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Research data from hydrology disciplines are safely stored and published in 3TU.Datacentrum

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Good management of research data from different science disciplines such as hydrology, geodesy and climate research, is crucial for reducing the uncertainties in forecasting and predictions. These research data can be well-managed and safely stored in 3TU.Datacentrum and thus become available for future use by the scientific community.

3TU.Datacentrum (datacentrum.3tu.nl) is a portal for science- and technology research data in the Netherlands. It provides long-term archive and permanent access to research data, it provides tools for citation of research datasets and thus enables linking, sharing and reuse of research data. Versatility of disciplines and thus versatility of the data producers' needs is a challenge of the data center.

3TU.Datacentrum offers solutions – as standardized as possible yet different where required. Standardized solution is the data model: datasets, instruments, locations and time frames are all objects on their own, with own metadata and interconnected through rdf relationships. These relations are also used to generate ORE Resource Maps. The file format NetCDF, which is primarily used for sets of multidimensional arrays with metadata included, enables interoperability. For simple datasets a Fedora repository is used where datasets of any format are allowed including that of a specific instrument. Alongside the NetCDF an xml version (ncml) is stored that can be converted to other formats. For complex datasets an OPeNDAP framework is used, which allows querying within and across datasets.

Some examples from hydrological research are presented.
1 - For a complex collection of simple datasets consisting of ongoing hydrological measurements from several project partners, using several instruments, on several locations, and over a long period of time, there was a need for central storage in order to share the data and enable easy combination of data sets. The measurements are not repeatable and are also valuable for multidisciplinary research, which justified investment in the preservation and 'publishing' of the data.
2 - For research datasets underlying publications consisting of measurements in different formats including video animations, there was a need to store the data and link to publications and other digital objects on different locations. By assigning DOIs to datasets and linking with other related digital objects an enhanced publication is created thus increasing the visibility, citability and impact of the researcher.

Similarly 3TU.Datacentrum can cooperate with researchers from sub-disciplines of hydrology such as those presented at the EGU2013.