Geophysical Research Abstracts
Vol. 19, EGU2017-13633, 2017
EGU General Assembly 2017

Virtual Research Environments for Natural Hazard Modelling

Hazel Napier (1) and Tim Aldridge (2)

(1) NERC, British Geological Survey, Nottingham, United Kingdom (hjb@bgs.ac.uk), (2) HSE, Health and Safety Laboratory, Buxton, United Kingdom (timothy.aldridge@hsl.gsi.gov.uk)

The Natural Hazards Partnership (NHP) is a group of 17 collaborating public sector organisations providing a mechanism for co-ordinated advice to government and agencies responsible for civil contingency and emergency response during natural hazard events. The NHP has set up a Hazard Impact Model (HIM) group tasked with modelling the impact of a range of UK hazards with the aim of delivery of consistent hazard and impact information. The HIM group consists of 7 partners initially concentrating on modelling the socio-economic impact of 3 key hazards – surface water flooding, land instability and high winds. HIM group partners share scientific expertise and data within their specific areas of interest including hydrological modelling, meteorology, engineering geology, GIS, data delivery, and modelling of socio-economic impacts.

Activity within the NHP relies on effective collaboration between partners distributed across the UK. The NHP are acting as a use case study for a new Virtual Research Environment (VRE) being developed by the EVER-EST project (European Virtual Environment for Research – Earth Science Themes: a solution). The VRE is allowing the NHP to explore novel ways of cooperation including improved capabilities for e-collaboration, e-research, automation of processes and e-learning.

Collaboration tools are complemented by the adoption of Research Objects, semantically rich aggregations of resources enabling the creation of uniquely identified digital artefacts resulting in reusable science and research. Application of the Research Object concept to HIM development facilitates collaboration, by encapsulating scientific knowledge in a shareable format that can be easily shared and used by partners working on the same model but within their areas of expertise.

This paper describes the application of the VRE to the NHP use case study. It outlines the challenges associated with distributed partnership working and how they are being addressed in the VRE. A case study is included focussing on the application of Research Objects to development work for the surface water flooding hazard impact model, a key achievement for the HIM group.