(a) Conventional Approach (1) Model setup (2) Including additional data **Additional Data Additional Data Data Repository** Multiple Iterative refienement of Iterations Revised Revised **Geological Model** (single) geological model **Geological Model** Geological Model Validation with Validation with Validation with additional Information additional Information additional Information (b) Proposed Method (2) Including additional data **Additional Data** (3) Hypothesis testing (1) Model setup **Updated Repository Data Repository** Selected Data Selected Data Selected Data for Geomodel for Geomodel for Geomodel Different geological models, Geological Model Geological Model **Geological Model** multiple hypotheses Validation with Validation with Validation with additional Information additional Information additional Information Comparison of different model hypotheses, Model selection