System Requirements	Operating System: 64bit Microsoft Windows (MS) 10 or 11 CPU: 64 bit Intel, 64 bit AMD or equivalent 64 bit Intel Pentium compatible multicore CPU with minimum of 2 GHz. Memory: Minimum of 8 Gb, recommended 16 Gb RAM, 500 GB Free Hard Disk Space for Data processing Graphics Adapter: Minimum of 1920 x 1080 pixel resolution with 32 Bit Colour Depth and 512 Mb Graphics Memory, recommended Full HD, double screen, GPU enabled Graphics adapter with 2Gb memory. Interfaces: 1 free USB-port; Direct or USB-Hub for software security key. Possibility also for a network key.	Supported Road Measurement Equipment Data Formats	GPR: Geophysical Survey Systems Inc. (GSSI) (.dzt), Malå GeoScience (.rd3,.rd7), Sensors & Software (.dt1), IDS (.dt), 3D-Radar (.vol, 3dra), Utsi. 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. Falling weight: Kuab, Dynatest, Carl Bro, RODOS .DDX, and User Defined list formats Profilometer: Dynatest RSP, Finnish PTM, RST and Greenwood. User definable formats Video: All Windows supported Video Formats – mpg, wmv, avi, etc. Also 360 videos. GPS: All GPS-equipment with NMEA-standard output or user defined tabulated format. Lidar: Supports LAS-format data input.
Project Handling	Tree view: File based database for data storage. All data assigned to data type groups, user defined sub-groups, Lines, Projects and Project Groups, Line and Data order changeable. Backup: Specified data in projects can be backed up to ZIP-files or copied to a new folder. Log keeping: program keeps record of users, changes to data, linked files etc. Multi-user: multiple users can access the same project at the same time, automatically merges changes.	General Features	Support for SI- and US-units both for distance and data units. Output units can be changed. Data conversion to SI-units for internal handling. Several supported user interface languages: English (default), Swedish, Finnish, German, French. On-line documentation (F1-key), tooltips.
GPR-Data Processing	File editing: Merging, Cutting, reversing, distance scale normalization, channel separation On-screen file processing: Static Background removal, DC-level removal, Automatic and user defined signal amplification, Arithmetic operations, Time and Frequency domain filtering, Moving background removal, Hilbert transform, Kirchoff-Migration, Trace and Data Section Muting, Correlation filtering operations, Bouncing removal operation, Diagonal filtering, Operations between files, Savitzky-Golay filter, data reversing and rescaling on-screen etc. Up to 63 different processing operations can be used for one file. Each operation can have different start and end trace and sample intervals. Views can be saved with GPR processing settings. The same data can be shown multiple times in the same view with different processing settings.	GPR-Data Interpretation	Displaying: Possible to display all previously with GPR-module done interpretations - both layers and objects. Possibility to change the interpreted layer colours and line thickness. Interface tracking: Possible with a general manual digitizing tool, which saves data to a table and a file specific text file. Possible to edit and delete points and layers afterwards. Needs manual editing to calculate layer thicknesses and include coordinates for points. No possibility to create or update interpretation databases with coordinates, annotations and changed dielectric values like with GPR-module. Dielectric value estimation: Dielectric value can be estimated using hyperbola fitting or ground truth tool. Possibility to analyse the frequency content of a signal using single trace view.

GPR-data Display	B-scan view: from 16 to 256 simultaneous colours, User definable colour tables and colour transform threshold. The transform selectable from 16 predefined possibilities. Multiple profiles in the same view, combined or in different sub-windows. Shown distance section in a view is user-defined. Cross-section view: in the case of multiple profiles from the same line. 3D-views: Displays premade time slice views and cross-sections. Topography from point cloud. A-Scan view: from selected sub-window. Possibility to copy all scans to clipboard. Dielectric-value, layer depth, layer thickness	GPR Interpretation Output	Possibility to output all Interpretation data created using GPR-Module. Vector Interpretation: All layer and set object information can be printed to user defined formats. Formats can be saved for later use. Outputted parameters are for example: layer thickness, depth, code, quality, location as distance, xyz-coordinate, longitude, latitude, offset, reflection amplitude, vector point number, layer number etc. Air-coupled data interpretation: multiple predefined and user defined formats for printing average, min, max, standard deviation, coordinates, etc.
Road Analysis Tools	Manual road analysis: Up to 20 different user definable analysis parameters and annotation fields. Analysed sections are highlighted using the mouse. Outputting the analysis results to text files, Maps, ESRI shape files, Google KML-files.	Road Rehabilitation Design	No tools to change the rehabilitation design database. Possibility to view the outputs and export to text files.
Falling weight	Outputting the falling weight results as deflection curves with or without profile average curve. Surface moduli and layer moduli output. SCI and BCI output (also user definable) Surface moduli values as a function of depth. Temperature correction for deflections.	Profilometer	Roughness and rutting data format output. Operator can select the outputted parameter.
Database	Supported databases are: Tabulated text tables, MS Excel, MS Access, Oracle, MySQL, SQL-server. MS Excel and MS Access support require also 64-bit Office installed. Databases can be linked as project databases, which are linkable to all lines Data searches can be done to all database types View types: Data value, bar graphs, line graphs, area graphs, surface plots. Surface plots makes it possible to create contour images. Powerful and flexible From-To display. Supports m, km, km+m, ft, mile etc Database data can overlay any other data. Database can have an offset row, which can be used for surface plots or setting a data multiplier or distance shift Single column can be used as an arrangement column (dates etc.). Text Databases can have up to 7000 columns. Text database can be rescaled using special distance fixing files. Even single columns can be rescaled.	MAP view	Supported Map image formats are TIFF, JPG, PNG, BMP, WMF, EMF and LAS file. Reads georeference information from ArcGis and Mapinfo linked images, otherwise manual georeferencing using 2 points. Supports Road Doctor analysis and database formats for data reading and thematic maps. Direct link between Data view and Map view. Several display formats, draw offset, data classification (from 1 to 9 classes or linear), automatic legend, distance mileposts, north arrow and company logo display. Saving Map to image-file, or automatically to map-lists, clipboard, and project tree. Linking the lines to GPS makes real-time data scrolling and displaying possible in the field. Map Server support: WMS Map servers can be connected to Road Doctor's Map View and used as a base for maps. Support also for Google maps. Data view Map: Map image and Map list support

Video	Video shown and synchronized with other data. Includes tools for subtitling the locations and date/time to video. Handles extra-long videos, which are split into multiple video files and linked as separate videos, and reversed videos. Playing videos in reverse direction, controlled slow motion and fast forward or backward with synchronized control between videos. Several videos can be synchronized to show the same location although measured at different time and speed. Possibility to change video settings: contrast, brightness, gamma, saturation, zoom, panning etc and save them marked with effecting distance interval for later use. Support for 360 video files.	Images	Supported image formats are TIFF, JPG, PNG, BMP, WMF, EMF Images are linked as image-lists which can be shown in a separate multi-image view or in the place of a video in a data view. Images can also be shown in data sub-windows with or without the longitudinal or cross-section scale Possible to read location data from jpg-image metadata. Supports also 360 images with zooming and panning. Possibility to create image-and image lists from videos at fixed intervals. Changing the video format to another and transform time-based video to distance based.
Point Cloud	LAS-files and Road Doctors' point cloud format files can be linked and shown in a linked view. The displayed point cloud can be zoomed and rotated and scrolled in synchronization with other data in a view. Analysis and Database data can be overlaid on the Point Cloud and the point cloud coloured with data values from data currently shown in the data view. Possibility to save all shown points to LAS-file or txt/csv-file including all coloured layers. Tools to create a video of the shown point-cloud, with distance markers and labels.	Table Tools	All data in Road Doctor can be exported to a table view, where it can be processed further, copied to clipboard, saved to a file and/or linked to a project for visualization as a database. Tools: Arithmetic operations with data cells and between columns, classification of data, statistics from data, data filtering, interpolation, averaging, min-max picking, table combination, slope analysis, etc. Exporting tools: KML and ESRI ArcGIS shape file export from any data which has grid and long/lat coordinates in the view where they were created.
General View Properties	Several Views, in which all data is linked together, can be shown simultaneously. Every view can have several sub windows with different or similar datatypes. Legends can be defined for all data in the view. Views can be saved as is for later use or as view templates for use with other lines. All data is synchronized to each other. Views generated from the same line can be synchronized together. Multiple views can be shown in the user interface without controls to enable maximum use of view area.	Coordinates	All linked information can be given a coordinate. The program can transform between different grid coordinate systems. Practically, all coordinate systems are supported, if not directly, at least indirectly using ESRI ArcGIS .prj projection files. Line chainage and measurement positioning can be displayed using Area/Road Network coordinates. This enables showing the true Road Network Road, Section and chainage address regardless of the original line chainage. Using special distance files, the distance can be made to increase from right to left and mileposts can be set at varying intervals. All distances can be outputted to table view and exported as seen on the screen.
Web Connection	Web Connection tool enables data transfer to and from Road Data Center Webserver for visualizing the results to clients. Road Data Center is maintained by Roadscanners Oy.	Combine Databases	Combine databases tool can be used to bring similar data from several tables together in to the same table to different columns to enable slope analysis, average, deviation, min, max calculation, etc.