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"Only one half of your house is likely to fall down a hole, Mr Brown"

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Text of Abstract

Mr Brown used the new Geological Survey Internet GIS service to get the answer to his question about the stability of the land his house was built on. Naturally, he was concerned to find that it was unstable; but why only half of it? He asked for an explanation and the Geological Survey looked at their data more closely. When he was told it was because his house was, unfortunately, situated precisely on the boundary of 2 geological maps, each with a different interpretation of the geology and thus the geological hazard, it did not make him a happy man, or a lifelong fan of Geological Surveys. Mr Brown and his house may be fictitious, but the problem is very real – consistency, and thus standards, matter. As more Geological Surveys develop digital products that are intended for the non-geologist, the problem is a very serious one.

Standards and (in)consistency in digital geological systems may be the subject of intense theoretical debate in scientific circles, but they become much more important when that science is used in the real world. Consider the consequences of: inconsistency in mapping alluvial or solifluxion deposits (irritating superficial dirt to some geologists!); or failing to agree on lithostratigraphical classification; or having no organisation-wide rock-type or grain-size scheme. We build systems to help society that depend on these fundamental parameters – systems for predicting subsidence and instability, systems for identifying radon gas risk, and susceptibility to groundwater pollution. Because of that dependence these systems may be equally inconsistent

and fatally flawed. In these cases the consequence is not just a storm in an academic teacup, but the potential loss of credibility and reputation for a Geological Survey and potentially expensive legal action against it.

Of course, some of this inconsistency is unavoidable, inevitable - and positive. Geology is a dynamic science, theories evolve, new data becomes available, and improved interpretations are made. But some of the inconsistency is inexcusable - and negative. Geological Surveys are supposed to be long-term, strategic and national survey organisations, not a hotchpotch and chaotic collection of short-term, individual, research projects.

What actions can we take to address the problem? Invest more resources in establishing and enforcing standard terms and classification systems? Develop and adopt consistent working practices? Operate more in teams (rather than as isolated individuals)? Supervise work and control quality more proactively and rigorously?

This presentation will discuss the inconsistencies that have been identified in developing high resolution national digital geological map databases in Great Britain, the problems that these have created for user-focused GIS delivery systems, and the technical and cultural standards and solutions that are being pursued.

If only half of Mr Brown's house is predicted to fall down a hole, then it should not be because he lives on an arbitrary map edge, or a line of unresolved agreement between geologists.