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Opportunities for the Mashup of Heterogenous Data Server via Semantic Web Technology

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European Union ESPAS, Japanese IUGONET and GFZ ISDC data server are developed for the ingestion, archiving and distributing of geo and space science domain data. Main parts of the data -managed by the mentioned data server- are related to near earth-space and geomagnetic field data. A smart mashup of the data server would allow a seamless browse and access to data and related context information. However the achievement of a high level of interoperability is a challenge because the data server are based on different data models and software frameworks. This paper is focused on the latest experiments and results for the mashup of the data server using the semantic Web approach. Besides the mashup of domain and terminological ontologies, especially the options to connect data managed by relational databases using D2R server and SPARQL technology will be addressed. A successful realization of the data server mashup will not only have a positive impact to the data users of the specific scientific domain but also to related projects, such as e.g. the development of a new interoperable version of NASA's Planetary Data System (PDS) or ICUS's World Data System alliance.

ESPAS data server: https://www.espas-fp7.eu/portal/
IUGONET data server: http://search.iugonet.org/iugonet/
GFZ ISDC data server (semantic Web based prototype): http://rz-vm30.gfz-potsdam.de/drupal-7.9/
NASA PDS: http://pds.nasa.gov
ICSU-WDS: https://www.icsu-wds.org