**Product:**   **iCON office**

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iCON office release of version 2021.1.1

We are pleased to announce the release of iCON office 2021 with a lot of new functionality and improvements. All users with a valid subscription will be able to install and run this new version. Verify that your subscription date expires after the build date of this iCON office version.

Two of many highlights in this release are the support for WMS and WMTS as background in iCON office and a new merge model function.
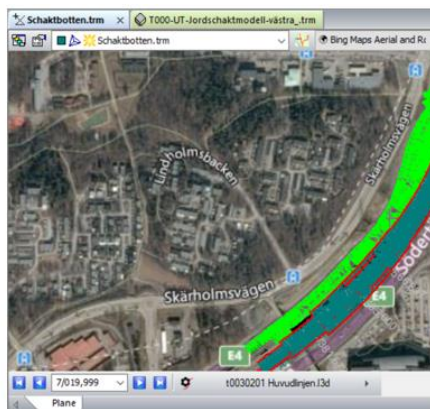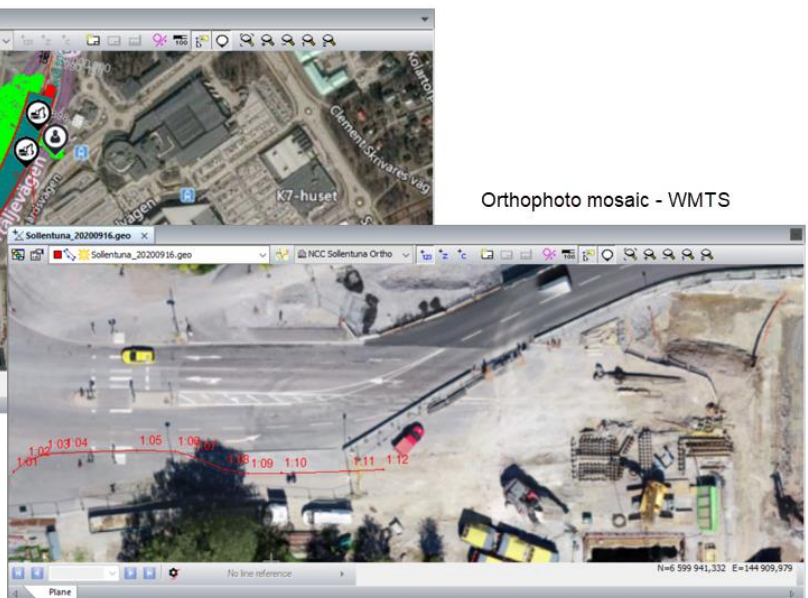
Orthophoto mosaic - WMTS

Bing Maps - WMS

Cross sections can be generated from multiple TIN surfaces in one single cut and the tool, cross-section preview, can be saved to file. The cross-section format is updated and can contain more information so layers can be visualized with colors and hatching. If you are working with the module Volume by Sections, you will be happy to see that the wizard is updated and more user friendly.

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1 New Functions and Improvements

1.1 *Support for WMS and WMTS as Background Map*

In iCON office 2021 it's possible to use a map service as background in 2D and 3D window. Both WMS and WMTS (Web Map Tile Service) are supported and it's possible to configure several different map sources and just select one from a drop down list.

Supported types of map sources are:

- Image file
- WMS
- WMTS
- Bing
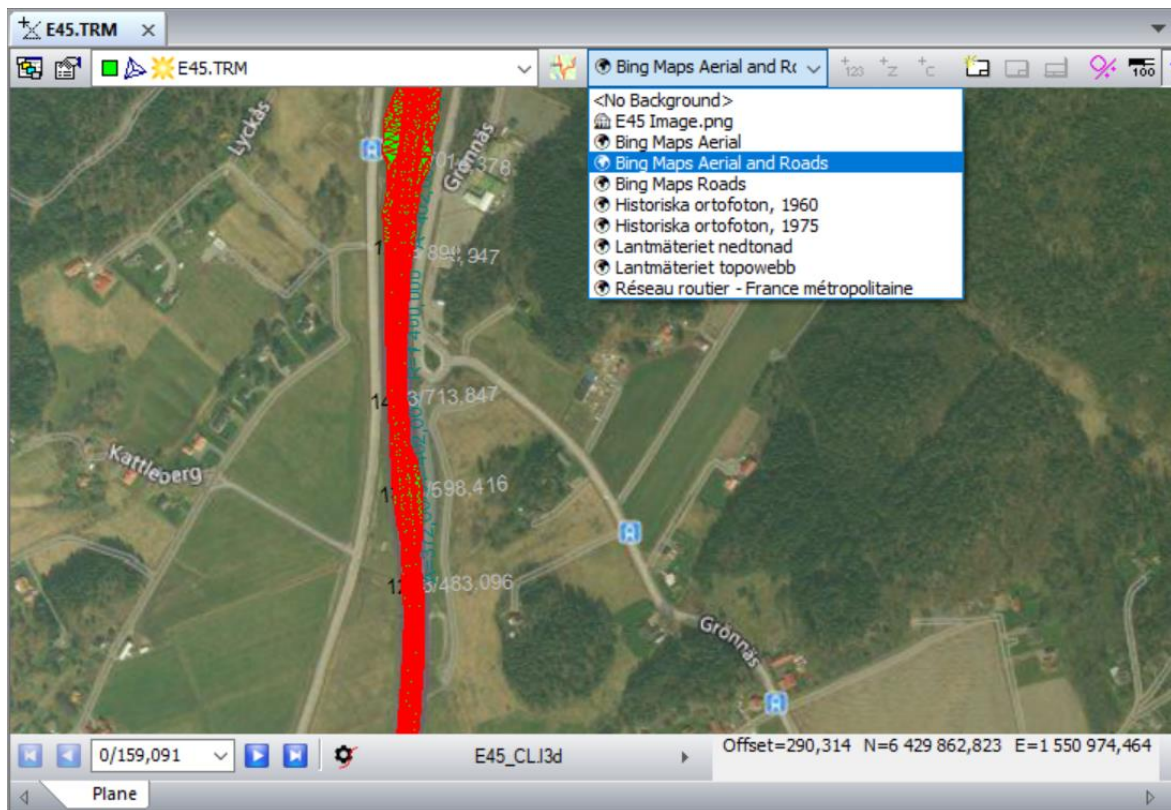
Most map services are not free, but Bing map still provides a basic key that can be used free of charge. Create an account on the link below:
https://www.microsoft.com/en-us/maps/create-a-bing-maps-key

1.2 *Improvements in the Terrain module*

1.2.1 *New Merge Model Functionality*

A new long-awaited function to merge TIN model is now available in the menu Functions. We have focused on three use cases how to handle the height in the overlapping areas and the three options are:

- Lowest
  - The height of the lowest model is used in overlapping areas
  - Two models as input

- Highest
  - The height of the highest model is used in overlapping areas
  - Two models as input

- Prioritized
  - The height of the prioritized model is used in overlapping areas
  - One source model and one prioritized as input
  - If the two models don't intersect, the user defines a cut and a fill slope, in percent or ratio, to connect the two surfaces.
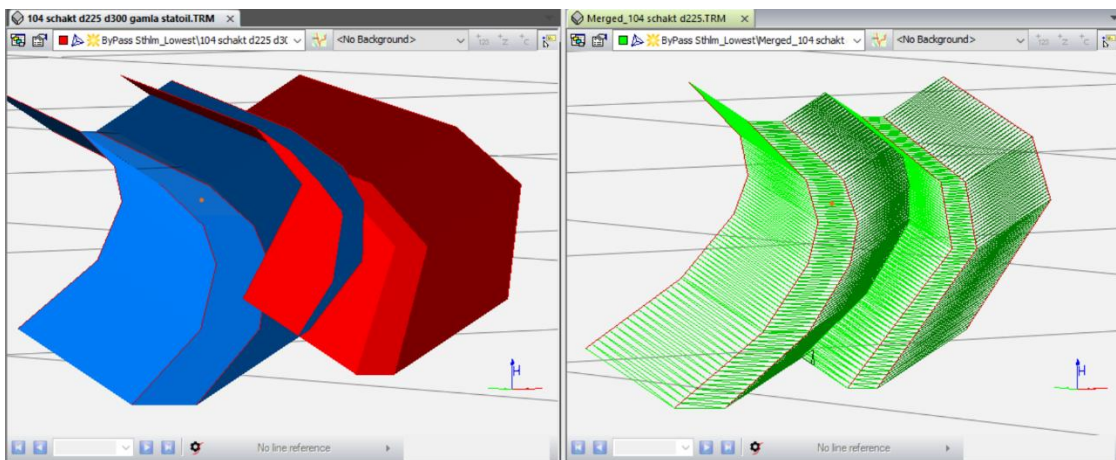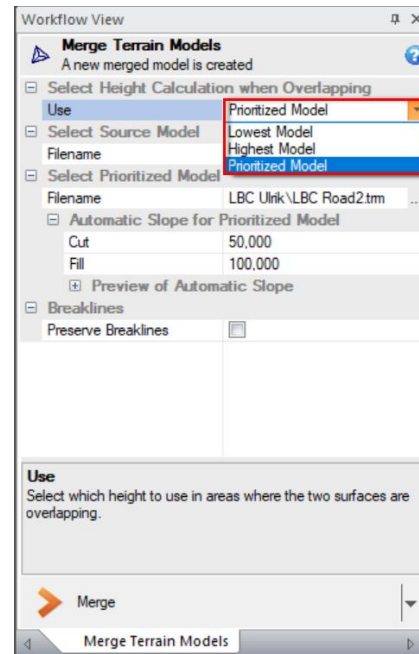
Lowest
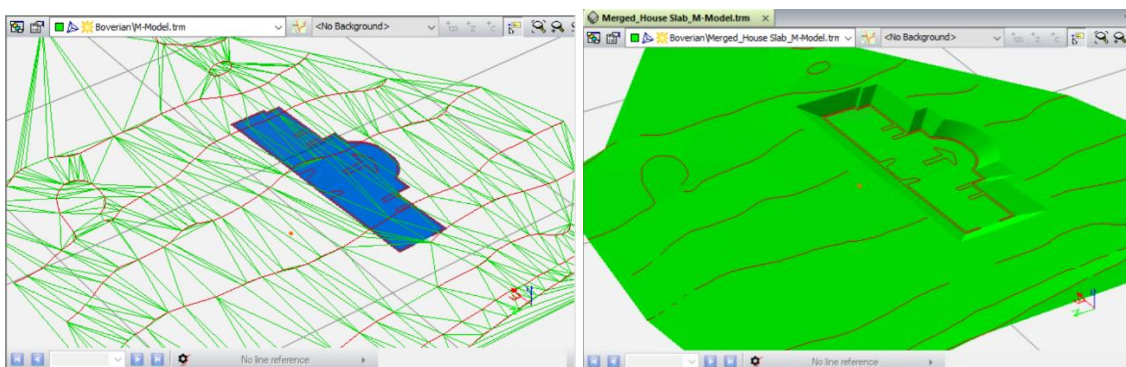
Prioritized

1.2.2 Create Cross Sections of Multiple Surfaces

The function, Create Terrain Sections, is improved so it's possible to get a cross section file containing all layers, i.e. surfaces displayed in the graphical window. Earlier cross sections were generated for one surface at the time and finally added to a drawing, to get the same result.
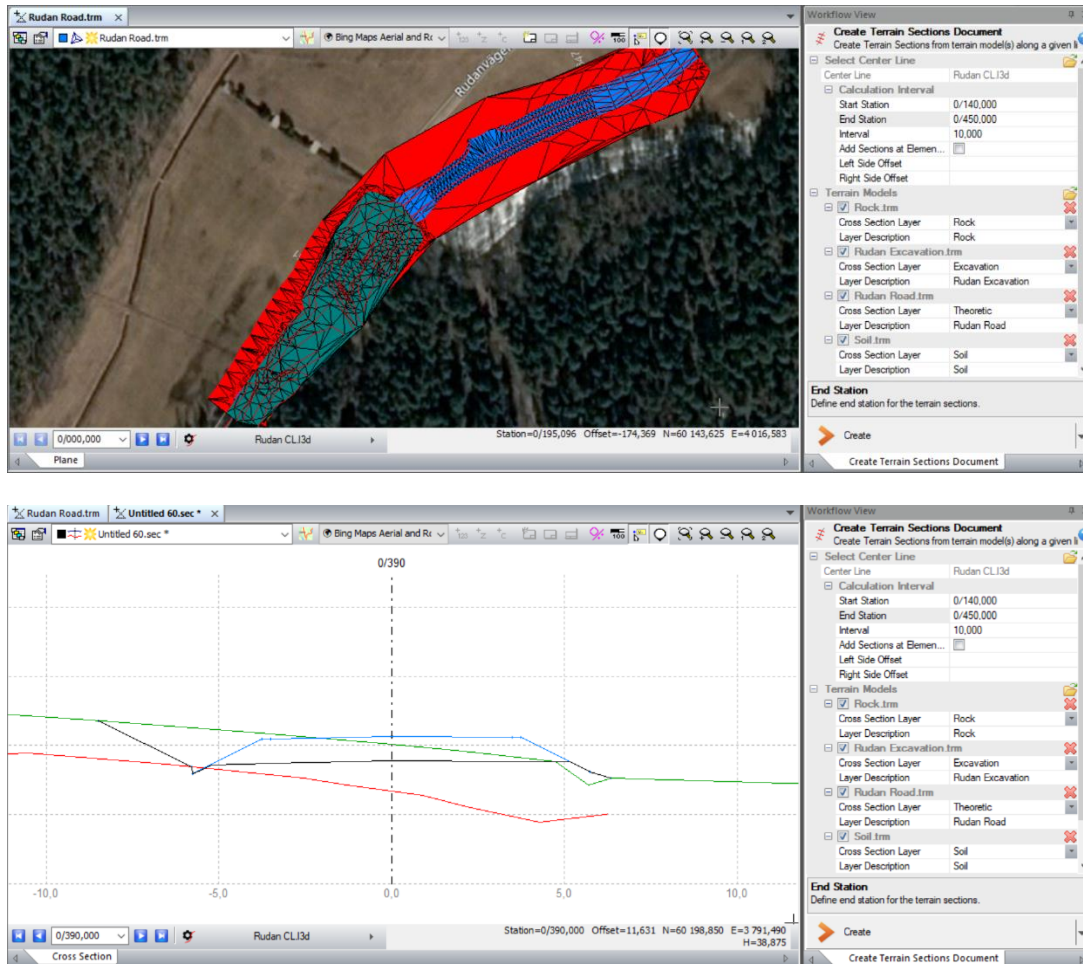
The popular cross section preview tool is also improved, and the result displayed in the preview window can be saved to a new or existing cross section file (*.sec).
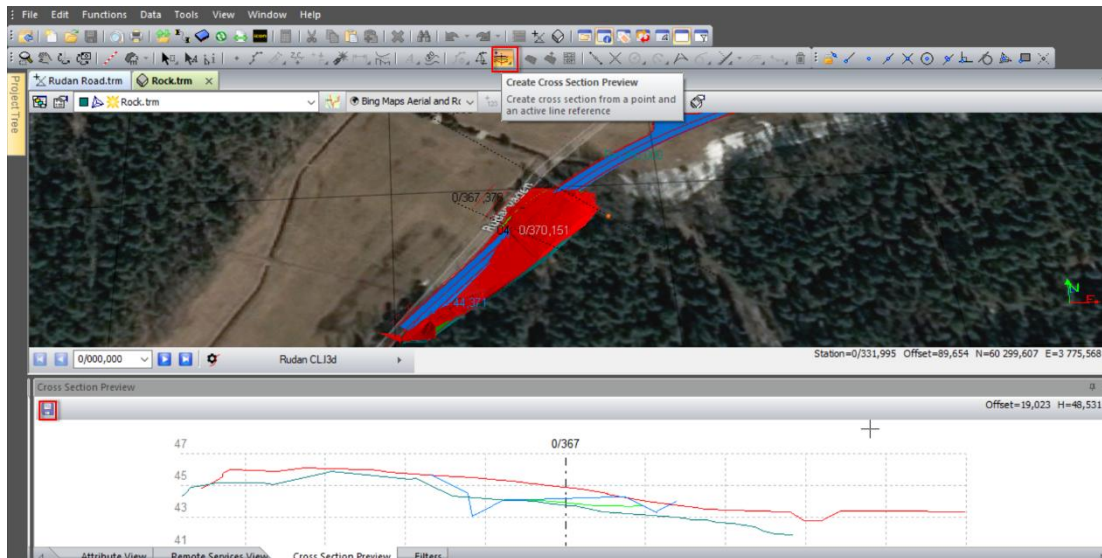
1.2.3 Terrain Models in Cross Section View

If a terrain model with an active reference line is open in the graphics, it's possible to right click and change view orientation and see model in a cross-section view.
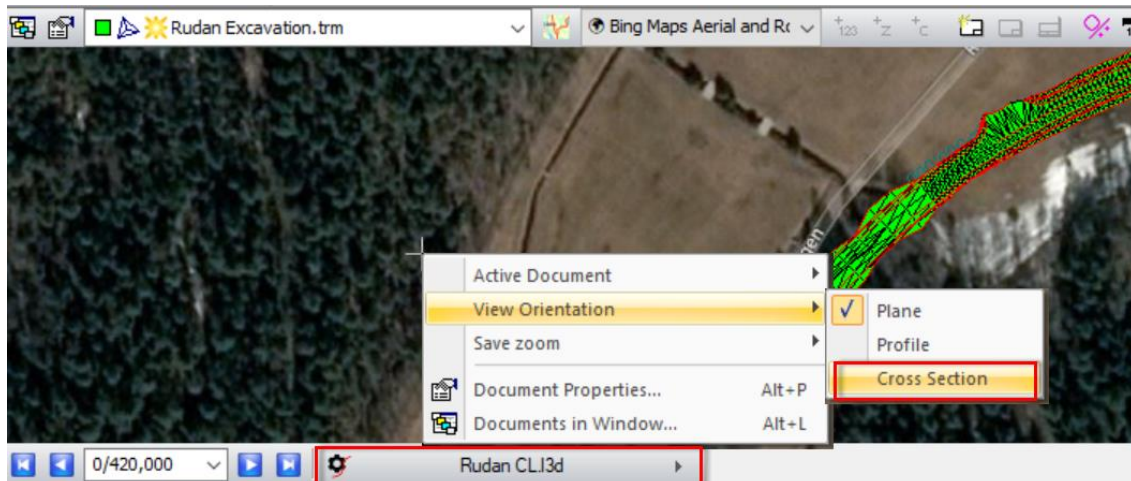
1.2.4 Rotate Triangles in 3D

The editing tool, Rotate Triangles, is now available in the 3D window as well.

1.3 *Volume by Section*

The volume by section (*.mbs) has got a new wizard with predefined templates for some typical cross sections, side lines and different surface models can be added, and the calculation interval defined.

When the user hits [Finish] a working model is opened in cross section view and he can start to modify the cross-section template.

Visualization is improved and the different layers can be displayed as areas in the cross-section view. Go to Document Properties and the tab Areas to be able to turn them on, change color or hatching.

Other improvements for the volume by section model are:

- Tabs are added so it's easier to change the view orientation between cross section, plan, profile and 3D.
- Possible to define material codes for the different layers and the codes are saved to both volume report and cross sections.
- User defined templates for material codes can be saved.
- The dialog to calculate a volume report is moved to the workflow view, so the graphic window isn't blocked when defining what to include in the report.
- If a vertical profile offset is used for the main line, the offset is displayed at the main line node in the mbs-tree.

1.4 Road Module

A new function, Heights, i.e. to set height to points and lines in coordinate file from a road line (l3d) or cross fall model (cfm) can now be found in the Data menu for road lines/cross fall models.

Some other improvements in the road module are:

- In stringline model (lmd) the steps are now synced between plan, cross section and 3D view.
- If another slope is added to the excavation layer in a stringline model, it can be done in percent. Now you add 2.5, if it should be a 2.5% slope and before you had to type in 0.025. The same change is done for deep cut.
- If buildup layers are added to the stringline model, the user defined names are now used in both the document properties and tool-tip information.
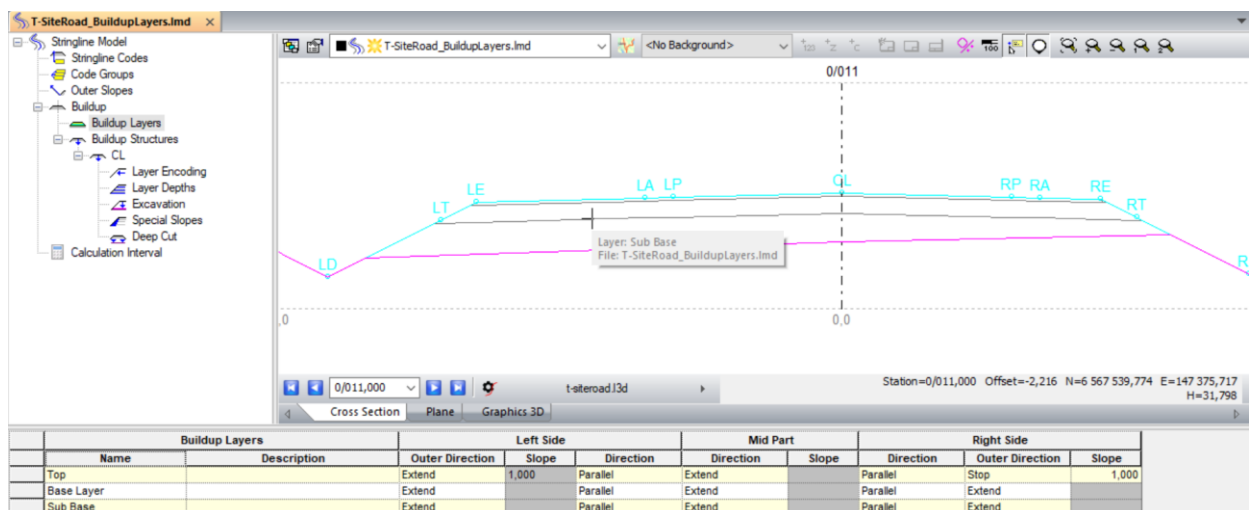

1.5 *Updated Cross Section Format*

The cross-section format (sec) is updated and can contain more information. iCON office is backward compatible and can open old cross section files, but old iCON office versions (2020.2 and earlier) cannot open the new version of the extended cross section format.

- Different materials can be displayed as cross section areas with color, hatching and material code.
- In the data menu a new option, Manage Areas, can be found and the user can define areas between existing layers and set name, color, fill pattern and code.
- Cross section files exported from volume by section models (mbs), already have available material areas defined.
- In document properties for the sec-file, only available layers are displayed.
- If sec-files are exported to DWG, a new option to create a legend is available.
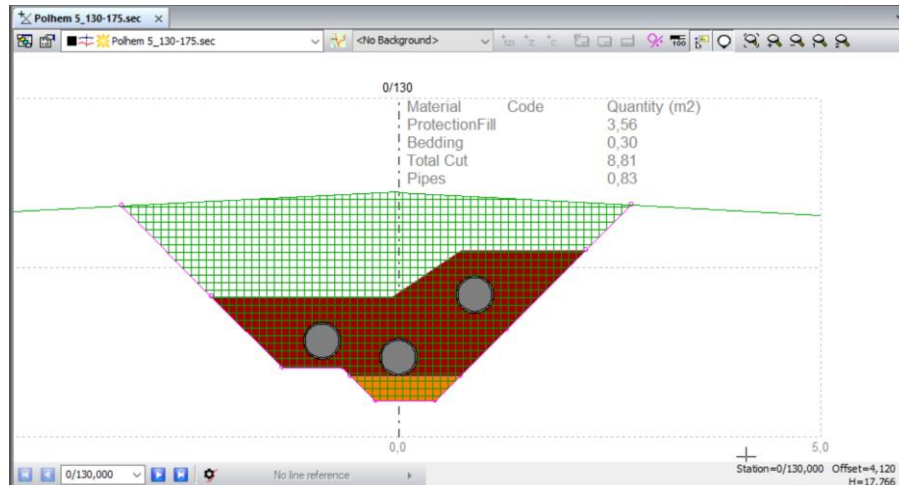
1.6 *Coordinate Data*

A couple of useful new functions have been added if you are working with coordinate line data. The functions can be found in the not so well-known right click context menu. Select an object and right click when the cursor is on the selected object.
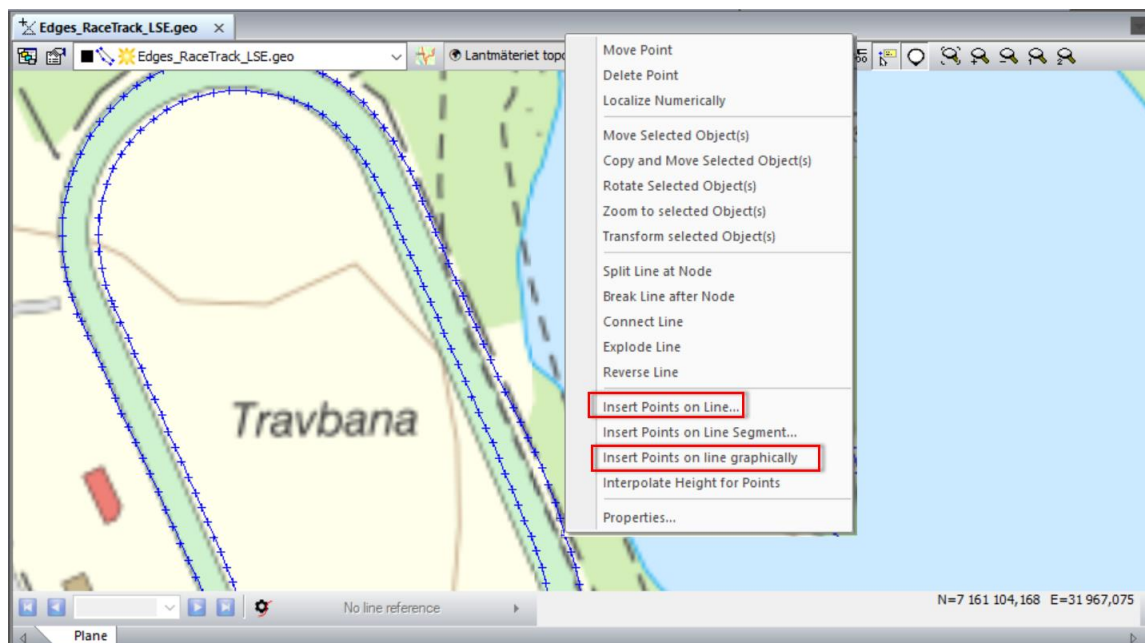
- New function to insert points on a whole line based on distance, both horizontal and sloping, or number of points.

- Insert points on a line segment has a new option called, apply for all line segments, which means the insertion will be applied for all segments of the line.

- New function called, Insert points on a line graphically. The user selects a line and then a single point with height, and this point is added to the line, at the shortest perpendicular distance from the point.

1.7 *DWG/DXF*

- The ODA library (former Teigha) is updated to latest version.
- Possible to create a pdf of a DWG.
- DWG/DXF files will always open in model layout.

1.8 *Surveying*

1.8.1 *Net Adjustment*

- In rounds of measurements, possibility to select/deselect measurements and see the results directly.
- When calculating a net adjustment in height, the standard error of unit weight is now displayed in the input/output window.
- Selected or deselected observations are remembered when data is added/deleted, or control or approximately points are added/deleted.
- The movements of control points are added to the net adjustment report for height.
- The movements of control points in height adjustment, are displayed graphically
- A new setting for max difference between circles in rounds of measurements is added.

1.8.2 Correction of Measurements

- If the option "Enter instrument constants" is used in correcting measurements, the used constants A and N are now added to the station header in the plm-file.
- More information is added to the correction of measurement report, e.g. instrument, instrument N, instrument A, pressure and temperature.

1.9 Graphical Tool

1.9.1 Polygonal Selection

A new polygonal selection tool is implemented, so it will be easier to select objects.
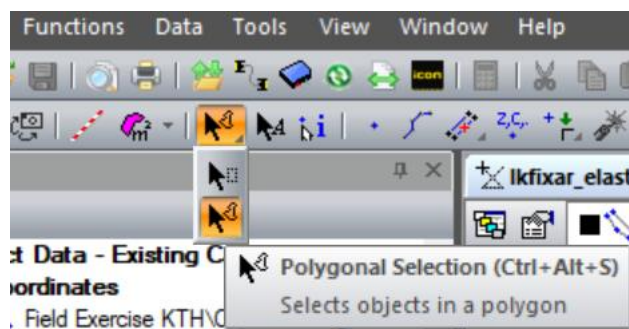
1.9.2 New Keyboard shortcuts

The following keyboard short cuts have been added to some common graphical tools:

- Alt+S   Rectangular Selection
- Ctrl+Alt+S   Polygonal Selection
- Alt+X   Split/Connect
- Alt+C   Set Point Information

1.10 *Point Cloud*

Filtered point clouds can be exported as DWG. The option is available in the Data menu for point cloud.

1.11 *Tunnel*

- Tabs are added so it's easier to change view orientation between cross section, plan and profile view.
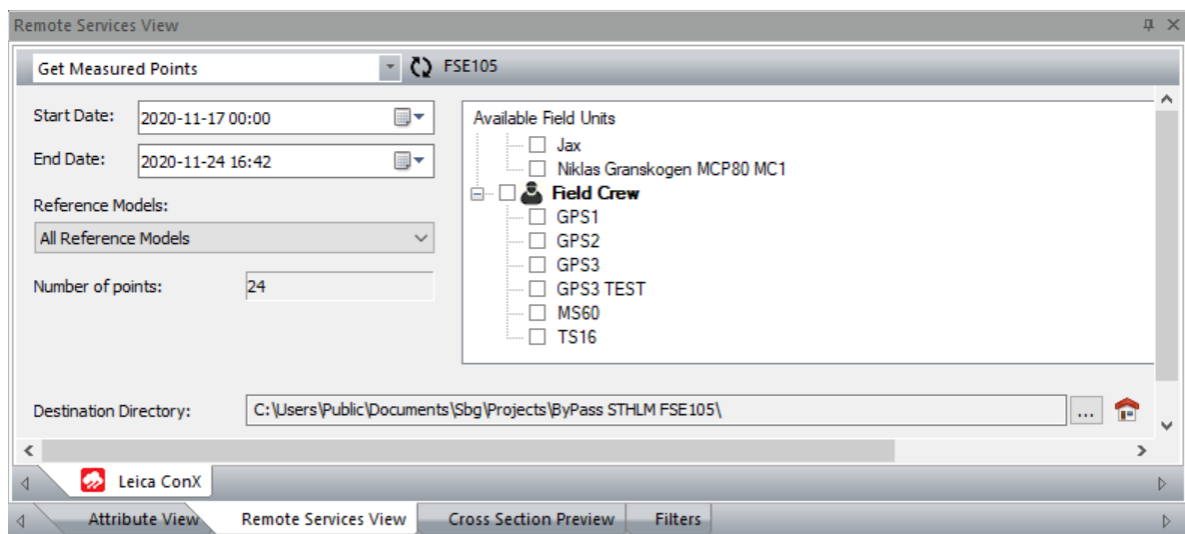- In the function, Points in Relation to the Tunnel, the input data now can be both in N, E, H and N=station along main line, E=length along *.tun line, H=distance to *.tun li

1.12 *ConX Connection*

- The correct device name MC1 is now displayed in all places
- The start default date is changed to today's date in the query to download logged points

1.13 *Bug Fixes and Maintenance*

- Cross-section files exported from MBS with CFM didn't store the information about used center line. Fixed
- Volume Calculation, Terrain Model, if grid spacing was the used method, offset didn't affect the calculation. Fixed
- Tool-tip information is now available for icons in the 3D window.
- When saving circles from the help layer, the center points were not included. Fixed
- Insert points at intersections was not working for line segments with arcs. Fixed
- Crash if a length report was generated and the very first line segment had a radius. Fixed
- iCON office failed to export vertical lines to DWG. Fixed

2 iCON office modules

- 797955 CSW301   **Core Module** – Import/Export and basic functionality

Add-On modules:

- 797956 CSW302   **Road** – Advanced road line calculations
- 797957 CSW303   **Terrain** - Volume calculation model to model
- 906348   **Trench** – Underground utilities module (requires Terrain module)
- 797958 CSW304   **Volume** - Volume calculation by sections
- 797959 CSW305   **Tunnel** – Tunnel functionality
- 797580 CSW306   **Net Adjustment** - Network adjustment and calculations
- 832546 CSW313   **Point Cloud** – Import and filtering of scanning data

Available packages:

- 6007380   iCON office Core package, includes installation package, Core
- 6007381   iCON office Terrain package, includes installation package, Core, Road, Terrain
- 6007382   iCON office Volume package, includes installation package, Core, Road, Terrain, Volume
- 6007383   iCON office Tunnel package, includes installation package, Core, Road, Tunnel

3 Update Service (Subscriptions)

- 849563, iCON office Update Service (subscription) 1 year

- 849565, iCON office Update Service (subscription) 2 years

- 868774, iCON office Update Service (subscription) 3 years

- 868776, iCON office subscription revival
  This revival option should be used when subscription expired more than two years ago. The new subscription will be valid one year ahead from the date of purchase.

Provide serial number of the license or the hardware lock ID, when you order an extension of license (update service). Use Dongle Tool to update the USB hardware lock with the license.

4 Leica myWorld

Please use Leica myWorld to find the latest version of the software. Access Leica myWorld by using the following link:

https://myworld.leica-geosystems.com/

- If it is a new iCON office installation the HASP driver must be installed so the computer can recognize the USB hardware lock.

- Point cloud utility is the point cloud engine and must only be installed if the point cloud module is purchased.

5 Dongle Tool

Use **Dongle Tool** to update the hardware lock with extended subscription for Leica iCON office or to unlock new modules purchased for the license.

Place an order using your normal order channels and when the logistics has processed your order, you can run Dongle Tool and update the USB hardware lock.

1. Insert the HASP hardware lock into the USB port.
2. Start Dongle Tool.
3. To change the subscription date or to add/remove modules it is first necessary to check in the current license to the license server. This is done by pressing **Check In**.
4. Switch to the **License Server** tab. Select the modules open for use and then press **Check Out**.

This will give the hardware lock a new certificate containing the updated license information.