TCP-Digital Terrain Model V8
Module Features Comparison

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POINTS AND POINT CLOUDS	Standard	Professional	Surveying	Images	PointCloud
Import and export from/to different file formats	■	■			■
LiDAR files import					■
Laser scanner files import					■
Conversion from drawing entities	■	■			
Point editing	■	■			
Automatic drawing from point codes	■	■			
View points in natural color					■
View points by height, intensity or category					■
Allows to set the percentage of points shown					■
View in stereo mode					■
3D box selection					■

SURFACES	Standard	Professional	Surveying	Images	PointCloud
Import and export from/to different file formats	■	■			
Breakline drawing and editing	■	■			
Breakline error detection	■	■			
Creation of surfaces from points	■	■			■
Creation of surfaces from 3D polylines	■	■			
Interactive surface editing	■	■			
Drawing as 3D faces, solids, polylines or meshes	■	■			
Creation of esplanades from terrain or esplanade height		■			
Earthworks by cut or fill head or foot		■			
Final ground calculation		■			
Fill holes and repair triangulation errors	■	■			
Optimum esplanade height calculation		■			

MESHES	Standard	Professional	Surveying	Images	PointCloud
Calculation from points	■	■			■
Calculation from surfaces	■	■			
Calculation from contours	■	■			
Mesh as current surface	■	■			
Drawing of meshes as 3D faces, polyfaces or image	■	■			■
Mesh operations	■	■			

CONTOURS	Standard	Professional	Surveying	Images	PointCloud
Contour generation	■	■			■
Contour editing	■	■			
Contour labeling automatic, manual or by direction lines	■	■			
Labeling of special contours	■	■			
Elevation of polylines to contours	■	■			
Contour smoothing	■	■			
Contour generalization		■			
Contour filtering		■			
Contour interpolation		■			
Contour splitting and joining	■	■			
Special height contours	■	■			
Contour separation	■	■			
Splines conversion	■	■			
Height error detection	■	■			

HORIZONTAL ALIGNMENTS	Standard	Professional	Surveying	Images	PointCloud
Definition of alignments from lines, arcs and clothoids	■	■			■
Fixed, coupled, revolving and mobile alignment calculation		■			
Drawing of alignments		■			
Alignment editing		■			
Alignment library		■			
Conversion of polyline to alignment	■	■			
Alignment utilities	■	■			
Checking of road regulations	■	■			
Import and export from/to different file formats	■	■			
Alignment dimensioning	■	■			
Generation and editing of superelevations		■			
Generation and editing of widenings		■			
Distances among alignments	■	■			
Drawing of 3D polylines	■	■			
Alignment data tables		■			
Alignment intersections		■			
Acceleration and deceleration lanes		■			
Roundabouts links		■			

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PROFILES AND CROSS SECTIONS	Standard	Professional	Surveying	Images	PointCloud
Quick profile	■	■			■
Profiles and cross sections from point clouds					■
Cross section calculation from surface or mesh	■	■			
Cross section calculation from 3D polylines	■	■			
Cross section calculation by regression	■	■			
Automatic update of profile drawing	■	■			
Cross section editing	■	■			
Conversion of cross sections from drawing	■	■			
Drawing of terrain cross sections	■	■			
Drawing of compound cross sections		■			
Label station and elevation	■	■			
Numerical data definition	■	■			
Heights report by interval	■	■			
Drawing of cross sections in plan view	■	■			
Multiple cross sections drawing	■	■			
Final ground cross section generation		■			
Polyline projection on cross sections	■	■			
Cross section utilities	■	■			
Import and export from/to different file formats	■	■			

VERTICAL ALIGNMENTS	Standard	Professional	Surveying	Images	PointCloud
Graphical and numerical definition		■			
Conversion from polyline		■			■
Circular and parabolic vertical curves		■			
Automatic update		■			
Vertical alignment editing		■			
Points on profile analysis		■			
Best-fit vertical alignment		■			
Checking of road regulations		■			
Visibility report		■			
Import and export from/to different file formats		■			

TEMPLATES	Standard	Professional	Surveying	Images	PointCloud
Definition of platforms		■			
Definition of ditches		■			
Definition of slopes		■			
Definition of roadbeds		■			
Definition of walls and structures		■			
Definition of geology		■			
Assignment of templates to stations		■			
Conversion of templates from drawing		■			
Plan view		■			
Reinforcements		■			

STAKEOUT	Standard	Professional	Surveying	Images	PointCloud
Drawing and editing of stakeout stations	■	■			
Points stakeout		■			
Stakeout with respect to an alignment		■			
Points calculation and analysis		■			■
Layers stakeout		■			
Lines stakeout		■			
Simple template stakeout		■			
Point analysis on alignment and terrain		■			

VOLUMES	Standard	Professional	Surveying	Images	PointCloud
Volumes by meshes difference	■	■			
Volume by cross-sections difference	■	■			
Volume report		■			
Quick volume calculation		■			
Area and volume reports		■			
Cross-sections measurements report		■			
Roadbed layers measurements report		■			
Volume by simple template		■			
Volume by zones		■			
Mass diagram		■			

MAPS/RENDER	Standard	Professional	Surveying	Images	PointCloud
Route by terrain	■	■			
Route by road		■			
Height map	■	■			■
Slope map	■	■			
Visibility map	■	■			
Customizable color palettes	■	■			■
Material management	■	■			
Insertion of 3D objects	■	■			
Export to Google Earth (KML)	■	■			
Export to 3D Studio (3DS)	■	■			
Export to Google SketchUp (SKP)	■	■			
Export to 3D Collada (DAE)	■	■			
Import from Google Earth (KML)	■	■			

IMAGES	Standard	Professional	Surveying	Images	PointCloud
Insertion of georeferenced images	■	■		■	
Insertion of pictures with location				■	
Insertion of UAV pictures				■	
Insertion of images from WMS services	■	■		■	
Change resolution of image				■	
Change size of image				■	
Flip and rotate image				■	
Adjust brightness, contrast, hue, saturation and gamma of image				■	
Delimit image				■	
Cut and paste images				■	
Georeference images				■	
Update georeferencing	■			■	■
Distort image				■	
View EXIF information				■	

UTILITIES	Standard	Professional	Surveying	Images	PointCloud
Plot division utilities	■	■			
Sheet drawing	■	■			
Entities elevation	■	■			
Drawing of crosses, ticks and coordinates	■	■			
Import and export of LandXML files	■	■			

SURVEYING	Standard	Professional	Surveying	Images	PointCloud
Conversion of total station measurement files			■		
Instruments table			■		
Point and station calculation			■		
Direct and inverse intersection			■		
Trigonometric leveling			■		
Traverse compensation			■		
Network compensation			■		
Reliability and goodness of fit tests			■		

GEODESY	Standard	Professional	Surveying	Images	PointCloud
Coordinate transformations			■		
Transform from/to local systems			■		
Ellipsoids, datums and coordinate systems management			■		
Geodesic calculator			■		
Drawing transformations			■		
Import of GPX files			■		