

Introduction to SYSMET project

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SYSMET - Systematic scenario methods for the assessment of overall safety



Why do we talk about scenarios?

- Goals of SYSMET project



What are scenarios?



Our approach

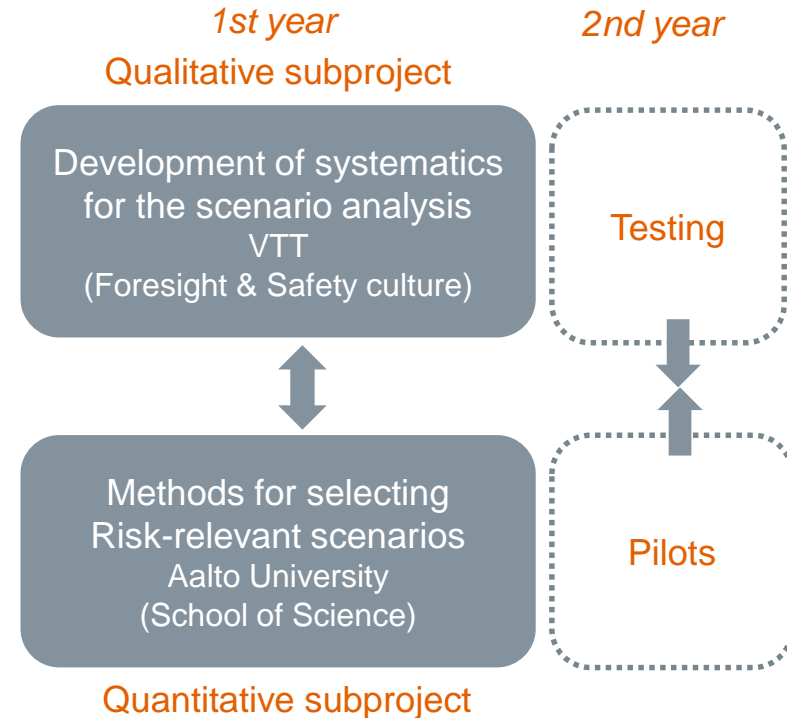
Why do we talk about scenarios?

- Scenarios have a central role in the assessment of long-term safety of the disposal system

- Why is this difficult?
 - Safety critical system → Have we missed something crucial?
 - Extremely long time scale → Think, what has happened during the past 10 000 years
 - The concept of scenario is ambiguous and there are numerous scenario methods → What are the advantages and limitations of different methods?

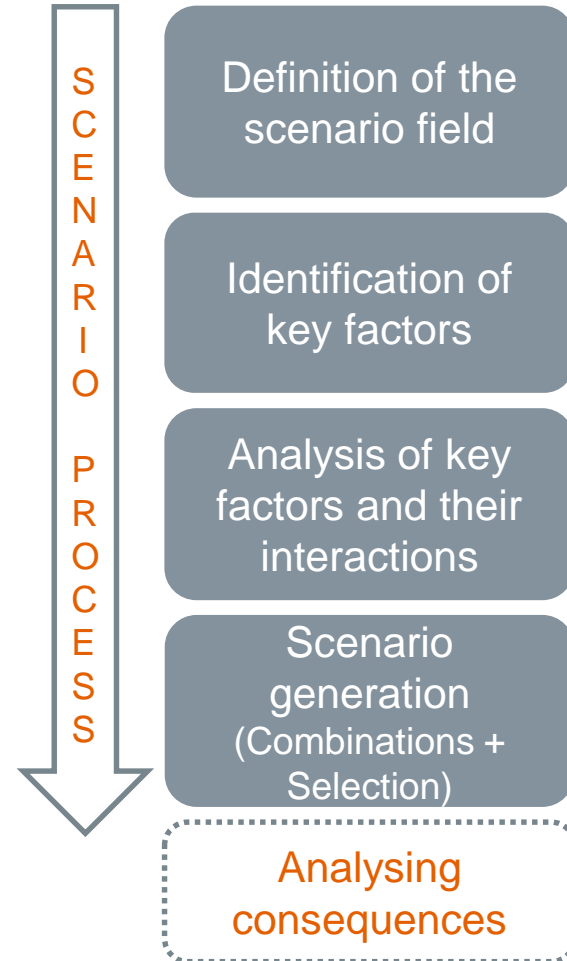
SYSMET objectives

- 1. Learning from other application domains** on the uses of scenario analysis in the identification and analysis of uncertainty factors;
- 2. Formulation of systematic frameworks** which can be deployed to assess the overall safety of nuclear waste repositories;
- 3. Development of decision analytic scenario methods** for selecting the most relevant scenario combinations

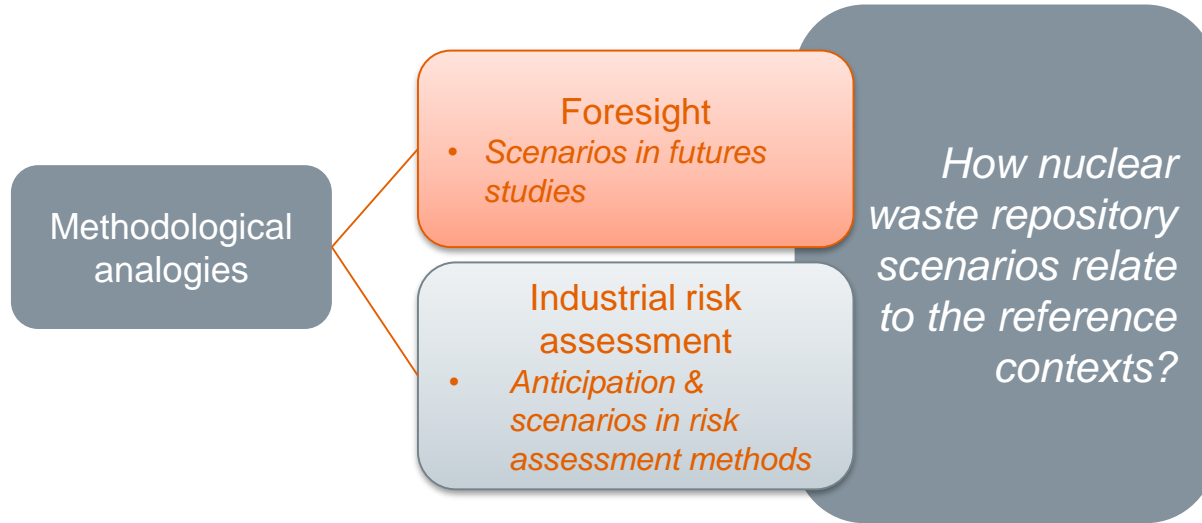


What are scenarios?

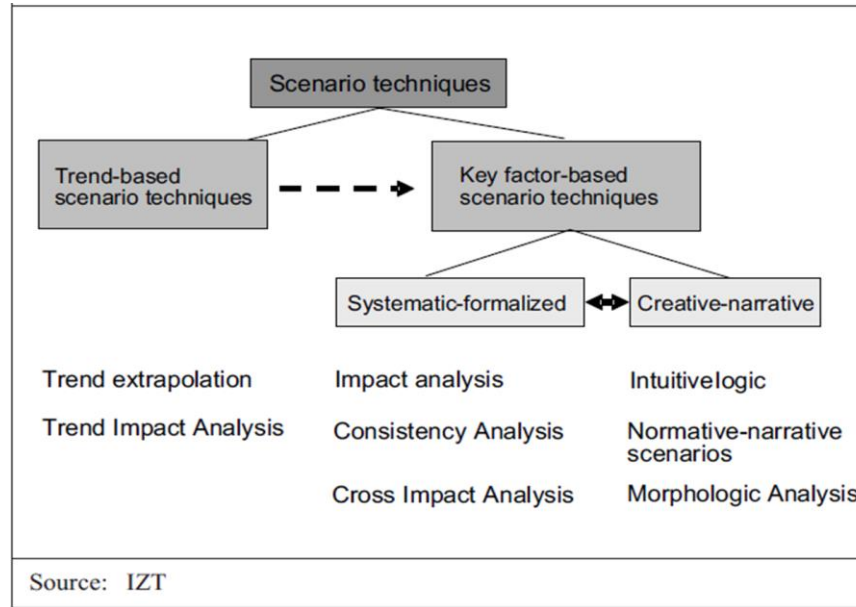
- *“Scenarios are hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision points.” (Kahn/Wiener, 1967)*
- *“Scenarios are descriptions of journeys to possible futures. They reflect different assumptions about how current trends will unfold, how critical uncertainties will play out and what new factors will come into play.” (UNEP 2002)*



Our approach



Foresight: Diversity of scenario methods



Predictive scenarios



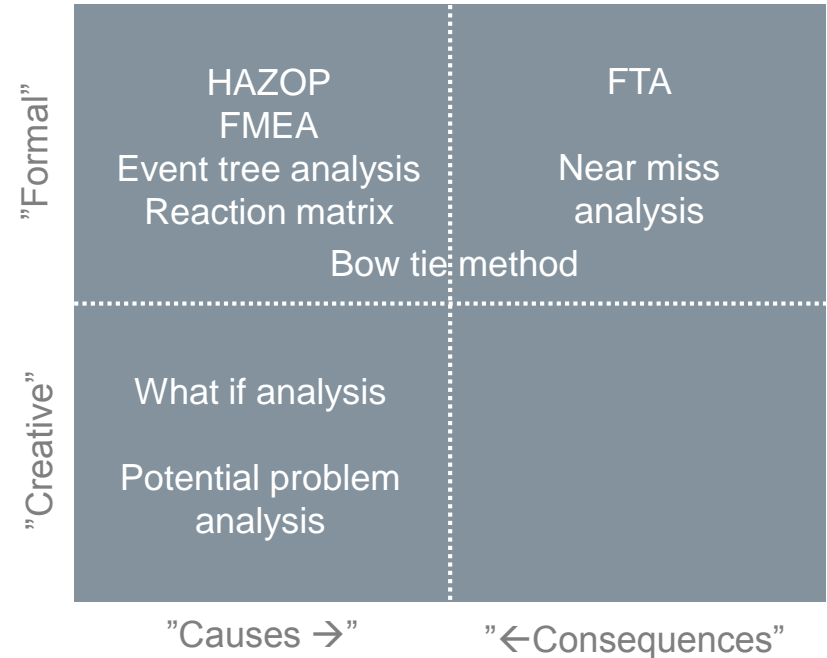
Normative scenarios



Explorative scenarios

Risk assessment: identification of uncertainties

- Systematic methods aim to identify all potential and significant scenarios
- Risk assessment methods are able to cover only direct cause-consequence relations
 - Limited effectiveness in long time scales



Conclusions

- Learning from other scenario contexts
 - Foresight
 - Risk assessment
- Goal: New methodological frameworks for scenarios in the context of overall safety
 - Systematic
 - Explorative
 - Managing the long time scale

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