DRIVING PERFORMANCE IN DRILLING THROUGH SUBSURFACE DATA LIBERATION THROUGH OSDU

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who is a part of and what constitutes the well plan?

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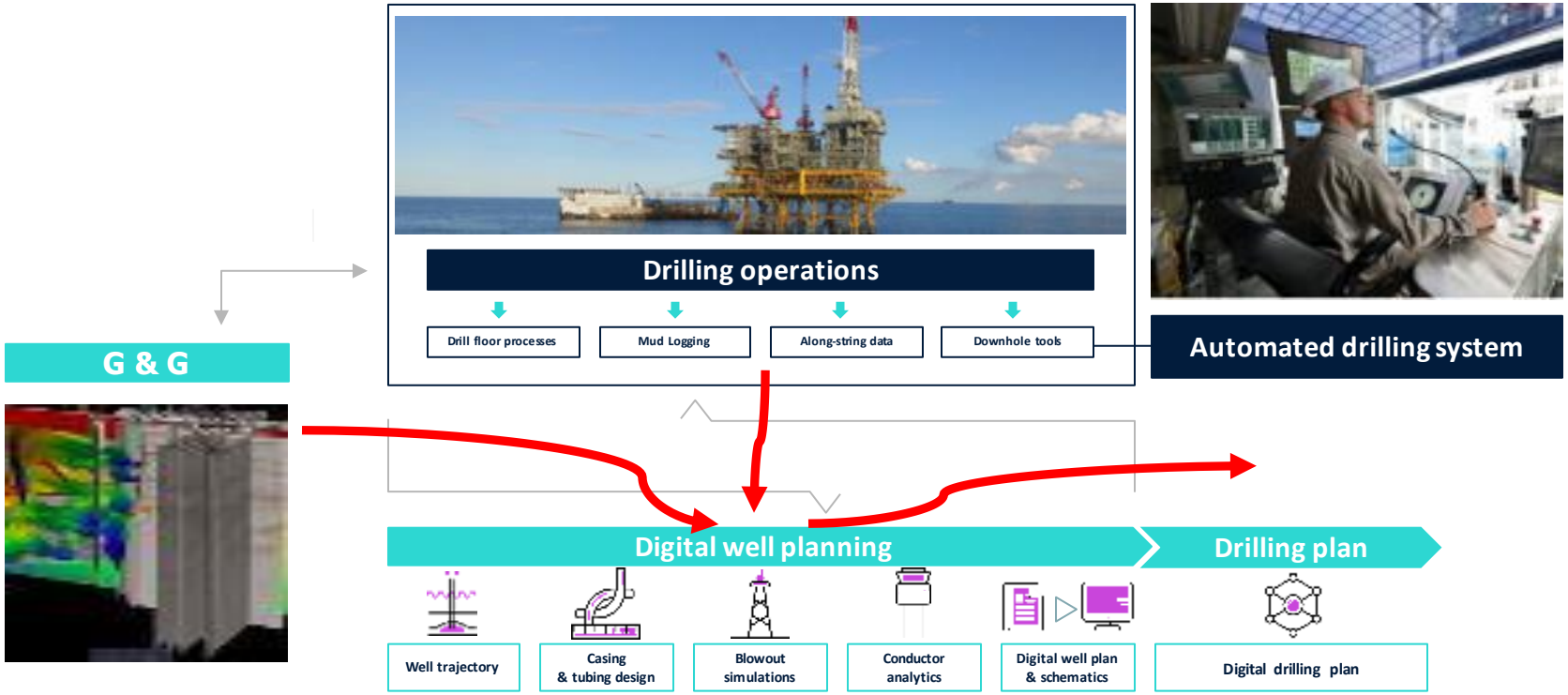

Digital drilling procedure

Safe operating windows & drilling strategy for optimal drilling without error

Procedures constantly updated based on rig & down-hole data

some challenges getting to the plan

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Data is manually imported and exported between Subsurface and D&W applications. Poor filing and governance can increase time intensiveness of this manual process

Data is shared both internally and externally via Outlook and SharePoint which is challenging to ensure version control, and ensure the latest correct calculations are used

Daily Drilling Reports, Performance and Financial reports are **manually collected** and consolidated, which is **time intensive**

Multiple systems are used during well delivery and have overlap in the data that must be entered – this results in timely repeated input (compounded by dynamic design) and increased risk of error

Data is **stored in multiple places** by different functions during closeout, including zip files and unstructured formats which results in **difficulty finding and accessing data**

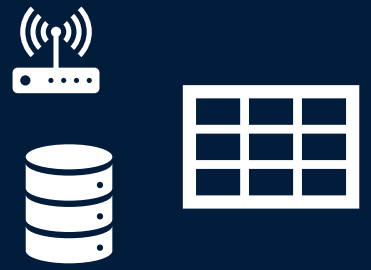
Ensuring D&W **data is archived** in structured systems **is limited** by its ability to be accessed by external users

…but what if something changes?

Drilling target/trajectory handover between Subsurface, OpsGeo, DrillEng and DirDriller done manually and time-consuming (e.g. Fenja: 19 revisions – 57 trajectory sign-offs)

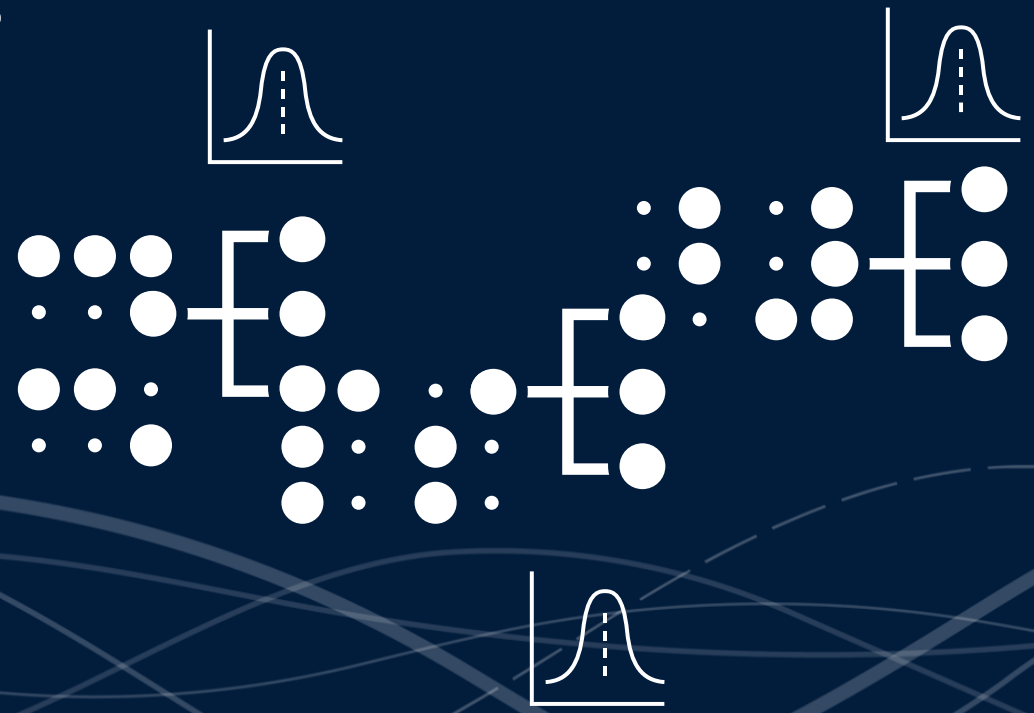
Each time trajectory changes (e.g. 19 times for a project) the Ops Geologist has to send new data to DrillEng (PPFG, temp, formation tops). This is time-consuming and any mistake has high consequences.

Blowout & kill analysis require ≈15 input data points (about well design and reservoir), each iteration by 3rd party very time consuming

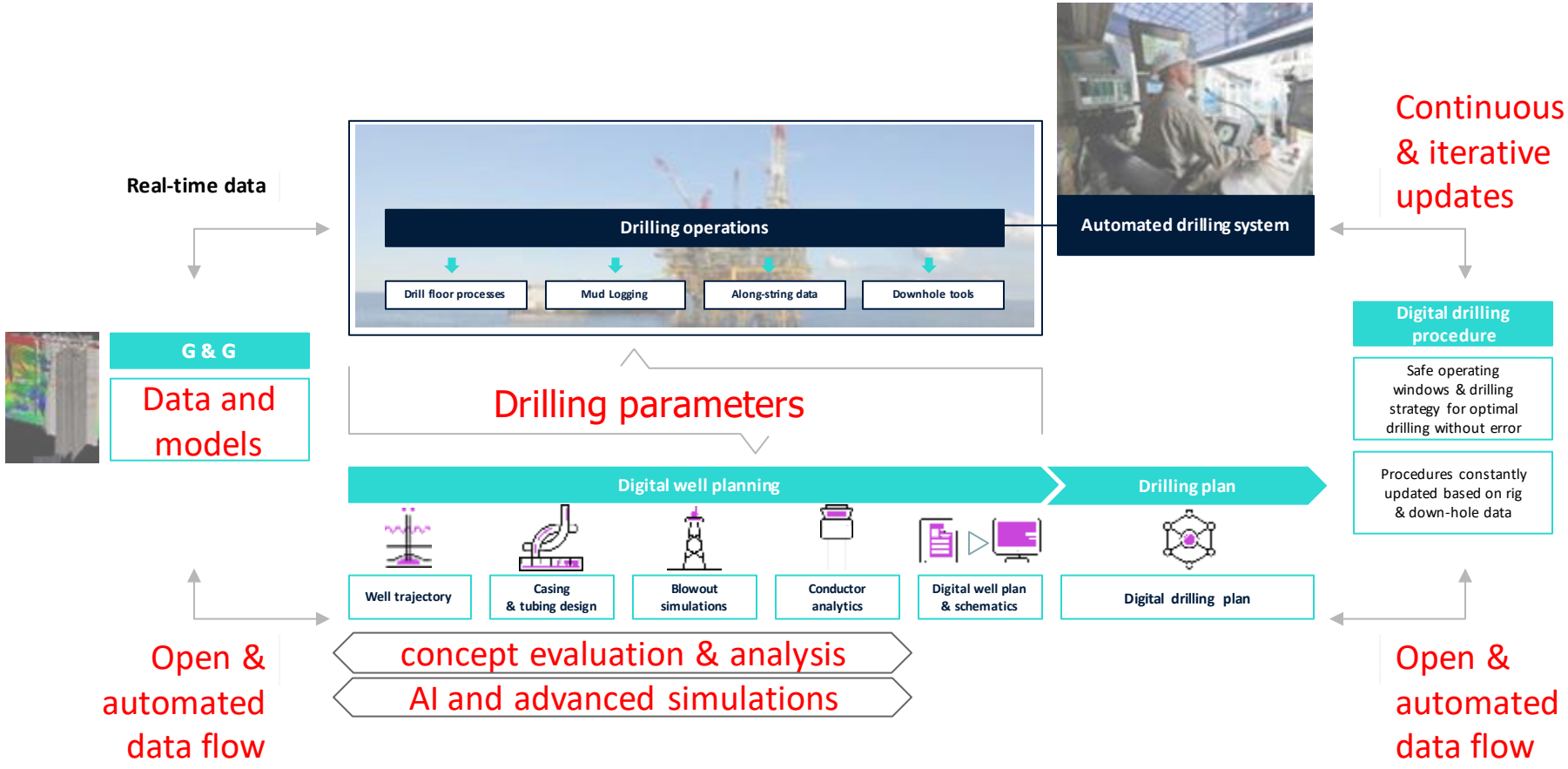


Several data types «live» in spreadsheets/silos, but should be in a central database to be managed and used (e.g. risk)

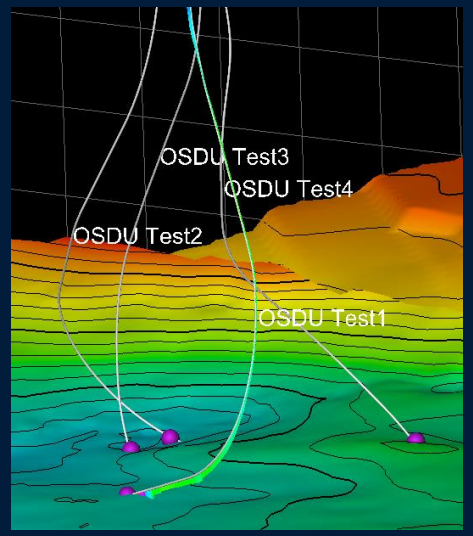
…and what is the uncertainty from the contributing sources?

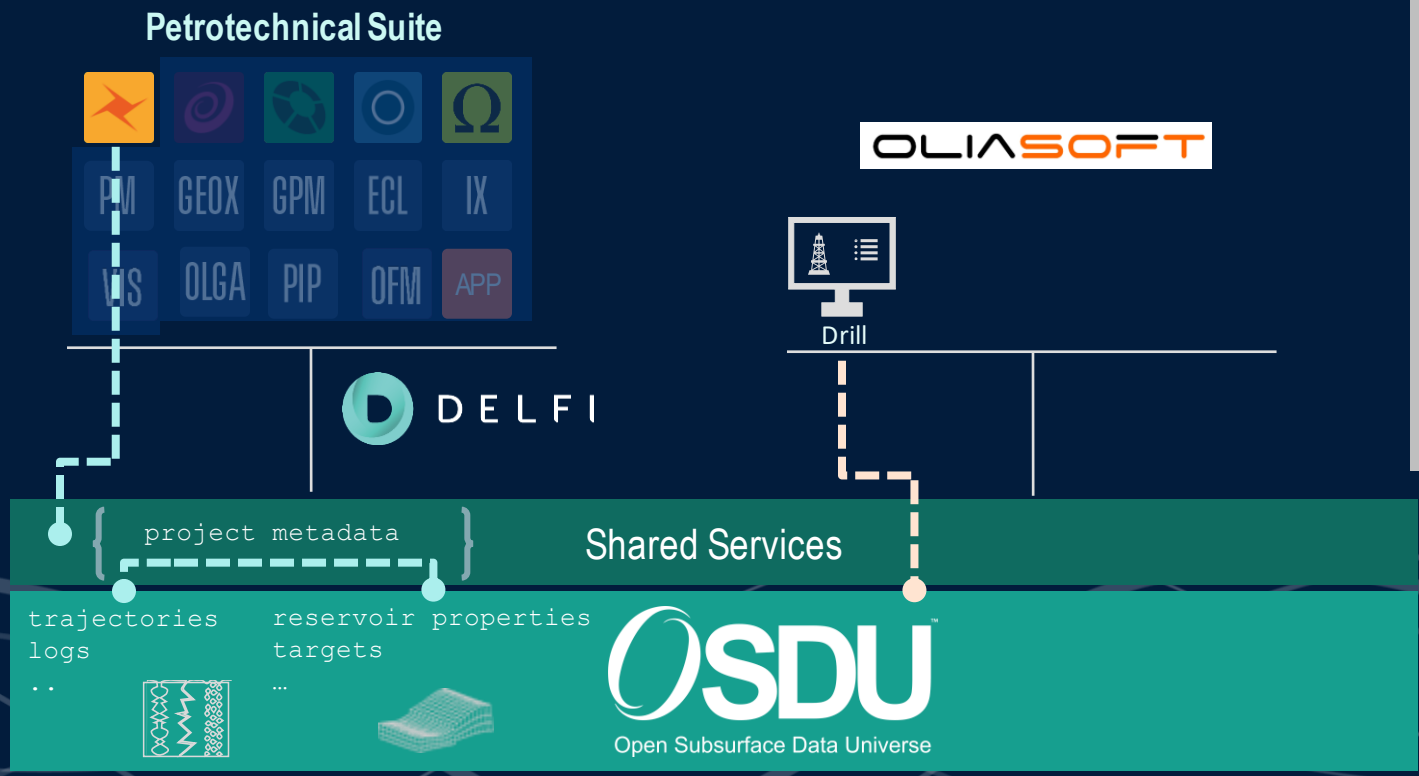


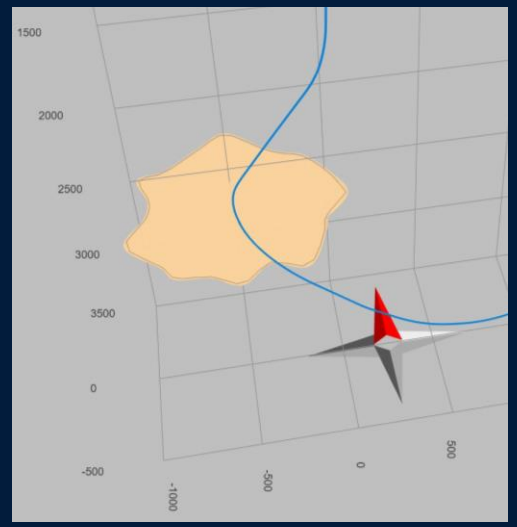
need better integration to enable automation



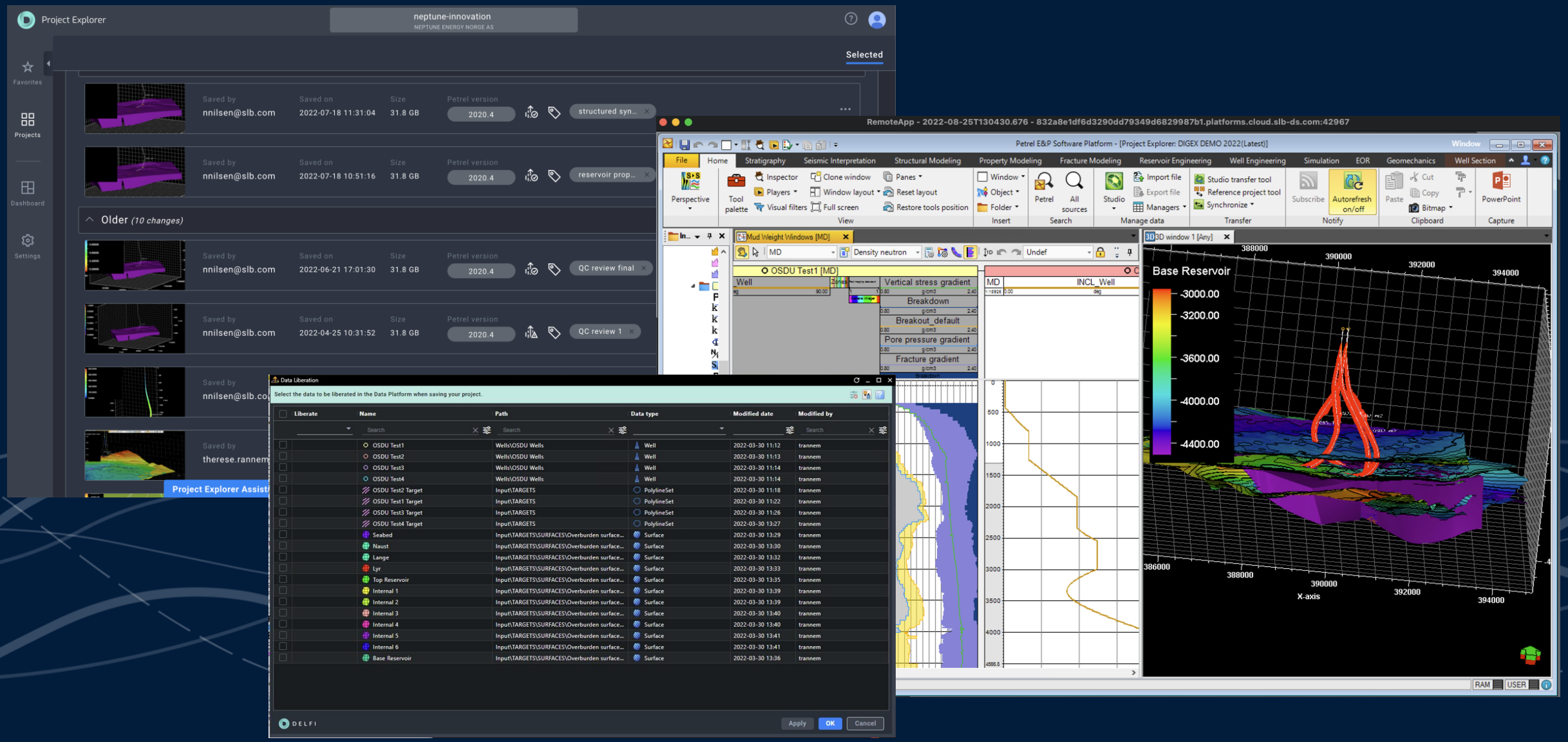
integration through OSDU







Petrel PTS and OSDU



OSDU and Oliasoft

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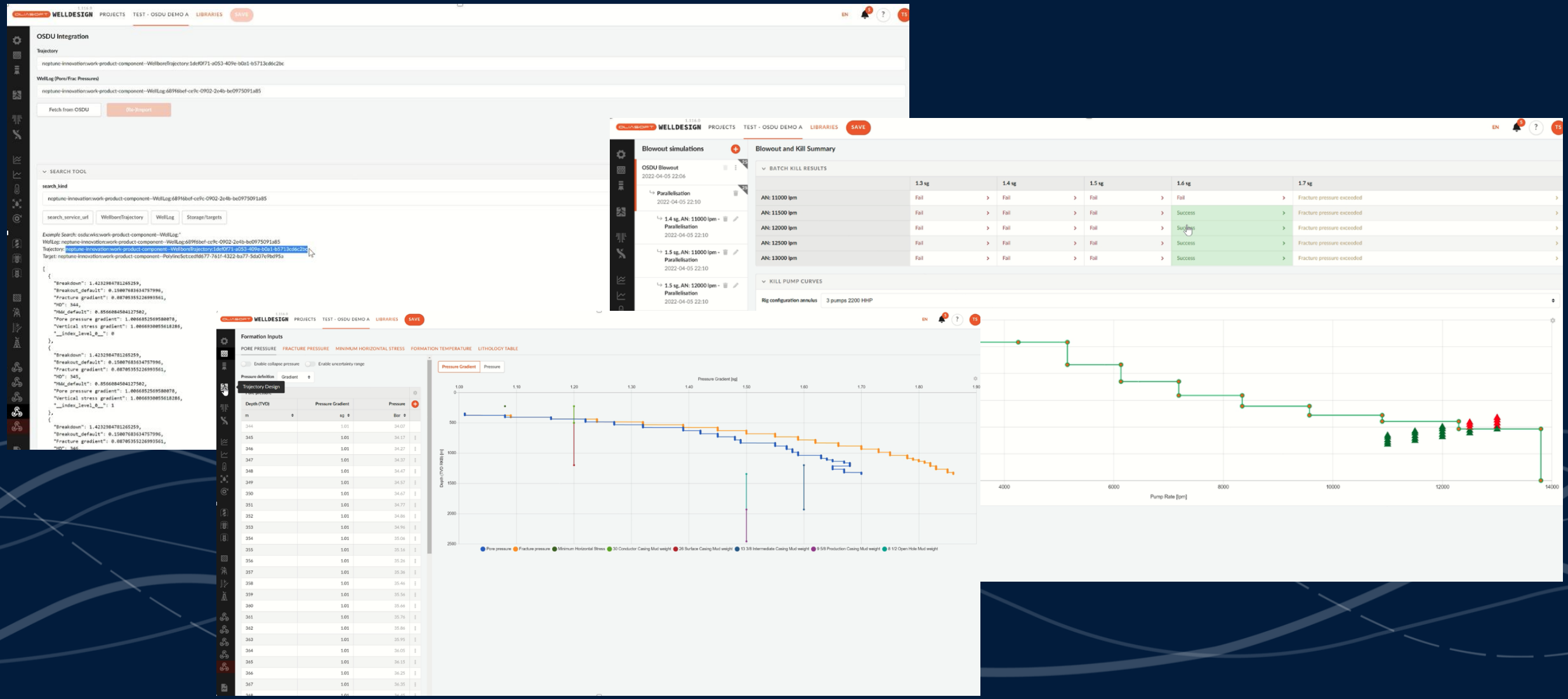

more cost effective

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Reduce well design iteration time

Reduce risk of wrong input data

Reduce non-value adding efforts

drill the well right

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Reduce well design iteration time

Reduce risk of wrong input data

Reduce non-value adding efforts

Improved hand-offs

Faster iterations

drill the right well

Faster iterations

Reduce non-value adding efforts

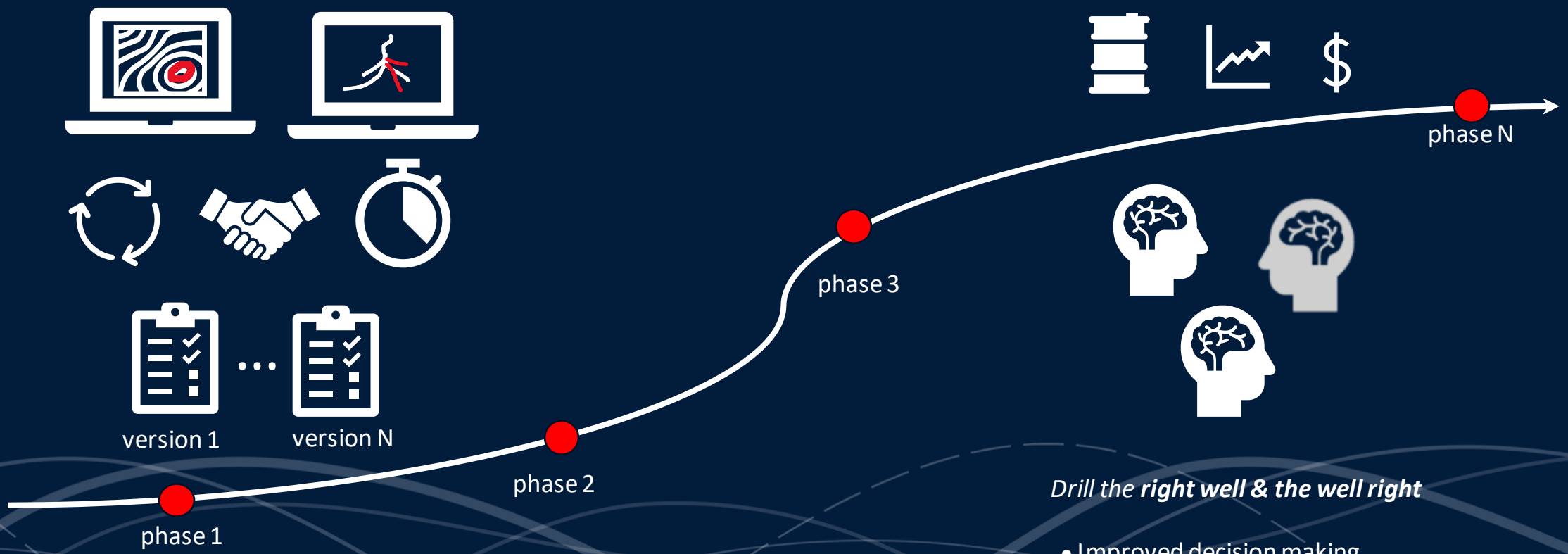
Improved hand-offs

Use of best available knowledge across teams

Reduce well design iteration time

Reduce risk of wrong input data

agile development, incremental delivery



Collaborative environment: drill the well right

- Initial reduction well planning time
- Shorten well planning time
- Reduce NPT
- More data driven decisions

*Drill the **right well & the well right***

- Improved decision making
- Increased drill target success rate
- Reduced NPT
- Shorter well planning time
- Collaborative environment

how we have worked together

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