axis COS **3D**

Axis3D COS

Construction surveying for tunneling and civil engineering projects

Various calculation options: Perfect solutions even for unusual tasks.

Precise results: Proven calculation routines for reliable results.

Flexible data structure: Data structure designed individually by the user according to project requirements.

Efficient workflow: Intuitive user interface guides users and makes work considerably easier..
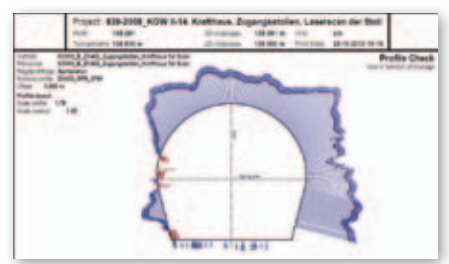
Coordinate Calculation
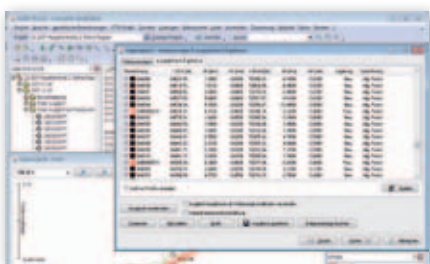
Axis3D COS greatly simplifies the professional analysis of measurement data. Accurate trigonometric **results** are guaranteed by reliable adjustment routines that take refraction into account. Easy evaluation of leveling data **minimizes analysis effort** and the intuitive user interface guides users through the program.

Data Management
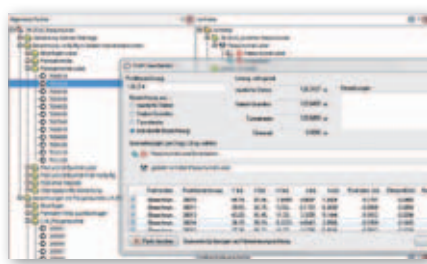
Users can manage large volumes of data **individually** and by **project.** Coordinates of reference points, profile-related points, and other project points are stored securely, as are shutter definitions and cross-sections for profile checks. The clear data structure provides a **quick overview of the entire project.**

Stakeout and Control

Various calculation routines are available for stakeout and control tasks, such as plumbing points onto center lines, 3D lines, and 3D planes; point calculation along center lines and 3D lines; construction laser calculations; coordinate comparison. NATM-profile and TBM guidance checks can be evaluated easily and displayed in clear graphics.

significant software

System Information

Hardware (not included)
- PC with at least 2 USB ports
- 21" screen recommended
- Three-button mouse

Software
- Axis3D PC software, incl. USB or SD dongle
- Languages: German, English; French (coming soon)
- Operating systems: Windows XP, Windows Vista, Windows 7, Windows 8 (32-bit and 64-bit, respectively)

Related Products
- Axis3D ETU - Easy Tunnel
- Axis3D MLS - Motor Laser System
- Axis3D NET - Network Adjustment
- Axis3D SET - Sets of Angles
- Axis3D GTM - Geotechnical Monitoring
- Axis3D OBM - Tunnel Face Monitoring

Applications

Tunneling
Tunnels, caverns, cut and cover construction, above ground structures

Axis3D COS Functionality

General
- Easy to use, flexible user interface design
- 3D display of the project situation with tunnel geometry, survey points, and sightings

Coordinate Calculations
- Based on data obtained from polar measurements or sets of angles
- Supports Leica GSI8 and GSI16 data formats (other manufacturers on request)
- Includes leveling data
- Free Station (3D) with survey point calculation
- Calculation of linked stations with optimized adjustment algorithms
- Automatic recognition of reference point IDs , even without measured distances
- Calculation of leveling runs

Setting Out
- To center lines
- To nominal profiles
- To 2D and 3D lines and planes

Point Calculation along defined lines and curves
- To center line
- To nominal profile
- To 2D and 3D lines
- Of borehole axes for umbrella fore-poling

Tunneling Laser
- Manage construction laser definitions
- Laser stakeout and control

Control
- Profile checks with graphical output
- TBM guidance checks with graphical output
- Coordinate comparison for absolute and centerline related coordinates
- Shutter profile check

Other Calculations
- First and second geodetic problems
- Helmert transformation (1D, 2D, 3D)
- Intersection of 2D and 3D center lines

Alignement
- Calculation of clothoid (Euler's spiral) elements
- Curve sequence clothoid – clothoid
- Curve sequence clothoid – circle – clothoid
- Curve sequence outer clothoid
- Curve sequence transition curve

Geometry Manager (Axis3D GeoMan)
- Analytical definition of tunnel geometry according to design
- Plausibility checks and 3D visualizations
- Highly accurate transformation between absolute coordinates and axis-related coordinates

Database
- Management of points, cross-sections for profile and TBM guidance control,
- shutter definitions, etc.
- Individual, project related data structure
- Interfaces for data import/export
- SQLite, Oracle, Microsoft SQL-Servers, Interbase

Shafts, Open Cuts
Secured slopes; sheet pile-, secant pile-, and diaphragm- walls

Civil Engineering Structures
Bridges, retaining walls, building pits

Customers

DIBIT Measuring Technique

Kiewit Corporation (USA)

Rhomberg Sersa Rail Group

Trigonos Civil Engineers
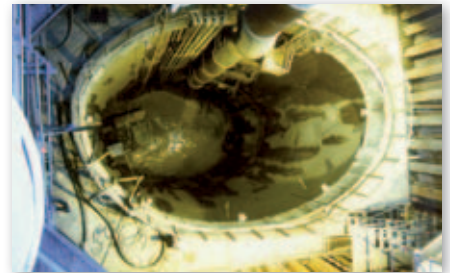
Stolitzka & Partner Civil Engineers

Vorarlberger Illwerke AG

▣ Contact Information

www.axis3D.eu

Significant Software KG
A-2514 Traiskirchen, Josef Bruna Strasse 28
tel: +43 (0)676 733 61 44
office@significantsoftware.com
www.significantsoftware.com

Significant Software SARL
F-81470 Roquevidal, Lento Bas
tel: +33 (0)6 35 94 53 50
france@significantsoftware.com
www.significantsoftware.com