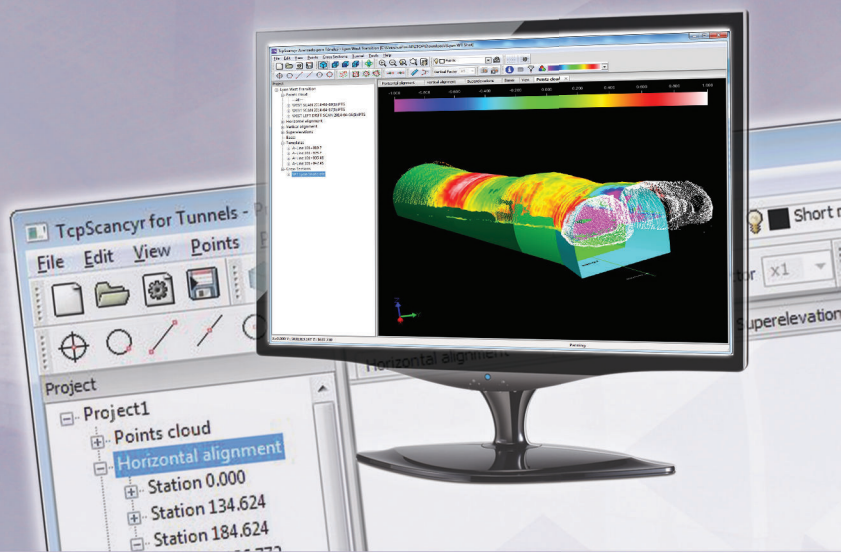
TcpScancyr for Tunnels

Generation of Tunnel Cross Sections based on a 3D Scanner

This application is designed to generate road and rail tunnel cross sections based on laser scanner data.

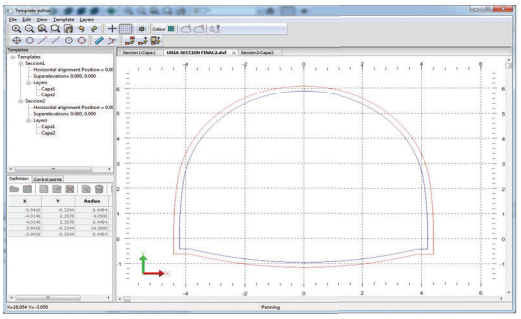


Input Data

Horizontal and vertical alignments and superelevation data, via numerical input or conversion from other commercial formats.

Theoretical tunnel templates, which can consist of various layers,defined by parameters or by importing a DXF file.

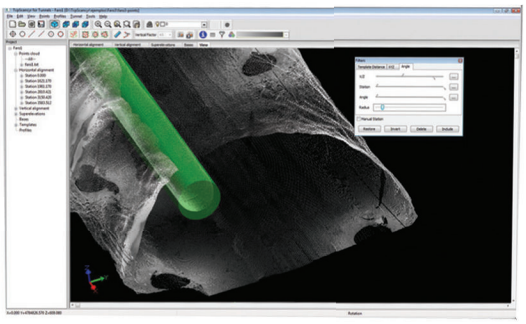
Once this data has been defined, the information from the points taken from the scanner is added via a set of coordinate files either with optional intensity and color.



Visualization of Points

Points may be examined using a three-dimensional viewer, with the option of changing between orthogonal and perspective view. Camera position can be controlled directly on the alignment or on a relative position, allowing the station and height to be altered. The level of presentation detail can be modified in order to optimize speed.

The symbology assigned to the points may be configured using a variety of method ssuch as angle, height difference, displacement, natural color, intensity, in/out, etc. The application also includes interactive tools for filtering points based on several criteria.



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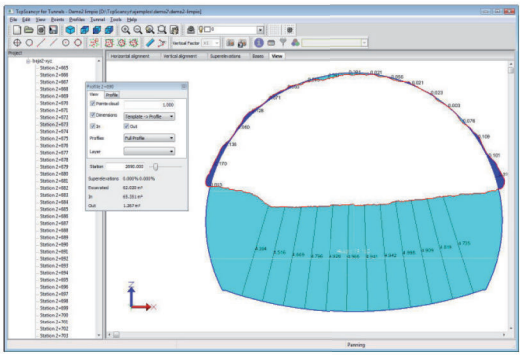
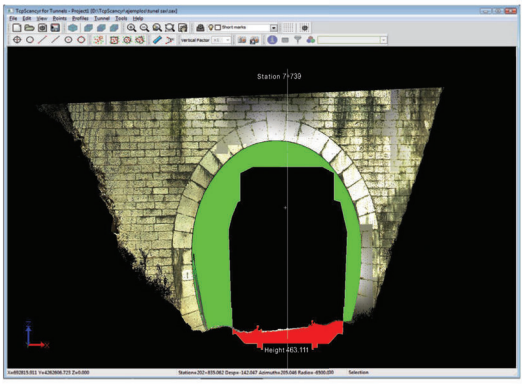
Cross Section Calculation



To obtain cross sections the user needs to specify the station range, the generation interval, and the bandwith to be employed. Optionally the filtering can be activated in order to delete peaks. The program features a powerful profile editor.

Once the cross sections have been calculated, they may be represented in 3D or using a frontal viewer. If the theoretical section has been defined, the over- and under-excavated areas are shown in different colors. Profiles can be exported as DXF files in 2D or 3D, either individually or as sets.

Tools



The program automatically calculates areas, with the option to represent this data on the cross sections or create an area and volume report. The program can also export the drawing as a DXF file, allowing the paper format, scale and other representation options to be set. Tunnel 3D model can also be exported in several formats.

The application also allows the route through the tunnel to be simulated, situating the user at a determined height and allowing him or her to control their position, speed, direction and extent of view.

Requirements (1)

Formats	Generic: text (TXT,XYZ), ASTM E57 (E57), ArcView (ASC) Scaner Point Cloud: Topcon (CLR, CL3), Leica(PTS,PTX), Faro (FLS), Leica MS-50 (XCF) LIDAR Point Cloud (LAS/LAZ)
Operating System	Windows XP, Vista, 7, 8, 8.1, 10 in 32 and 64 bits
Peripherals	Mouse CD-ROM reader
Graphics Card	Minimum resolution 1024x768 pixels, compatible with OpenGL
Hard Disk	10 Gb of free disk space
Memory	Minimum 2Gb
Processor	Intel Dual-core 2 Ghz or better

(1) This information is purely orientative. We recommend you consult the requirements sections on our website www.aplitop.com

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