



## **Fracture Systems – Digital Field Data Capture**

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Fracture systems play a key role in subsurface resources and developments including groundwater and nuclear waste repositories. There is increasing recognition that there is a need to record and quantify fracture systems to better understand the potential risks and opportunities. With the advent of smart phones and digital field geology there have been numerous systems designed for field data collection. Digital field data collection allows for rapid data collection and interpretations. However, many of the current systems have principally been designed to cover the full range of field mapping and data needs, making them large and complex, plus many do not offer the tools necessary for the collection of fracture specific data.

A new multiplatform data recording app has been developed for the collection of field data on faults and joint/fracture systems and a relational database designed for storage and retrieval. The app has been developed to collect fault data and joint/fracture data based on an open source platform. Data is captured in a form-based approach including validity checks to ensure data is collected systematically. In addition to typical structural data collection, the International Society of Rock Mechanics' (ISRM) "Suggested Methods for the Quantitative Description of Discontinuities in Rock Masses" is included allowing for industry standards to be followed and opening up the tools to industry as well as research.

All data is uploaded automatically to a secure server and users can view their data and open access data as required. Users can decide if the data they produce should remain private or be open access. A series of automatic reports can be produced and/or the data downloaded. The database will hold a national archive and data retrieval will be made through a web interface.