FieldTwin Design* and OLGA workflow in Equinor

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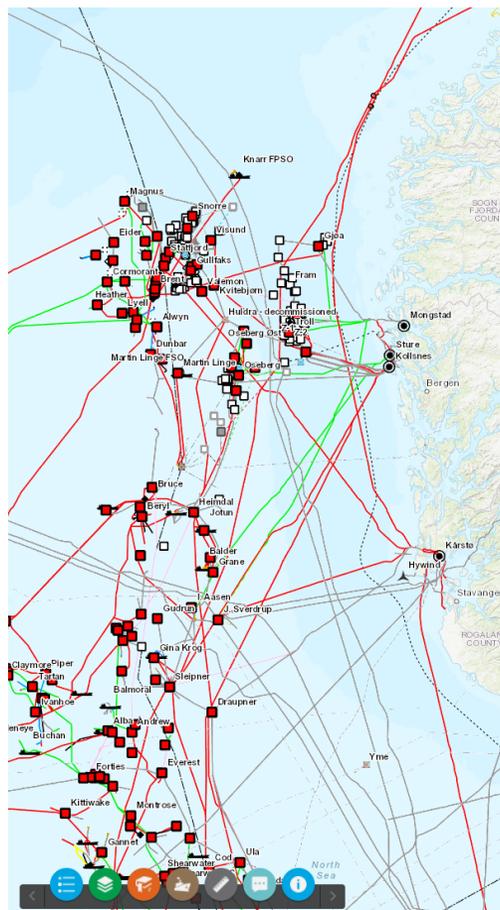Schlumberger Digital Forum 2022
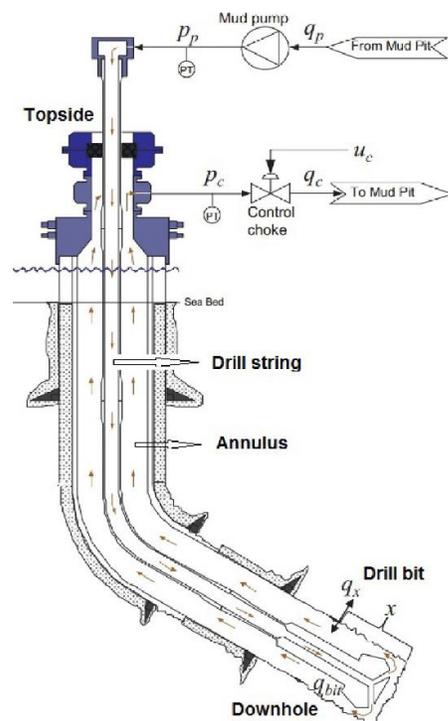September 20-22 | KKL Luzern, Switzerland

FieldTwin → OLGA

*A FutureOn data storage and visualization platform

Examples of Digitalization within different disciplines
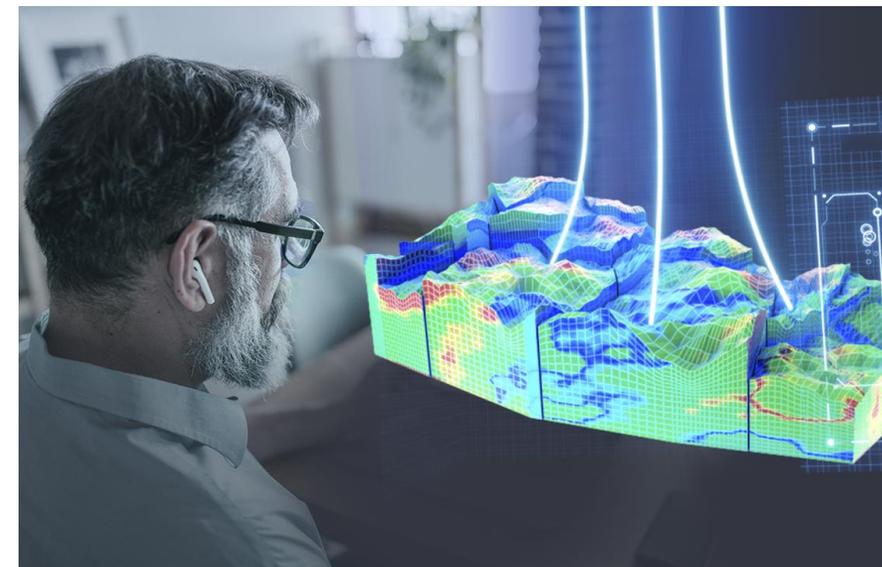(does not necessarily promote interdisciplinary collaboration)

Equinor: MapHub

Equinor: Well database

SLB: DELFI (OLGA, Pipesim, Eclipse)

Field development projects: Multiple databases/files for data storage

FieldTwin Design to promote interdisciplinary collaboration

Area specific data:

- Bathymetry data (maps)
- Marine infrastructure data
- etc.

Project specific data:

- Design basis
- Fluid data
- Reservoir data / production profiles
- Well data
- SURF data
- etc.

One common platform to visualize and store common project data

To share information between different disciplines working in field development projects
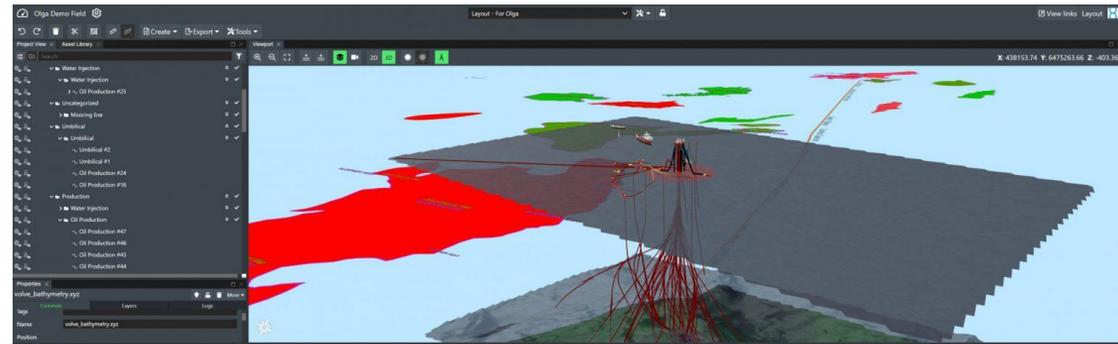
FieldTwin Design in Equinor

A Digital Twin for field development projects

- Data storage and visualization platform

- Screening of concepts with cost estimates

- Store system meta data to build /populate disciplines models like OLGA

- Key results from disciplines models made available in FieldTwin

Not a Digital Twin for as built systems in Equinor

However, FieldTwin supports collaboration with contractors Promotes development of an as built Digital Twin during the engineering phase
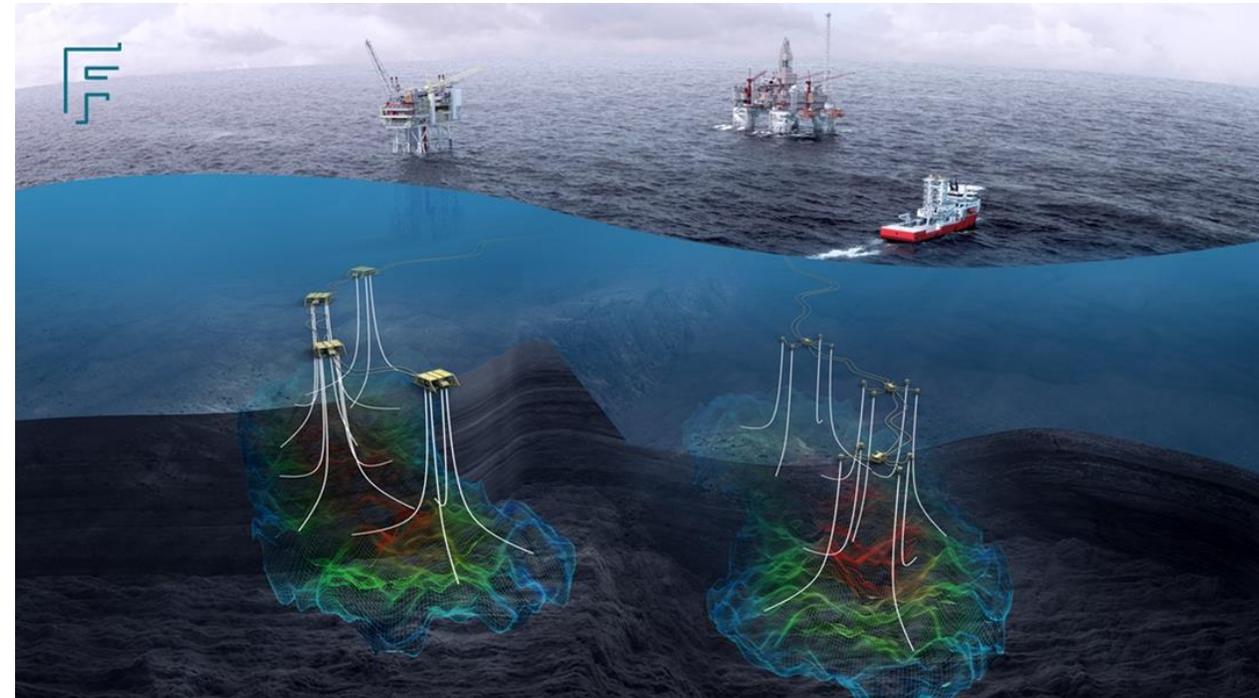
OLGA – FieldTwin workflow
(Development project between FutureOn, Schlumberger and Equinor)

**Phase 1: Released in OLGA 2021.1 and FieldTwin 6.2**

- Generate single flowpaths in FieldTwin with ID and Roughness

- Import flowpath (XY coordinates, ID and Rougness) into OLGA Profile Generator

Phase 2: Start Q1 2022 – Delivery Q3 2022

- Also import of U-value and Steel wall thickness to OLGA

- Set up heat transfer key in OLGA based on U-value

- Make wall based on U-value and steel wall thickness in OLGA
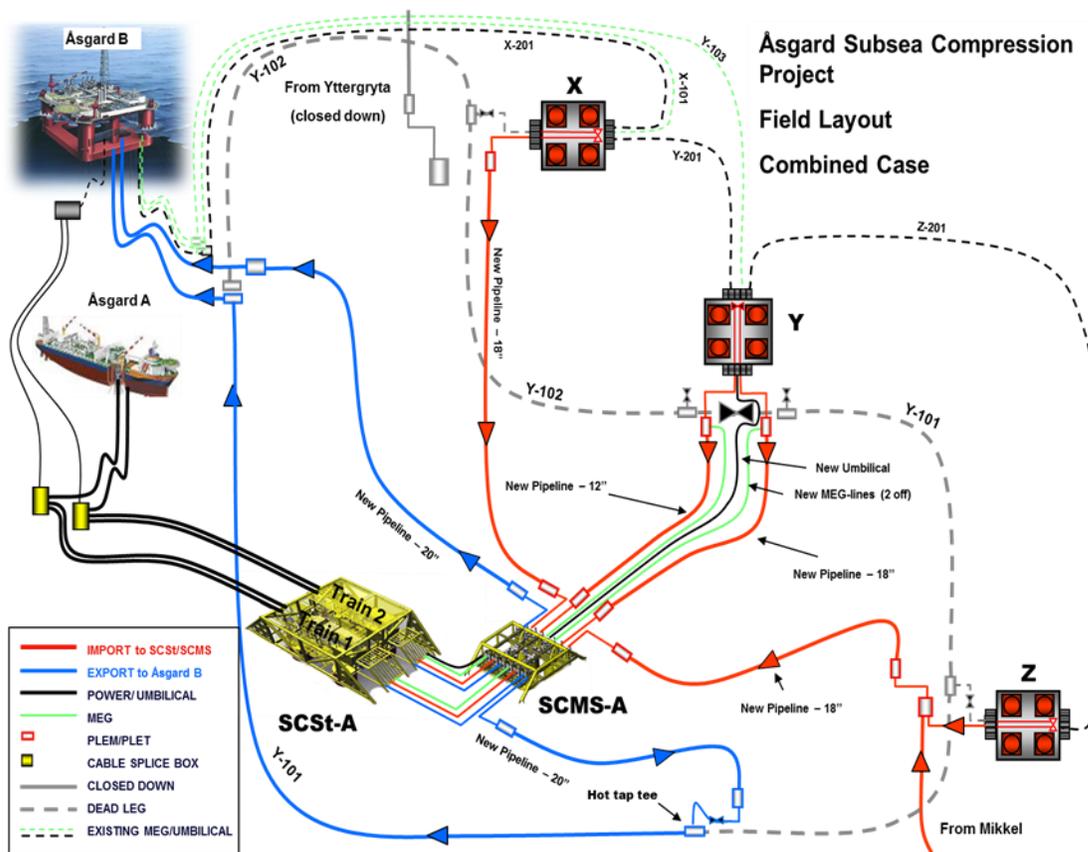
- Improve OLGA Profile Generator

System data → Model data

Apply FieldTwin – OLGA workflow to Åsgard subsea compression
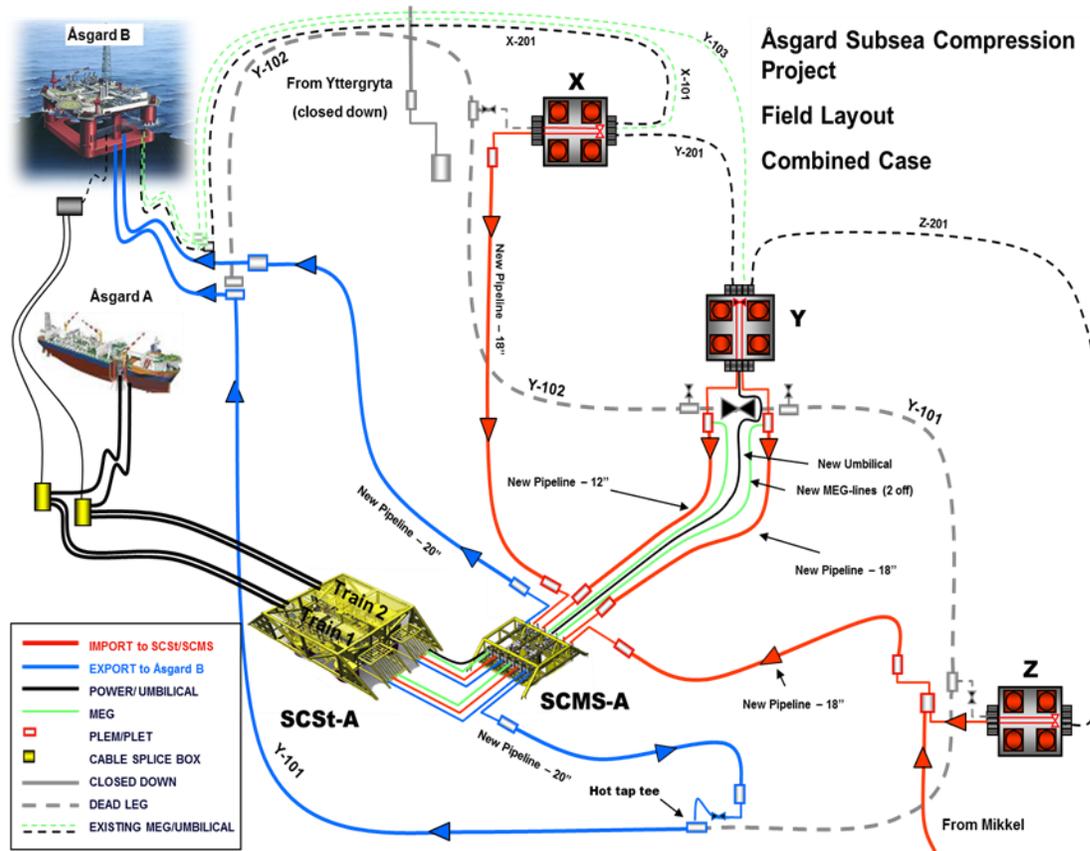
Apply FieldTwin – OLGA workflow to Åsgard subsea compression
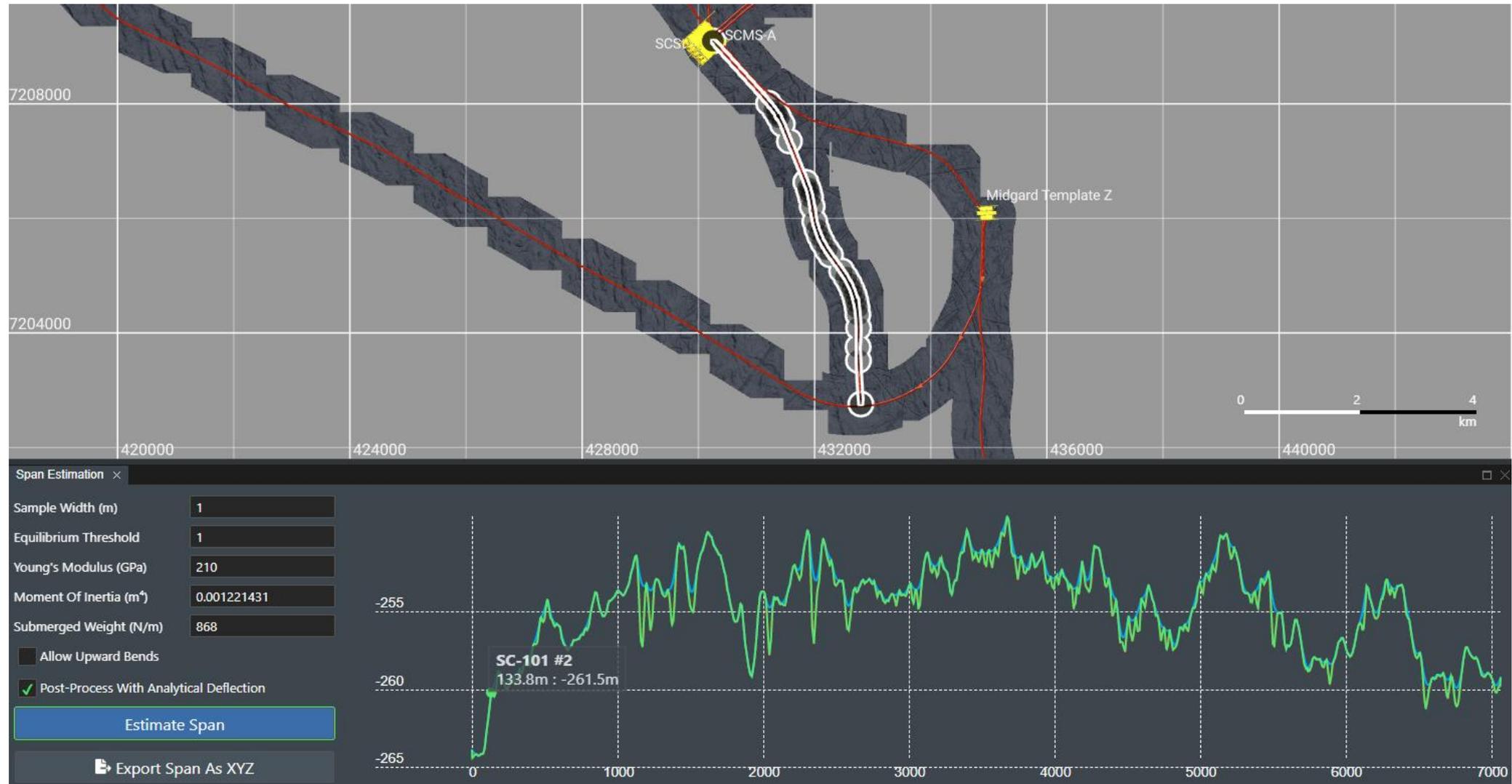

FieldTwin model
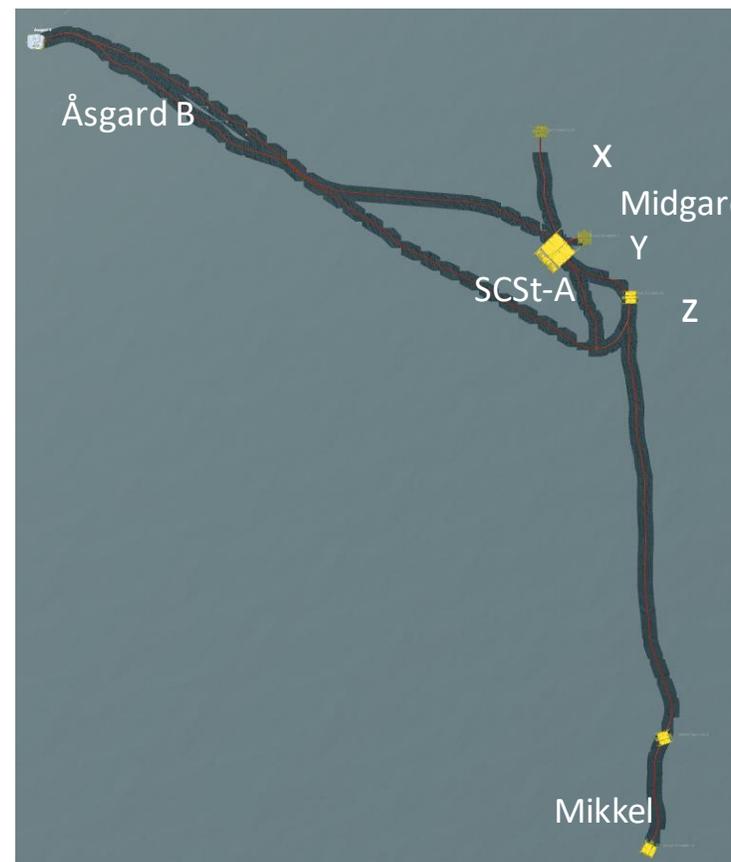
5 min to import 14 wells from database
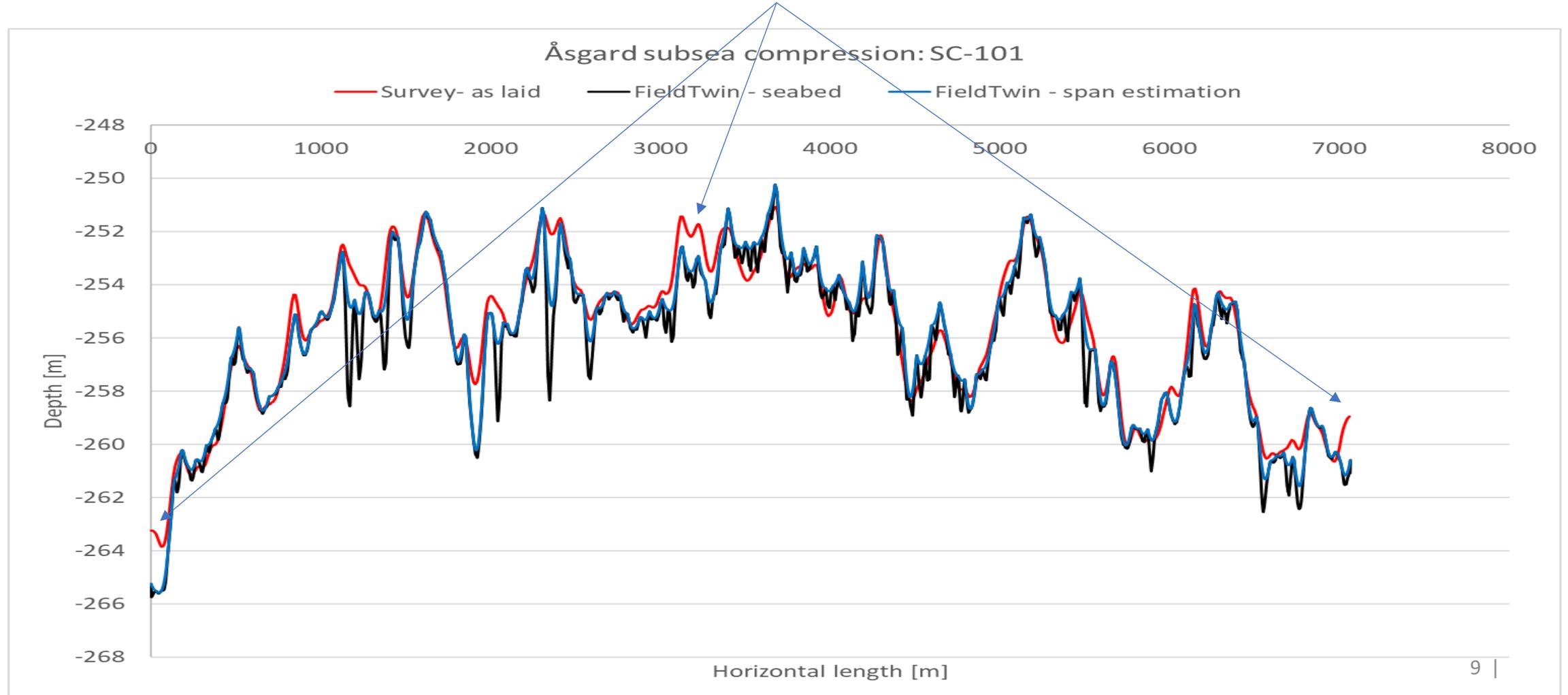
2-3 weeks to get flowlines in place

Need database also for flowlines

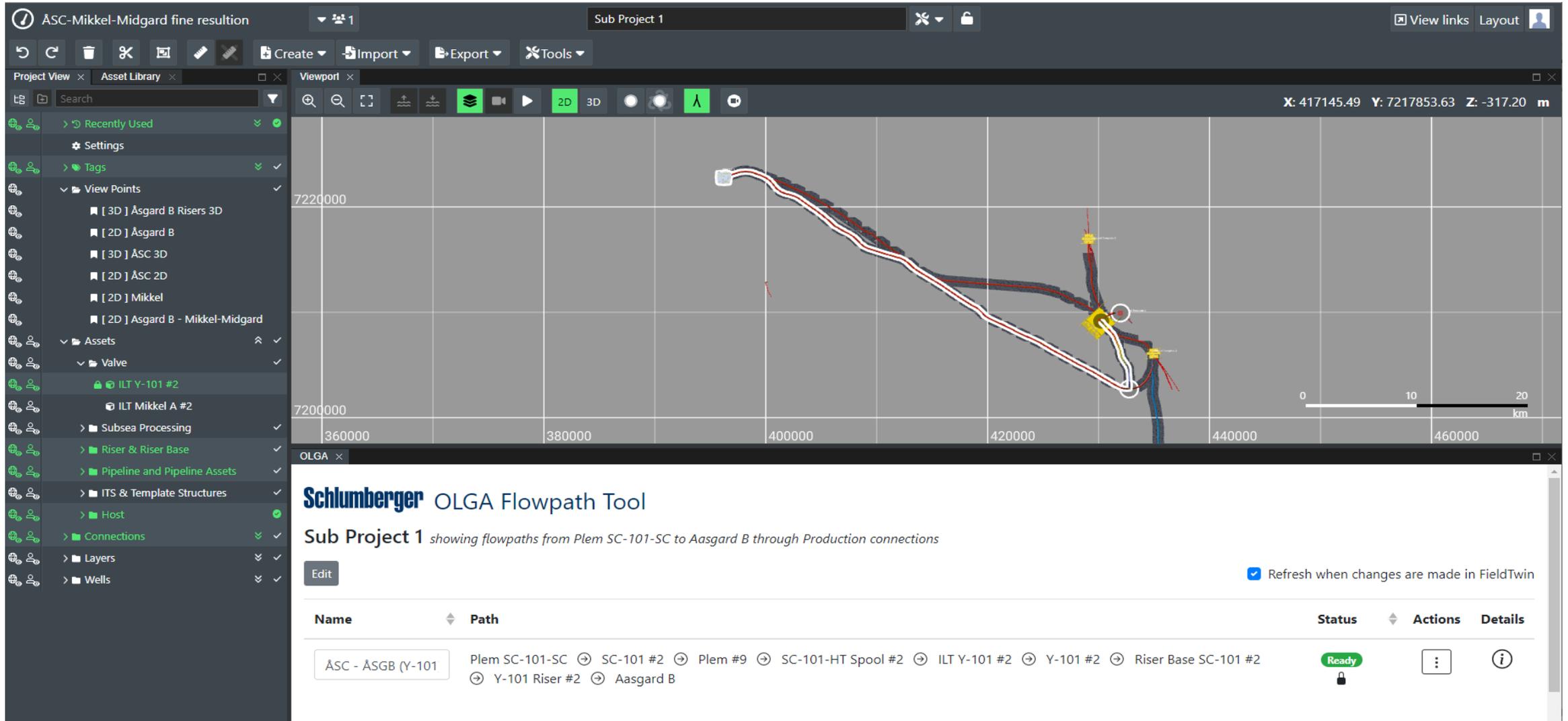# FieldTwin: Detailed map (green line)
As laid pipeline estimation (blue line)

Sea-bed, survey pipeline data and as laid estimated profiles

Deviations between survey and estimated as laid profiles can partly be attributed to rock dumping

Åsgard subsea compression: SC-101

Schlumberger OLGA Flowpath Tool in FieldTwin

Flowpath from FieldTwin imported into OLGA Profile Generator

OLGA Profile generator – zoomed in

New:
FieldTwin

New:
D: Inner diameter
R: Inner wall Roughness
U: U-value
T: Steel wall thickness

Summary of the work process for FieldTwin-OLGA

1. Build model with system data in FieldTwin

2. Define Flowpaths in FieldTwin (can contain well and several "connections")

3. Import of one-by-one flowpath into OLGA Profile Generator

4. Follows standard work processes in OLGA to include the Flowpaths in an OLGA model

Summary

Equinor sees FieldTwin Design as a Digital Twin for field development projects:

- A Data storage and visualization platform

- Screening of concepts with cost estimates

- Store system meta data to build /populate disciplines models like OLGA

- Key results from disciplines models made available in FieldTwin

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