The British Geological Survey (BGS) operates eight geomagnetic observatories around the world. The data from these observatories are transmitted to Edinburgh, where they are processed and subjected to rigorous quality control procedures. The data are then disseminated to the community over the internet via a number of channels, including the Edinburgh INTERMAGNET Geomagnetic Information Node (GIN), and BGS's own public website. Increasing demand for real-time or near-real-time observatory data means there is a requirement for institutes to have a robust and scalable data-processing architecture capable of delivering geomagnetic data products over the internet in a variety of commonly-used formats.

BGS have spent the past year developing a new software system for the processing and distribution of our geomagnetic observatory data. The system provides a uniform interface for data access, available to any software capable of making HTTP requests, e.g. web-browsers, command-line tools, and web-enabled software packages such as MATLAB and R. The system provides data in common formats such as IAGA-2002, WDC, NetCDF, XML and JSON, and enables third-parties to build applications which make use of the data in near-real-time, or to integrate our data into their own systems.

We use the same web-service internally to access our observatory data, and have built a browser-based data exploration and quality control tool which we use to support daily observatory operations.