

## Virtual Reality Geological Studio (VRGS)

### BACKGROUND

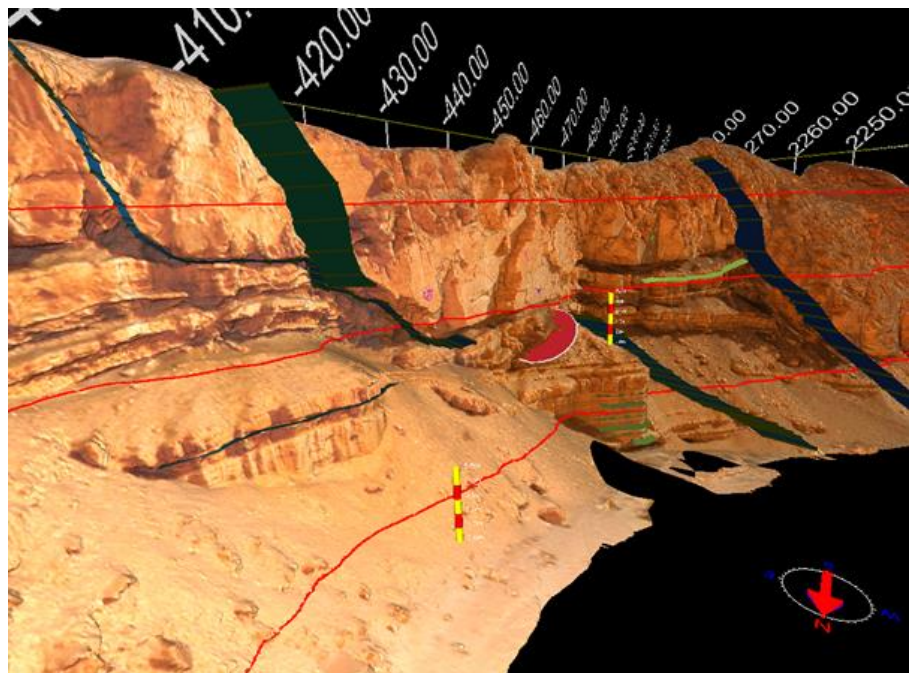
Digital outcrop models are three-dimensional models of geological exposures created using technologies such as laser scanning and digital photogrammetry. These 3D models allow accurate representations of the geological exposure to be taken back into the office for further interpretation and analysis, thus making more efficient use of time in the field. VRGS provides the geological toolkit to process, analyse and interpret these data.

Digital outcrop data have applications in petroleum, mining and engineering geology, and indeed in any field where statistical information from geological exposures may be of use.

### THE TECHNOLOGY

Virtual Reality Geological Studio (VRGS) is a 3D data visualisation and interpretation software tool, developed by Dr. David Hodgetts of the University of Manchester, for geoscientists working with 3D digital outcrop models (DOM).

Focusing mainly on point cloud and triangulated mesh data, multiple attributes can be calculated based on surface geometry and used to assist interpretation. Input data can be from LiDAR, Structure from Motion (SfM), DEM or any other point cloud type dataset. A wide variety of input data types are supported (including common formats such as PLY and OBJ), and further types can be added on request.



Interpretation tools include structural measurement (dip/azimuth) of faults and beds, polylines and geobodies, with associated analysis of these data types with stereonet and statistical output. Interpretation data can be exported to ascii text files if necessary.

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## KEY BENEFITS

- Import, cleaning and attribute analysis of point cloud and mesh data
- Cleaning, refinement and processing of point cloud and mesh data
- Import from broad spectrum of data formats & additional formats added on request
- Interpretation and analysis of structural information such as faults and fractures
- Mapping of geobodies and integration of sedimentological data
- Automated tools for rapid data extraction
- Addition to scale bars and other annotations to models
- Create animations and fly-throughs via built in movie tools
- Stereonet and histogram analysis of data
- Image draping and projective texturing
- Output of data to simple text files
- Support for Oculus Rift Headsets

## APPLICATIONS

- Petroleum geology: extracting geostatistics from outcrop analogues to improve subsurface reservoir modelling
- Engineering geology: fracture and slope stability studies
- Mining geology: mapping and analysis of mine surveys
- Education: bringing outcrop data into the class room for pre/post fieldtrip analysis
- Training and virtual fieldtrips: visualize and understand outcrops when otherwise unable to visit

## INTELLECTUAL PROPERTY

VRGS Software is Copyright © 2004-2016 The University of Manchester

## OPPORTUNITY

Commercial licences for VRGS software can be obtained here:

[http://www.click2go.umip.com/i/s\\_w/vrgs.html](http://www.click2go.umip.com/i/s_w/vrgs.html)

Further technical information can be found at [www.vrgeoscience.com](http://www.vrgeoscience.com)

## CONTACT

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