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Automatic publishing ISO 19115 metadata with PanMetaDocs using SensorML information

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Terrestrial Environmental Observatories (TERENO) is an interdisciplinary and long-term research project spanning an Earth observation network across Germany. It includes four test sites within Germany from the North German lowlands to the Bavarian Alps and is operated by six research centers of the Helmholtz Association. The contribution by the participating research centers is organized as regional observatories. A challenge for TERENO and its observatories is to integrate all aspects of data management, data workflows, data modeling and visualizations into the design of a monitoring infrastructure.

TERENO Northeast is one of the sub-observatories of TERENO and is operated by the German Research Centre for Geosciences (GFZ) in Potsdam. This observatory investigates geoecological processes in the northeastern lowland of Germany by collecting large amounts of environmentally relevant data. The success of long-term projects like TERENO depends on well-organized data management, data exchange between the partners involved and on the availability of the captured data. Data discovery and dissemination are facilitated not only through data portals of the regional TERENO observatories but also through a common spatial data infrastructure TEODOOR (TEreno Online Data repOsitORry). TEODOOR bundles the data, provided by the different web services of the single observatories, and provides tools for data discovery, visualization and data access. The TERENO Northeast data infrastructure integrates data from more than 200 instruments and makes data available through standard web services.
Geographic sensor information and services are described using the ISO 19115 metadata schema. TEODOOR accesses the OGC Sensor Web Enablement (SWE) interfaces offered by the regional observatories.

In addition to the SWE interface, TERENO Northeast also published data through DataCite. The necessary metadata are created in an automated process by extracting information from the SWE SensorML to create ISO 19115 compliant metadata. The resulting metadata file is stored in the GFZ Potsdam data infrastructure. The publishing workflow for file based research datasets at GFZ Potsdam is based on the eSciDoc infrastructure, using PanMetaDocs (PMD) as the graphical user interface. PMD is a collaborative, metadata based data and information exchange platform [1]. Besides SWE, metadata are also syndicated by PMD through an OAI-PMH interface. In addition, metadata from other observatories, projects or sensors in TERENO can be accessed through the TERENO Northeast data portal.

[1] http://meetingorganizer.copernicus.org/EGU2012/EGU2012-7058-2.pdf