



## The role of digital sample information within the digital geoscience infrastructure: a pragmatic approach

Michael Howe

National Geological Repository, British Geological Survey, United Kingdom (mhowe@bgs.ac.uk)

Much of the digital geological information on the composition, properties and dynamics of the subsurface is based ultimately on physical samples, many of which are archived to provide a basis for the information. Online metadata catalogues of these collections have now been available for many years. Many of these are institutional and tightly focussed, with UK examples including the British Geological Survey's (BGS) palaeontological samples database, PalaeoSaurus (<http://www.bgs.ac.uk/palaeosaurus/>), and mineralogical and petrological sample database, Britrocks (<http://www.bgs.ac.uk/data/britrocks.html>) . There are now a growing number of international sample metadata databases, including The Palaeobiology Database (<http://paleobiodb.org/>) and SESAR, the IGSN (International Geo Sample Number) database (<http://www.geosamples.org/catalogsearch/> ).

More recently the emphasis has moved beyond metadata (locality, identification, age, citations, etc) to digital imagery, with the intention of providing the user with at least enough information to determine whether viewing the sample would be worthwhile. Recent BGS examples include high resolution (e.g. 7216 x 5412 pixel) hydrocarbon well core images (<http://www.bgs.ac.uk/data/offshoreWells/wells.cfc?method=searchWells>) , high resolution rock thin section images (e.g. <http://www.largeimages.bgs.ac.uk/iip/britrocks.html?id=290000/291739> ) and building stone images (<http://geoscenic.bgs.ac.uk/asset-bank/action/browseItems?categoryId=1547&categoryTypeId=1> ) . This has been developed further with high resolution stereo images. The Jisc funded GB3D type fossils online project delivers these as red-cyan anaglyphs (<http://www.3d-fossils.ac.uk/>). More innovatively, the GB3D type fossils project has laser scanned several thousand type fossils and the resulting 3d-digital models are now being delivered through the online portal. Importantly, this project also represents collaboration between the BGS, Oxford and Cambridge Universities, the National Museums of Wales, and numerous other national, local and regional museums.

The lack of currently accepted international standards and infrastructures for the delivery of high resolution images and 3d-digital models has necessitated the BGS in developing or selecting its own. Most high resolution images have been delivered using the JPEG 2000 format because of its quality and speed. Digital models have been made available in both .PLY and .OBJ format because of their respective efficient file size, and flexibility. Consideration must now be given to European and international standards and infrastructures for the delivery of high resolution images and 3d-digital models.