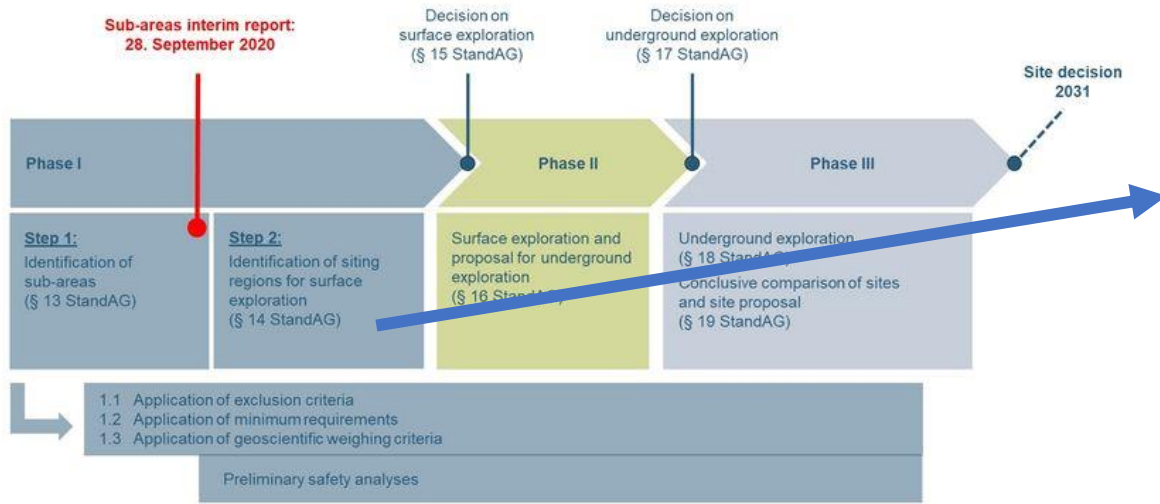# WELCOME!

Hannover, 8 – 9 September 2022

*"The site with the best possible safety is the site which is **determined in the course of a comparative procedure** from the sites suitable in the respective phase **according to the requirements** of this Act and **which ensures the best possible safety for the long-term protection of man and the environment** from ionizing radiation and other harmful effects of this waste **for a period of one million years**."*
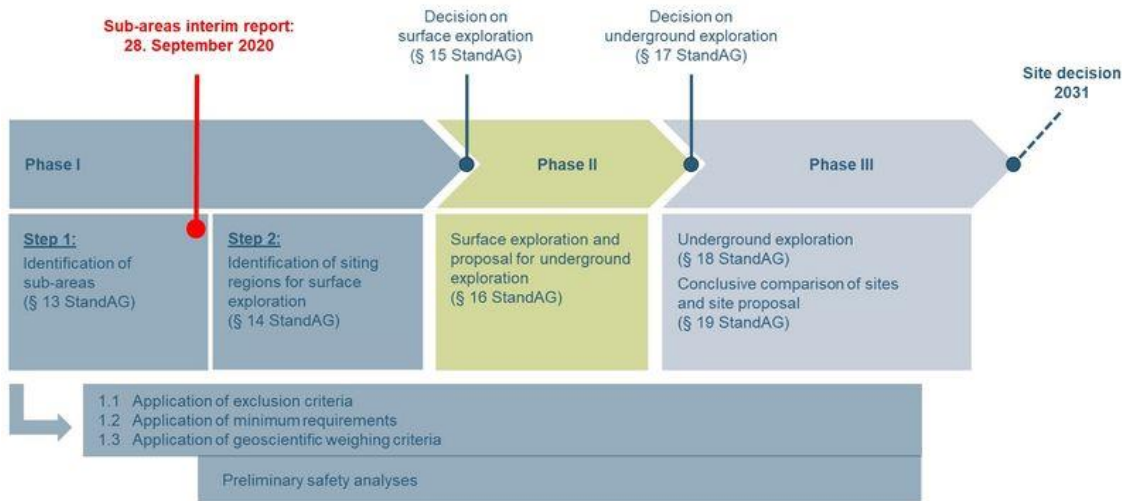
Site selection procedure

Phase I: select prospective area(s) for extensive surface exploration

- Step 1: **"White map"** of Germany
  - exclude regions according to a set of legally defined criteria and minimum requirements established based on geoscientific aspects
- **Sub-interim report**: 90 prospective areas – 7 sites are in crystalline host rock

Sub-areas interim report:
28. September 2020

Decision on surface exploration
(§ 15 StandAG)

Decision on underground exploration
(§ 17 StandAG)

Site decision
2031

Phase I

Phase II

Phase III

Step 1:
Identification of sub-areas
(§ 13 StandAG)

Step 2:
Identification of siting regions for surface exploration
(§ 14 StandAG)

Surface exploration and proposal for underground exploration
(§ 16 StandAG)

Underground exploration
(§ 18 StandAG)

Conclusive comparison of sites and site proposal
(§ 19 StandAG)

1.1 Application of exclusion criteria
1.2 Application of minimum requirements
1.3 Application of geoscientific weighing criteria

Preliminary safety analyses

URS project

Phase I: select prospective area(s) for extensive surface exploration

- Step 2: Preliminary safety investigations
  - Assumptions made regarding the suitability of site: based on geological and geological findings, and model calculations
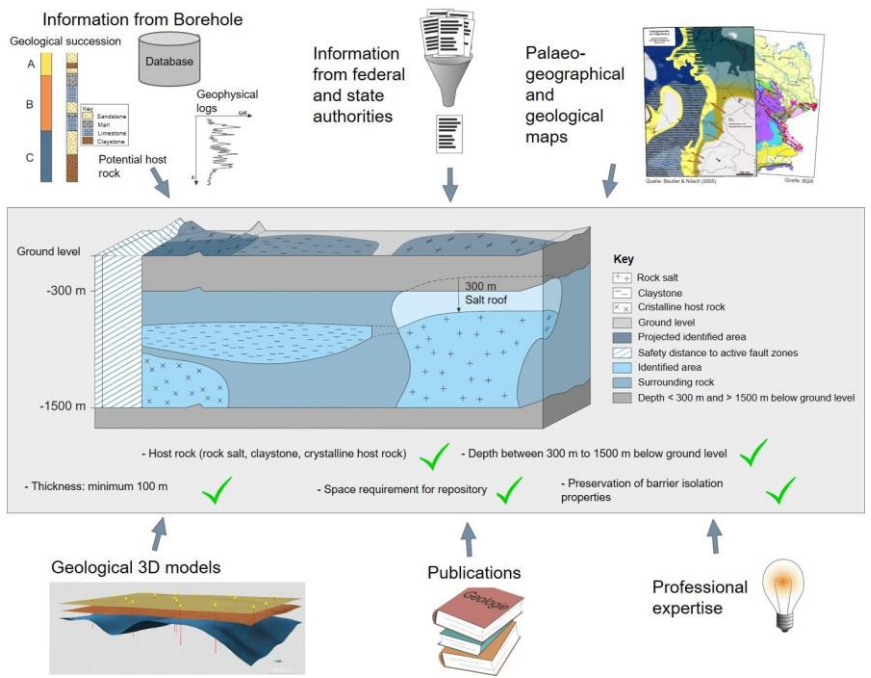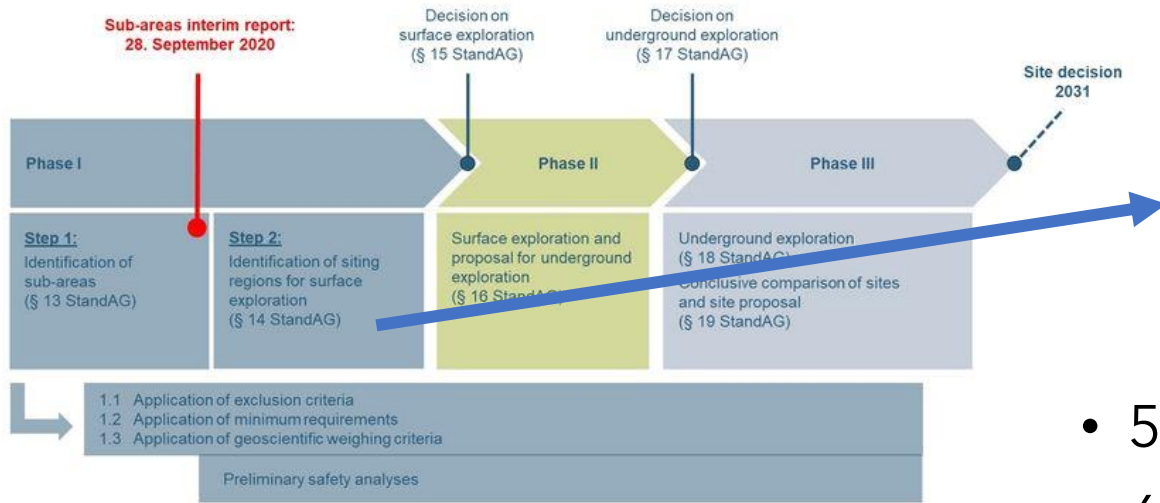
UNCERTAINTY → DIVERSITY & COMPLEXITY
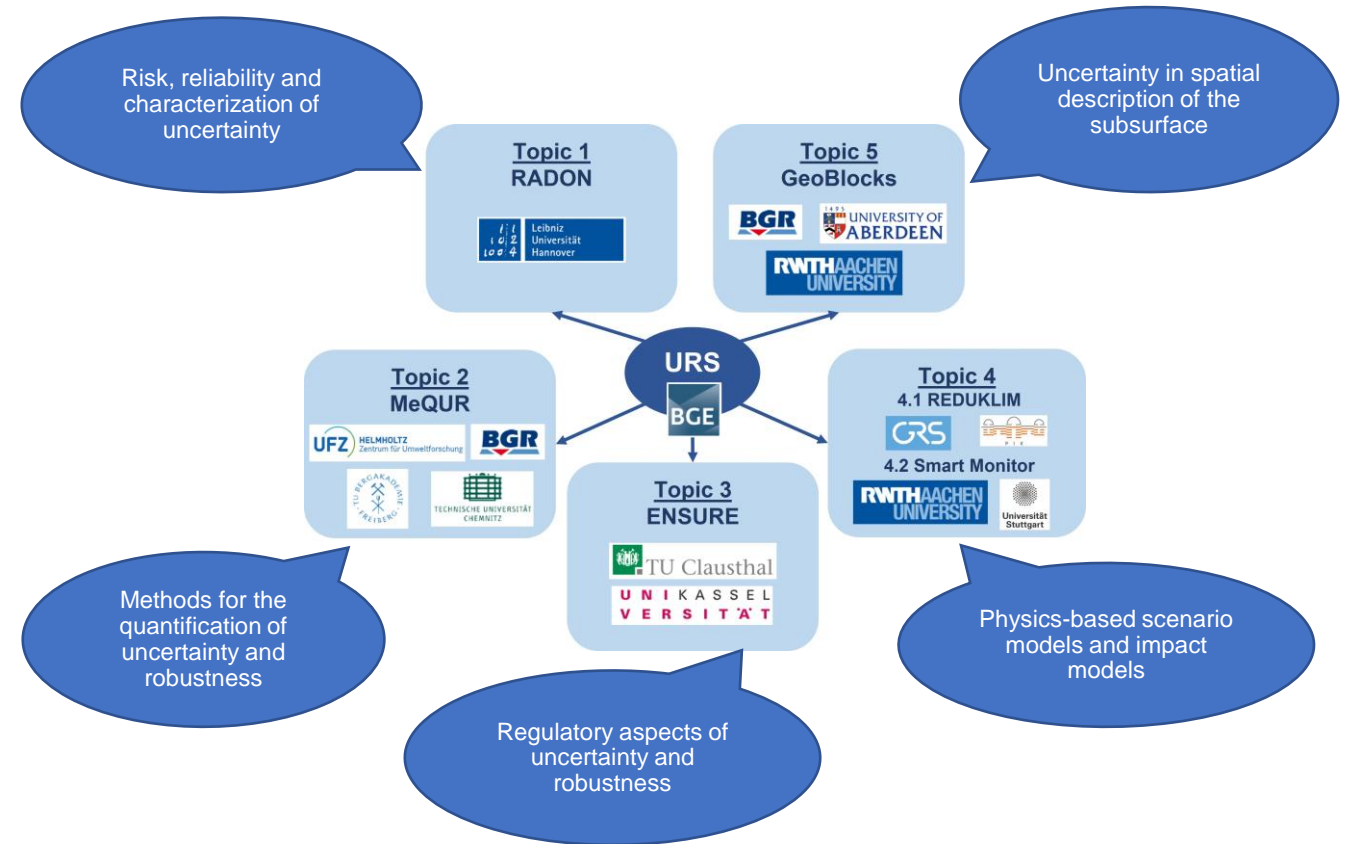
Reduce complexity!!!

Call for a research cluster

- 5 thematic fields
- 6 collaborative projects
- 12 partner facilities (+ BGE):
  - 8 university
  - 4 private sector research facility
- 18 Institutes
- 13 PhD candidate

Hey, that's you!

Good-to-knows…

PROJECT WEBSITE URS-related wiki	**BGE'S WEBSITE** All about the site selection procedure

The legal stuff: Atomic Energy Act, StandAG, EndlSiUntV	The technical stuff: BGE's Sub-interim report

Prologue paper Coming soon…	Overall project supervisor @ BGE: Wolfram Rühaak, Phillip Kreye

Overall project coordinators: Thomas Nagel, Kata Kurgyis @ TUBAF	Research group coordinators @ BGE

Workshop Schedule
Thursday

TIME	TOPIC	PRESENTER
13:00	Registration / Welcome	
13:30	Beginning and introduction to the workshop and the URS project	Kata Kurgyis
14:00	Risk-based assessment of salt domes as disposal sites for nuclear waste	Andrea Perin
14:15	Risk-based assessment of salt domes as disposal sites for nuclear waste	Jonas Suilmann
14:30	Uncertainties in THM-coupled integrity calculations	Aqeel A. Chaudhry, Feliks Kiszkurno, Chao Zhang
15:00	Coffee break	
15:30	Repository safety: uncertainties and regulatory aspects	Friedrich Englisch, Marcus Frenzel, Fabian Fritsch
15:45	A set of long-term climate change scenarios	Christine Kaufhold
16:00	Reduction of scenario uncertainties through climate models	Marc Johnen
16:15	Building blocks for the quantification of uncertainties in geological models - online	Carlos Colombo
16:30	Closing remarks	Wolfram Rühaak, Phillip Kreye
18:30	PhD Event – Schlag dein Team	
20:00	Dinner at Brauhaus Ernst August	

Workshop Schedule Friday

Time	Topic	Presenter
8:00	Welcome to 2. Workshop day	Kata Kurgyis
8:30	Improving the predictive quality of repository-relevant simulations through optimal data acquisition and smart monitoring	Maria Morales
8:45	Improving the predictive quality of repository-relevant simulations through optimal data acquisition and smart monitoring	Nino Menzel
9:00	Improving the predictive quality of repository-relevant simulations through optimal data acquisition and smart monitoring	Qian Chen
9:15	Comparing uncertainty quantification methods for modelling radionuclide transport in nuclear waste disposal	Merle Bjorge
9:30	Coffee break	
9:45	Enhanced Bayesian Network for Reliability Assessment	Andrea Perin
10:00	Variable density and viscosity flow in nuclear waste disposal	Jonas Suilmann
10:15	OpenGeoSys – Workflow and other useful tools for PhD researchers	Aqeel A. Chaudhry, Feliks Kiszkurno, Chao Zhang
10:45	Coffee break	
11:15	Software, tools and other resources for PhD students	Christine Kaufhold
11:30	Reducing modelling uncertainties with parameter variations and sensitivity analysis	Marc Johnen
11:45	GemPy: Open-source software for implicit 3D structural geological modeling in Python	Carlos Colombo
12:00	Coffee break	
12:15	Surrogate model generation using Gaussian process regression and Bayesian active learning	Maria Morales
12:30	Geophysical modeling and inversion with PyGiml	Nino Menzel
12:45	Modelling of radionuclide transport process using SHEMAT-Suite	Qian Chen
13:00	Closing of the workshop and farewell	
14:00	Optional lunch	

Special thanks to:

- Aqeel for setting up the Mattermost group and making fast communication possible

- Feliks for managing the cloud file and meeting rooms

- Christine for all the amazing designs

- Marc for the announcement writings

- Jonas and Andrea for the local setup

- Merle for the numerous German phone calls

- BGE for making URS possible

And of course…

Thank you everyone for coming and let's get to know each other!

… food & drinks are in the back