

## What's New in Maptek I-Site Studio 6

This release marks 15 years since Maptek began developing unique spatial modelling software for working directly on 3D point cloud scan data. New reporting, geology, CAD and geotechnical tools are supported by many enhancements to improve the I-Site software experience.

### Overview

**I-Site Studio 6** includes two new reporting modules and major updates to CAD and geotechnical functionality.

New **CAD** tools streamline routine layout and drafting tasks by allowing 2D design work from 3D point cloud data.

The **Geotechnical Module** includes major upgrades to stereonet and kinematic analysis as well as new waviness and spacing tools.

A new **Geological Module** provides foundation tools for geological mapping direct from 3D point cloud data.

**Reporting** is a new menu with two options for volume and design conformance reporting.

The release also includes many enhancements to tools and workflows for improving point cloud processing and modelling.

I-Site Studio 6 is available for download from a secure link in the Maptek Users Area. Visit [users.maptek.com](http://users.maptek.com) to login or register for access.

USBs are available for shipping release files to sites with limited or no download ability.

- CAD tools
- Geotechnical Module
- Geological Module
- Reporting Modules
- Automated registration tools
- New 3D surface modelling
- Enhanced filtering tools
- Level of detail display
- Other enhancements



## CAD tools

New CAD tools in version 6 enable design work in 2D and 3D, reducing the need for users to switch between CAD applications.

Creating CAD objects direct from 3D point cloud data streamlines tasks like drafting haul roads and ROM pad layouts, adding strings for stockpile shadow zones and indicating directions, driving routes, safety zones and landing areas.

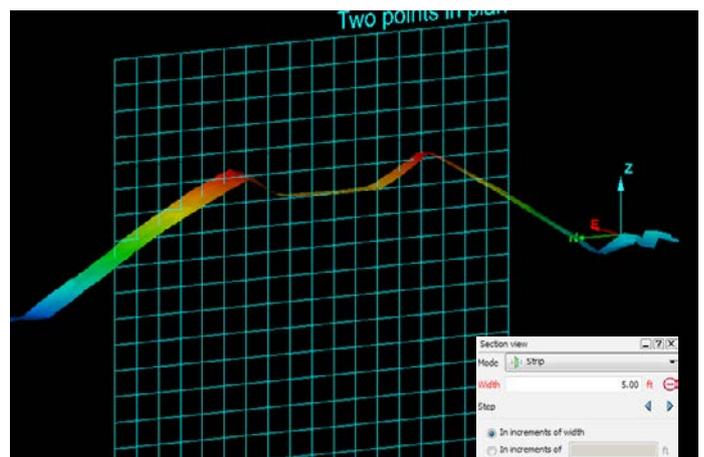
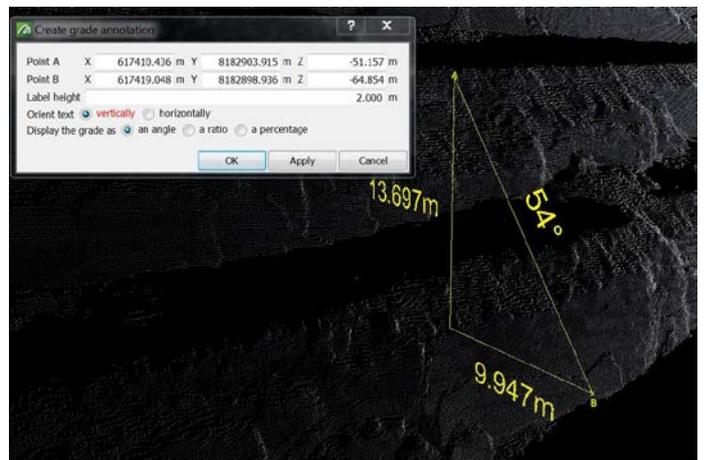
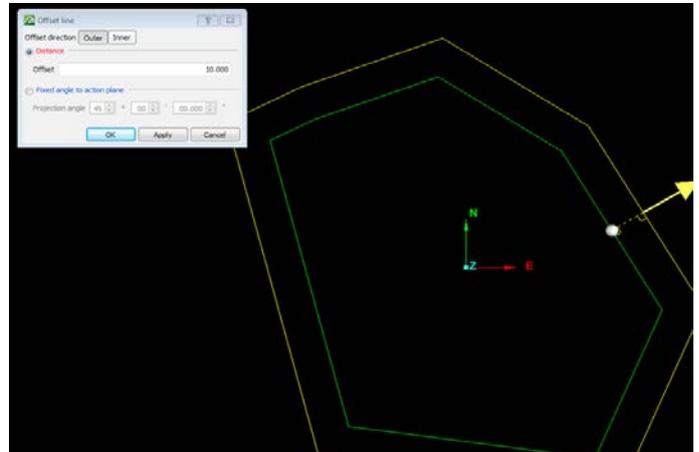
Improved **snapping** tools streamline CAD workflow and allow users to digitise from real world to CAD environment.

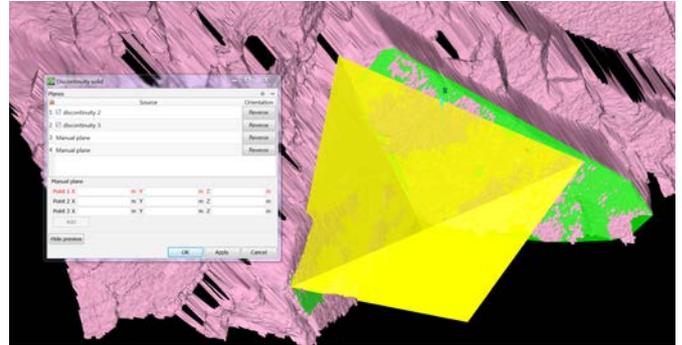
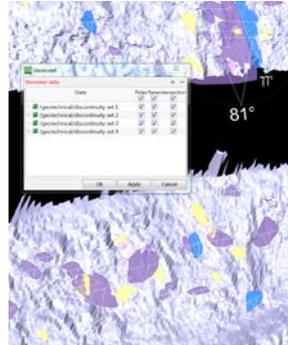
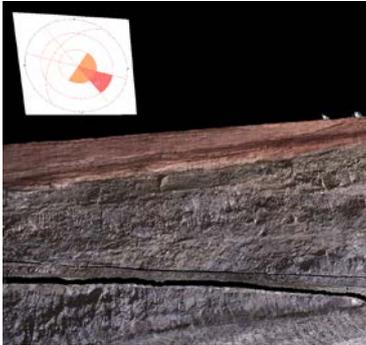
Improved **3D line creation and offset** tools allow users to create simple 3D geometry with control over length, bearing and grade.

Users can choose from several default **line style and thickness** options as well as easily create their own styles.

A new **annotate grade** tool allows users to easily label the grade on an as-built surface.

A new 2D **action plane section** tool allows users to work intuitively with CAD in the 3D environment. The setting of properties in the new section mode is streamlined and a new sidebar allows for easy editing of section widths. Section views can be saved and returned to later, improving user workflow.





## Geotechnical Module

The upgraded Geotechnical Module includes enhanced functionality for analysing structures and surfaces.

New features include a **discontinuity solid** tool which takes a selection of discontinuities to create a solid. The shape, size and volume of wedge failures can be easily defined. Dynamic adjustment of discontinuities extends shapes to assess their potential impact elsewhere.

The new **discontinuity spacing** tool calculates the average spacing between discontinuities based on their orientation to aid statistical modelling.

New **waviness analysis** functionality produces a histogram of variations in apparent dip. Standard deviation can be used to report on stability analysis.

**Automated cell mapping** includes user-defined cells for structural mapping, statistical analysis and reporting.

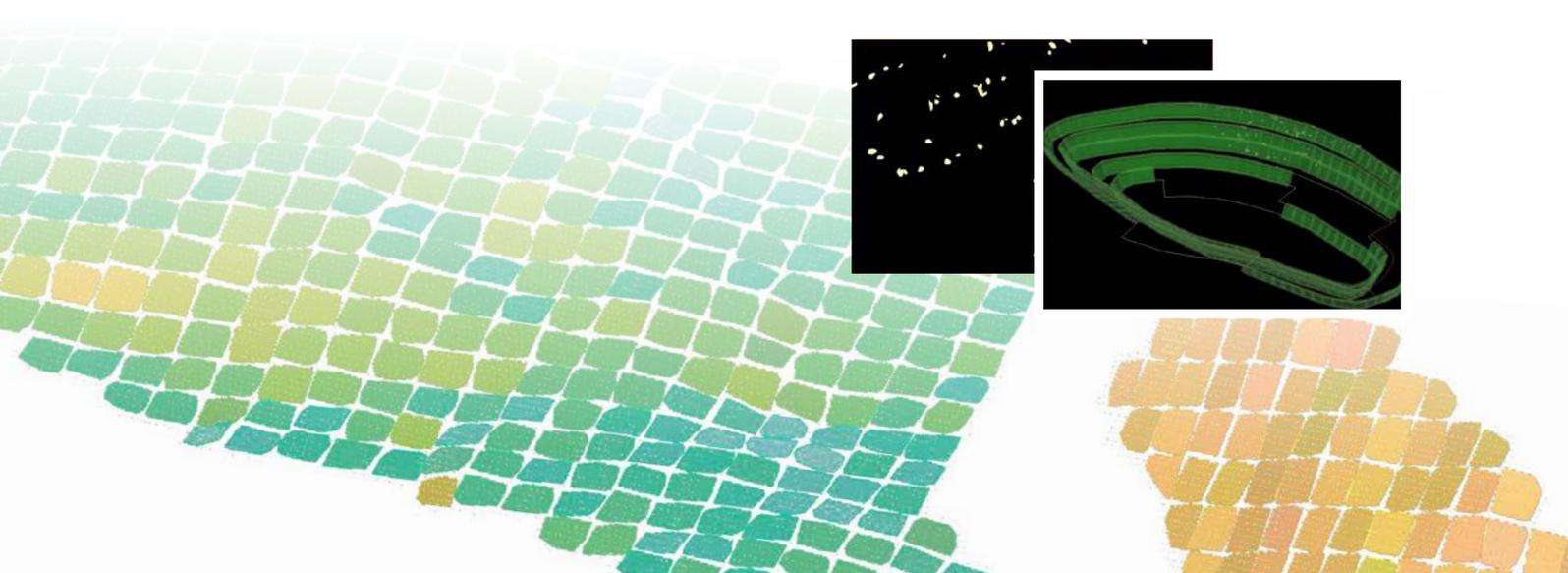
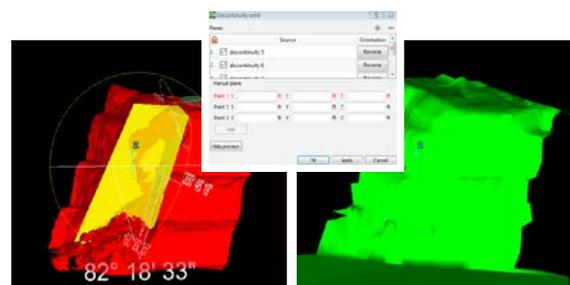
**Stereonet enhancements** include new tools, preferences and workflows. A new stereonet viewer is fully customisable for background colour, point and line size. A direct link between the stereonet and 3D views allows users to easily see discontinuities on the stereonet by highlighting them in the 3D view. Users can now apply custom preferences to set the appearance of stereonets and rose diagrams.

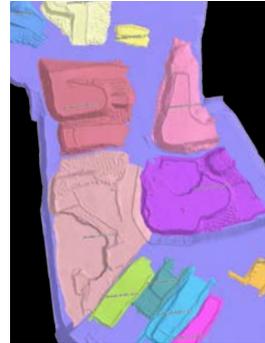
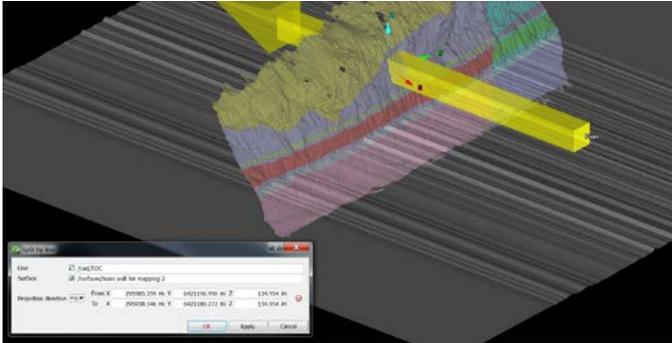
Users can display **tangent planes** as great circles, and add planes, poles and intersections to stereonets.

**Kinematic analysis** has been overhauled. Defaults for failure types have been added, and failure zones on the stereonet are automatically shaded. Dragging and dropping discontinuities onto the kinematic slope orientation fields dynamically adds dip and strike direction.

Other upgrades include a new **pole scaling** tool on the stereonet toolbar and **PDF output** for cell mapping reports.

New **right-mouse context** menu functionality introduces smart workflows for quickly querying dip and strike and extending a discontinuity boundary by adding points. Users can automatically merge discontinuities and intersect two discontinuities to create wedge intersection lines.





## Geological Module

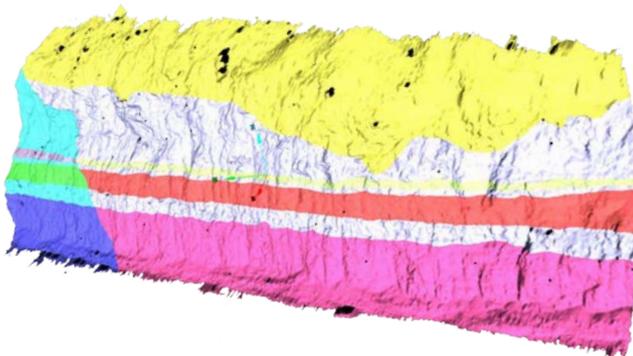
A new Geological Module includes several features for defining geology directly from 3D point cloud data. Intuitive tools streamline the mapping workflow.

**Split by line** splits a surface such as a highwall face into separate facet networks based on a user defined line. The line could be the top of coal or a fault line which is easily viewed on the detailed scan data.

**Extract by polygon** extracts a new surface based on a digitised polygon, while **Colour surface by polygon** fills an area with a uniform colour based on a digitised polygon to define the geology.

**Apply a texture fill pattern to a surface** overlays patterns like those used in geological face mapping to denote rock types.

Ongoing development will further improve I-Site—Vulcan workflows for geological and geotechnical analysis.

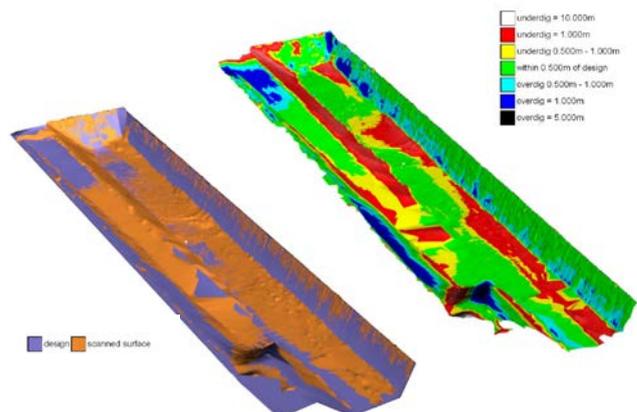


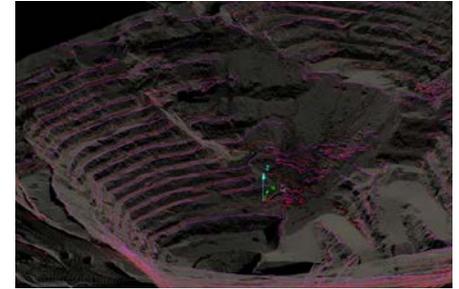
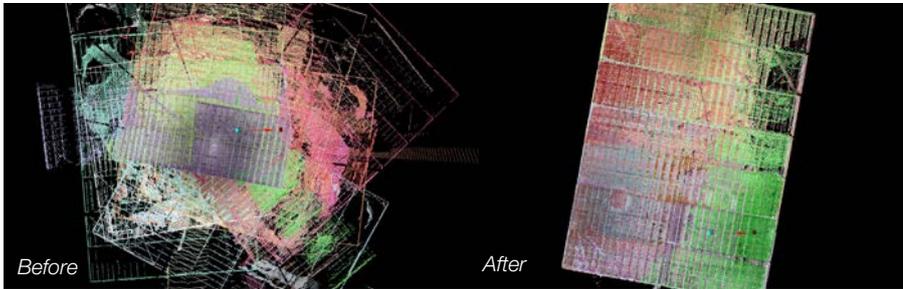
## Reporting Modules

A new Reporting menu contains **two new modules** for streamlining the creation of configurable reports. Automating conformance and performance monitoring dramatically improves survey productivity.

The **Volume** reporting module allows users to apply a base surface, stockpile surfaces and polygons to generate volumes for multiple regions. Reports will summarise stockpile volumes and colour code by region. Templates are fully customisable, making it possible to attach photographs and other documentation to the PDF being exported for distribution.

The **Design Conformance** reporting module compares a design surface to as-built and other surfaces. PDF export summarises sections, reporting on underdig, overdig and percentage of volume variance for each block.





## Automated registration

New automated scan registration options are ideal for underground scanning where sensor information such as GPS is usually absent.

### Automated initial positioning

automatically aligns scans without any prior sensor information, manual translation or rotation.

**Assisted initial positioning** allows users to quickly align two scans by selecting a point in one and then hovering the mouse over the other. The best fit is displayed in real time while hovering.

## Level of detail display

Level of detail graphics rendering of **surfaces** allows selective display of huge datasets scaled to the display settings. Display detail is adaptively adjusted based on zoom, removing limitations on data size due to graphics hardware display constraints.

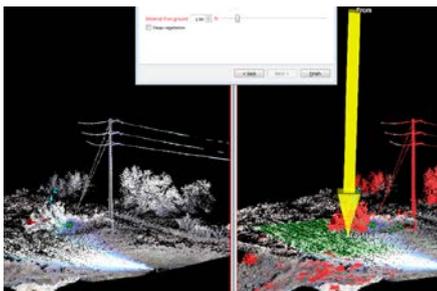
Performance of **level of detail on point clouds** continues to improve, with support for larger datasets and a wider range of graphics cards.

## Labs menu

Maptek makes I-Site early development options available via the Labs menu. A new **coordinate conversion** tool easily converts spatial data to any coordinate system or grid representation, streamlining transformation and projection processes.

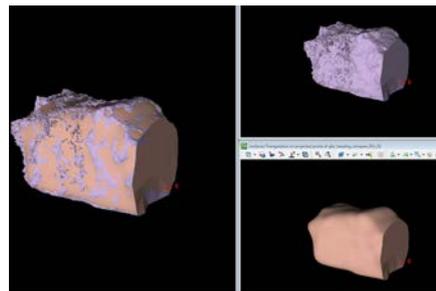
**ECW files** of network streams may be imported as ECW objects for association as static rasters with user-specified parameters.

A new tool for generating **toes and crests directly from point sets** will save time on this routine task. It works best with good data density and uniform point coverage.



## Enhanced filtering

Tools new to the **Filter** menu include an option for filtering by column to view and manage I-Site Drive continuous scans. The **Vegetation** filter has moved from the Labs menu and now features a wizard style interface.



## 3D surface modelling

A new **complex 3D surface modelling** tool is ideal for when 3D rather than 2.5D topographic surfaces are required. The tool produces dual output: a 3D surface that honours the input point cloud, conforming around walls, curves and tunnels with little manual effort; and another surface created by averaging the point set.

## Other enhancements

A new option in **Query Surface Volume** allows users to export stockpile volumes for multiple regions in one report.

**Borrowable licences** can now be borrowed to a correctly initialised TPM (Trusted Platform Module) as well as dongles.

Users can now apply **multiple attributes to points and objects**. New custom ASCII export allows object attributes to be brought into Vulcan.

**Export CAD output** via .dgd.isis protocol allows data to be brought into Vulcan, honouring the container names as Vulcan layers.

Users can easily **rename multiple objects** simultaneously using the context menu for containers.