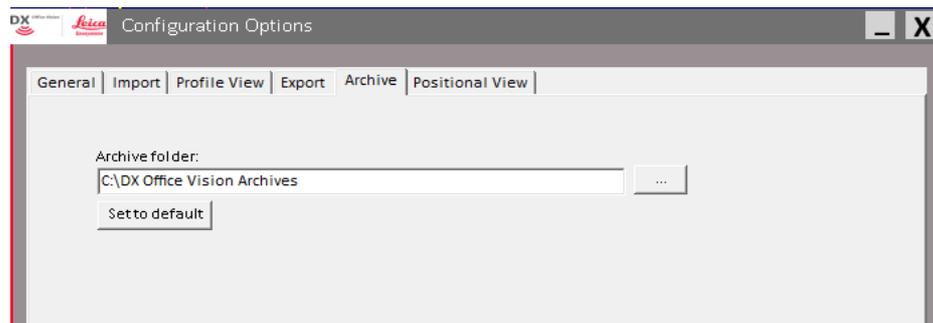
The **Export** tab allows you to configure the options for exporting project data to CAD.

Option	Description
<b>Export To</b>	Select the export type.
<b>AutoCAD Version</b>	 Only available if <b>AutoCAD</b> is selected. Select the version of the <b>AutoCAD</b> 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"> <li>• Scan lines/swathe lines</li> <li>• Swathe area outlines</li> <li>• GPS points</li> <li>• Targets</li> <li>• Strings</li> </ul>
<b>Export to new coordinate grid</b>	Enable this option to convert and export data to a different coordinate grid. Click <b>Select</b> to select a coordinate grid.
<b>Current coordinate grid</b>	Displays the currently used coordinate grid, normally the grid the data was loaded with. If no grid name is displayed, click <b>Select</b> to select a coordinate grid.
<b>Export depths</b> (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

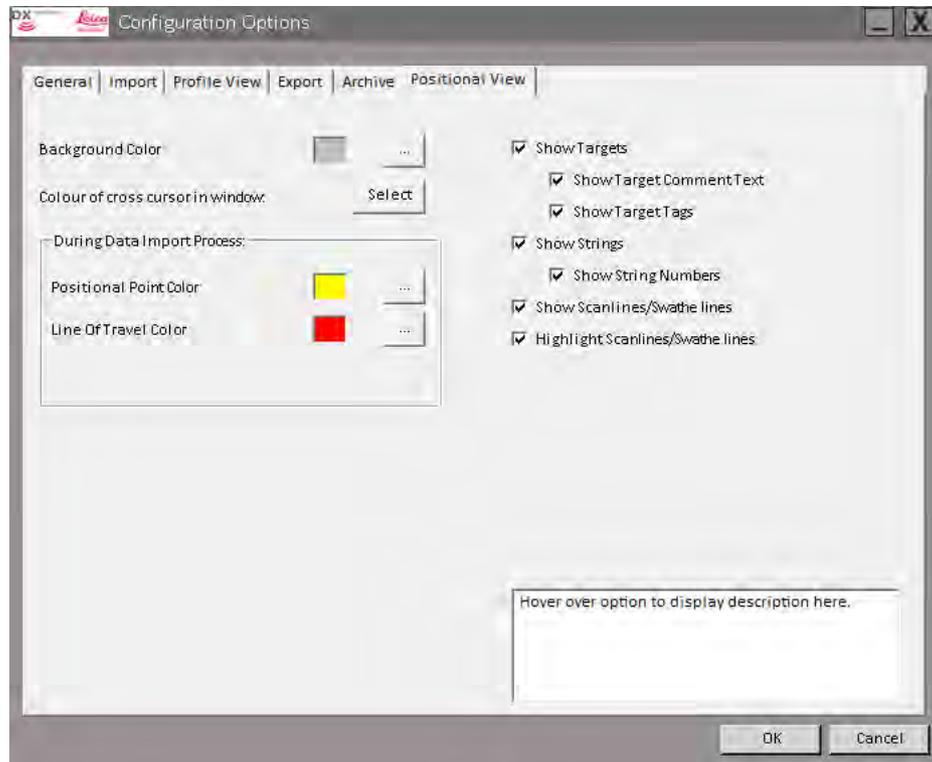
### The Archive tab



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



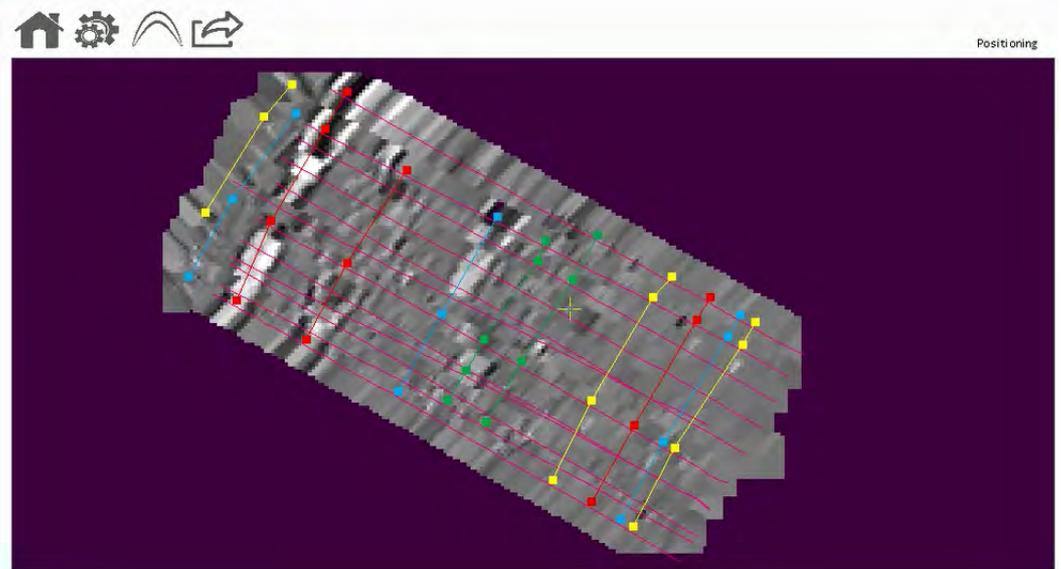
The **Positional View** tab allows you to configure the display options for the **Positioning** plan view.

Option	Description
<b>Background Colour</b>	Define the background colour of the <b>Positioning</b> plan view. By default, the colour is grey. Click the ... button to define another colour.
<b>Colour of cross cursor in window</b>	Define the crosshair colour. By default, the colour is yellow. Click the <b>Select</b> button to define another colour.
<b>During Data Import Process</b>	When loading data to a project, only the positional information is displayed in the <b>Positioning</b> 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 <b>Positioning</b> 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).

**856062-1.0.0en**

Original text

Published in Switzerland

© 2017 Leica Geosystems AG, Heerbrugg, Switzerland

**Leica Geosystems AG**

Heinrich-Wild-Strasse

CH-9435 Heerbrugg

Switzerland

Phone +41 71 727 31 31

[www.leica-geosystems.com](http://www.leica-geosystems.com)

- when it has to be **right**

**Leica**  
Geosystems