Creation of nationwide geo-scientific information management systems – an experience report

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SUMMARY

Over hundreds of years, geo-scientific data were collected and fixed on paper. Handmade descriptions, bore hole logs, maps, exploration reports etc. have filled up archives with materials of inestimable value. The systematic capture, storage and distribution of this information is an extremely important and expensive activity.

Today, the problem of storage, management and distribution of large amounts of geo-scientific, geo-economic and environmental information at a level of a state or a large company is one of the big challenges to both software engineers and technical users. More and more the attention focuses on the creation of centralised flexible and redundancy-free information management systems (IMS), which allow the storage of large amounts of heterogeneous data.

Modern IMS consist of a combination of powerful data storage systems topped by a user friendly GUI with both database and GIS modules. Additional functions like import, export, data processing and interfaces to other systems (e.g. modelling software) complete a sophisticated system.

Although the general structure of all systems is uniform (relational database, file system, infrastructure, application), each single system must be customised to pre-existing legal and technical framework. The successful introduction of a modern IMS demands a complex of accompanying administrative measures such as quality assurance, user rights management, work flow description.

The presentation includes both WINDOWS and WEB applications (e.g. Earth Data Namibia, Non-metallic minerals of Saxony/Germany).