Experiences with implementing interoperable WFS 2.0 services using open source software – a UK INSPIRE Issues Paper

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My colleague John Laxton in his contribution Linking Geospatial Data - a British Geological Survey Position Paper, emphasises that vocabularies as lists or sets of linked concepts are a very important part of making linked data usefully useable. Indeed it has been said that 'linked data is the semantic web without the semantics' and the fundamental aim of linking data must be to enable it to be machine manipulated but used appropriately and appropriately in combination with other data. These aims can only be fully achieved when the data is presented with the highest level of interoperability possible and at the moment for spatial data that should be achievable using structured application schemas based on the ISO GML 3.2.1 (ISO 19136) standard and it's associated transfer and query standards such as ISO/OGC WFS 2.0 (ISO 19142) and OGC Filter Encoding Standard 2.0. Of course these are schemas and standards that the INSPIRE directive has defined should be followed.

Open source and free software in the web services domain usually aims to follow and implement as much as they can these ISO/OGC standards.

Much work and development has gone into trying to make interoperable web services for INSPIRE but there have been many issues retarding progress to the holy grail of 'full' and useful interoperability along the way. Issues to be shared and discussed using the examples of MapServer and in particular Geoserver (www.geoserver.org), will include different interpretation and hence implementation of the standards including different approaches to 'mandatory' and 'optional' standards parts defined. Lack of understanding of the implications of parts of the standards. Lack of fitness for purpose of described features in the standards including using them together to work to produce the desired result. Sometimes lack of understanding of what the standards are trying to achieve as many topics of interoperability are simply very difficult to fully understand even for many informatics specialists. Often implementaion of parts of these standards exposes internal machine data manipulation inefficiencies that may never be optimisible to achieve INSPIRE performance criteria.

The development of a working INSPIRE WFS with a complex property GML 3.2.1 application schema will be used to highlight these issues and show how they might be overcome.