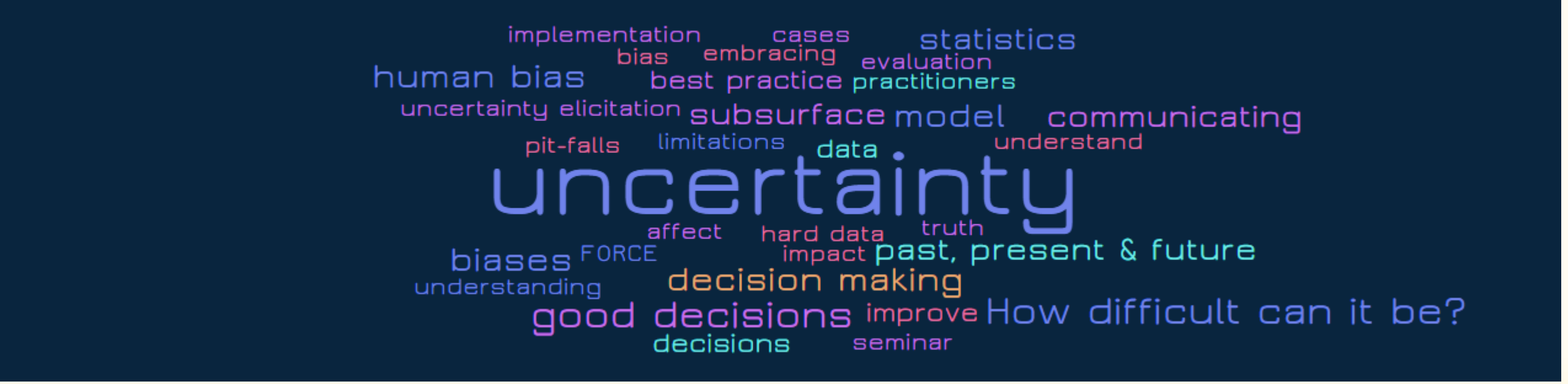


Making good decisions under subsurface uncertainty: How difficult can it be?

FORCE

Administrative Things

- No fire drill planned
- In the case of an evacuation: Meet in the carpark

- No pictures & no filming of the presentations
- Switch off phones or silent mode

From "Decision User Manual", Norwegian Computing Centre, 1993

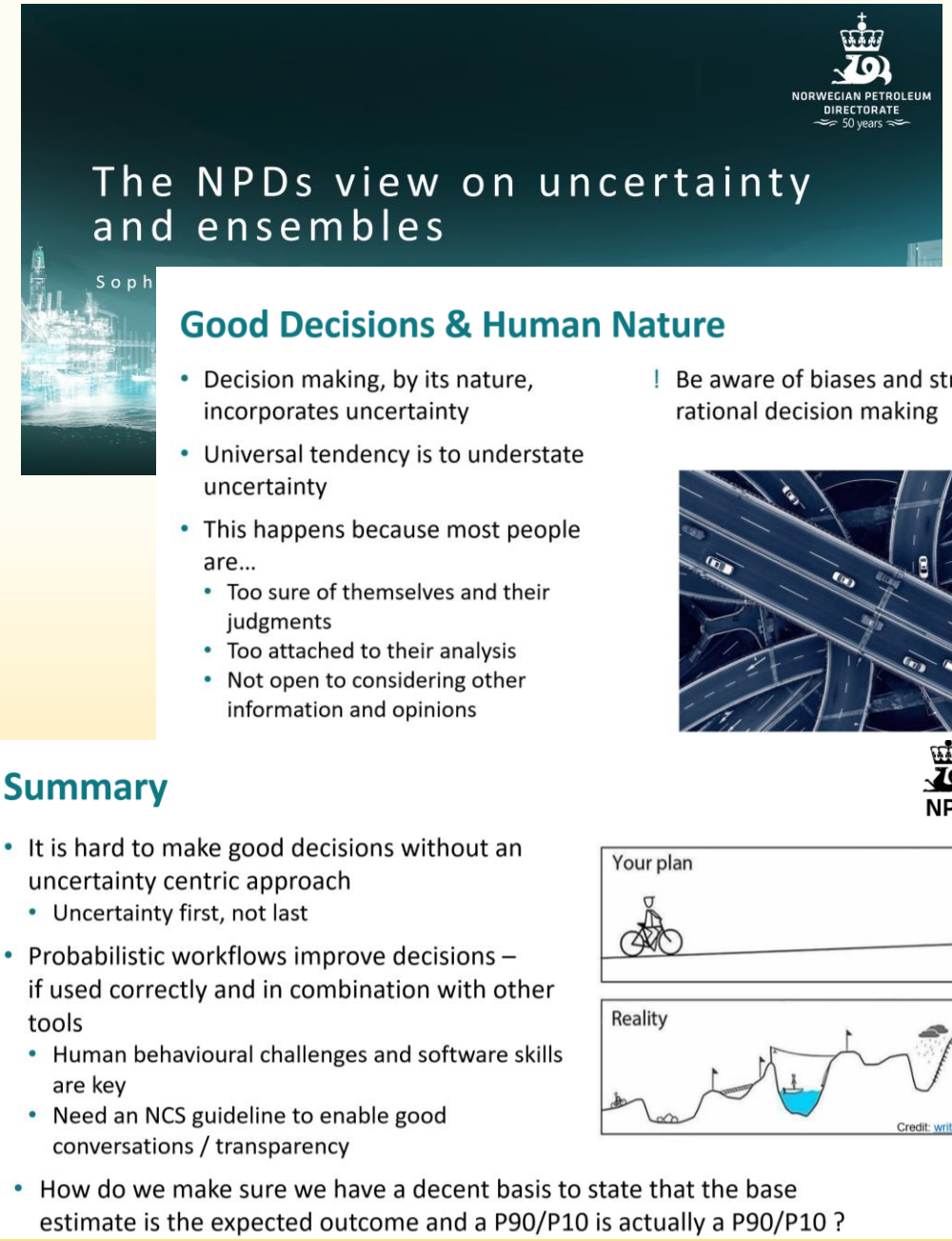
Ensemble Data Sharing

a guideline generated at the request of the FORCE Integrated Reservoir Modelling group

FORCE

Issue

- Which and how much data is shared when ensembles are built varies greatly between licenses
- Both the sharing of too little & too much data can impact “see-to-duty” and make a constructive decision-making process harder
- Wide-range of views on what should be shared
- Different software available – commercial and OpenSource



Process

- Objective – generate a guideline which is acceptable from both an operator and a partner perspective.
- Who - A cross-functional group under the FORCE umbrella
- How - March to October 2023 - smaller groups and 5 large meetings + Basecamp communication

Volunteers needed: "Data sharing - Ensembles"

Sophie Haseldonckx - Jan 27

As discussed at the IRM seminar on "Assisted History Matching and Ensemble Modelling" 7/8 December 2022 we would like to put together a guideline for "Data sharing of ensembles".

Part of the task is to define what is covered (and what is not) by this umbrella term (e.g. input used to generate ensemble, workflows, realisations pre & post history match, ...).

The aim is to have a working proposal of the guidline for the IRM committee to discuss before summer 2023.

To get the guideline set-up and in a format where agreement can be reached, we are looking for hands-on volunteers who have time to actively contribute and are dependent on constructive contributors. The thought is to meet at least once a month as a focussed group to achieve progress. As promised at the seminar, I will take a coordinating role to help things along.

The suggestion is for a small workgroup - around 5 people - who have a mixture of experience from
- FMU/ResX/Petrel U&O/other
- Operator/partner

Please send nominations to sophie.haseldonckx@npd.no before 3 February 2023.
(they do not need to be a member of the IRM comitte)

This is so that Trond, CT Chris and Sophie can make a selection to ensure it is a balanced group while also keeping it small enough to work effectively. The aim is to present the group to the IRM committee at the next IRM committee meeting which is currently tentatively planned for week 6.

Next step - "Data sharing - Ensembles"

Sophie Haseldonckx - Feb 8

Thank you to everyone who took contact after the request for volunteers for «Data sharing – Ensembles» - please see next request in yellow 😊

We have had a look though the nominations and would like everyone nominated to participate in the workgroup. That puts us above the 5ish people target, but this gives us a good mixture of people. Through creating subgroups, we will aim work effectively.

I presented our suggested way forward at the Force IRM committee today - see attachment below. This also includes a list of the workgroup members. Here is a short summary

1. We would like the workgroup members and anyone else (hence the post here) to email their ideas to sophie.haseldonckx@npd.no by 3 March 2023 on:
   «What should be included in an ensemble data sharing guideline»
   Sophie will roughly group the suggestions so that at the first meeting
2. The workgroup members can work though the suggestions
   a: select what topics to include / exclude / leave for a later stage
   b: set schedule / deadlines
   c: form subgroups to work on selected suggestions in "sprints"
3. Further meetings to come together to share progress and work through next suggestions
4. Repeat

The plan is to have check-ins with the IRM committee during the process to ensure that the outcast to be presented in the summer is acceptable.

A separate email has been sent to the workgroup members.

Contributors

- Aker BP
- ConocoPhillips
- Equinor
- Resoptima (now Halliburton)
- TotalEnergies
- Orec / UiS
- Petoro
- PGNiG
- Vår Energi
- Wintershall Dea Norge
- NPD (now Norwegian Offshore Directorate) as facilitator

- Alexander Kovalevich
- Chris Townsend
- Eugene Dahl
- Hazim Lee
- Jon Sætrom
- Katherine Waite
- Konstantin Monastyrev
- Marcin Bartnik
- Marine Seignole
- Per Olav Eide Svendsen
- Remus Gabriel Hanea
- Sandor Voelgyi
- Sophie Haseldonckx
- Stian Håland

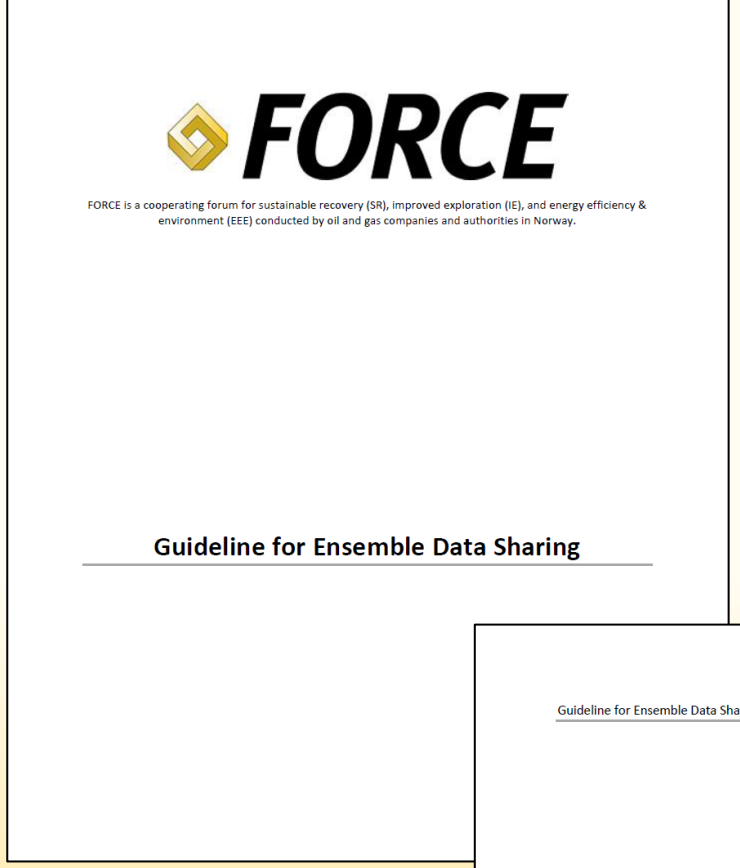
Result

Three possible levels of data sharing

- Level 1 - results from the ensemble are to be **reviewed**.
- Level 2 - results from ensemble are to be **analysed**.
- Level 3 - results from ensembles are to be **regenerated** in-house.

Includes a section on

- Terminology
- Collaboration in the partnership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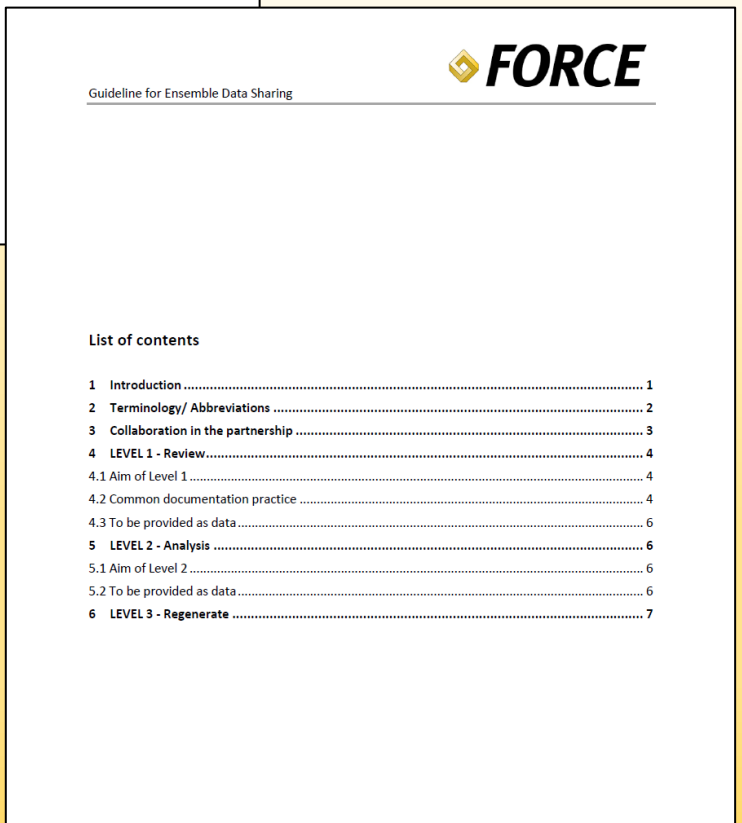
FORCE is a cooperating forum for sustainable recovery (SR), improved exploration (IE), and energy efficiency & environment (EEE) conducted by oil and gas companies and authorities in Norway.

Guideline for Ensemble Data Sharing


Guideline for Ensemble Data Sharing

FORCE

List of contents

Carbonate and Chalk Reservoirs

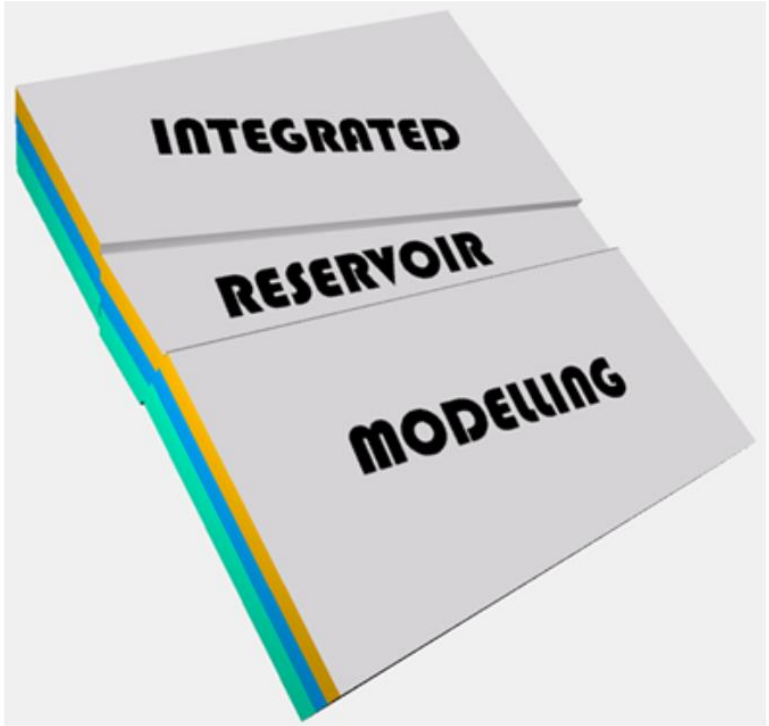
Improve IOR/EOR Compentence

Integrated Reservoir Modelling

Production Optimisation and Reservoir Managment

Well Technology and Drilling

Integrated Reservoir Modelling



The network group provides an open forum for discussion, sharing of ideas and problem solving in the cross-disciplinary area of Reservoir Modelling

Contact

- Chair: Trond Halvorsen Wierød- Petrolia NOCO
- Vice: Chris Townsend- Aker BP

Ensemble data sharing guidline document

- Guideline document

Next Steps

- The guideline will be evaluated after 1 year of use (summer 2024)
- Please give feedback!

- Both companies and the regulator should evaluate:
  - Has the document contributed to better understanding and cooperation?
  - What should be updated / added / taken out?

https://www.sodir.no/en/force/