

# The Digital Data Workflow at the British Geological Survey

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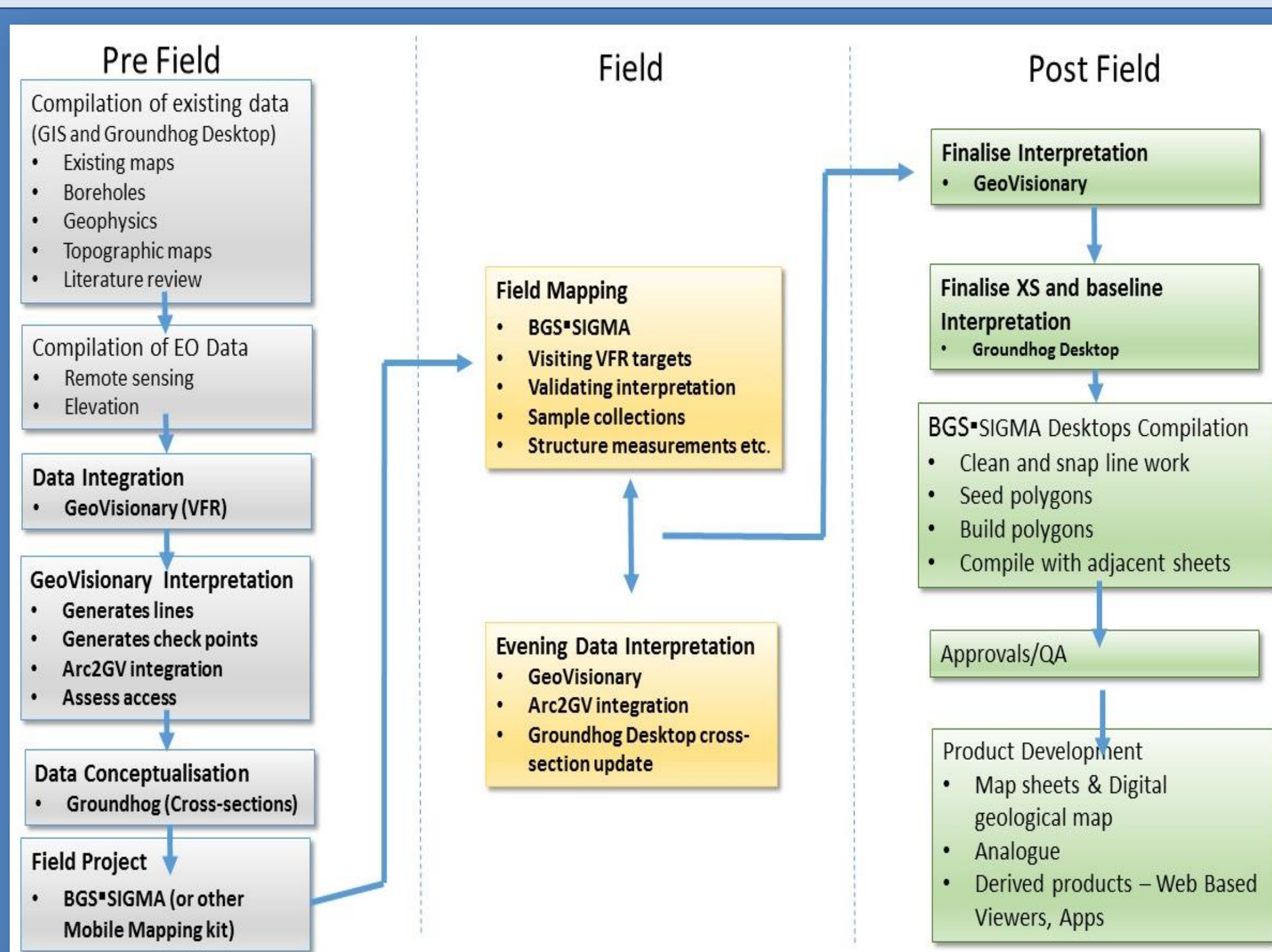
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## Abstract

The Digital Data Workflow at the British Geological Survey (BGS) is the concept of incorporating the collection, production and storage of digital geological data into one single workflow made up of individual components. The BGS has developed several software solutions and methodologies over the course of the past two decades and our software helps geoscientists to utilise the vast collection of baseline datasets held by BGS to generate geological models that can help analyse, visualise and communicate geoscience data. The BGS sees the delivery of geological models in a multi-platform environment as an important addition to its 2D paper and GIS products giving stakeholders better access to data via the web as well as bespoke visualisation systems. As the modelling community grows and technology advances, ground models are becoming more sophisticated and require increasing detail of the geological setting. This poster will explain the Digital Data Workflow, software BGS has developed, and examples of the workflow system in practise.

## 1) What is a Digital Data Workflow?

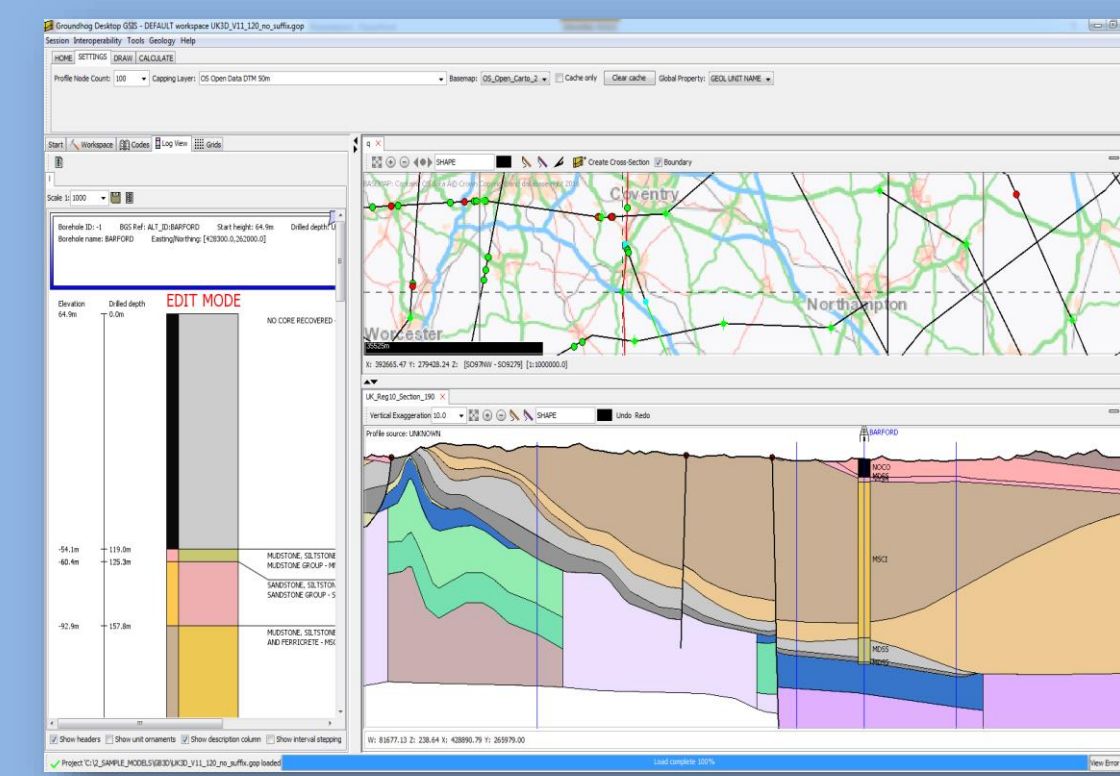
The Digital Data Workflow (DDW) at the British Geological Survey (BGS) is a workflow system whereby geological field data is collected, transferred, stored, quality checked, and interpreted. Thus enabling the visualisation of geoscience data and the delivery of products to external stakeholders (see figure<sup>1</sup> to the right). At all stages, an iterative process of data checking and combining with current knowledge, ensures that the data is fit for purpose at the scale intended.



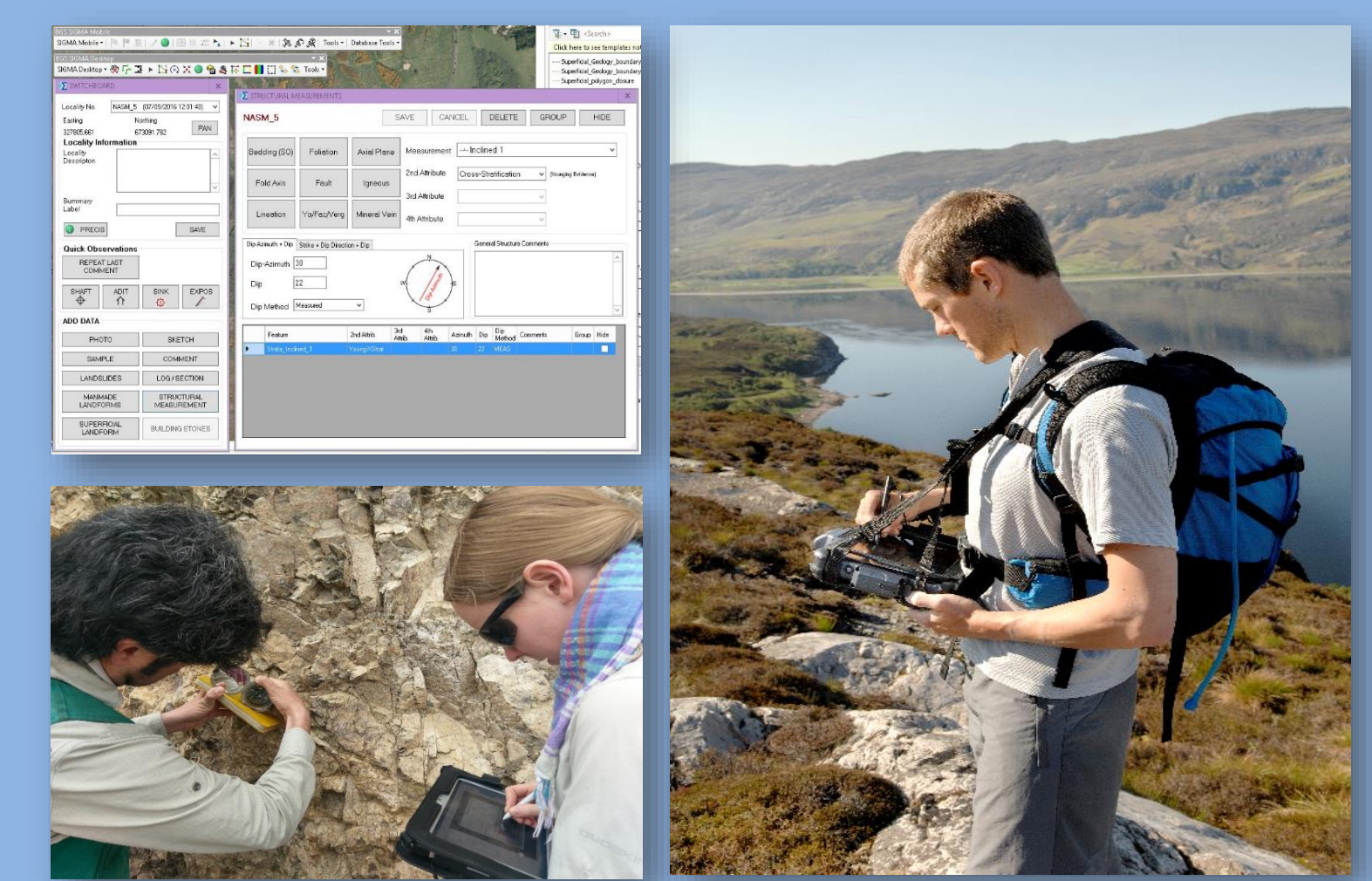
The Digital Data Workflow brings together ideas from different sections of the BGS into one concept of a smooth flow of data. It incorporates ideas from mapping, modelling and visualisation together to provide the user or project team, a time-saving, low-cost, efficient way of surveying a given project area.

## 2) What BGS software is available?

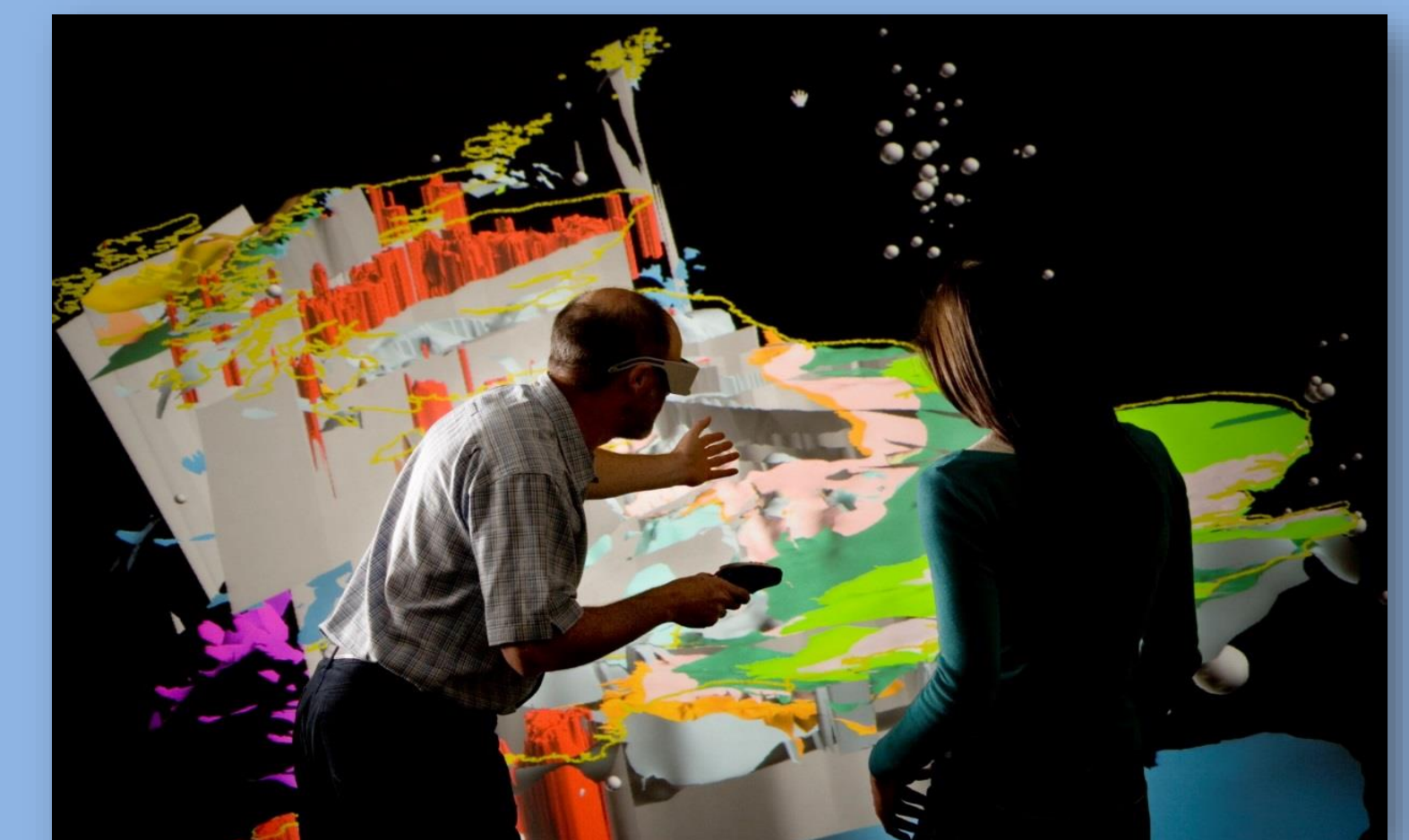
**BGS-SIGMA** is an integrated toolkit for digital geological mapping, which enables the assembly, capture, interrogation and visualisation of geological information as well as the delivery of digital products and services.



**BGS Groundhog Desktop** is free-to-use software. It can be used to digitize geological cross-sections, and display and edit borehole logs. It can support a range of baseline data such as geo-registered images and digital elevation models.



**GeoVisionary** is the result of a collaboration between Virtualis Ltd and the British Geological Survey. It is a world leading geoscientific information system for visualisation and interpretation of geoscience datasets in a virtual reality environment. It was first developed to enable BGS geologists to undertake virtual field reconnaissance.



Spatially related data can be visualised within the system, including remote sensed images such as Landsat or aerial photography.

## 3) Where have the BGS implemented a Digital Data Workflow?

### Sierra Leone

In 2015 a BGS/DFID scoping study was set up to strengthen state institutions in natural resource management. This had a focus on the mineral extraction industries and involved the National Minerals Agency and the Petroleum Directorate, in addition to the Geology department at Fourah Bay College.



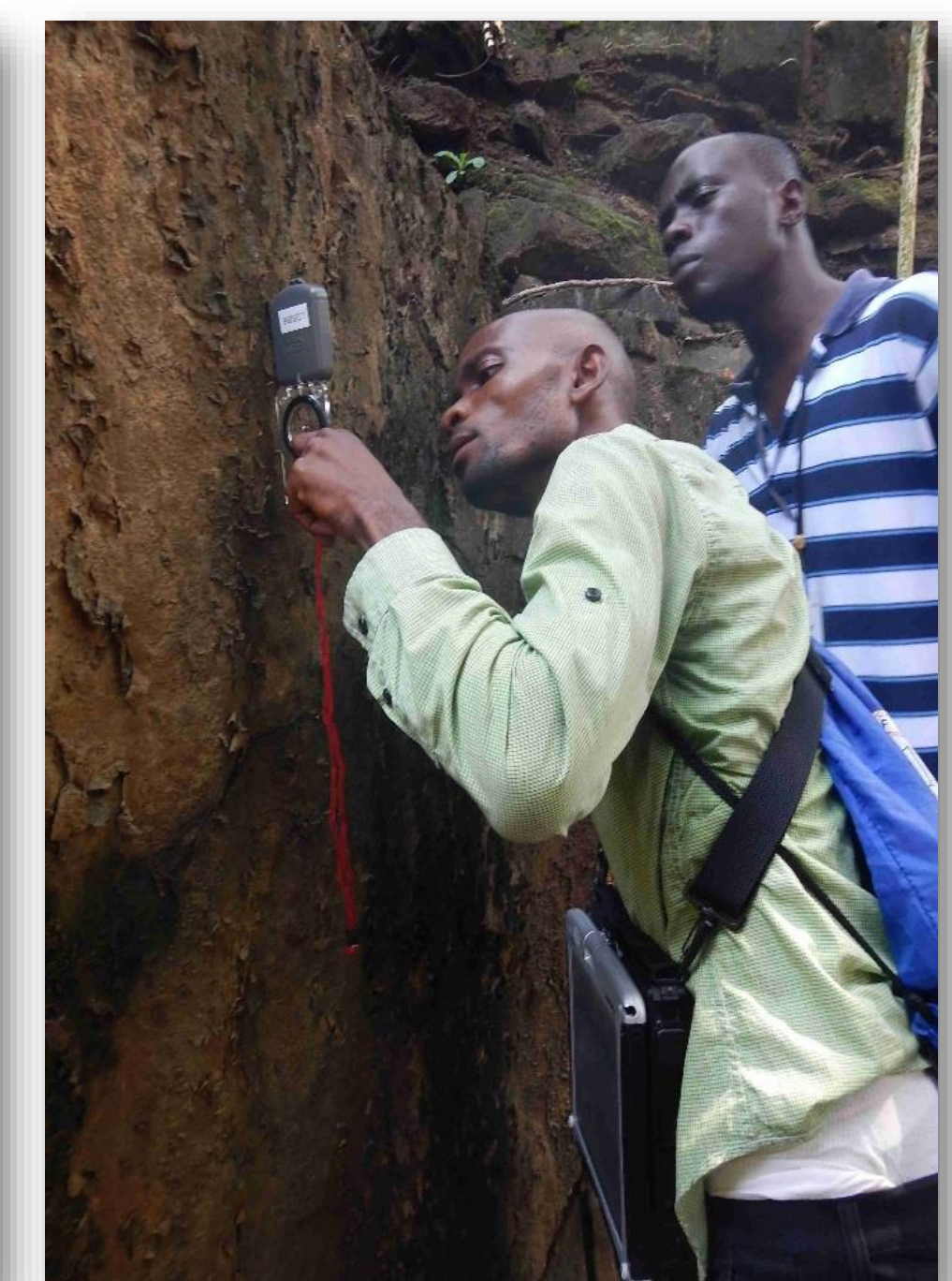
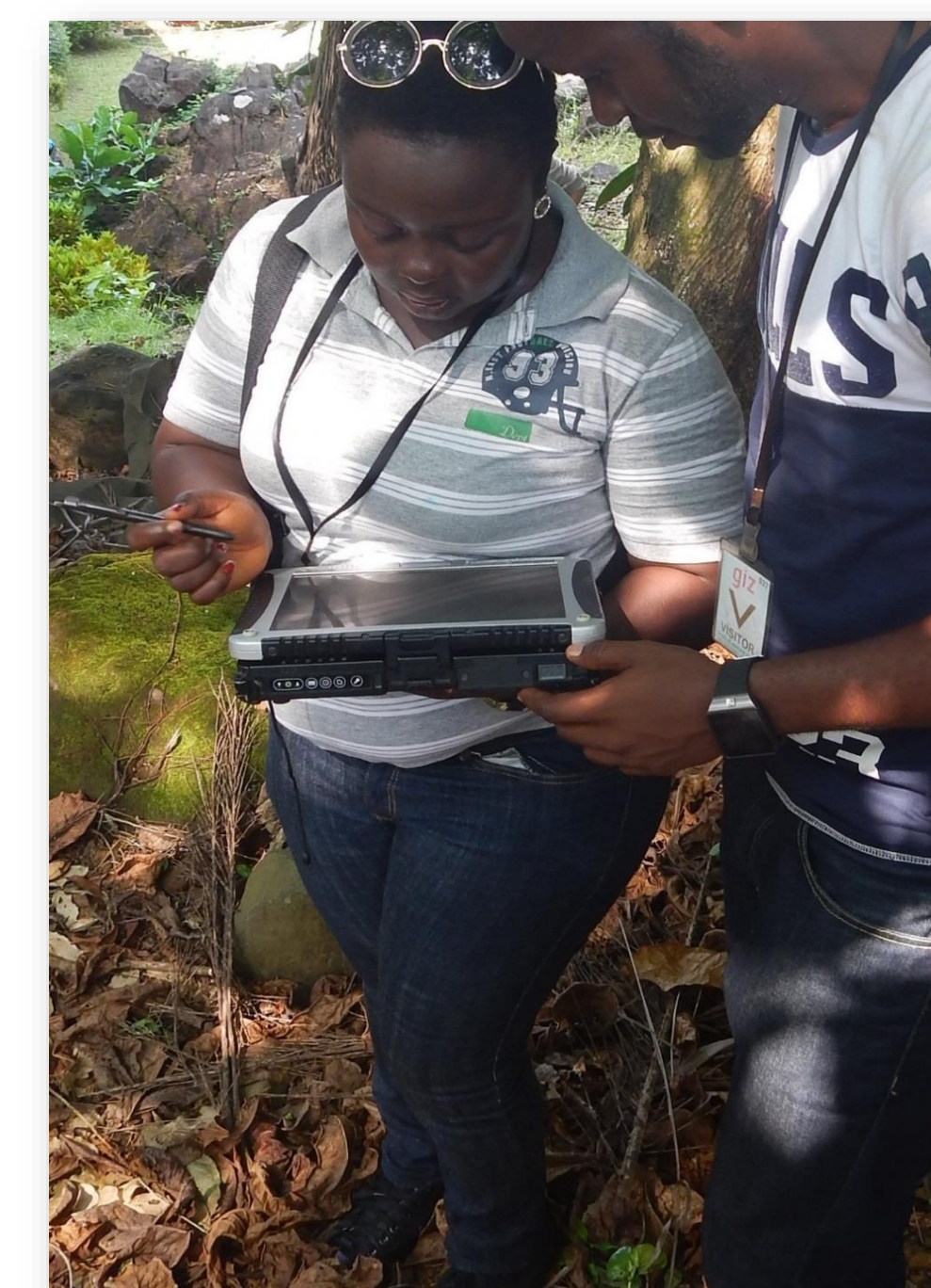
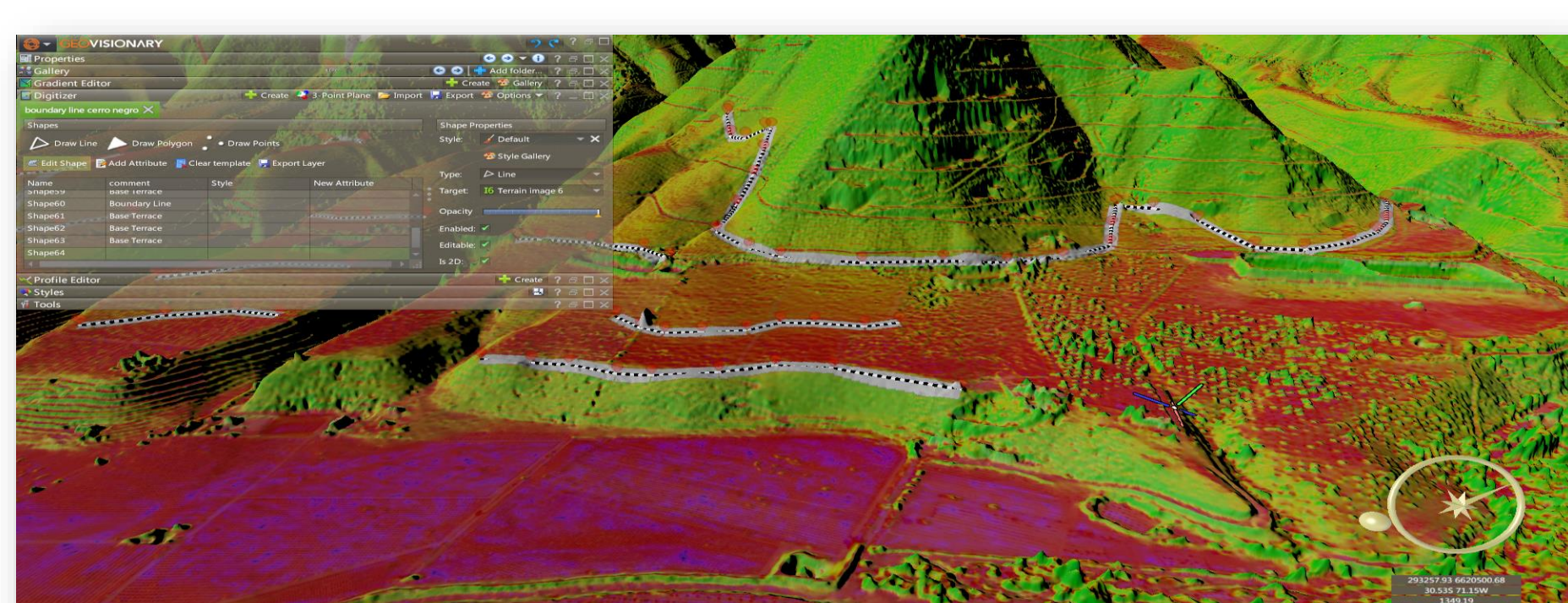
A series of visits followed, which included technical training and knowledge exchange in geology/petrography, field skills, office-based mapping software and developing a suite of databases and management systems. BGS are still visiting Sierra Leone to continue this training.

### Liberia

With funding from the UK Government (DFID), the BGS provided technical assistance to staff of the Liberian Geological Survey (LGS) so that it is better equipped to manage the country's land-based mineral resources. A key activity has been the provision of training in the use of techniques for field data collection. Training focused on delivering skills in digital field data capture, rock and sample description, heavy mineral identification and analysis, along with some of the field orientation skills required by geologists. LGS staff enjoyed the opportunity to map bedrock, made ground and beach deposits in Monrovia while undertaking the course.

### Chile

In 2017, geologists from the Chilean Geological Survey visited the UK to learn the skills developed by BGS. This included using GeoVisionary (VFR) and Groundhog to get a better understanding of the geology. BGS-SIGMA was taken to Chile and under the guidance of BGS geologists, a field survey was completed utilising the standards of the Workflow.



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