



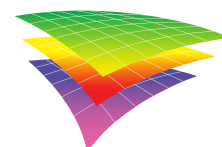
Geospatial Technologies for Extractive Industries and Geotechnical Engineering

Overview

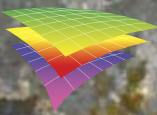
Our geospatial surveys, using our expertise in modern spatial technologies (lidar, terrestrial and UAV-based photogrammetry), are carefully designed to fulfil the requirements of your commercial applications.

High spatial accuracy is provided by our bespoke GNSS Ground Control Point units.

Our 3D data are rapidly acquired, processed and analysed to meet your specific needs, at a highly competitive price.



**Geospatial
Research
Limited**



Geospatial Technologies

Our geospatial methodologies are a rapid, low-cost, safer route to high-resolution spatially accurate 3D data

Digital Elevation & Orthomosaic Applications

We use UAV photogrammetry to produce tiled orthomosaics, DSMs and DTMs in grid format (.asc, .tif, .dwg etc.) ... ideal inputs for:

- Site & mine planning & blasting design.
- Change detection (repeat surveying).
- Slope stability analysis & slope modelling.
- Stockpile volume calculation.

Geotechnical Discontinuity Applications

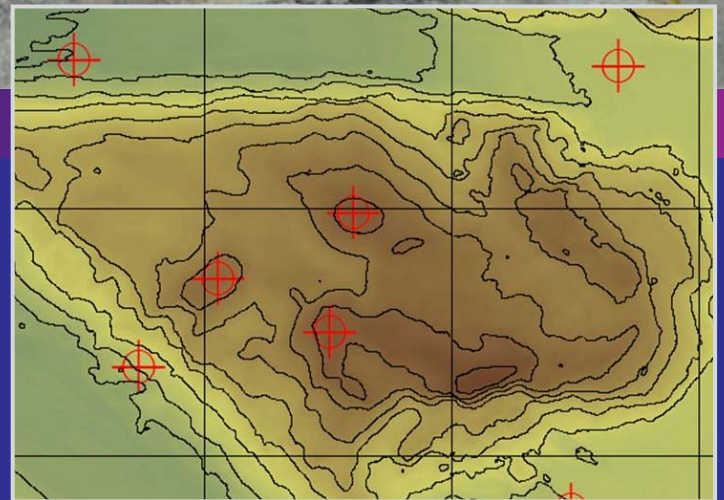
Our 3D discontinuity analysis uses our in-house automated software (originally developed by our fracture experts for our oil & gas clients). Spatially accurate discontinuity datasets from hard-rock faces (e.g. quarries and cuttings) provide data-rich inputs for:

- Kinematic analysis of hard-rock slope stability: wedge, plane block and failure etc.
- Probability analysis using statistics of multiple fracture sets.

Discontinuity Parameters tailored for:

- Geotechnical modelling, via DFN (Discrete Fracture Network) generation.
- Rock Mass Characterisation.

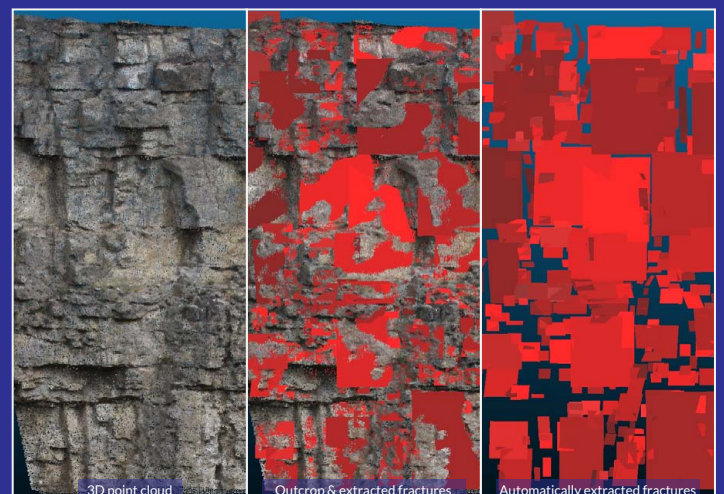
3D products can be easily imported into GIS or CAD software. Data quality and spatial precision are calculated and reported with all deliverables.



Discontinuity parameters

Parameters that we derived from our 3D discontinuity models combined with traditional field methods include:

- Fracture set definitions and angular dispersion (stereonet analysis).
- Equivalent fracture radius distribution.
- Fracture intensity (volumetric intensity value).
- Fracture spatial location distribution.
- Fracture terminations.
- Fracture spacing & clustering; RQD.
- Fracture morphology and roughness.



Discuss your project needs

david@geospatial-research.com

+44 191 384 1759