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The Resource Information System (RIS) – the digital memory of mineral resource occurrences in Switzerland

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In the late 19th century, the importance of systematical investigations of distribution, occurrence and application of mineral resources in Switzerland was recognized. A huge amount of georesources data were collected by different organisations and compiled by the Swiss Geotechnical Commission (SGTK) during the last 120 years (Heuberger *this volume*). Today, the Georesources Switzerland Group maintains and extends this outstanding data archive.

Only parts of the data are digitized and available to the public at the moment. Furthermore, the datasets are heterogeneous in terms of structure, documentation, quality and data format. Therefore, assessing, analysing or evaluating the data is not straightforward. There is increasing need to 1) structure, harmonize and verify these data, 2) migrate them to a uniform, data model-based platform and 3) make them all available to the public.

These needs are addressed with the development of a comprehensive, web-based management system containing these mineral resource occurences, the so-called Resource Information System (RIS). It succeeds and builds on SGTK's innovative digital databases like the "Rohstoffinventar" (Vogler 1995) and the "Geotechnischer Umwelt-Atlas (GUA)" (Baumeler et al. 2005). But in contrast to these former inventories, the RIS is built upon data models, i.e. the Georesources Switzerland Group's raw materials data model as well as swisstopo's «Geology» data model (swisstopo 2017a). Using data models leads to higher data quality and reduces data errors. Furthermore, modelled data can be accessed, compared and analysed more easily. However, data models increase the complexity of a system. Therefore, migration and integration of data remains a time-consuming task. Although some data can be imported automatically, lots of datasets still need manual editing or research (Grünig & Fulda *this volume*).

Since the RIS data management platform was put into operation in 2015, nearly 2000 datasets on ores, energy resources and industrial minerals were harmonized and migrated from the "Rohstoffinventar" to the RIS. Today, datasets of most resource groups currently mined in Switzerland are processed and migrated into the system and updated on a yearly basis. However, the huge amount of already digitized data on historical mining sites and products (produced before 1980) containing more than 20'000 datasets, is still waiting to be harmonized and integrated into the platform. The RIS represents an important data basis for the future implementation of the measures defined in swisstopo's report on mineral resources in Switzerland (swisstopo 2017b). Mainly measure A1 "Acquisition and characterisation of geological raw material occurences" is heavily depending on such data.

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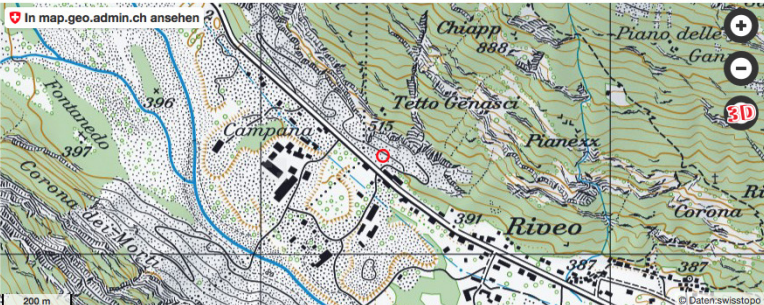
Figure 1: data management platform of the RIS showing exploitation data of a dimension stone quarry in the Canton of Ticino.