



Supplement of

The collection, digitisation, interpretation and publication of geological data in the German site selection procedure – status and challenges

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**BUNDESGESELLSCHAFT
FÜR ENDLAGERUNG**

safeND 2023

The collection, digitization, interpretation, and publication of geological data – Status and challenges

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Berlin, 14.09.2023

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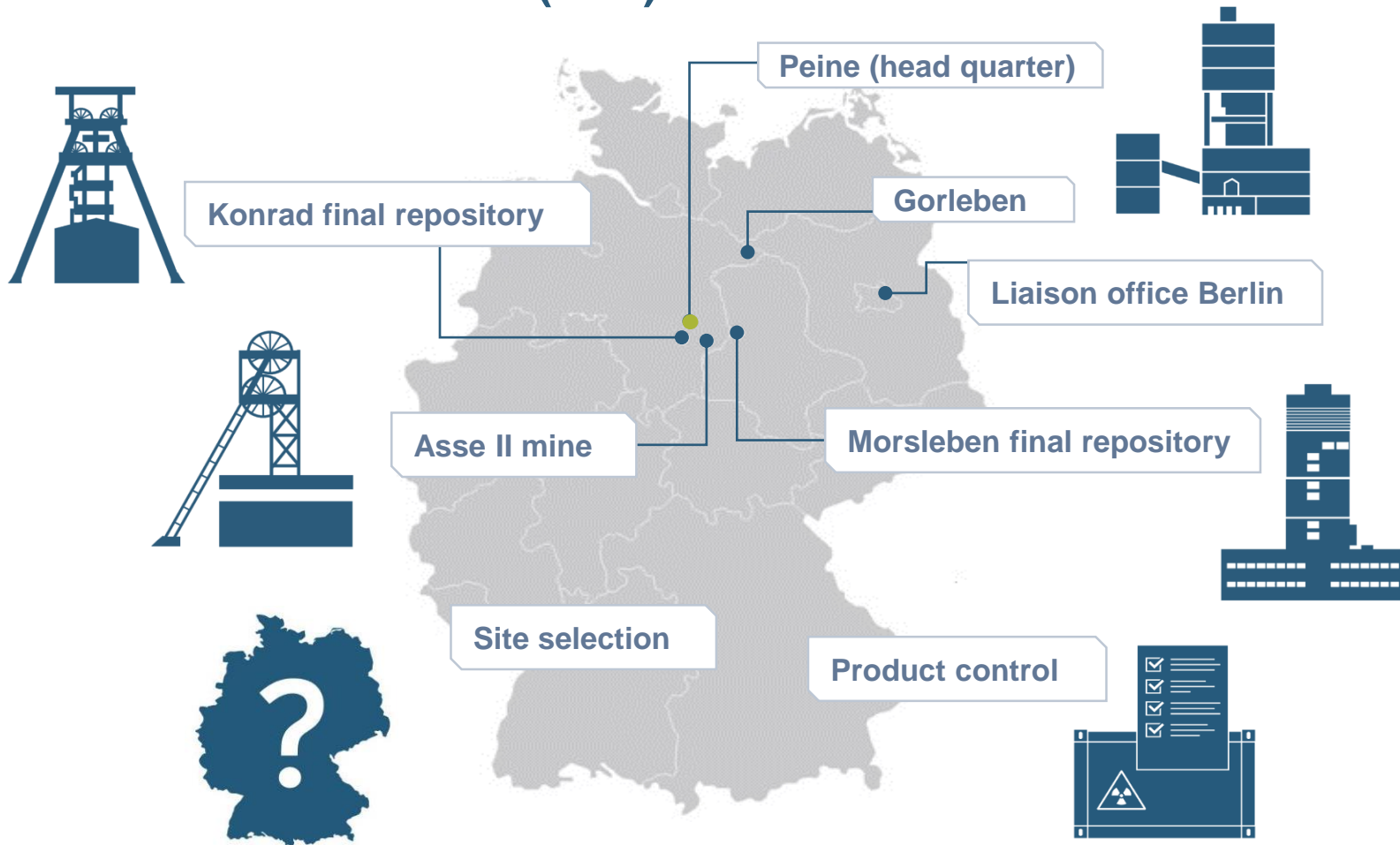


INTRODUCTION

01

INTRODUCTION

Site Selection Division (STA)



Other office locations: Salzgitter, Wolfenbüttel

Short profile STA

Responsible for the implementation of the selection procedure for a repository for high-level radioactive waste

Approx. 140 employees

5 departments:

- Project Planning (VM)
- Site Investigation (ST)
- Safety Analysis (SU)
- Exploration (EK)
- Repository Planning (EP)

(Source: BGE)

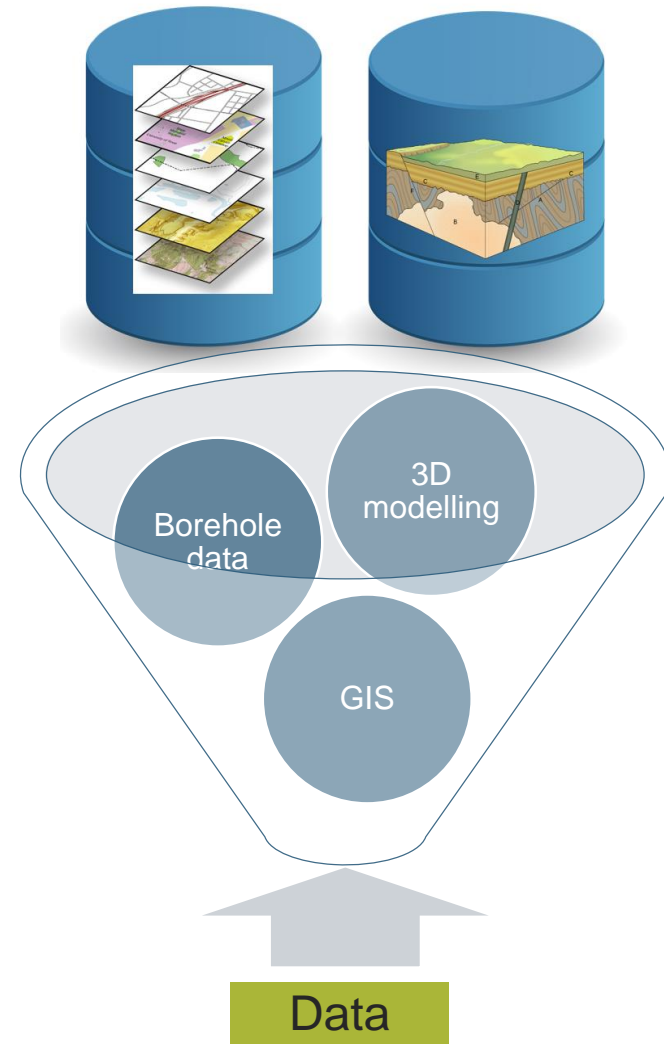


CURRENT STATE OF GEODATA MANAGEMENT

02

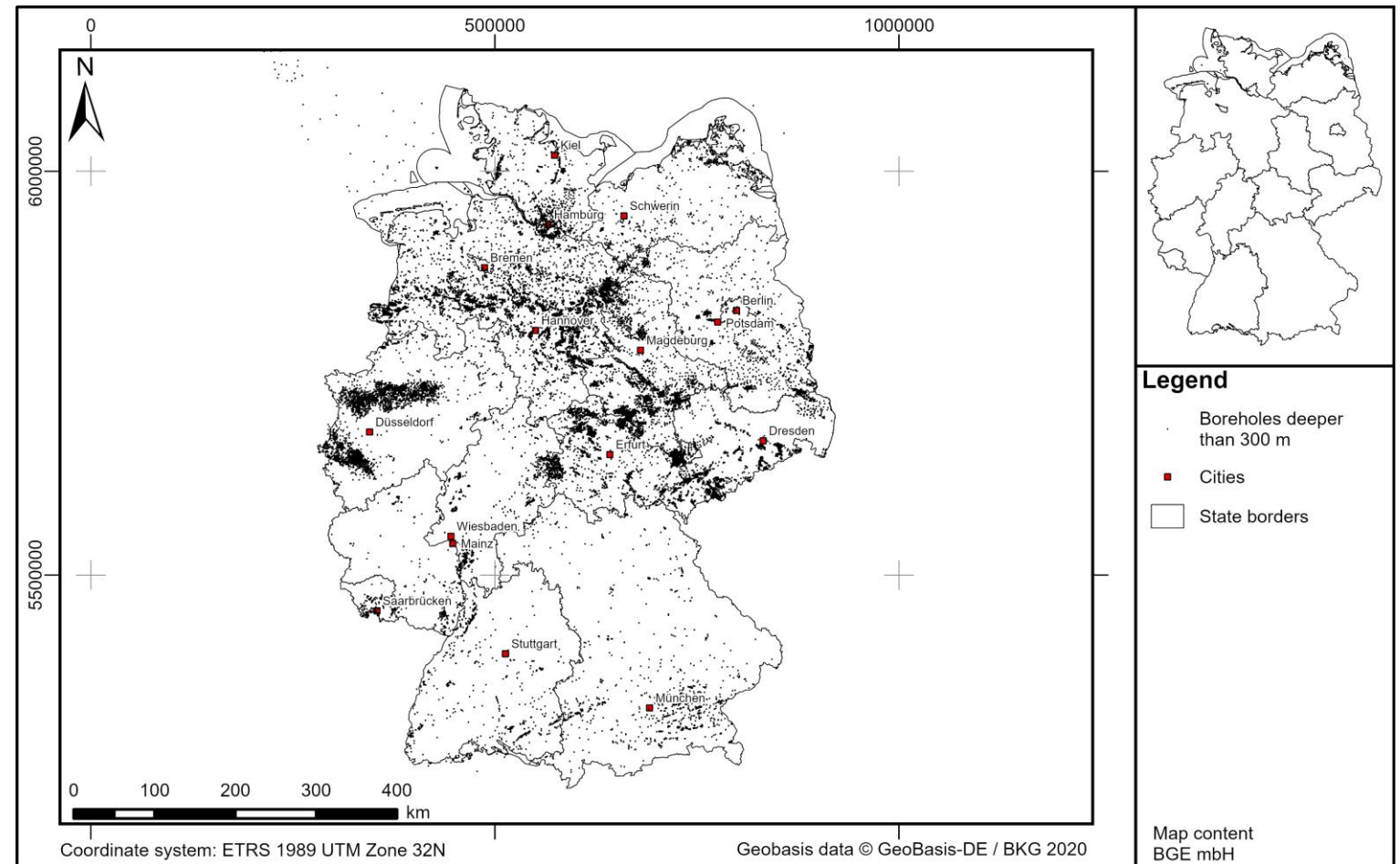
CURRENT STATE OF GEODATA MANAGEMENT

- Geodata Management (GDM) manages about 650 data deliveries from 93 institutions with about 11 terabyte of data consisting of 1.5 million files.
- A well database stores and visualizes digitalized stratigraphic, petrographic data and links to all files regarding the boreholes.
- An Enterprise DB is used to store and provide the 2D data to users together with overviews (e.g., all borehole data and seismic lines).
- Different 3D data formats are processed and homogenized to be used in several different pieces of modelling software.



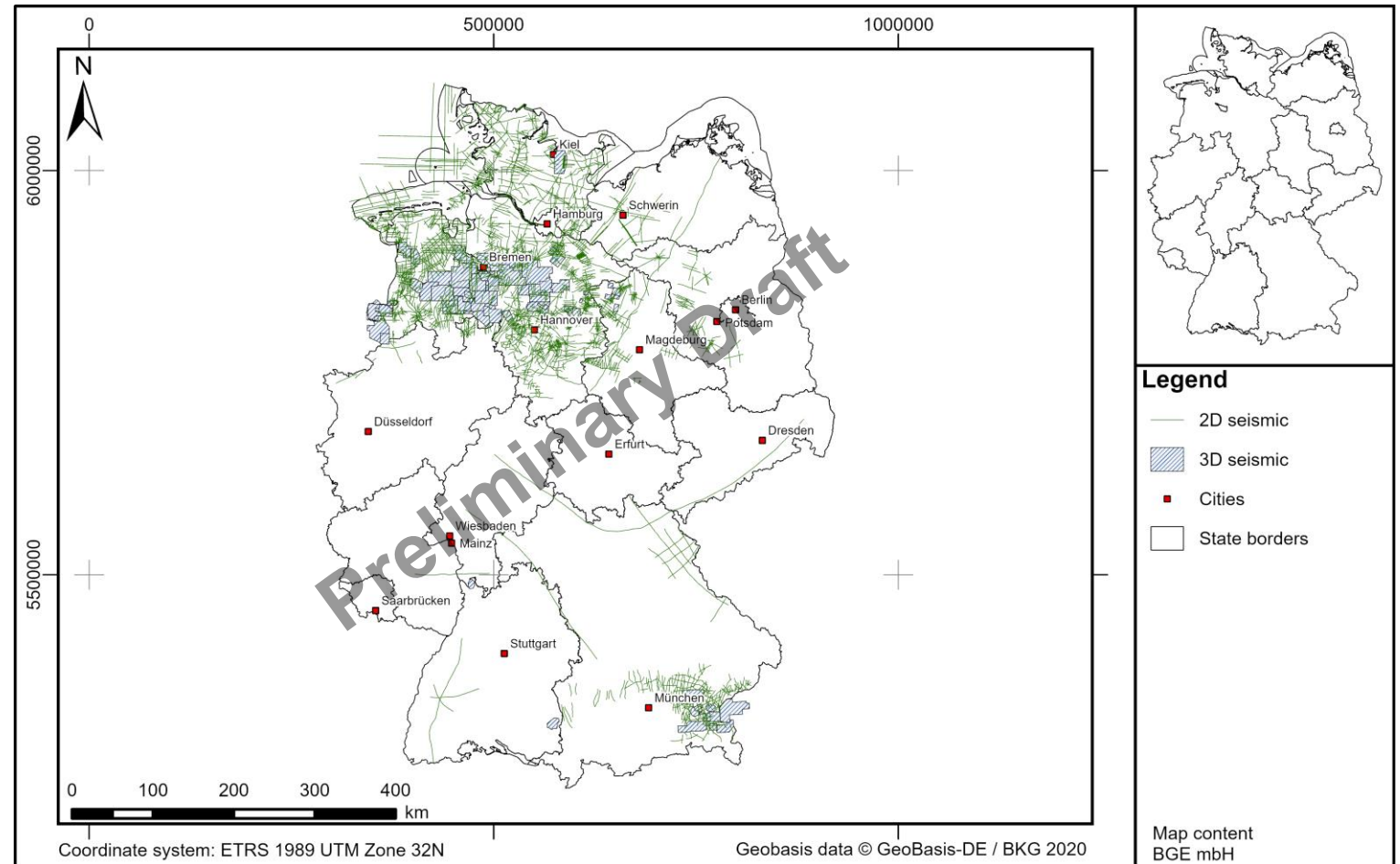
GEODATA MANAGEMENT

- Approx. 50,000 boreholes deeper than 300 m with deviation surveys, logs, and markers
- Over 200,000 files related to boreholes



GEODATA MANAGEMENT

- Approx. 50,000 boreholes deeper than 300 m with deviation surveys, logs, and markers
- Over 200,000 files related to boreholes
- More than 340,000 km of reflection seismic lines are currently planned to be used for the site investigations



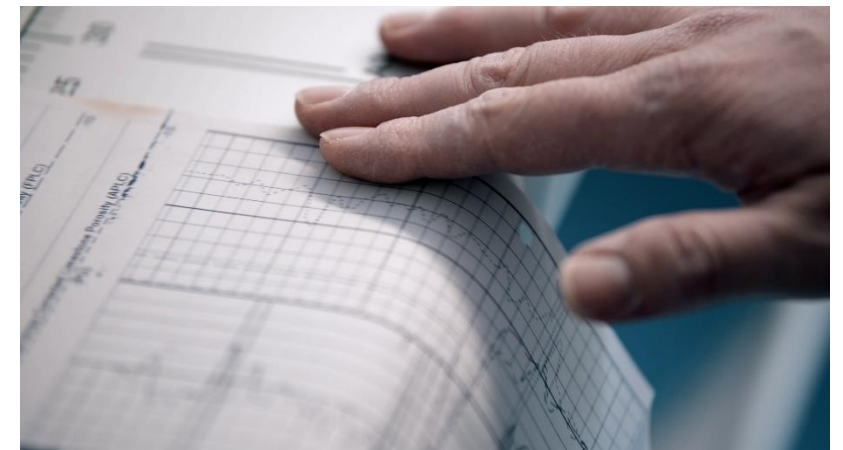
The background of the slide features three pieces of translucent, faceted crystals, possibly quartz or a similar mineral, resting on a reflective surface. The crystals are arranged in a cluster, with one large, prominent crystal in the center foreground and two smaller ones behind it. The lighting creates highlights and shadows, emphasizing the geometric facets of the crystals. The overall color palette is a range of blues, from light to dark, creating a professional and modern aesthetic.

DATA COLLECTION – DIGITIZATION

03

DATA COLLECTION – DIGITIZATION

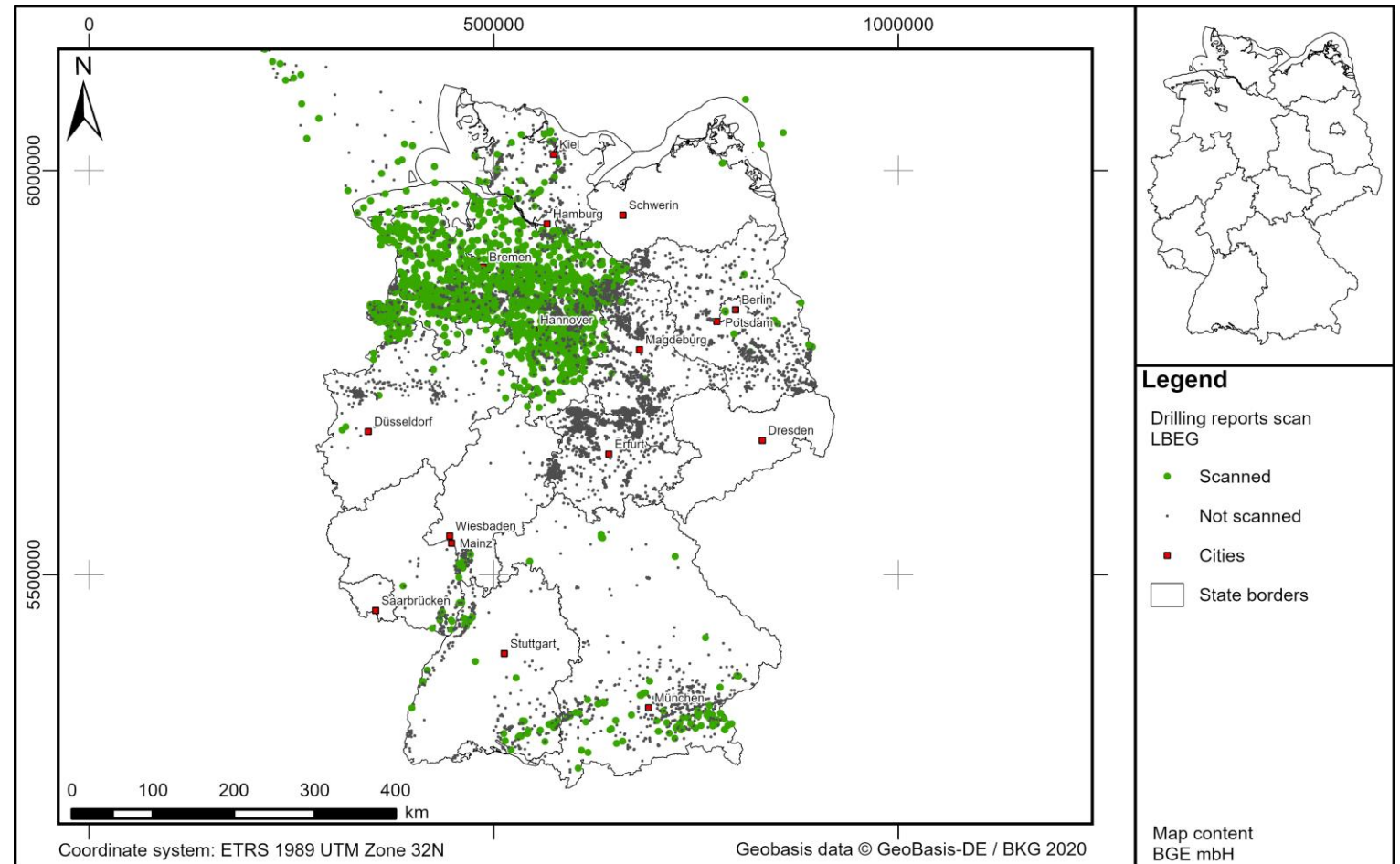
- In cooperation with qualified geo-consultant partners, large efforts are put into digitizing significant amounts of the geological data that are stored in analog form.
- Campaign in cooperation with the State Office for Mining, Energy, and Geology in Lower Saxony (LBEG) where more than 16,000 drilling reports are in analog form.
- Smaller campaigns with several other state agencies have already been completed or are on the way.



DIGITIZATION PROGRESS

Already scanned:

- 163 km of borehole logging
- 280,000 pages of documents

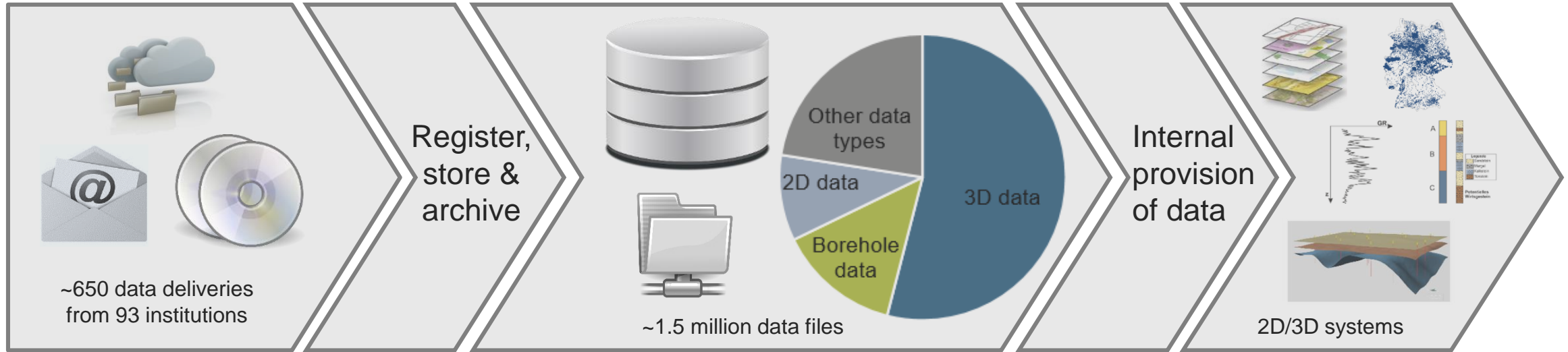


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DATA FLOW, DATA QC, AND USE

04

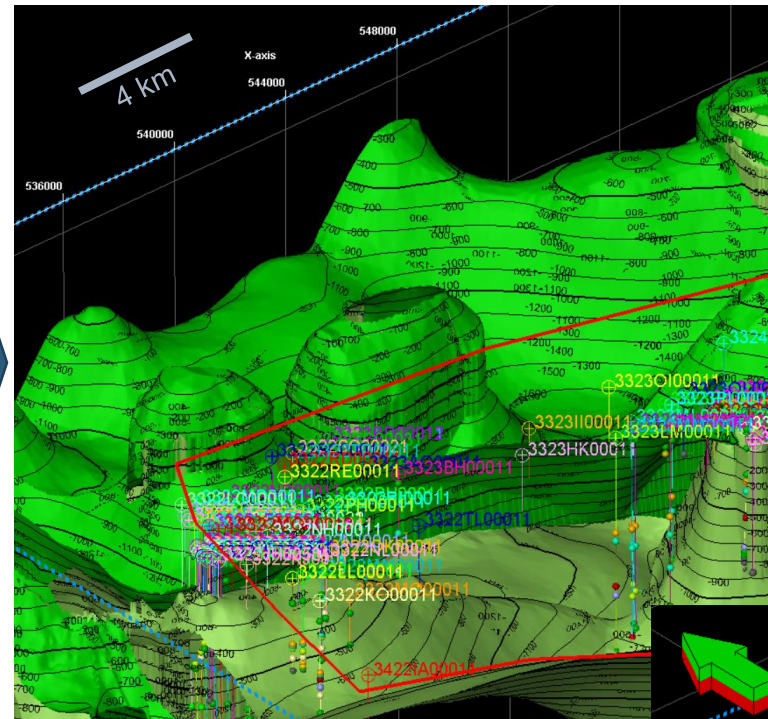
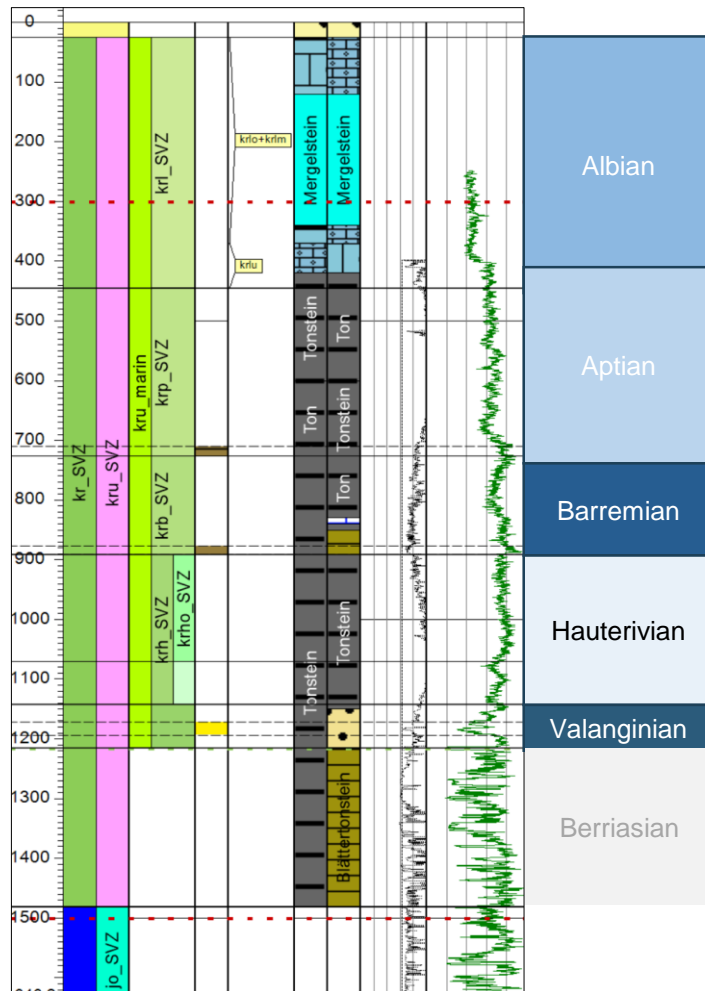
DATA FLOW AND DATA QC



Checksum control when receiving and storing data

Location and reference control during internal provision

EXAMPLES OF HOW DATA IS USED FOR EVALUATING THE SUBSURFACE IN TERMS OF SUITABILITY AS A POTENTIAL REPOSITORY SITE



(Source: BGE)

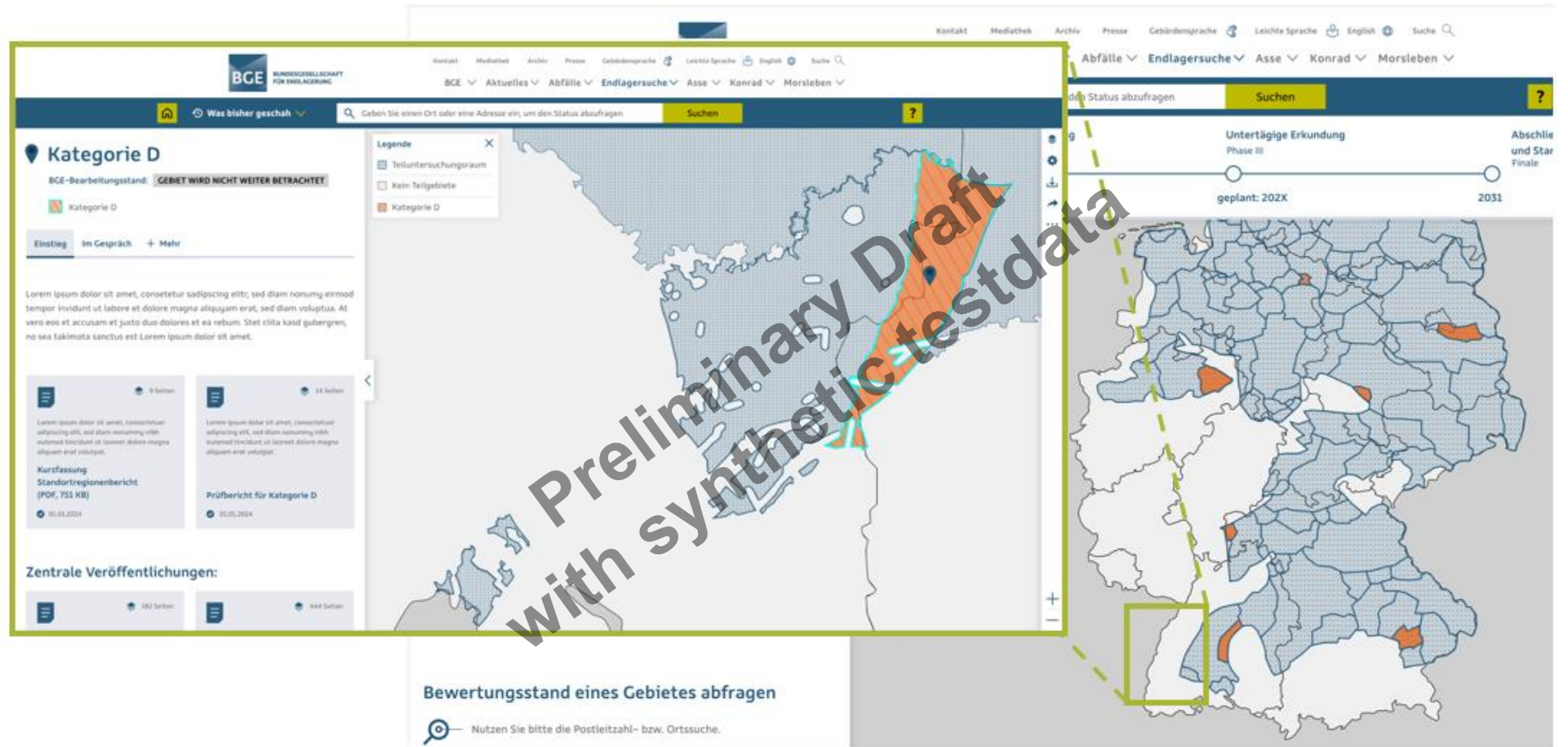
- Borehole data (including well path, wireline logs, lithological descriptions, etc.) are integrated to build a local 3D geological model used for the evaluation of suitability.
- Data preparation, harmonization, and QC between different data types and sources before integration into 3D model.
- Data QC is limited due to sheer mass of data.

The background of the slide features three pieces of translucent, faceted crystals, possibly quartz or similar mineral, resting on a reflective surface. The crystals are arranged in a cluster, with one larger piece in the foreground and two smaller ones behind it. The lighting creates highlights and shadows, emphasizing their geometric forms. The overall color palette is a range of blues, from light to dark, with the crystals appearing in shades of grey and white.

WEB APPLICATION FOR PUBLIC PRESENTATION OF RESULTS

05

WEB APPLICATION FOR PUBLIC PRESENTATION OF RESULTS



Kategorie D

BGE-Bearbeitungsstand: **GEBIET WIRD NICHT WEITER BETRACHTET**

Legende

- Teiluntersuchungsraum
- Kein Teilgebiete
- Kategorie D

Suchen

Untertägige Erkundung Phase III

geplant: 202X 2031

Abschließung und Start Finale

Bewertungsstand eines Gebietes abfragen

Nutzen Sie bitte die Postleitzahl- bzw. Ortssuche.

Preliminary Draft with synthetic testdata

THANK YOU FOR YOUR ATTENTION! WOULD YOU LIKE TO READ AGAIN ?



Information on Sub-areas Interim Report

[Interactive introduction to compilation of Interim Report and to all criteria and requirements](#)

[Sub-areas Interim Report with all documents and annexes](#)

[Dedicated page for each sub-area](#)

[Interactive map with all sub-areas and excluded areas](#)

Information on status of rvSU methodological development

[Descriptions of areas for methodological development](#)

[Event series on YouTube](#)

[Overview of representative preliminary safety analyses](#)

[Concept for carrying out representative preliminary safety analyses](#)

[Description of method for carrying out representative preliminary safety analyses](#)

ABBREVIATIONS

BGE	<i>Bundesgesellschaft für Endlagerung mbH</i> – federal company for radioactive waste disposal
Enterprise DB	Database on a SQL-Server containing geographic and meta data
GDM	<i>Geodatenmanagement</i> – Geodata Management
GIS	Geographic Information System
LBEG	<i>Landesamt für Bergbau, Energie und Geologie</i> – State Office for Mining, Energy, and Geology in Lower Saxony
QC	Quality control
STA	<i>Standortauswahl</i> – Site Selection Division



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Die Newsletter der BGE



SAVE THE DATE



25-28
NOVEMBER
2024

**9th International Conference on Clays
in Natural and Engineered Barriers for
Radioactive Waste Confinement**

25th - 28th November 2024
supporting programme: 24th & 29th November

**Hannover/Germany at
HCC Hannover Congress Centrum**
secretary@clayconference2024.de

plenary sessions · parallel sessions · poster presentations
networking events · scientific supporting programme and lively discussions

Organised by  **BGE** **BUNDESGESELLSCHAFT
FÜR ENDLAGERUNG**

In cooperation with  **BGR** **Bundesanstalt für
Geowissenschaften
und Rohstoffe**

9TH Clay CONFERENCE