MAIN TAKEAWAY

Why build a European 3D geomodel?

A shared 3D view could connect geology across borders and enable questions that national models alone cannot answer.

Start with users and decisions—not the ambition to build a single model.

DISCUSSION SYNTHESIS

Who would use it—and for what?

- Researchers: continental-scale geological questions and buried structures
- Groundwater specialists: cross-border aquifers and lithological continuity
- Minerals / CRM teams: regional structures, prospectivity and exploration targeting
- Infrastructure and planning: subsurface context across countries
- Policy makers and the public: accessible European-scale understanding

DISCUSSION SYNTHESIS

Where is the European added value?

- Treat Europe as a connected geological system, not isolated national datasets
- Correlate units, faults and aquifers across borders
- Use common concepts, classifications and visualisation
- Expose gaps, inconsistencies and new research questions
- Provide an overview and access point for models across Europe

DISCUSSION SYNTHESIS

What do geological surveys gain?

- A shared framework and better dialogue with neighbouring surveys
- Improved quality through cross-border checks and error correction
- Technical learning, harmonisation and reusable workflows
- Visibility of missing data to support investment and funding
- Potential for discoveries not achievable through national work alone

DISCUSSION SYNTHESIS

What would make it useful in practice?

- Define priority use cases and engage users before choosing architecture
- Build from existing national and regional models and datasets
- Harmonise terminology, lithostratigraphy, geometry and metadata
- Support nested scales: European overview linked to detailed local models
- Show uncertainty, coverage and gaps; ensure open, sustained access

DISCUSSION SYNTHESIS

One model—or a connected family of models?

1 Catalogue

Discover existing 3D models

Fast starting point; limited analysis

2 Model mosaic

Bring models together with common handling

Cross-border comparison; partial harmonisation

3 Harmonised geometry

Continental geometry that can be queried and calculated

Highest analytical value; greatest effort

Open choice: the right architecture depends on intended decisions, scale and resources.

DISCUSSION SYNTHESIS

What would demonstrate success?

- A cross-border use case delivers insight that national models missed
- Users can query connected geology and identify areas for further study
- New discoveries or better-targeted exploration emerge
- Surveys actively collaborate and maintain harmonised data
- Model outputs inform real research, planning or policy decisions