Road Doctor 4.0 - Major changes

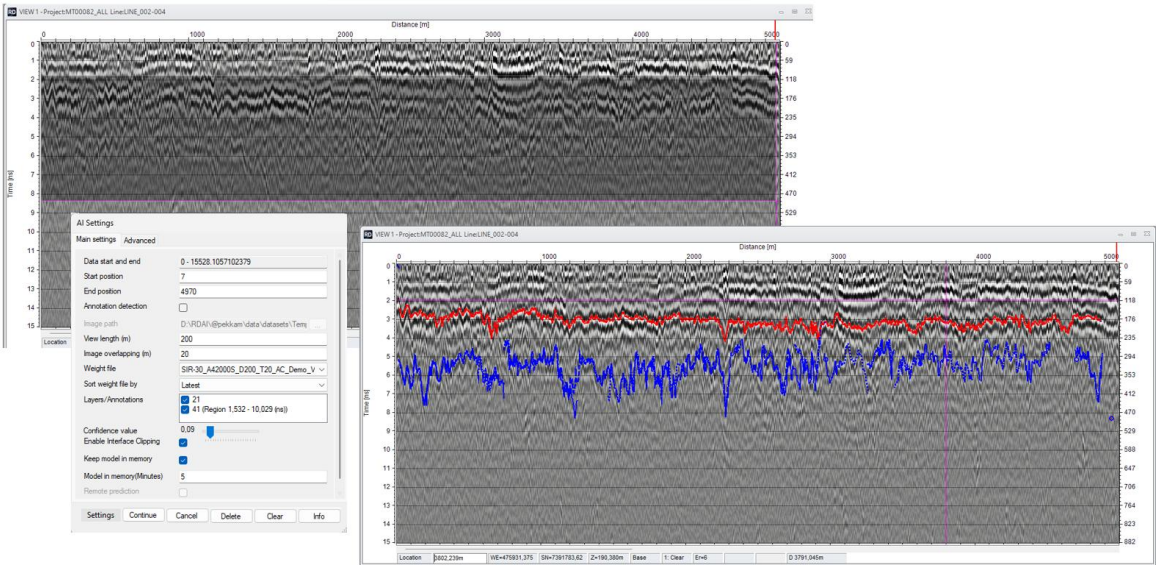
New module structure

Roadscanners has simplified and renewed the structure of Road Doctor modules by combining several similar modules to the same modules. This will give more value for the end user. See the list of new and corresponding old modules

- Road Doctor Core is now Road Doctor
- GPR + Coreless is now GPR Advanced
- GPR + Coreless + Rock + Moisture + Concrete is now GPR Expert
- Diagnostics + design are now combined
- Surface analysis

AI powered automatic GPR Data layer tracking

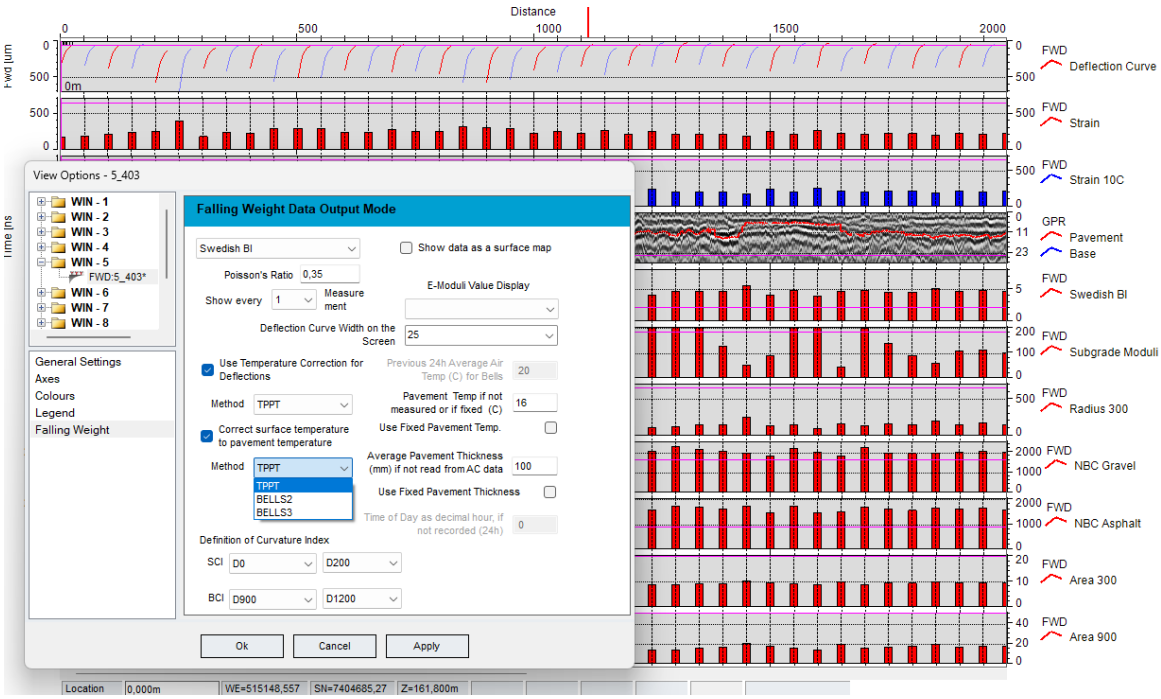
Road Doctor 4.0 is the first version of Road Doctor which brings the capability of using AI for helping and powering the GPR data layer Interpretation and object detection. The routines are deeply integrated into the manual and semiautomatic interpretation tools in Road Doctor. This makes it possible to use the existing tools to generate validated interpretations for new better models which are best appliable for set GPR antenna type and soil or aggregate environment. The user interface helps to iteratively enhance the models. Also underlying objects can be labelled and after training the models can be used to automatically detect underground or surface objects.



AI powered layer tracking interface and layers. 5km in one view.

Falling Weight Deflectometer

Importing any tabbed text mode falling weight data is now supported using a new interface, where the user can define the needed fields. This is done especially Traffic Speed Deflection Devices (TSDD) in mind. New deflection temperature correction formulas have also been implemented. These can use also BELLS formulas for estimating the inner asphalt temperature from the asphalt surface temperature. New deflection curvature indexes have also been included. These are available for all modules.

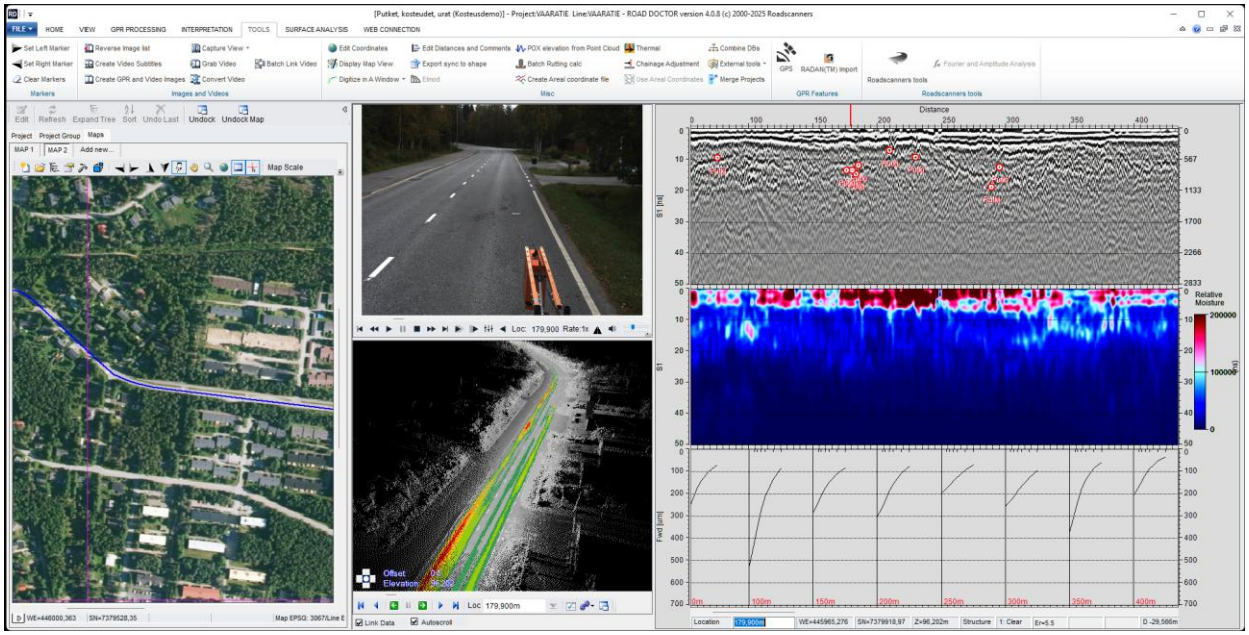


New FWD/TSD parameters and interface for setting temperature correction parameters

User Interface changes

Mouse scroll button together with control key can now be used for zooming in and out of data both in vertical and horizontal axis direction. Panning is also possible using combination of shift key and mouse scroll button.

External map view is now linked together with the data view, which make it possible to quickly see the current data location also in the map view.

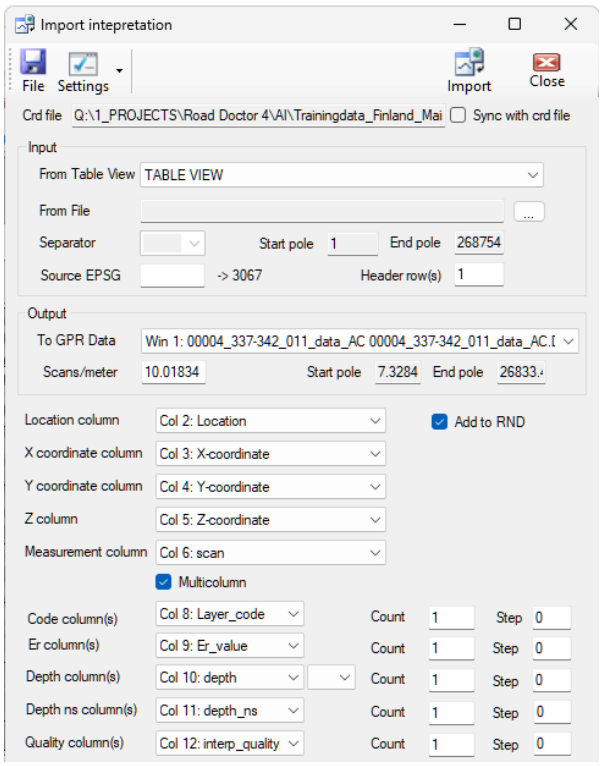


Road Doctor user interface with multiple synchronized data and map.

GPR data handling enhancements

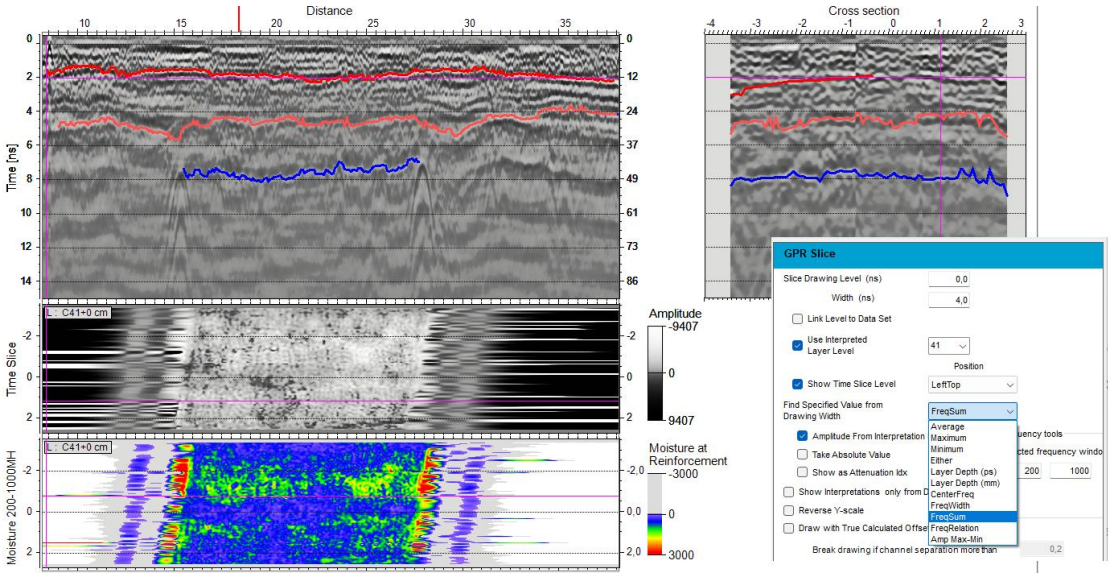
Industry standard SegY-format data reading support has been added to Road Doctor. The routine reads both the single channel data and multichannel data. This will open support for multiple different GPR types.

A new user interface has been added to link to Road Doctor tabular text format GPR interpretations, which include locations as distance or coordinates and layer depth, along with related GPR data. Earlier, Road Doctor included interface for importing interpretations from GSSI's Radan files. These interpretations can then be updated, edited and used in Road Doctor's multi-data-analysis functions.



GPR Interpretation importing and linking tool

Road Doctor’s GPR Expert module includes new interface for interactive data frequency and amplitude analysis using multichannel GPR time-slice. Current version outputs to text files, which are linked as databases and drawn from those.



3D GPR data amplitude and frequency analysis at a bridge

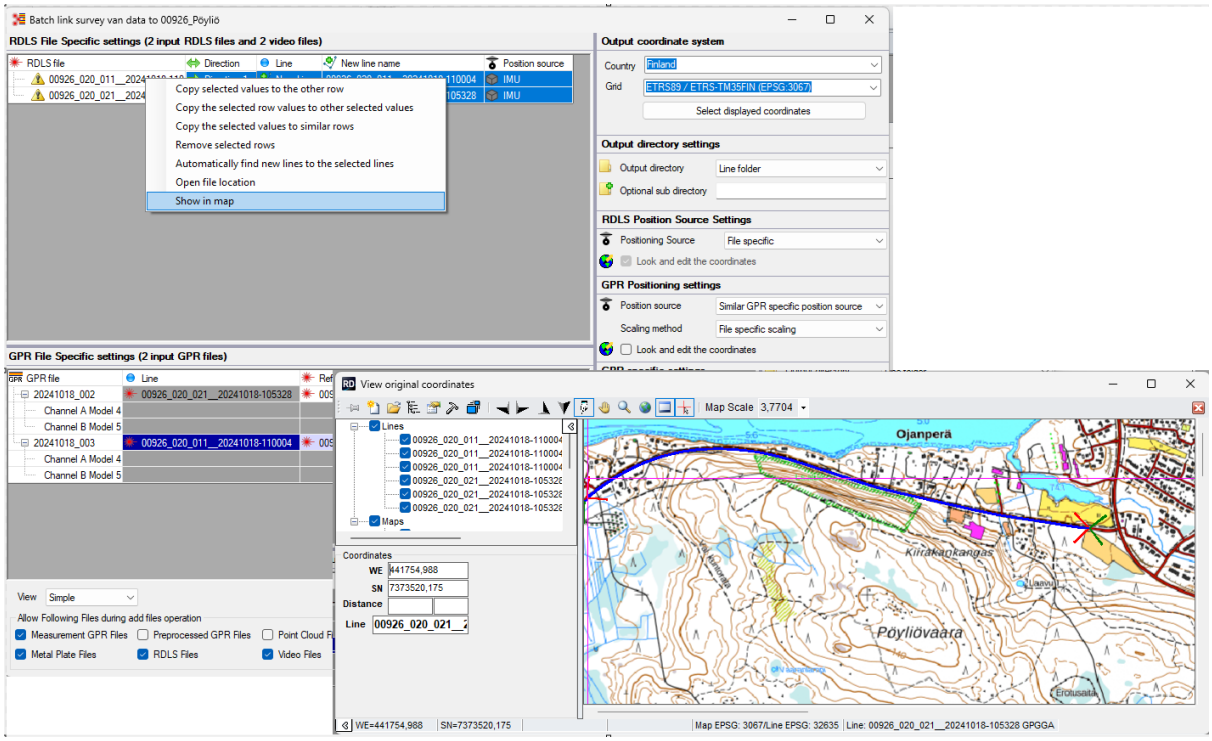
Data Batch linking operation

Batch linking operation supports now measurements which have been done in several continuous parts. Road Doctor combines multiple trajectory files into one and can display files on the screen as continuous, although the actual data files are not joined.

The data locations can be previewed in a map view. This way the evaluation of the measuring direction of the files and goodness of the coordinates is possible. The direction of the measurement can also be estimated using the new calculated azimuth parameter in file properties in the Batch linking list.

Las files can also be linked and imported to Road Doctor Point Cloud (.rdpc) – format in batch link operation.

GPS measured data coordinates can now be updated with more accurate post-processed coordinates in batch linking operation.



Previewing the line and data coordinates on a map in batch linking operation.