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From GeoMol to EGDl – towards the integration of regional 3D geological datasets into the European Geological Data Infrastructure

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In the 2012-2015 GeoMol project [1] on the subsurface potential of the Alpine Foreland Basins, shared by six countries, a vast variety of cross-border harmonized spatial datasets have been compiled by the GSOs in charge following common standards. They are now available for the different target groups of the cross-domain user community as identified in a stakeholder survey: The project's results, map sets to satisfy the users' demand for ready-to-use 2D products are provided via the MapViewer web application, 3D geological models are held available through the 3D-Explorer, a 3D browser-analyst for the web-based visualization and query, implemented as a distributed organized system to comply with national data access statutory provisions. However, like in many other EU-funded cross-border projects on various geoscientific issues these project related web-based distribution services are part of the project's proprietary website and thus are subject to a limited lifespan after the closure of the project.

To safeguard the long-term access to transnational geological information assets by providing a European Geological Data Infrastructure (EGDI) owned by the EGS community is a key element of the European Geological Service and the EuroGeoSurveys (EGS) Strategy. EGDI is geared towards preserving, maintaining and providing access to cross-border and pan-European geological datasets and information services from passed, on-going and future projects, allowing to view and combine such datasets, and to act as a hub for the setup of new, derived datasets and services. Its technical infrastructure and governance as well as the prioritization of the EGDI 'products' and the legal requirements for data accessibility are summarized in the EGDI-Scope Implementation Plan for the European Geological Data Infrastructure [2]. With the launch of 'EGDI Light' in June 2016 principal functionalities and selected datasets are available via WMS, also providing an interface with other community infrastructures such as EPOS, EMODNET, OneGeology, etc. and interlinked with WMS of project websites in operation. The geological information held available includes pan-European as well as regional cross-border datasets, the latter usually prepared for distinct geological structures in a more detailed scale and are thus, like in GeoMol, increasingly available as 3D geological models.

Even though technical solutions for sharing, merger and tiling of 3D geological model do exist, the integration of 3D geo-data owned by different GSOs into a European platform needs some special provisions to comply with the national legal requirements between the poles of 'freedom of access to information (FOI)' and 'commercial/industrial confidentiality and intellectual property': 3D geological models, in particular of the deep subsurface, are based on seismic, borehole and rock property data which are mostly classified as company secret. These baseline data made available for the GSOs' use may not be disclosed or derivable from any published product. However, the combination of advanced 3D query tools and the mandatory metadata information allow for a detailed analysis of 3D geological models and thereby the back-engineering of underpinning data. Thus, the integration of 3D geological datasets from national repositories into the EGDI must meet the requirements as defined by the national data policy.

Based on the lessons learned from the collaboration in GeoMol and its development of a transnational collaborative environment for multi-dimensional geo-information the requirements for governance and technical implementation of the envisaged 3D extension of EGDl will be addressed and the need for a distributed organized system with a role based access will be stressed.

References:

[1] <http://www.geomol.eu>

[2] <http://www.egdi-scope.eu/wp-content/uploads/2014/07/D1.3-EGDI-Implementation-Plan-v200614-final.pdf>

