3D Laser Scanning Technology

Rugged hardware and powerful software combined with streamlined survey workflow
Maptek specialises in the research, development and application of 3D laser scanning technology. Our products and services streamline common surveying tasks and deliver accurate, reliable results.
The Maptek I-Site™ 8820 laser scanner has all the sensor technologies necessary for survey tasks. These are integrated into a ruggedised modular system which can be configured to your survey requirements.

The I-Site 8820 laser scanner combined with integrated digital camera enables simultaneous capture of 3D laser point clouds with overlaid photo pixels. The system features an integrated GPS and digital compass. Surveyor productivity is dramatically improved using the enhanced interface and wireless toughbook controller.

A new modular design means I-Site 8820 laser scanners can be made without the camera and telescope if they are not essential to site survey requirements.

### Advantages
- Optimised for topographic survey
- Designed for stop-go vehicle survey
- Built to operate in tough conditions
- Configured for mining, topographic and general survey
- Ideal for indoor and outdoor stockpile survey
- Rated to IP65 for environmental protection

### Features
- 6mm accuracy
- Range from 2.5 to 2000 metres
- Ruggedised tablet PC for scan setup, management and viewing
- Built-in survey grade alignment telescope for backsighting (optional)
- Integrated 70 megapixel panoramic digital camera (optional)
- Instant image texturing requires no calibration or alignment
- Rapid registration of multiple setups for faster survey workflow

The Maptek I-Site 8000 series scanners are the only long range terrestrial laser scanners rated to IP65 to withstand the tough mining environment. Streamlined setup combine to deliver a superior method of acquiring survey grade scan data.
The Maptek I-Site 8200 is a versatile laser scanner for surface and underground survey applications. The I-Site 8200 laser scanner can quickly survey stockpiles, silos and underground drives.

Software tools and hardware accessories have been developed alongside the scanning equipment, providing a truly integrated solution for a wide range of survey applications. There is no need to change tools when coming up from underground, or to change standard setup or work practices.

Streamlined survey workflow is a feature of all I-Site laser scanning systems, and the I-Site 8200 is no exception.

**Advantages**

- Scanner for underground survey tasks
- Fast, easy setup for underground stope scanning
- Reliable, safe operation in challenging underground environment
- Integrated software for fast results and accurate models
- Scan drives, tunnels, stopes, stockpiles and silos with the one system
- Pick up development headings and map faces and backs
- Simple boom setup for void measurement
- Streamlined workflow
- Automatic levelling of scans at any angle

**Features**

- Range up to 500 metres
- 125 degree scanning aperture
- 3D view in scan control software
- Portable, weighs <12 kg
- Rated to IP65 for reliable operation underground
- On-board, simple scan controls
- USB scan storage for easy file transfer
- Intuitive software for modelling laser scan data
- Range of mounting kits for mobile scanning
- Extendable 10 metre carbon fibre boom
3D Laser Scanning Software
Fast processing of scan data for accurate modelling and volumetric analysis.

I-Site Studio
Complete point cloud processing package
Maptek I-Site™ Studio offers all the tools to successfully apply laser scanning to survey tasks within the mining and engineering industries. The software improves efficiency, productivity and workflow.

I-Site Studio integrates data from high performance laser scanning instruments with conventional survey and mapping. Surveyors can complete tasks efficiently, with a workflow matching many common survey applications.

I-Site Studio combines a user friendly interface with 2D and 3D modelling options. Outstanding processing power handles large datasets with ease and ensures fast and accurate deliverables for mining applications.

Features
- Generate high resolution images of data
- Global registration registers multiple scans & objects together
- Repeated acquisition and averaging to improve data accuracy
- Fully interactive rotation, zoom and pan of view
- Automatic toe and crest extraction in open pits
- End-of-month pit update tool integrates new scan data
- Common formats for seamless export to other packages

Geotechnical Module
Tools for geotechnical analysis
The I-Site Studio Geotechnical Module features powerful analysis tools, which combine with standard I-Site Studio functionality to provide a complete geotechnical solution for geologists and engineers. Intuitive tools remove the manual aspect of geotechnical analysis.
I-Site Topo  
*The ideal package for routine topographic survey and volumetric applications*

Maptek I-Site™ Topo provides a subset of tools for topographic and volumetric applications, with basic CAD and filter options. I-Site Topo is the ideal software for common survey tasks.

**Applications**
- Surface and bench volumes
- Manual pit modification
- Manual feature creation
- Intensity mapped point cloud returns
- Topographic modelling

**Tools**
- Manage survey station setups
- Locate scans from GPS
- Design points, lines and polygons in 3D
- Generate closed ‘loop’ sections
- Minimum separation and range filtering
- Fly or walk through data surfaces from any aspect

I-Site Void  
*Easy to use modelling and CAD tools for underground survey applications*

Maptek I-Site™ Void contains the required modelling and CAD tools for underground survey applications. The user-friendly workflow makes processing of underground scan data quick and easy.

**Applications**
- Calculate volumes between surfaces, within a void, and between solids
- Register, model and extract CAD from surveyed drives
- Visualise and map development headings
- Create solid triangulations, check and fix triangulations, join drive intersections

**Tools**
- Locate scans from GPS
- Design points, lines and polygons, create contours and section lines
- Topographic, minimum separation and range filtering
- Apply colour schemes to highlight areas of interest
Flexible site survey
Mobile laser scanning improves efficiency of survey tasks and reporting of results.

I-Site Drive
I-Site Drive allows the continuous acquisition of laser scan data, using an I-Site 8820, 8810 or 8200 laser scanner mounted on a moving vehicle. Mining, quarry and civil operations can quickly measure stockpiles for reporting and comparing daily or weekly volumes.

The Inertial Navigation System (INS) installed in the I-Site Drive vehicle mount allows the laser scanner to acquire data continuously and automatically assigns real world coordinates to the data, ready for processing.

Captured data can be viewed on the tablet PC in real time. Easily identify missing scenes and re-survey the area while in the field.

I-Site Vehicle System
I-Site laser scanners can also be mounted and transported on common site vehicles using the I-Site vehicle system. More efficient use of time and resources, faster setup and greater coverage over undulating ground combine to increase survey productivity and safety.
**Decision support solutions**
Laser scan data applied to tracking surface movement and design conformance.

### Maptek Sentry
Maptek Sentry is a 3D visualisation and trend analysis system for better understanding surface movements.

Sentry combines I-Site laser scan data with sophisticated software to gather accurate data and identify trends for deploying radar systems.

Sentry is quick and simple to setup and operate, allowing experts to use their intuition to monitor surface movements over time.

### Maptek PerfectDig
Maptek PerfectDig is intuitive software for evaluating and supporting design conformance. It takes 3D digital image data and compares it with a mine design to generate scenes that clearly show areas of conformance, underdig and overdig.

PerfectDig Field works with ‘real time’ data from an I-Site 8800, 8810 or 8820 laser scanner. A ruggedised tablet has an easy to use interface for immediately comparing mining to design in the field and creating conformance reports.

PerfectDig Office uses existing I-Site laser scan or surface data and compares this with the mine design on a desktop computer. Users can create conformance reports with an easy-to-use wizard interface and share results online.
Survey Solutions

1. I-Site 8820 laser scanner - end of month survey for updating pit surfaces
2. I-Site 8820 laser scanner - geological mapping and geotechnical analysis
3. PerfectDig - design conformance reports shared in near real time
4. I-Site 8200 laser scanner - underground drive and stope survey
5. I-Site 8200/I-Site 8820 laser scanner - accurate stockpile volumetrics
6. I-Site Drive - continuous and stop-go scanning for stockpile and haul road survey
7. Sentry - track surface movement to identify trends for closer monitoring
8. I-Site Studio - point cloud processing, modelling and analysis software
Industry Leading Global Solutions

Maptek is the leading global provider of innovative software, hardware and services for the mining industry. More than 1800 customers in 75 countries rely on Maptek.

Our solutions help reduce operating costs and improve performance, productivity and profitability. Maptek provides expert consulting, training and support services to ensure you get the most from your investment in our products.