Deliberations of Reusing the PROV Ontology for provenance capture in Earth and Environmental Sciences [1]

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Abstract:
The W3C PROV Ontology (PROV-O) provides a standard model for representing, capturing and sharing provenance information on the Web. Meanwhile, the Earth and environmental science domain is facing increasing demand for documenting and publishing provenance information of scientific data, methods and workflows. Currently we are still short of experience and best practices of deploying the PROV-O for Earth and environmental sciences. This presentation will discuss our experience of reusing the PROV-O for two recent research projects. The PROV-O provides three starting-points classes, Entity, Agent and Activity, and properties that relate them, as well as a number other classes and properties enriching the provenance representation. In practices one can design domain ontologies including specific classes and properties and map those classes and properties into the PROV-O. Deliberations happen in the domain ontology design and the mapping. In our first project we faced the provenance reconstruction of a report so we took definition of entities and relationships among them as the main stream of provenance capture. For the second project we shifted the main stream to provenance capture of activities because that work was designed to be associated with the workflow of data processing and information of activities is available. We hope this discussion will benefit colleagues who are also working on provenance capture and presentation.

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