

Digital Mapping with the British Geological Survey

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BGS - SIGMA

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

The system is the culmination of 15 years work by BGS IT developers and geologists and is comprised of two customised ESRI ArcMap toolbars: BGS-SIGMA*mobile* and BGS-SIGMA*desktop* accessing a full relational database.

BGS-SIGMA*mobile*

SIGMA*mobile* was designed to be used in the field, using ruggedized tablet PC's, for bedrock and superficial mapping, as well as landslide data collection, geodiversity audits and building stones projects. It has the following key features:

- A Digital Field Notebook for placing Field Observation points on the map and adding detailed field data.
- Ability to write digital notes and comments on the map.
- Custom designed data entry forms to address differing types of work.
- Allows the drawing of fully symbolised digital geological linework as well as the placing of polygon seeds.
- Custom built reporting tools.

BGS-SIGMA*desktop*

SIGMA*desktop* was designed to be used both for pre-fieldwork scoping studies as well as post-fieldwork office or field based data analysis and map compilation. The ultimate aim of the software being the production of the final clean copy map.

It has the following key features:

- Tools for automatic data gathering for specific areas to assist with pre-fieldwork assessment.
- Tools to assist with data analysis, map compilation and decision making.
- Functionality for smoothing and editing linework, checking topology and building polygons.

BGS-SIGMA External Release

BGS-SIGMA was first released as a free download from the BGS website in 2009 and the most recent version of the system, BGS-SIGMAv2015, was released on the 30th September 2016. The system is being successfully used by geological surveys e.g. Norway and Tanzania; universities including Leicester, Keele and Kyoto and by organisations such as Vale Mining in Brazil.

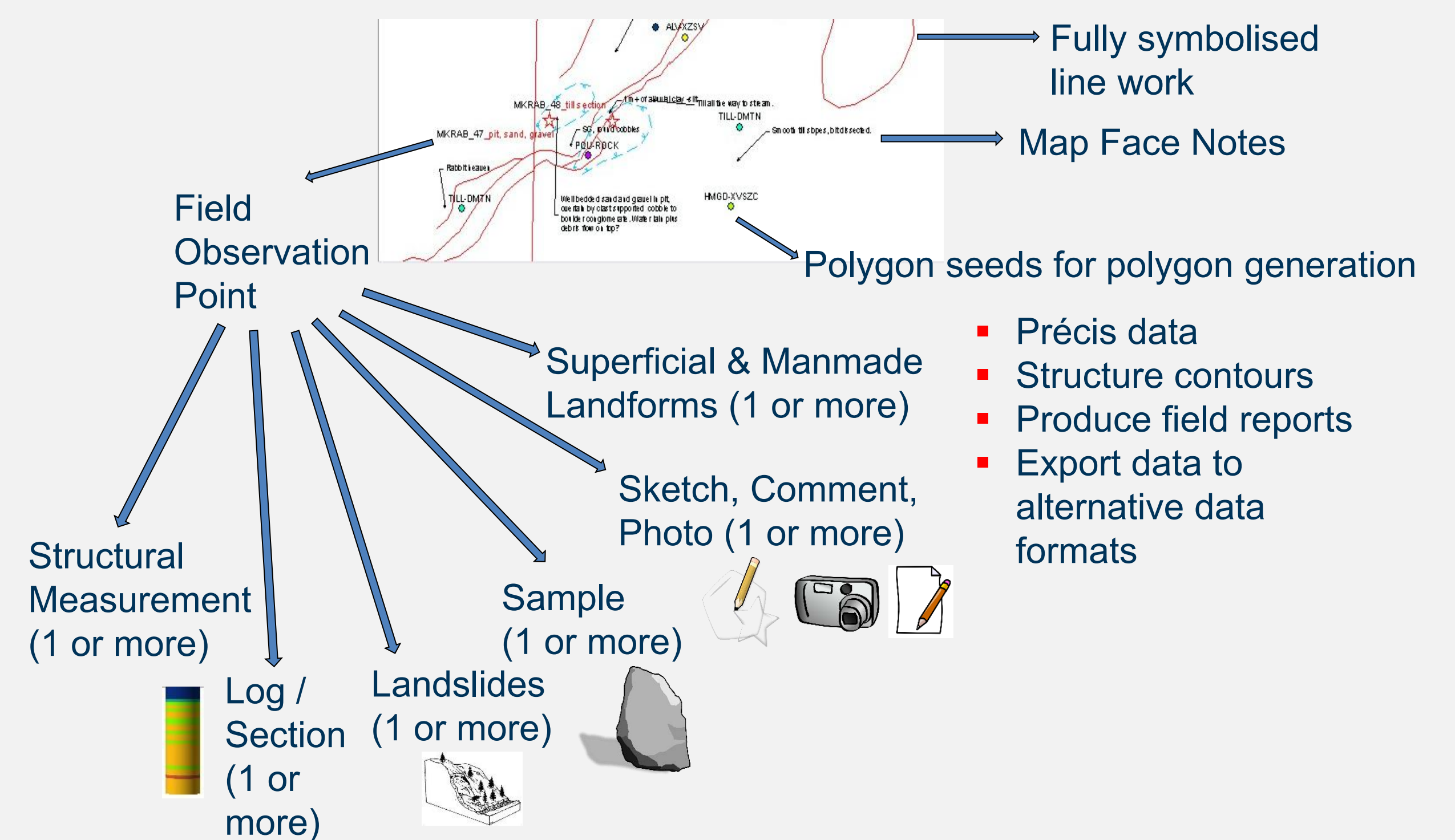
To download a copy of the software please visit:-

<http://www.bgs.ac.uk/research/sigma/home.html>



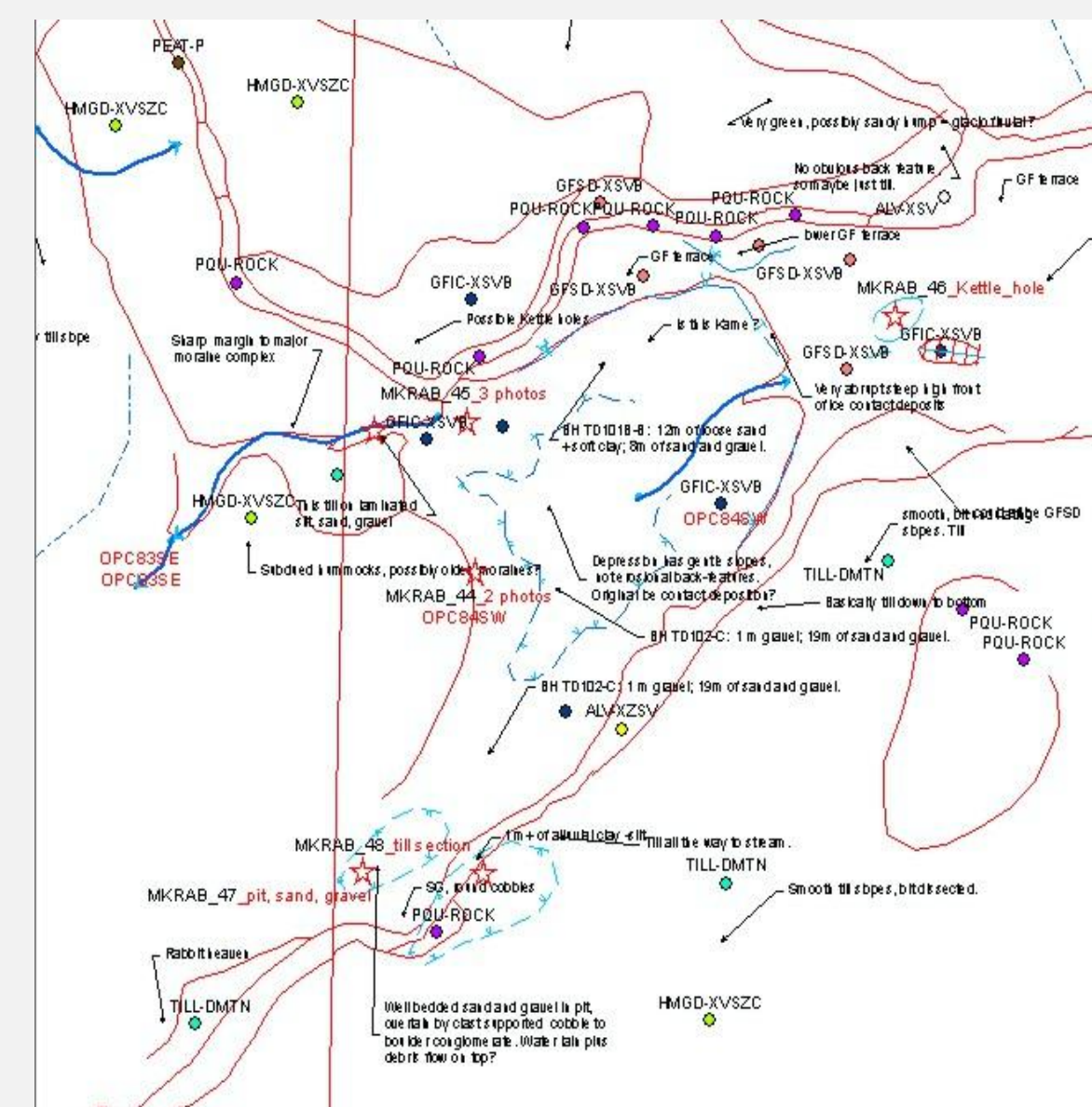
BGS-SIGMA is used by BGS geologists in the UK and overseas for all types of geological mapping

BGS-SIGMA*mobile* Field Data Collection

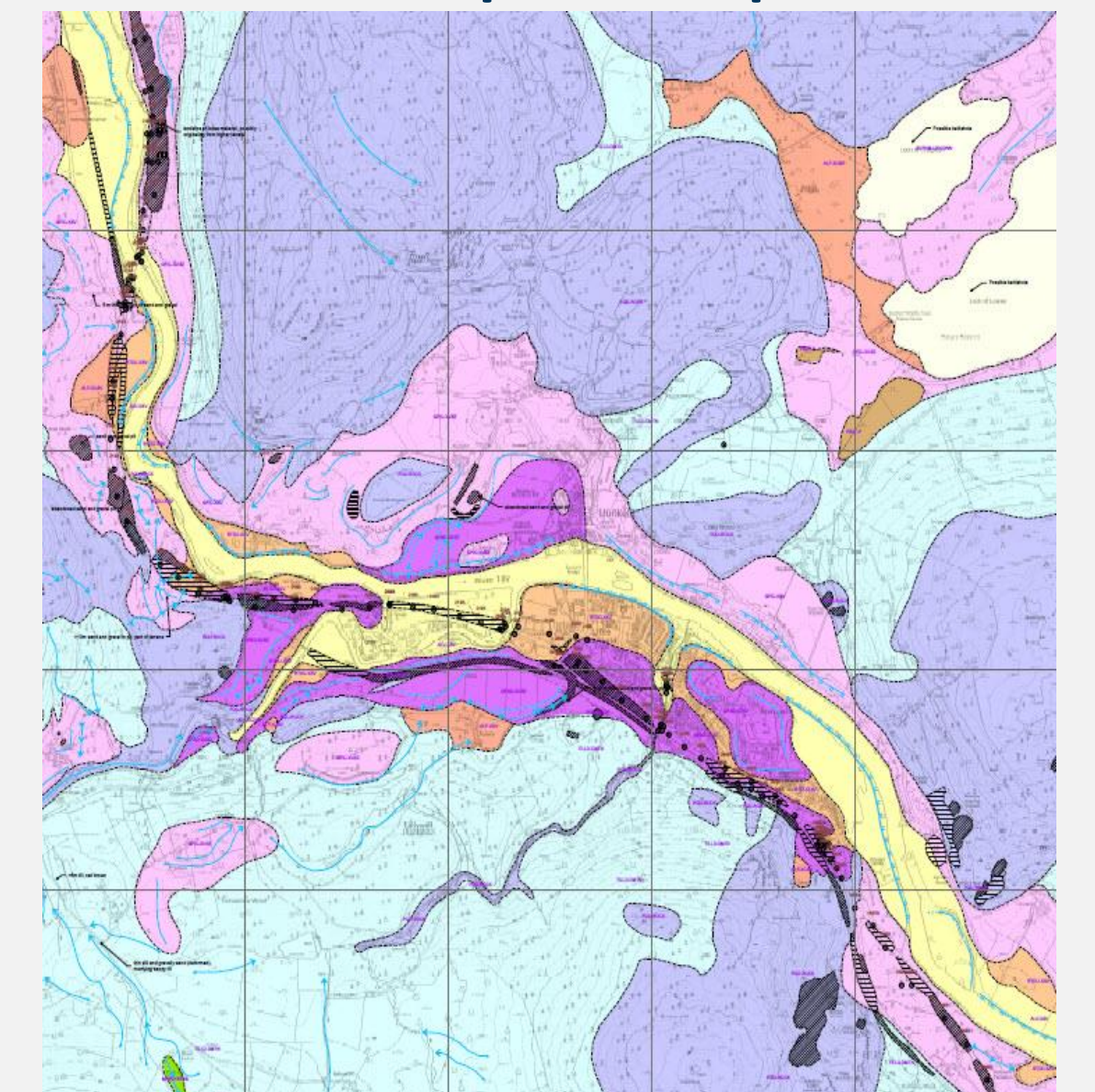


BGS-SIGMA*desktop*

From field data ...



To final map compilation



BGS-SIGMA for Heritage Management

Historic Environment Scotland (HES) is the public body responsible for the investigation, care and promotion of Scotland's historic environment. The HES conservation directorate is responsible for the conservation, monitoring and reporting on the 336 properties in the care of Scottish Ministers. In 2015 they approached BGS to develop a tool, based on BGS-SIGMA, that would refine their condition monitoring process and enable them to carry out digital condition surveys. This was achieved through the following work:

- Defining a HES specific workflow.
- Addition of unique GIS layers, attributes and dictionaries.
- Modifications to the existing BGS forms to accommodate multiple HES requirements.
- Implementation of new custom forms.
- Reporting tool to output HES data.

Successful field trials of HES-SIGMA were held in May / June 2016 and the system is currently being rolled out across HES properties on a phased basis.

