

## UTILITIES

- File Management\*
- Printing / Plotting\*
- Edit Undo/Redo\*
- Merging Files
- Extracting Files
- Change Point Identifiers
- Resolve Duplicate Points
- Filter Points
- Filter Lines
- Optimise Data Base\*
- Clean Data Base\*
- Integrity Check\*
- Statistics Report\*
- Point Report
- Line Report
- Polygon Report
- Tailored Rich Text and HTML Reports
- Alignment Point Report
- Alignment Intersection Point Report
- Alignment to Alignment Report
- Alignment Centre Line Report
- Point Comparison Report by Points
- Point Comparison Report by Alignment
- Configure – Units\*, Co-ordinates\*, Distances\*, Angles\*, Areas\*, Volumes, Alignments\*, Colours\*, Toolbars\*, Status Bar\*, Folders\*, Code Tables\*, Point Identifiers\*, Projections, Earth-Constants\*, Fonts\*, Text Editor\*, Language\* & Auto Backup\*.
- Code Tables – New & Open (\*Form view only)
- Code Table XML Export
- Lookup Tables – New & Open\*
- Block – Freehand\*, Polygon & All
- Display Features\*
- Display Groups\*
- Fit, Zoom In & Out, Window, Pan, Redraw, Save View, Restore View & Last View\*
- Reverse Polish Notation Calculator\*
- New Plan, Long Section & Cross-Section Windows\*
- Cascade, Tile and Arrange Icons\*
- Section Manager\*
- Help\*

## INPUT / OUTPUT

### Field Transfer

- Instrument Settings\*
- Code Definition\*
- Tolerances\*
- Data Recorder Input\*
- Manual Input
- Slope Distance\*, Horizontal Distance, Stadia, Resection & Intersection
- Create Field File\*
- Sets Summary
- Reduce Field File\*
- Process Digital Level\*
- Traverse Adjustment
  - Traverse File Editor
  - Traverse File Management
  - Extract Field File Observations
  - Print
- Traverse Adjustment (Continued)
  - > Move
  - Save Layout

- Editing Observations – Insert, Delete, Clear, Cut Copy & Paste
- New Traverse
- Delete Traverse
- Move / Copy Traverse
- Traverse Properties
- Retrieve Co-ordinates
- Set Arc
- View – Angles, Arcs, Elevations, Co-ordinates, Codes & Descriptions
- Auto Number
- Set Radiation
- Compute Traverse by Bowditch, Transit-& Crandall's
- Report or XML Output
- Compute Missing Parts
- Update Co-ordinates

- Edit Raw File\*
- Edit Field File\*
- Data Recorder Output\*
- Manual Setout\*
- Data Conversions
  - Import\* 35+ (19\*) methods
  - Export\* 35+ (15\*) methods
- CAD Output
  - CAD Parameter Files – New, Open & Default\*
  - CAD System – LISCAD CAD, AutoCad DWG & DXF, Microstation DGN\*
  - Code Settings\*
  - Tables – Co-ordinate, Radiation, Arc & Short Line
  - Legend Settings
  - Grid Settings
  - Model Settings
  - Alignment Settings
  - CAD Output Options\*
  - Warnings - View & Print

## ADJUSTMENT

- Least Squares Control File Editor
- Adjustment File Management
- Extract Field File Observations
- Import XML
- Print
- Save Layout
- Editing Observations – Insert, Delete, Clear, Cut, Copy & Paste
- Fix Observations
- Exclude Observations
- Set Reference Direction
- Set Bearing
- Retrieve Co-ordinates
- Modify Standard Deviations
- Display Elevation Observations
- Display Angle Observations
- Automatically Generate Identifiers
- Automatically Generate Standard Deviations
- View Station Control Window
- View Observation Window
- Horizontal Observation Corrections
- Compute Approximate Horizontal Co-ordinates & Elevations
- Check Horizontal & Vertical Observations
- Horizontal & Vertical Least Squares Adjustment (ASCII report or XML output)
- Update Co-ordinates

- Compute Approximate Elevations
- Check Vertical Observations
- Vertical Least Squares Adjustment
- Update Elevations

## COMPUTATIONS

- Create Point – 28 (6\*) methods
- Create Line – 14 (1\*) method(s)
- Create Arc – 11 (1\*) method(s)
- Create Circle – 5 (1\*) method(s)
- Create Spiral – 4 methods
- Create Spline – 8 (1\*) method(s)
- Create Combined Curve – 8 methods
- Create Splay – 3 methods
- Create Radiation – 2 methods
- Create Offset – 5 methods
- Create Alignment – 8 methods
- Create Section Markers – 3 methods
- Create Polygon – 3 methods
- Create Intersection Points
- Create Text
- Line Segmentation
- Set Attributes for Points\*, Lines\*, Polygons, Alignments, Section Markers & Text
- Adopt Attributes of Points, Lines, Polygons & Text
- Delete Objects (\* Points & Lines)
- Undelete Objects
- Enable / Disable Objects
- Move / Rotate\* / Scale
- Exchange Axes\*
- Point on Line
- Bets Fit Line & Arc
- Reverse Alignment
- Modify Alignment Chainage
- Trace Alignment
- Break Alignment
- Remove Line from Alignment
- Join Alignments
- Add Line to Alignment
- Edit Alignment Chainage Equations
- Spline to Line
- Line to Spline
- Text to Point
- Edit Object Attributes (\*Points-&-Lines)
- View / Edit Objects (\*Points)
- Edit Point Identifiers
- Edit Elevations
- Remove Elevations
- Break Line
- Segment Line
- Join Line
- Insert Point into Line
- Remove Point from Line
- Examine Object Attributes (\*Points & Lines), Co-ordinates, Co-ordinate Differences, Bearing & Distance\*, Offsets\*, Angles, Arcs, Spirals & Grades
- Find Objects
- Find Errors
- Validate Alignments

## TRANSFORMATIONS

### Projections

- Manage and Apply transformations between projections using 5 different transformation techniques

### Coordinates

- Define, View and Apply using Conformal, Semi-Affine, Affine, Unscaled, 3D-Conformal & 3D-Unscaled

## TERRAIN MODELLING

- Validate Data
- Form Model
- Delete Triangles
- Delete Model
- Add, Delete & Modify Label Lines
- Breakline Segmentation

- Interpolate Elevations
- Examine Elevations

## VOLUMES

- Base Plane Volumes
- Progressive Base Plane Volumes
- Surface to Surface Volumes

## PROFILES & DESIGN

- Create Section Markers – 3-methods
- Create Corridors of Interest – 2-methods
- Set Section Marker Attributes
- Delete & Edit Section Markers & Corridors of Interest
- Edit & Examine Section Marker Attributes
- Create Long Sections along Alignments, Lines, Point Ranges & Freehand using models or objects.
- Create Cross Section Sets
- Import Cross Section Sets
- View\* / Edit Long & Cross Sections
- Create Long & Cross Section Points – 4-methods
- Create Long Section Floating Points – 2-methods
- Move Long & Cross Section Points – 3-methods
- Define End Areas
- Apply Section Intersections
- Volumes by End Areas
- CAD Output of Long & Cross Sections
- Vertical Exaggeration\*
- Examine Points, Distance, Elev & Grade
- First, Last, Next, Previous & Go To Cross Sections\*
- Long Section Design & Points Reports
- Cross Section Report
- Template Library Editor
- Create Horizontal Long Sections
- Vertical Parabola Designer
- Create / Edit Template Implementation-Sets
- Transfer Long Sections into Plan
- Transfer Long Section Elevations-> Plan
- Transfer Cross Sections into Plan

## BACKGROUND IMAGES

### Import & Register Image

- Conformal
- Affine
- 2nd & 3rd Order Polynomial
- Check Registration
- Delete Image
- Rename Image
- Export Image

### Supports Georeferenced Images

- MrSID
- ECW
- GeoTIFF

## 3D VISUALISATION

- Fly Camera\*
- Walk Camera\*
- Pan Camera\*
- Zoom Camera\*
- Edit Triangle Attributes
- View/Edit Triangle Attributes
- View/Edit Model Attributes\*
- Copy To Clipboard
- Set Triangle Attributes
- Adopt Triangle Attributes