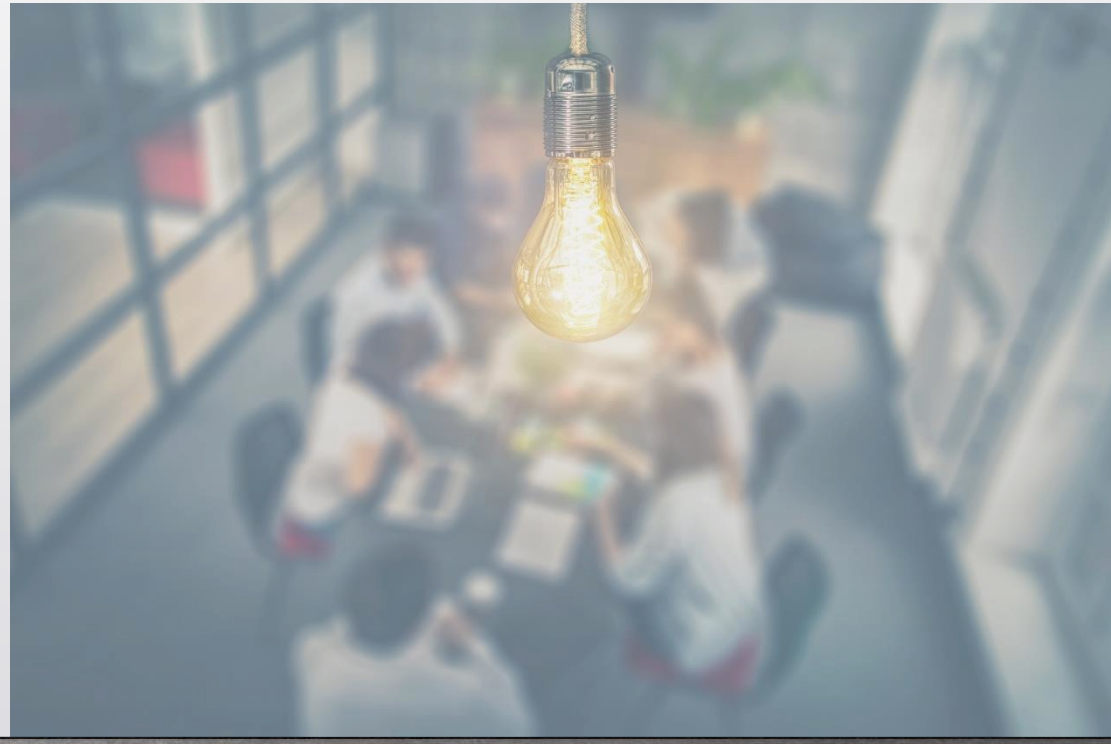
Cake & Discuss The Structural Framework

Organization Committee

Sonja Kuhlmann

Marine Seignole



HSE

Welcome to “Cake & Discuss”

- 13 April: The Structural Framework

- 22 August
- 7 November

Session 2
The Grid Build

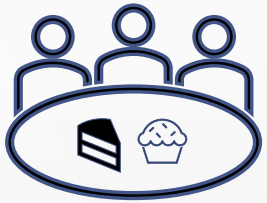
Session 3
The Property Model

Session 4
The Uncertainty Study

Welcome to “Cake & Discuss”

- Fundamental spirit of FORCE
  - Cooperative forum
  - Facilitate cooperation within the industry

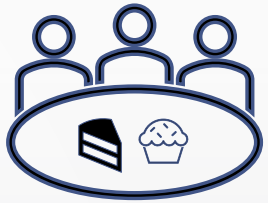
- Group discussions
  - Discussion based on impulse talk
  - Small group: Mix of experience and expertise
  - Summary session



How this works

- Divide audience into groups
- Get to know your group
- Each group chooses a discussion keeper
- “Impulse” talks round today's topic
- Discussion time after talk
  - Have you seen this?/What’s your best practice? ….
- Round the room: each group present findings (first round introduce your group)
- In total 3 impulse talks and follow-up discussion in groups and presentation to other groups
- Closeout and time to mingle and talk
- Enjoy food and drinks throughout the afternoon

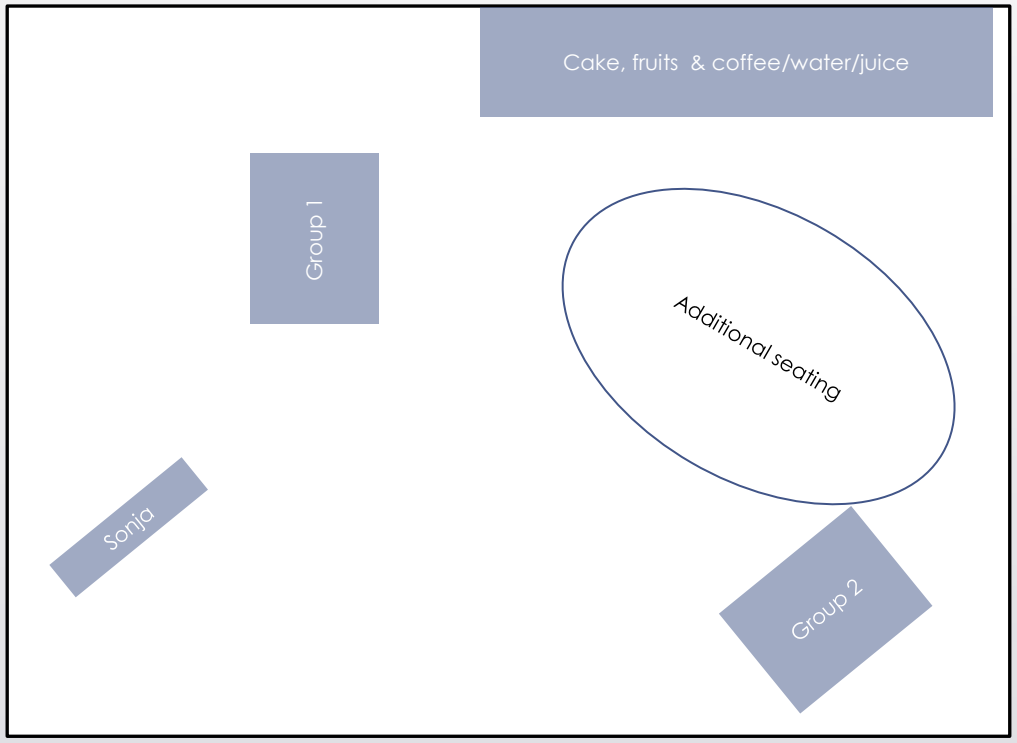
Time	Duration	Activity
12:30-13:00	30 min	Sort groups Intro to concept Guidelines
13:00-13:05	5 min	1. “Impulse” talk
13:05-14:00	30 min 20 5	Group discussion – know your group Presentations (people and topic) Overall discussion
14:00-14:05	5min	2. “Impulse” talk
14:05-14:45	40 min (20+15+5)	Group discussion Presentations and overall discussion
14:45-14:50	5min	3. “Impulse” talk
14:50-15:30	40 min(20+15+5)	Group discussion Presentations and overall discussion
15:30-15:50	20 min	Closeout / feedback

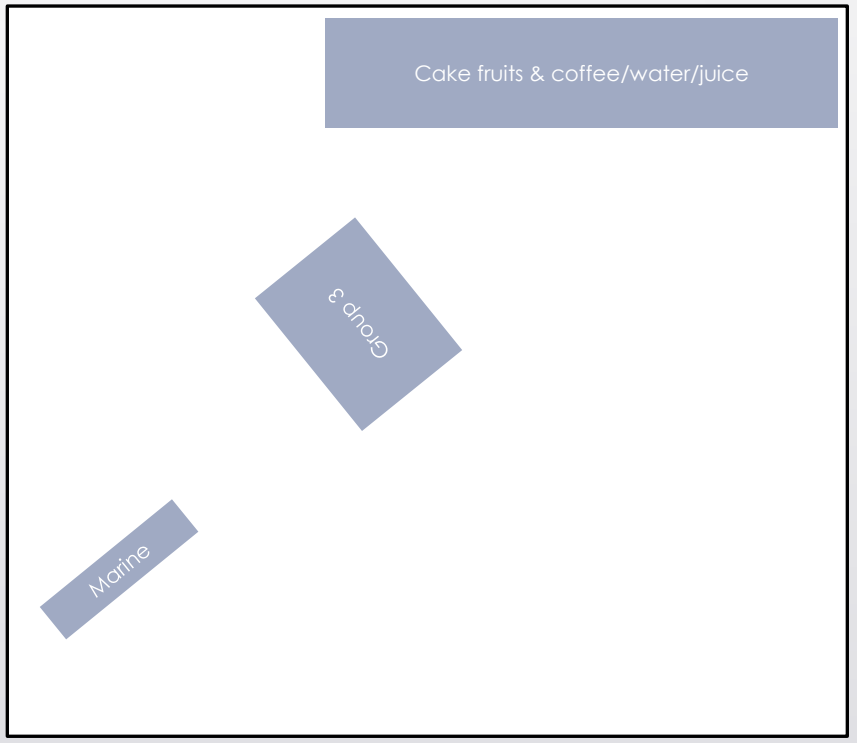


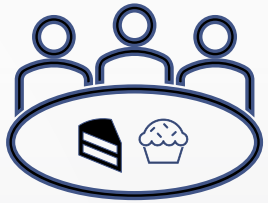
The groups

Group 1	Group 2	Group 3
Carlos	Andreas	Artem
Geraldine	Chris	Fredrik
Santiago	Eirik	Natalie
Øystein	Jens Martin	Piotr
		Sarah

The groups


Cake, fruits & coffee/water/juice
Group 1
Additional seating
Sonja
Group 2


Cake fruits & coffee/water/juice
Group 3
Marine

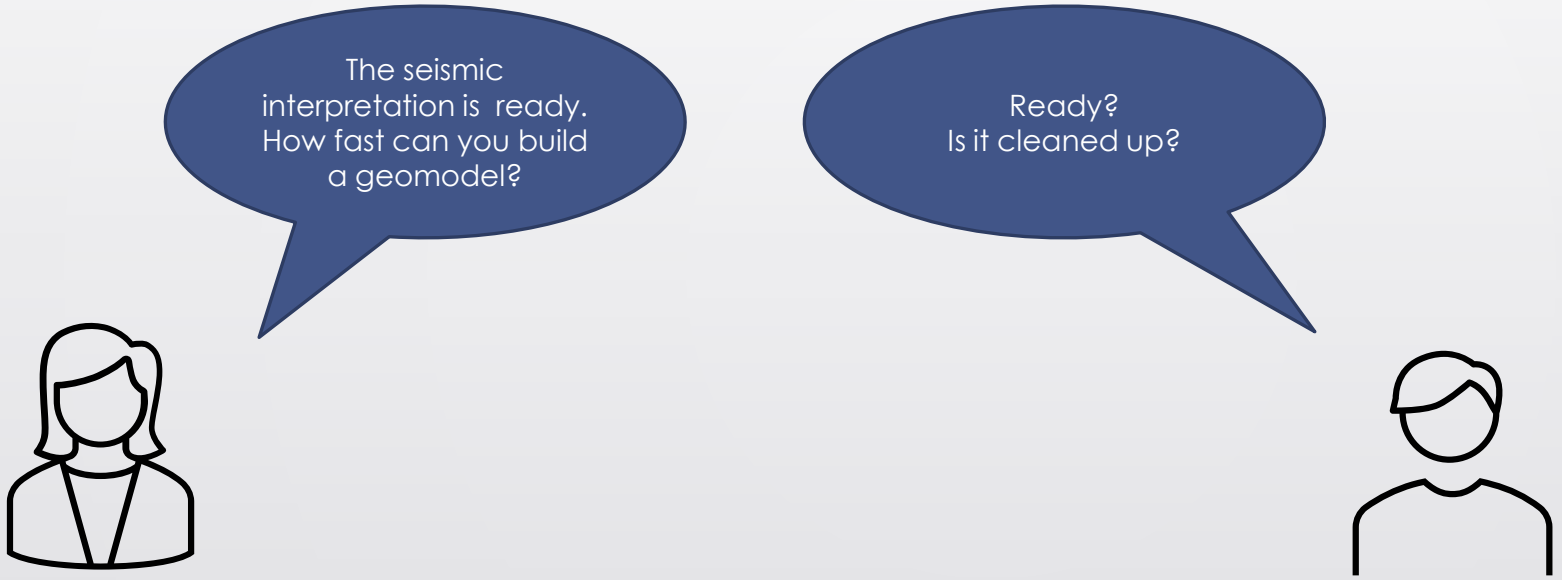


Choose a discussion keeper

- Role:
  - Make sure everybody in the group gets talking time
  - Time keeping
  - Make sure the key ideas are on the flip chart
  - Find a presenter to other groups- 1 presenter per impulse talk
  - When problems are raised
    - -> probe for solutions
    - -> keep the discussion going
  - TAKE A PICTURE OF YOUR FLIP CHART and BRING IT
    - Send it to Sonja.Kuhlmann@conocophillips.com

Impulse talk 1

What is a clean interpretation?



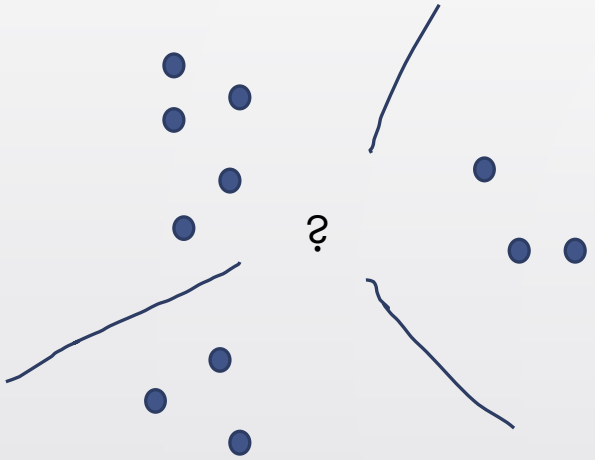
Definitions

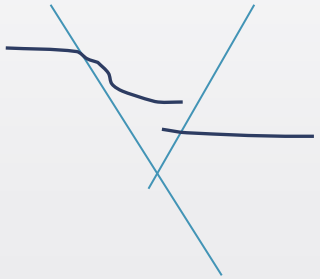
- Seismic Interpretation
  - "Unconstrained" horizon and fault interpretation
- Structural Framework
  - Constraint = "water tight" horizon and fault interpretation
    - Just the constrained fault interpretation is referred to as fault framework
  - Fault-fault-interactions and horizon-fault-interactions clearly defined
  - Minor (non-seismic) horizons are within the space defined by the major (seismic) horizons, e.g., not crossing
  - Fault throws are consistent
  - Geometries approximated and described by surfaces
  - Well based structural framework: horizons and faults fit with the well top and zone logs hence the well paths are in the correct zones and are on the correct side of a fault

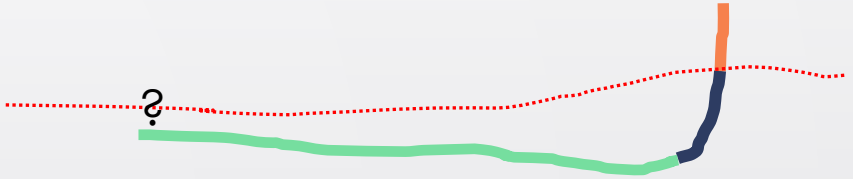
- Geogrid
  - Fine scale approximation of structural framework with grid cells
  - Some geometry limitations might come with software choice
- Simulation Grid
  - Coarse scale approximation of structural framework/geogrid with grid cells
  - Additional geometry limitations might come with software choice

Could be common dimension

What is a clean interpretation?



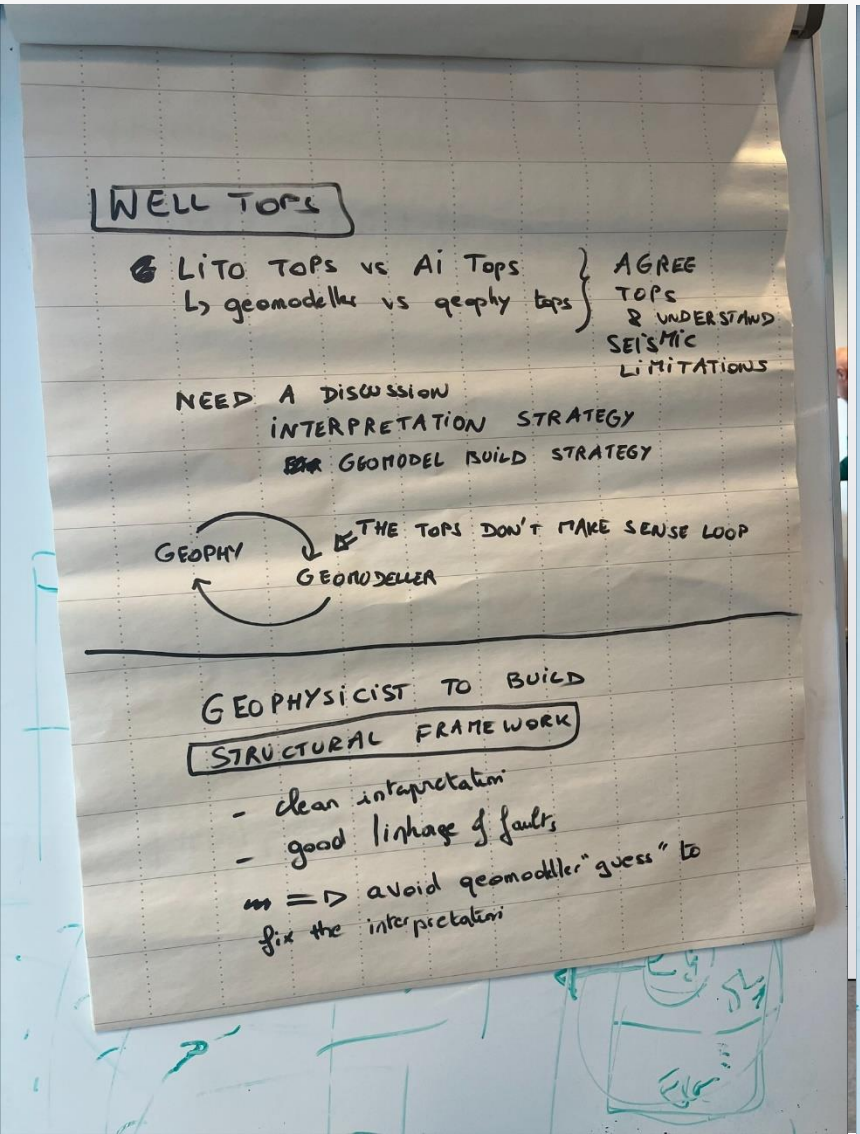


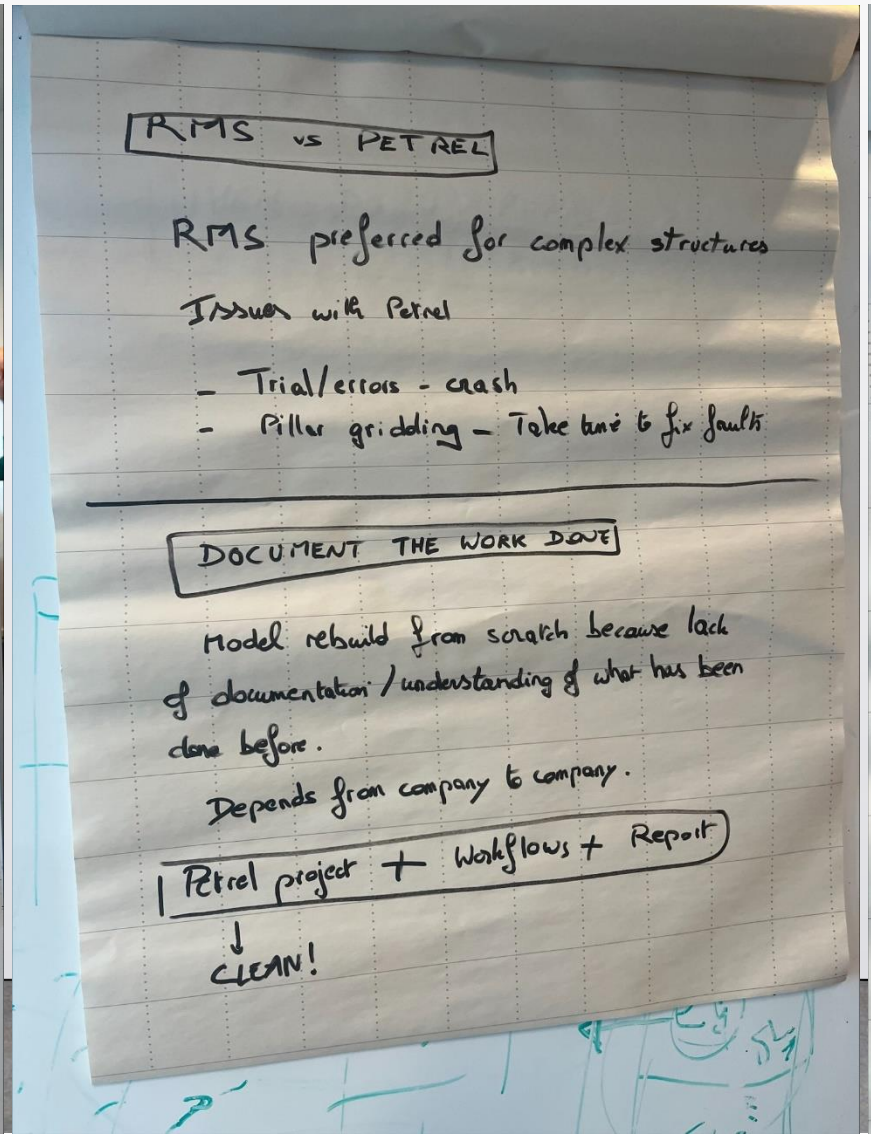


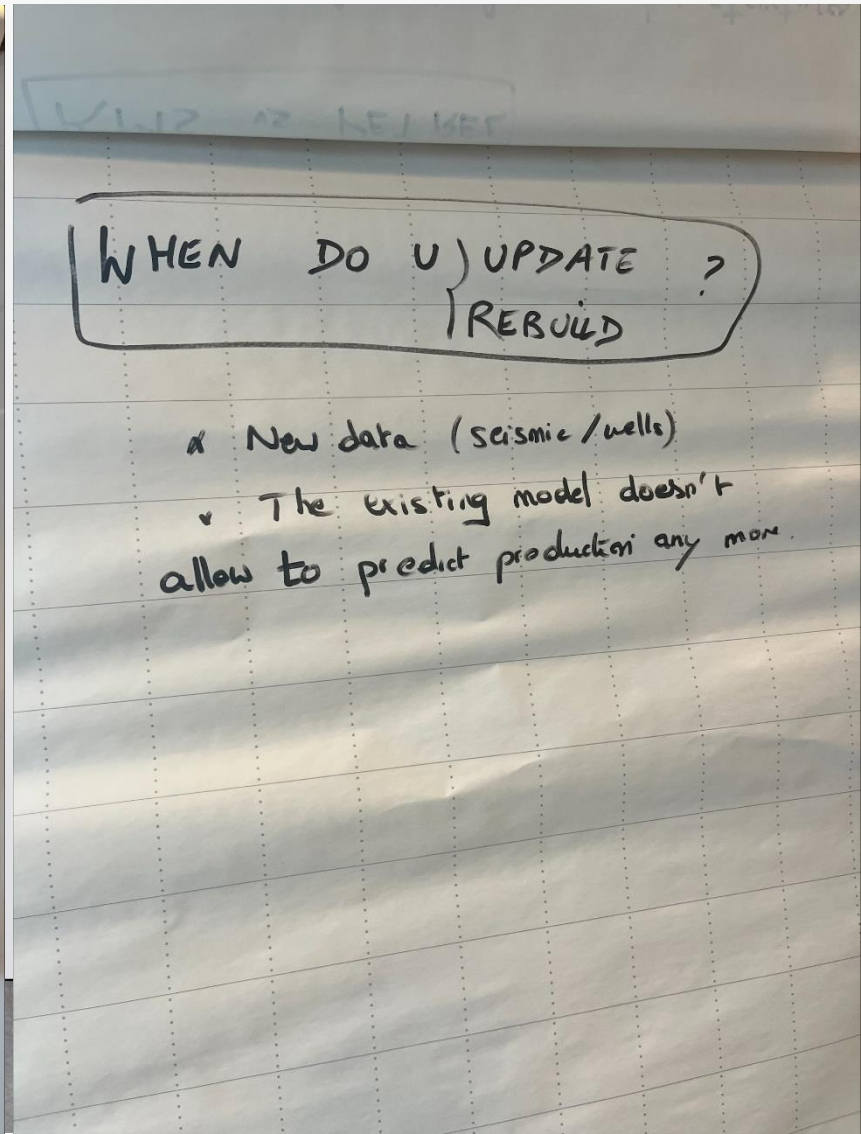
Discussion points

- Who is doing the interpretation
- Sequential vs integrated
  - Seismic independently from thickness-based horizons?
- How far to go back if finding inconsistencies?

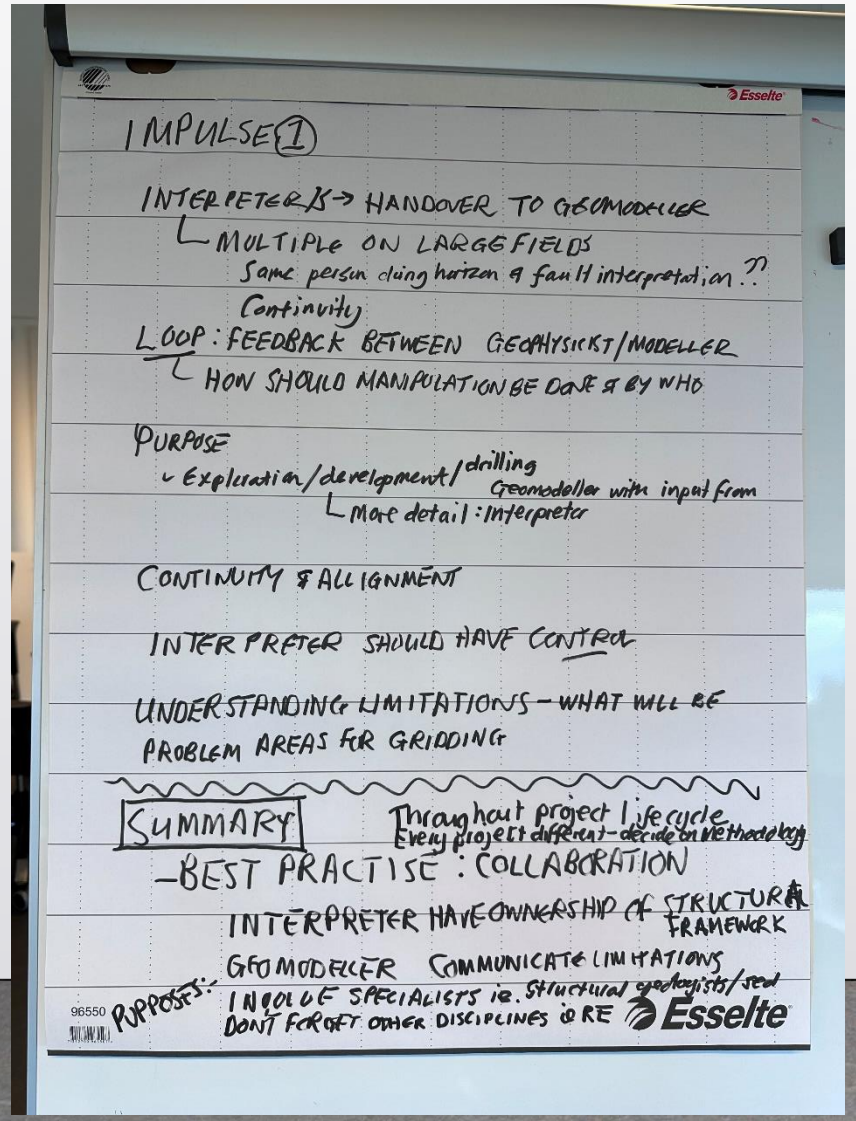
Group 1 - Notes



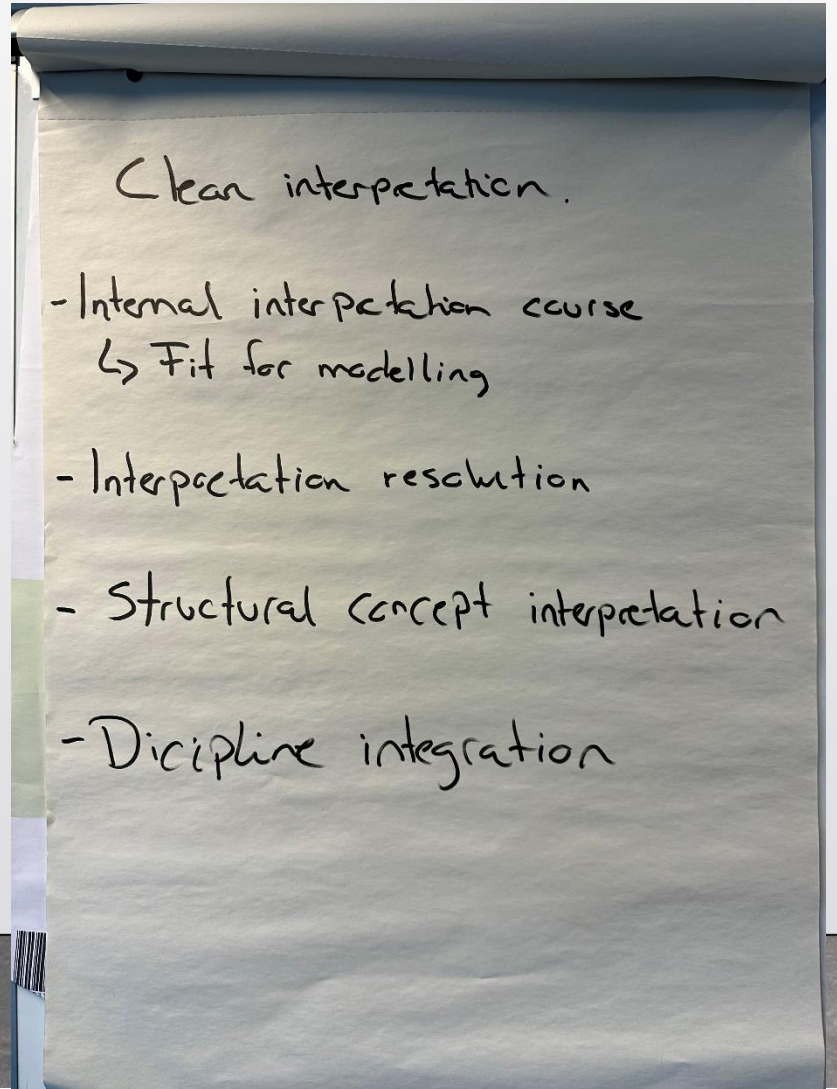


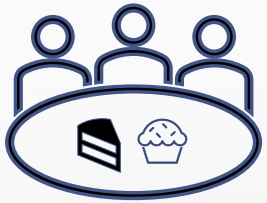


Group 3 - Notes

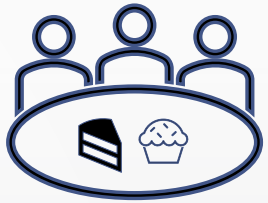


Group 2 Notes





Impulse talk 2

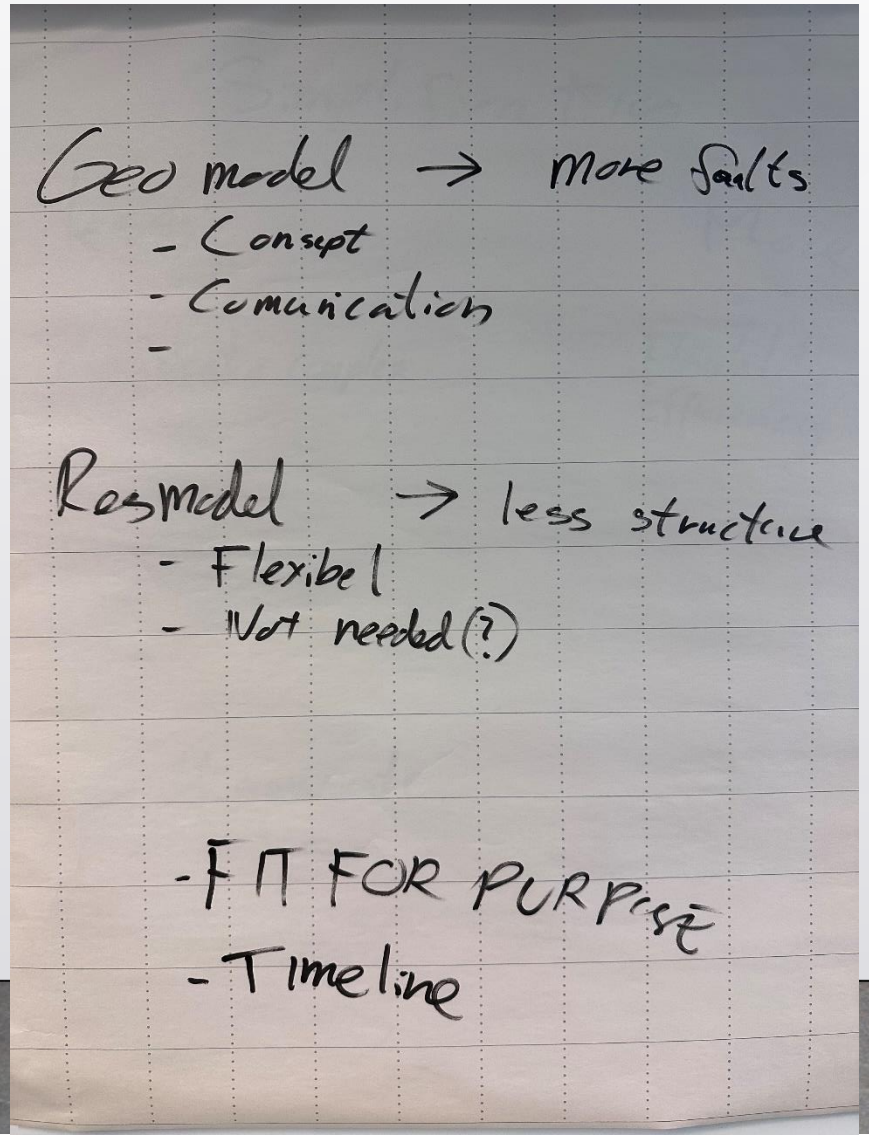


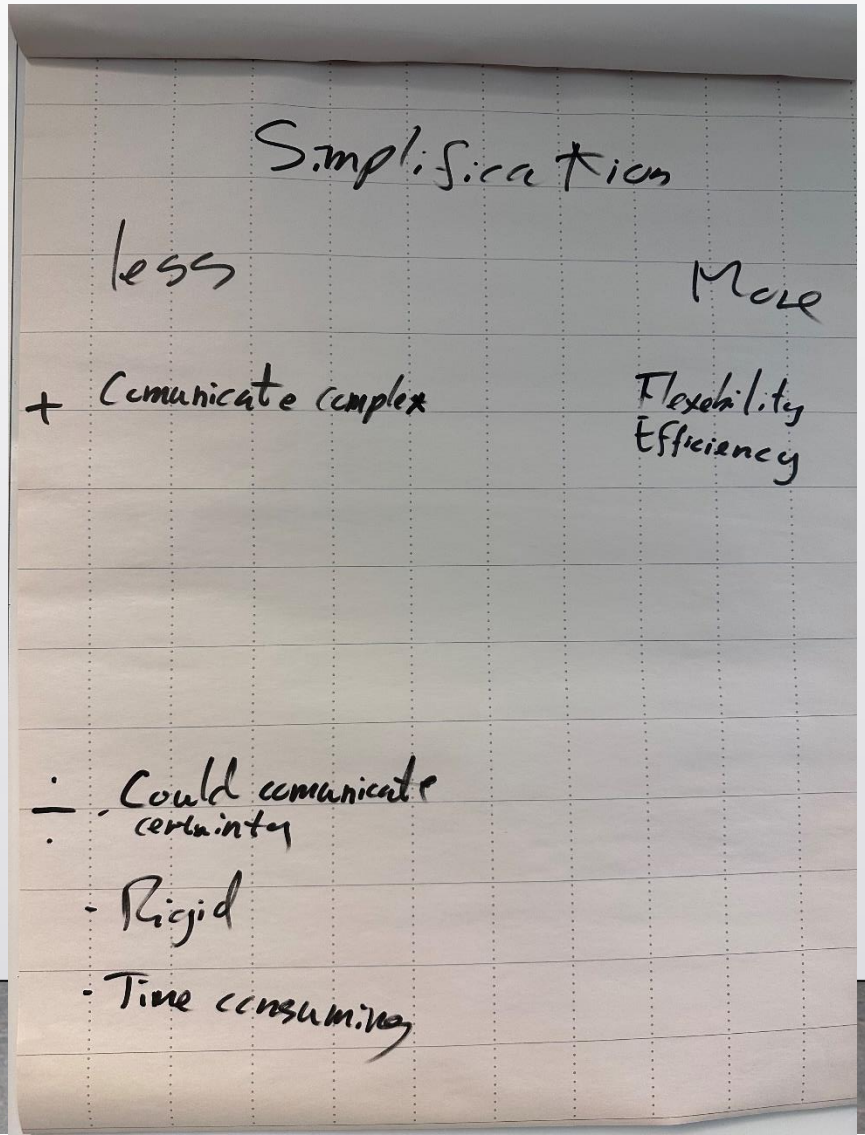
How complex should my fault model be ?

- Geological model vs reservoir model

- Impact of simplification?
  - Positive
  - Negative
  - Mitigation

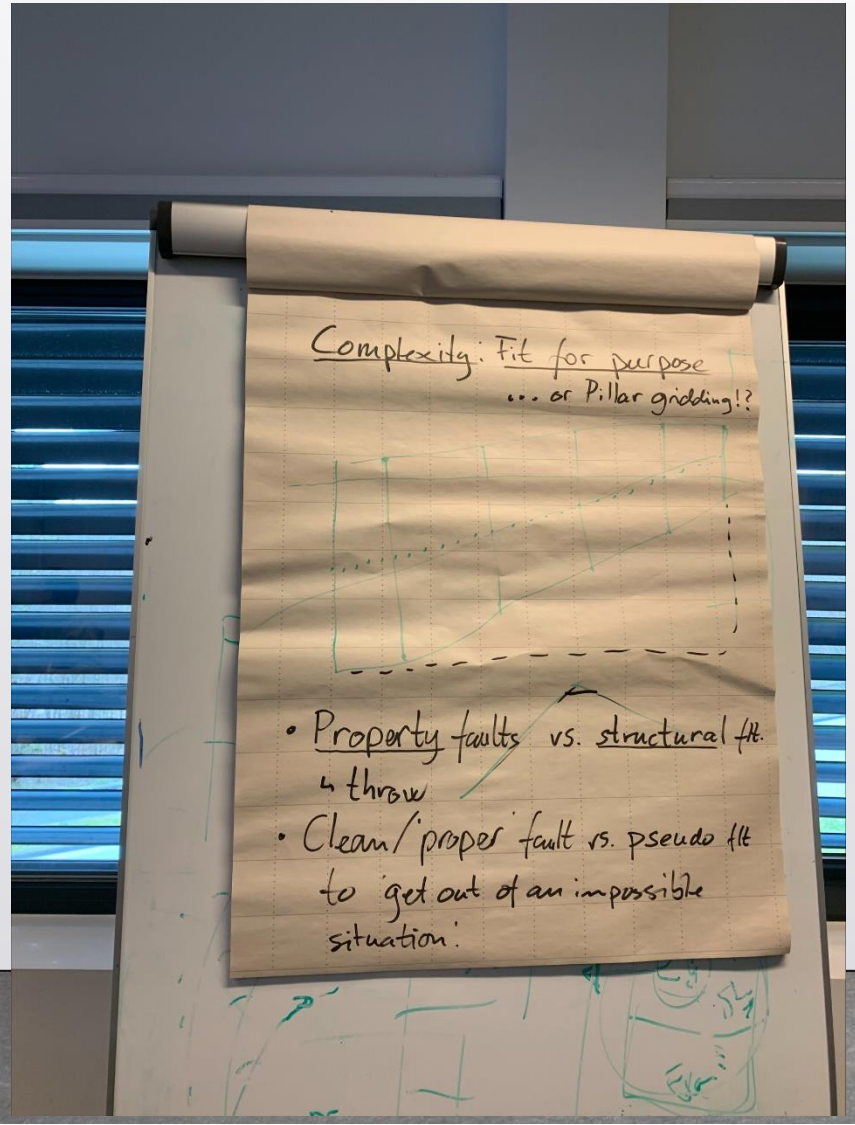
Group 3 - Notes

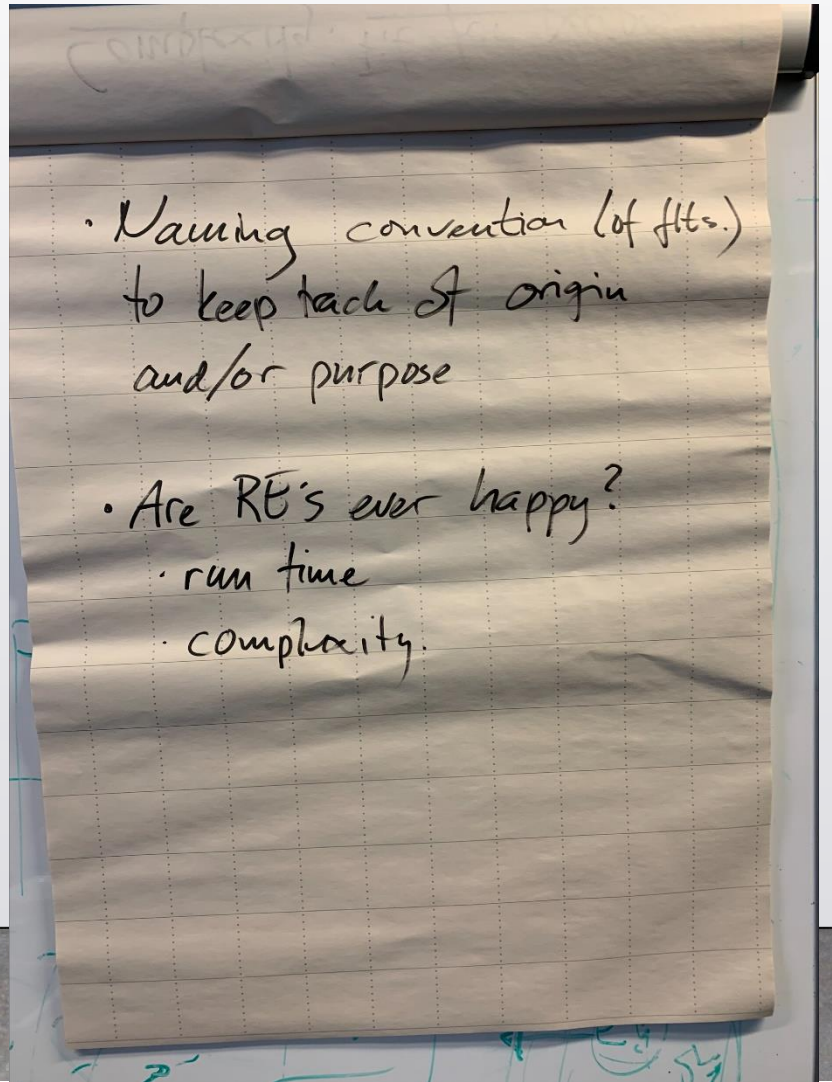


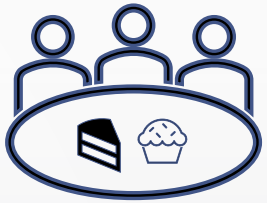


Group 2 - Notes

Group 1 - Notes



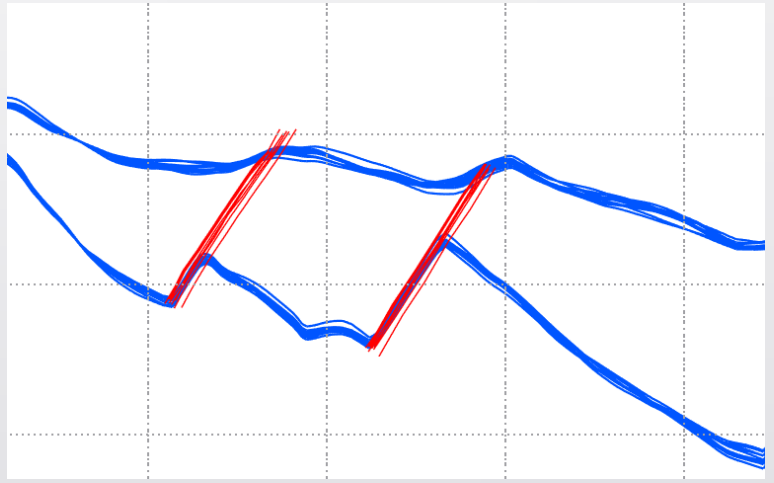




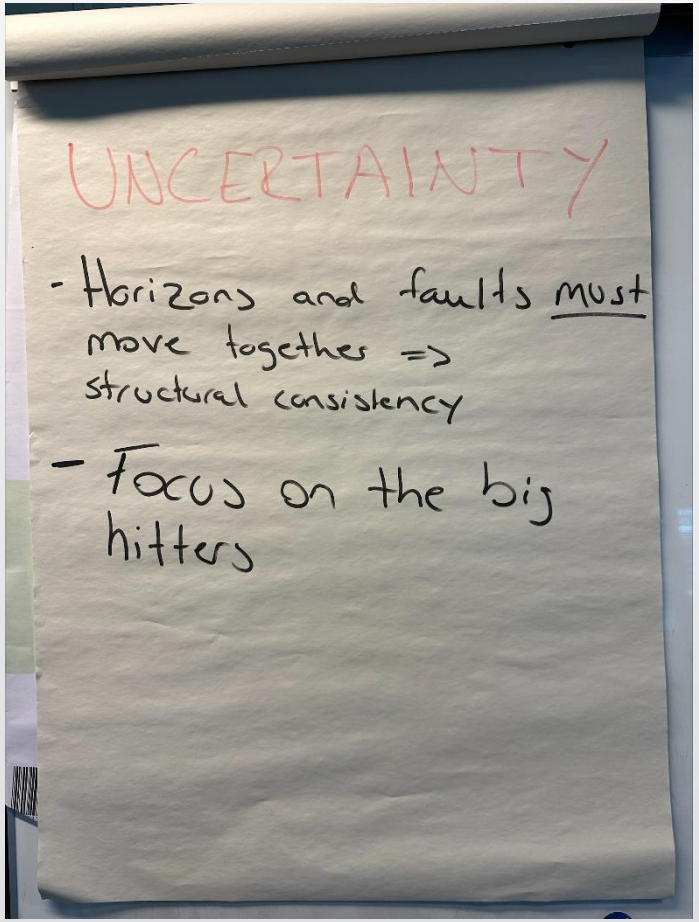
Impulse talk 3

Structural uncertainty discussion point

- Horizons
  - Several interpretation
  - Stochasticity around one work case
- Faults
  - Fault placement
  - Uncertainty around it
  - Interaction between faults and horizons
- Velocity model



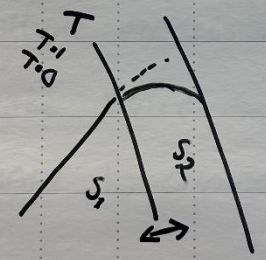
Group 2 - Notes



Group 3 - Notes

structural unc

- more dificult if there are differen structural models
- several stochastic models with differen probabilities



- large unc on prosperts

unc on top/base

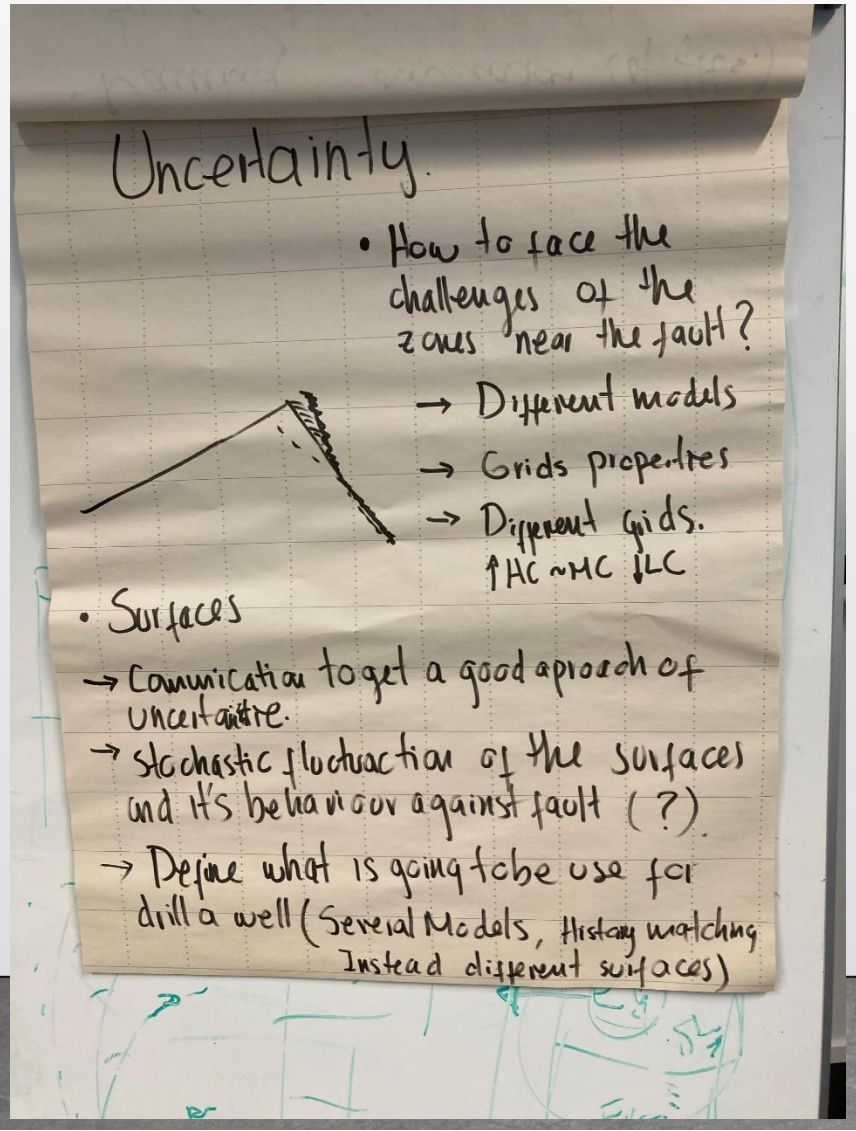
- how to handle it if you have two different data sets -> resulting in two different models
  - ↳ an AVG model accross two or multiple models might not make sence
  - ↳ need to choose structural concept

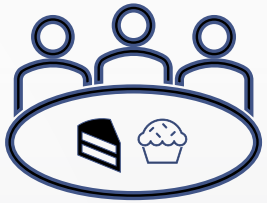
- is there any software that can hadle both horizon dept shift / latteral fault shift and fault tilt?

- how complex unc. workflow is needed

- servey unc.

Group 1 - Notes





Feedback

- 12 forms filled-1participant left before
- Very consistent feedback from all
- Format
  - Nice to have a chance to meet other people/expert and different challenges to solve
  - Refreshing different than 1 way dialog
  - Group size (4 -6) allow communication/ contribution from all . Better than 1 way dialog
  - Good to have the overall summary
  - Good to have topic points to discuss to frame the discussion (allow to digress but refocus)
- Session length
  - 20/30 mins discussion worked well for each topic
  - Some topics could be ½ day session on their own (e.g., fit to purpose, uncertainty)
  - ½ day enough
  - Longer hard to prioritize

Feedback

- Satellite location-> if we can . Will fit
- Suggestion of session topics
  - Fit to purpose
  - Structural uncertainty
  - Concepts and link to model
- Other feedback
  - Case study to force to identify common issues
  - Projects and solutions
  - Have follow up session with collaborative findings
  - How in the industry can we improve and share knowledge with common problems

Next dates

- 22 August
- 7 November

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The Grid Build

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The Property Model

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The Uncertainty Study