

Software Features

General

SOFTWARE CAPABILITIES

- Independent or linked 3D view windows
- Smooth, intuitive manipulation
- Large dataset management, including terrestrial and airborne LIDAR data
- Powerful filtering and editing tools
- Simple and flexible workflow
- Designed specifically for mine surveyors, geologists and engineers

- Generate high resolution images of data
- Generate animation and AVI files
- Survey station management
- Record scanner settings with the data
- Use repeated acquisition and averaging to improve data accuracy
- Query range and intensity of a single point
- Query distance and bearing between pairs of points
- Query dip and strike of surfaces, edges, points
- Report counts, range and intensity statistics for a scan
- Report only on masked data points to report statistics by areas
- Full report on data statistics recorded
- Fully interactive rotation, zoom and pan of the view
- Complete undo/redo facility
- View data from any aspect, including from-scanner, birds-eye view, moving section
- Fly or walk through the data
- View scans with created CAD geometry or other imported data to see the scan in relation to existing or planned designs
- Adjustable lighting and illumination for surface viewing
- Variable point size to aid visualisation
- Export high resolution screen captures not limited to display size
- Full keyboard shortcut functionality
- Multiple Document Interface for simultaneous multiple view displays with tabbed access
- Windows™ style explorer for intuitive data management
- Send feedback directly to Maptek I-Site support from within the application
- Operates in both 32 bit and 64 bit versions of Windows XP, Windows Vista and Windows 7
- Hot selectable Portuguese, American English, Spanish, UK English language settings, including dual-language mode for training

Import/Export Facilities

- Import of Maptek I-Site™ 3DP scan file format
- Import ODA CAD formats: DXF, DXB, DWG
- Import other CAD data formats: OBJ, 3DV
- Import and export user-customisable ASCII formats (scans, point sets, survey)
- Import other scanner formats: PTX, PTG, IXF, ZFS, 3DD, 4DD, RSP
- Import Vulcan formats: DGD, DGD.ISIS, 00t
- Scan data saved to disk in a proprietary data format immediately after scanning, for data security and integrity
- Export CAD geometry, scan data and surfaces direct to Maptek Vulcan™ data formats
- Export ired, 00t and jpg for texture drape in Vulcan
- Export CAD geometry and scan data to DXF, DXB, DWG, OBJ, ASCII and Maya formats
- Export to VRML 97, for viewing in web browser
- Export 3D views as 2D images in PNG and JPG format
- Export animations of static 3D scenes in MPEG-4 encoded AVI format
- Transfer data directly between DataEngines for improved workflow
- Full unit support (metric and imperial)
- Export surfaces and CAD objects to 3D PDF files

Registration

- Locate scan in correct easting, northing and elevation obtained from conventional surveying instruments (i.e. GPS, total station) including tilt compensator from I-Site laser scanners
- Multi-point registration to locate data to common points
- Arbitrary translation and rotation of data to 'tweak' the location
- Automatic surface feature registration using any type of data
- Locate data that has been acquired using various scanner frames
- Multi-degrees of freedom constrained registration
- Calibrated registration of scans acquired using the I-Site vehicle mount
- Locate reflectors in the scene from scan data

SYSTEM REQUIREMENTS

Operating System

Windows XP 32 or 64 bit

Windows Vista Business or Ultimate 32 or 64 bit

Windows 7 32 or 64 bit

Recommended Specifications

Processor	Intel 64 CPU, i7 series equivalent or higher
OS	Windows 7x64
RAM	8 GB RAM or more
Hard Disk	1 TB 7200 rpm
Graphics	GeForce GTX 1GB or higher
Display	1920 x 1080 resolution or higher
Peripherals	Scroll-wheel mouse

Filtering options

- Topography filtering
- Filter scan points by polygon, and by vertical and horizontal extents
- Minimum separation filtering
- Filter by surface proximity
- Mask scan points by range, bounding box, plane, polygon and intensity
- Generate reduced resolution versions of gridded scans by masking alternate scan rows and columns
- Randomly mask scan points to reduce distribution
- Edge detection techniques show only points on edges in the scan, based on a distance threshold and colour attributes
- Logical (AND, OR) combinations of masking operations
- Data smoothing to reduce the amount of noise

Colouring

- Full texture render of photo data from I-Site 8800 laser scanner onto scans and surfaces
- Easy-to-apply colour schemes automatically analyse data
- Greyscales and colour spectra mapped onto scan range / intensity values
- Specially created 'perceptually uniform' colour spectra can be applied to avoid misinterpretation of data
- Range and intensity colouring can be blended to add extra dimension to the visualisation
- 'Thresholding' reveals bright spots in the data
- Colouring of filtered points allows patchwork colouring to highlight areas of interest
- Advanced options to refine colouring, allows colour scales to be reversed, equalised and applied over percentile ranges to focus on interesting aspects of the data
- Colour surfaces based on distances from other surfaces, scans, edges, point sets

CAD

- Design points, lines and polygons
- Create text, circles, arcs and rectangles
- Delete geometry
- Move, delete and insert points
- Work in the visualisation environment so geometry can be drawn on the scans and views can be changed interactively during the editing process
- Smart line function to create polylines of scan data, on both scan points and surfaces
- Extrude features such as circles, rectangles and squares as well as arbitrary CAD lines
- Register data to topography
- Create labelled contours from surfaces
- Create section lines through surfaces
- Survey point creator
- Create gridded spot heights from surfaces
- Crop surfaces by extruded polygon
- Semi-automatically extract toe and crest lines on open cut mine models
- Annotate scenes with signs, scale bars and dimension lines
- Automatically join separate lines or close lines into loops
- Project points and lines to a 2D plane

Modelling

- Create 3D triangulated surfaces from single and multiple scans and point sets
- Create 2.5D surfaces from multiple scans
- Create solid triangulation from closed polygons
- Surface facets take on true passive colour of scan data
- Remove unwanted triangles on surface by edge length, orientation, or surface trend
- Adjust the shading and transparency of the surface
- Interactively fit geometric, primitive shapes (planes, lines, circles) to scan data points
- Fitted objects are placed to a higher degree of accuracy than the individual scan points
- Edit and combine these objects to construct complex 3D CAD models
- Move, rotate, scale and copy objects
- Create a mirror of original data set
- Find boundaries, check surfaces, add facets and automatically fix holes in triangulations
- Smart facet reduction tools
- Fragmentation of surfaces based on intersection
- Create combination surfaces based on lowest, highest surface or replace sections of one surface with those of another
- Add, edit and delete individual facets, edges and points to existing objects of the appropriate type

Volume Calculations

- Calculate volumes between two surfaces
- Calculate volumes between two surfaces divided by bench level
- Calculate the volume within a void
- Calculate differential solid volume between 2 solids