



## Geo Doctor Software Specifications for Version 2.3



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|---------------------|--|---|---|
| System Requirements | <p>Operating System: Microsoft Windows 2000, Windows XP, or Windows VISTA</p> <p>CPU: Intel Pentium 4, AMD Athlon or Equivalent Processor with minimum of 1,5 GHz</p> <p>Memory: Minimum 1 GB, recommended 2 GB RAM, 20 GB Free Hard Disk Space for Data processing</p> <p>Graphics Adapter: Minimum of 1024 x 768 pixel resolution with 16/32 Bit Depth and 64 Mb Graphics Memory, recommended 1280 x 1024, 32 bit double screen</p> <p>Interfaces: 1 free USB-port; Direct or USB-Hub for software security key</p>  | Supported Road Measurement Equipment Data Formats | <p>GPR: Geophysical Survey Systems Inc (GSSI), Malå GeoScience, Sensors &amp; Software, IDS, 3D-Radar. User Defined format - 8, 12, 16 or 32 bits signed or unsigned integer or single or double precision IEEE floating point value having 32 - 8192 samples per scan. Supports sample and scan aligned multi-channel Data.</p> <p>Video: All Windows supported Video Formats - mpg, wmv, avi, etc</p> <p>GPS: All GPS-equipment with NMEA-standard output or user defined tabulated format.</p>   |
| Project Handling    | <p>Tree view: File based database for data storage. All data aligned to Lines, Projects and Project Groups</p> <p>Backup: Specified data in projects can be backed-up to ZIP-files</p> <p>Log keeping: program keeps record of users, changes to data, linked files etc.</p>   | General Features                                  | <p>Support for SI- and US-units both for distance and data units</p> <p>Data conversion to SI-units for internal handling</p> <p>Several supported user interface languages: English (default), Swedish, Finnish, German, French, Spanish</p> <p>On-line documentation (F1-key)</p>   |
| GPR-Data Processing | <p>File editing: Merging, Cutting, reversing, rubber-sheeting, channel separation</p> <p>File processing: Static Background removal, DC-level removal, Automatic and user defined signal amplification, Arithmetic operations, Time domain vertical and horizontal filtering, Hilbert transform, Kirchoff-Migration, Trace and Data Section Muting, Correlation filtering operations, Bouncing removal operation</p> <p>Separate 3D-module for processing, visualization and interpretation of 3D GPR data. Multiple time-slices, cross-section view, Slices from user defined levels etc.</p> | GPR-Data Interpretation                           | <p>Coding: All interfaces can be coded to have layer name, layer quality and material Er-value. All values are editable.</p> <p>Interface tracking: manually or semi-automatically using user-defined parameters.</p> <p>Objects: Layers are tracked as vectors, which can have start, end and breaks or as table values in the case of Air-coupled data. Single reflectors can be pointed and annotated with text. Up to 1000 different interfaces can be coded, 4 for Air-coupled data.</p> <p>Editing: Vector Points and Annotations can be edited and deleted separately or multiple at once.</p> <p>Hyperbola fitting: Er-estimation using hyperbola fitting</p> |
| GPR-data Display    | <p>B-scan view: 16 to 256 simultaneous colours, User definable colour transform threshold and from 16 selectable transforms. Multiple profiles in the same view, combined or in different subwindows. Shown distance section freely selectable.</p> <p>Cross-section view: in the case of multiple profiles from the same line.</p> <p>A-Scan view: from selected subwindow</p> <p>Er-value, layer depth, layer thickness</p>  | GPR Interpretation Output                         | <p>Vector Interpretation: All layer and set object information can be printed to user defined formats. Formats can be saved for later use. Ouputted parameters are for example, layer thickness, depth, code, quality, location as distance, xyz-coordinate, offset, reflection amplitude, vector point number, layer number etc.</p> <p>Air-coupled data interpretation: multiple predefined and user defined formats for printing Average, Min, Max, St Deviation.</p>  |



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| Road Analysis Tools     | Manual road analysis: Up to 20 different user definable analysis parameters and annotation fields. Analysed sections are highlighted using the mouse.  | Road Rehabilitation Design | Not Supported   |
| Falling weight          | Not Supported  | Profilometer               | Not Supported   |
| Database                | <p>Supported databases are: Tabulated text tables, MS Excel, MS Access, Oracle, dBase, Paradox, MySQL</p> <p>Database can be linked as project database, which is linkable to all lines</p> <p>Data searches can be done to all database types</p> <p>View types: Data value, bar graphs, line graphs, area graphs, surface plots. Surface plots make possible to create contour images.</p> <p>Database data can overlay any other data.</p> <p>Database can have offset row, which can be used for contour plots</p> <p>Single column can be used as arrangement column (dates etc).</p> | MAP view                   | <p>Supported image formats are TIFF, JPG, PNG, PCX, BMP, WMF, EMF</p> <p>Reads georeference information from ArcGis and Mapinfo linked images, otherwise manual georeferencing using 2 points.</p> <p>Supports Road Doctor analysis and database formats for data reading. Direct link between Data view and Map view.</p> <p>Several display formats, draw offset, data classification 1 to 9 classes, automatic legend, distance pole, north arrow and company logo display.</p> <p>Map saving to image, clipboard, and project tree.</p> <p>Linking the lines to GPS make possible realtime data scrolling and displaying in the field</p> |
| Video                   | <p>Video shown and synchronized with other data. Includes tools for subtitling the locations and date/time to video.</p> <p>Handles also extra long videos splitted to multiple video files.</p>   | Images                     | <p>Images are linked as image-lists which can be shown in separate multi-image view or in the place of video in a dataview.</p> <p>Images can be shown also in data subwindows with or without scaling</p>  |
| General View Properties | <p>Several Views can be shown simultaneously</p> <p>Every view can have several subwindows with different or similar datatypes</p> <p>Views can be saved as is for later use or as view templates for use with other lines.</p> <p>All data is synchronized to each other.</p>   | Coordinates                | <p>Uses Franson coordinates transform library for exact transformation between GPS and different Grid-coordinate systems. Supports all UTM and EUREF-transformations and several other country specific formats. Other format support added if required.</p> <p>Line chainage and measurement positioning using Areal/Road Network coordinates</p>  |