The British Geological Survey (BGS) provides specialist services in the development of digital workflows for data capture, storage, manipulation, delivery and visualisation. Our clients include research institutes, UK and international governments, geological surveys across the world, the hydrocarbons sector, mining companies and heritage management bodies. Based on a set of modular, reusable tools and our 25 years’ experience as a global leader in geoinformatics, BGS can provide bespoke digital data workflow solutions tailored to individual customer needs.

**Data capture**
The BGS has more than 15 years’ experience in developing and deploying field-based digital data-capture systems. Our BGS SIGMA software (www.bgs.ac.uk/research/sigma) allows for the collection of point-based field locations with linkages to all observations made at that location such as photographs, sketches, and observations such as structural measurements or monument condition. The system also allows for the collection of digital line work with the ability to generate polygons as required. This data-capture system is developed on top of ESRI’s ArcGIS software with a relational database built in MS Access. BGS’s SIGMA data capture functionality can also be provided using alternative software solutions, including open-source technologies, as required. A mobile app will further extend the options for digital data capture across many scientific and heritage themes.

**Data storage**
BGS has been providing systems for the storage and management of digital data for over 20 years. We have a ready-made data model, covering the most common geoscience data objects, which can be easily modified and extended to meet customer needs. Implementation can be carried out in a range of commercial and open-source database software. Examples include Oracle, PostgreSQL and MySQL. Our experience in the cataloguing, indexing and scanning of analogue data enables us to provide expert advice on dealing with legacy data.
Data manipulation
BGS provides a range of data conversion, transformation and publishing tools and techniques. These ensure the various components of the digital data workflow are fully integrated and that data flows efficiently between them.

Data delivery
BGS produces GIS applications, web applications, mobile apps and interoperable, standards-based web services that can deliver data as required. We have been developing interactive web map viewers, making spatial data publically available via the web for over 15 years. GeoIndex (www.bgs.ac.uk/geoindex) – a map-based index to our data holdings is an example. We have experience in making our geological spatial datasets available in open, standards-based formats via web services (e.g. OGC standards: WMS, WFS, WCS, CSW) that can be combined with data from other sources in geoportal applications and within GIS software. Over the last 10 years, BGS has played a central role in the development of technical standards and data specifications underpinning INSPIRE. We specialise in developing mobile apps that deliver maps and spatial information to a range of tablets and smartphones. Our iGeology app (www.bgs.ac.uk/igeology), downloaded more than 280000 times, allows users to interrogate the geological map of Britain whenever they need it and wherever they are.

Data visualisation
The BGS is a world leader in the application and development of geoscience visualisation. GeoVisionary (www.virtalis.com/geovisionary), developed in partnership with Virtalis Ltd, is our world-leading geoscientific information system for visualisation and interpretation of geoscience datasets in a virtual reality environment. BGS has also created software that connects GIS with GeoVisionary.

Our 3D mobile app (www.bgs.ac.uk/iGeology/3d) offers innovative techniques for interactive delivery and visualisation of data, enabling users to fly around, exploring the landscape in three dimensions above and below the surface. In augmented reality mode, it superimposes maps on to the device’s camera view, painting the map onto the user’s view of their surroundings.

For more information please contact:

Enquiries
British Geological Survey, Keyworth, Nottingham NG12 5GG

tel: 0115 936 3143   email: enquiries@bgs.ac.uk