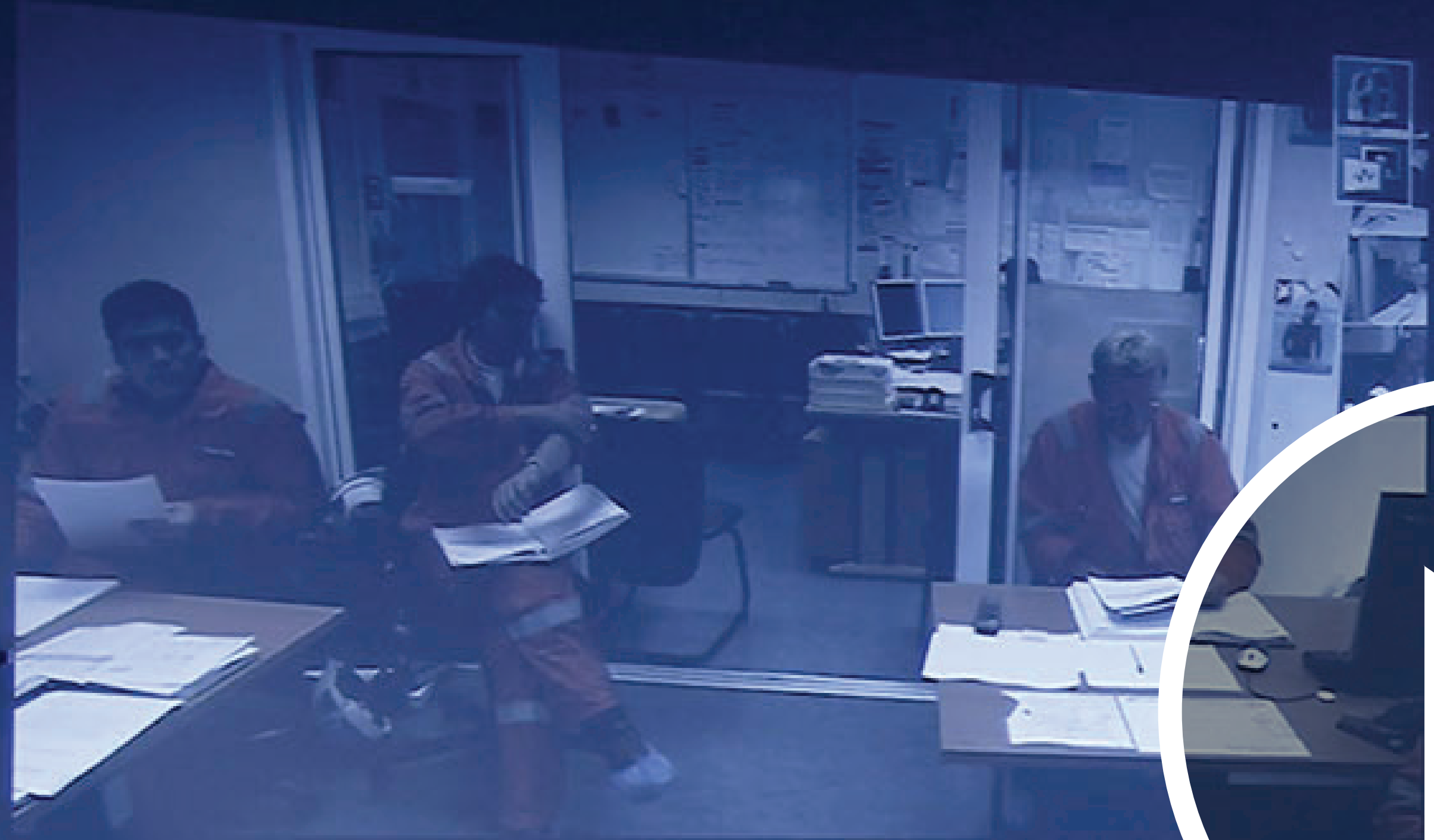




VCOG SOLUTION

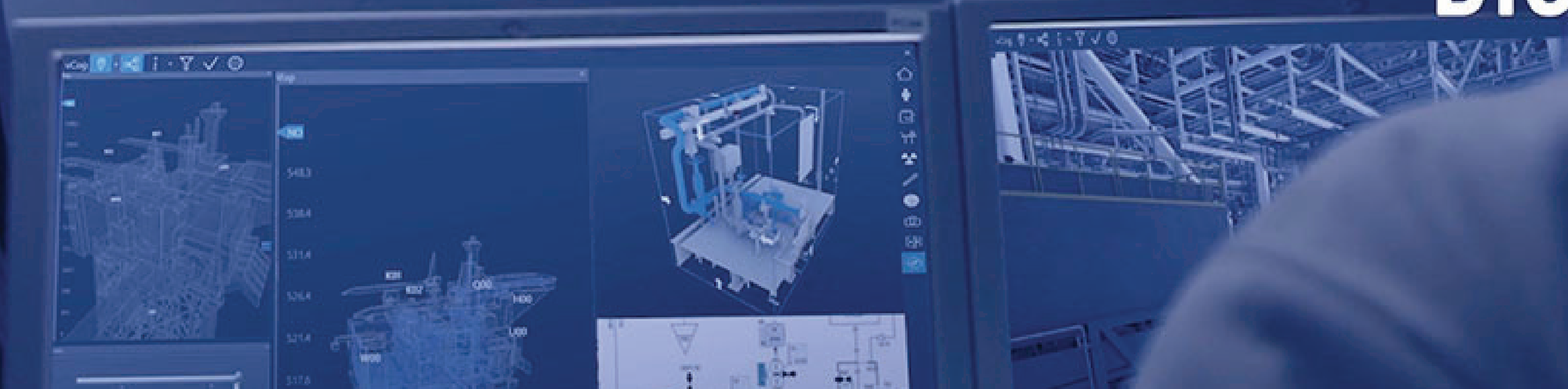
is a new workspace where people can collaborate, plan, execute and monitor mission critical asset operations in a lifelike visualization environment fused with data from digital twins and other relevant data sources



Introduction
to vCog

vCOG

DYNAMIC DIGITAL TWIN SOLUTION



Our definition of Digital Twin for Owner – Operators

VCOG is a Digital Twin solution for Owner-Operators in complex asset driven industries that fuses disparate data and information across the entire operational space into a single virtual collaborative environment of entire ecosystems.

This increases business performance by offering better locational, contextual and situational awareness.

Visual workspace supporting collaboration and awareness

- System of Insight – transforms data into knowledge
- Secures common understanding by “What-you-see-is-what-I-see”
- Asset-critical operations supported with Fit-For-Purpose visualization
- Singular gateway to the data you need, regardless of where it is stored
- Better Familiarization with VR and more efficient Field Operations with Tablets and Mixed Reality

Improve work processes with Discipline Specific COGs

Commissioning
Material Handling
Eq & Skid Packages
Risk Based Assessment
Isolation & Shutdowns
Work-Orders & SJA
Spare-part handling
Interventions

Deck Management
Work Permits
Surveillance
Inspection
SIMOPS
Logistic
Process
IMR

Supports planning, familiarization, field operations and monitoring with Fit-For-purpose visualization and relevant data for the job.

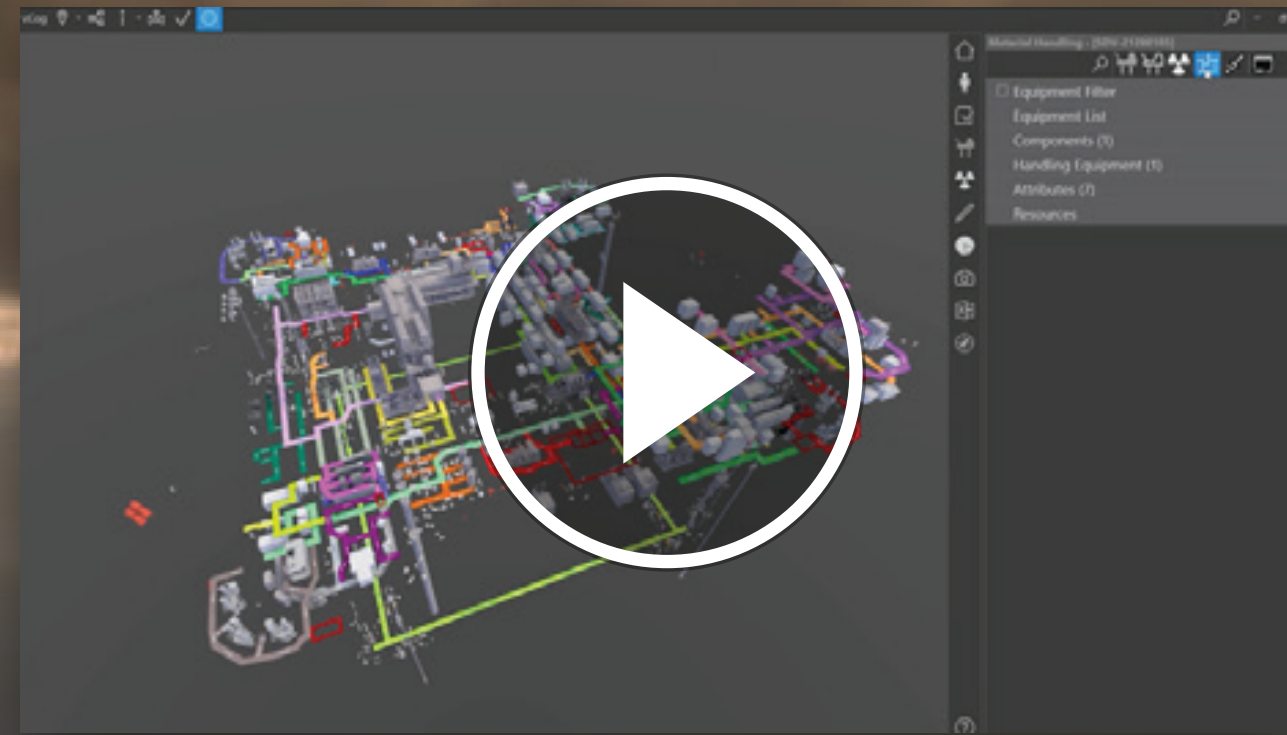
[pls see "COGs for VCOG.pdf" for details](#)

- Automated man-intensive work-processes with built in business rules
- Use analytics of geometry to increase awareness
- Configured together with you SMEs

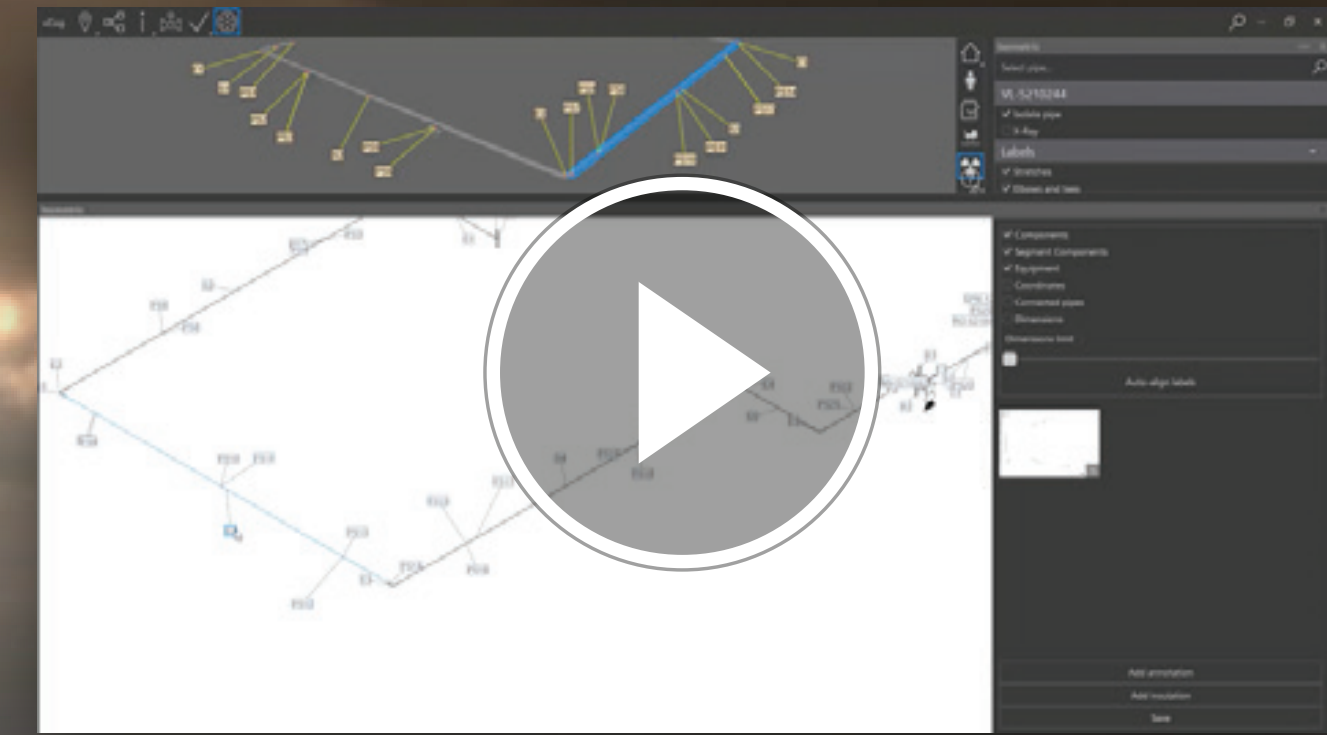
Videos



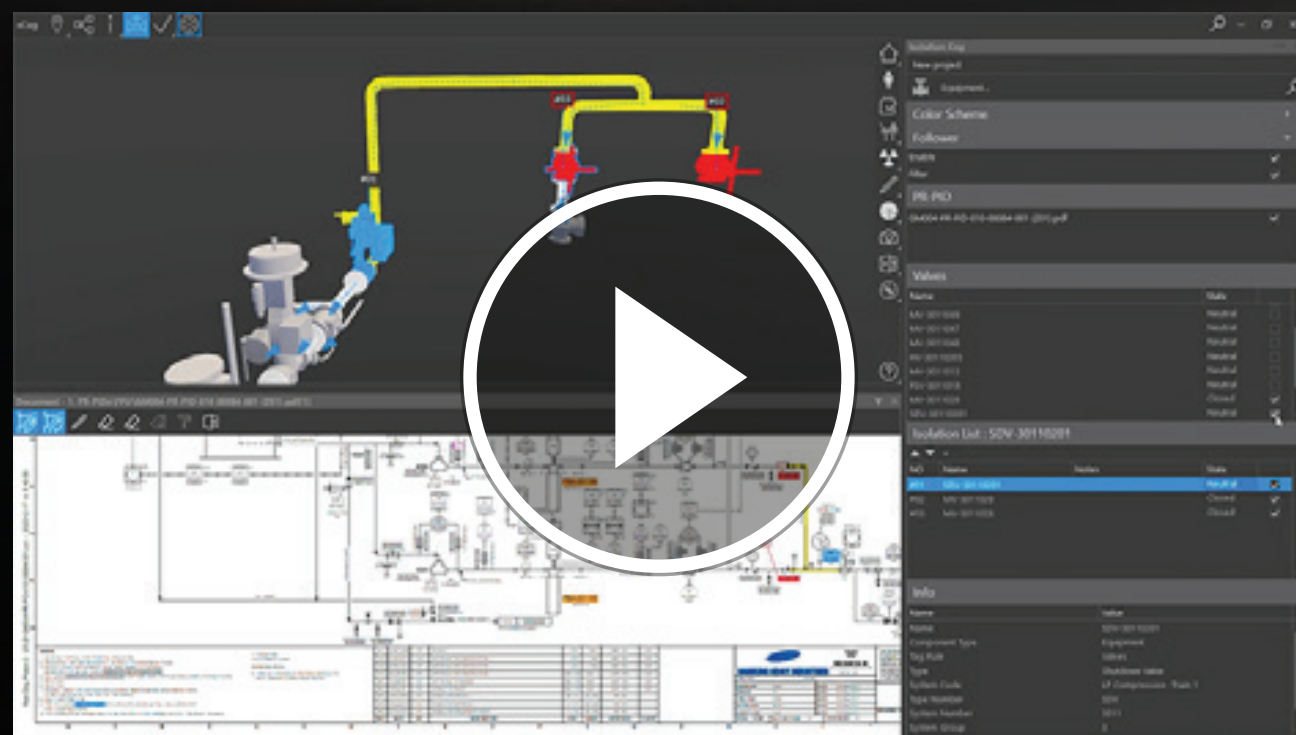
Subsea examples



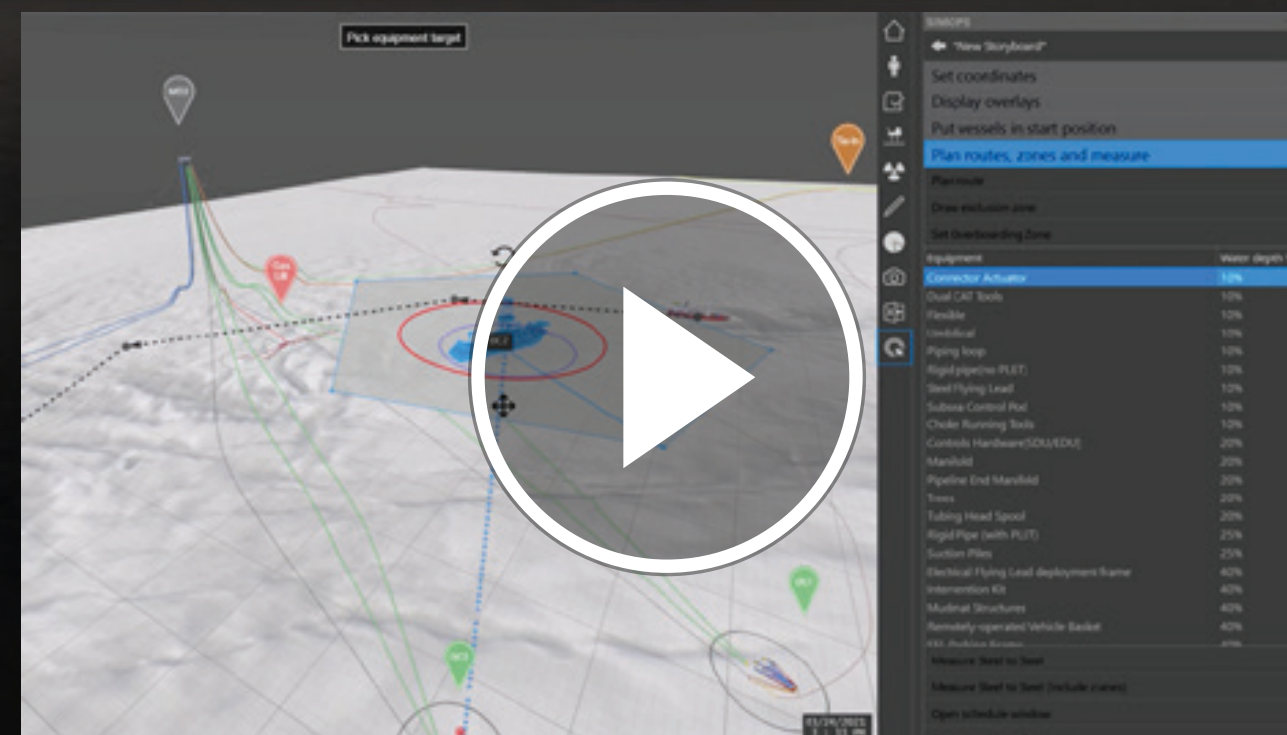
Material Handling COG



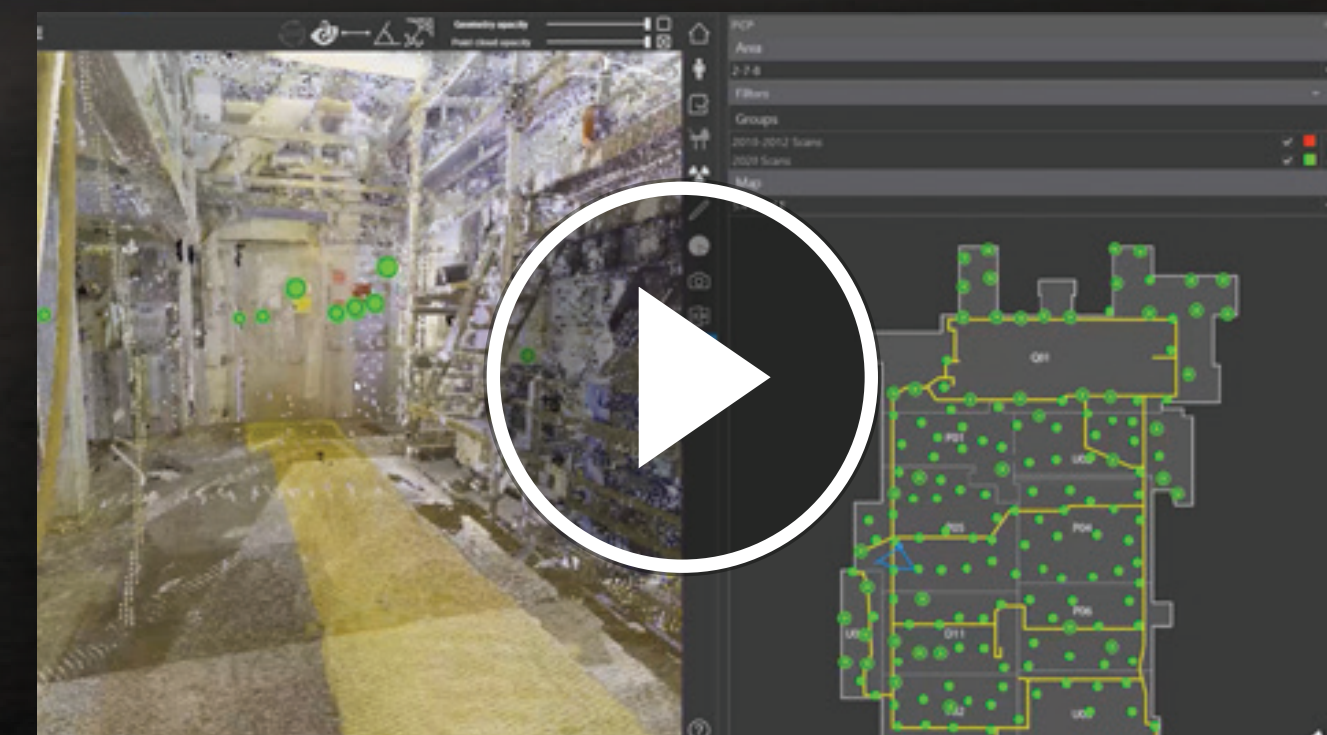
Isometric COG



Isolation COG



SIMOPs Cog explained



PCP Cog explained

What do the users say about vCog?

“Finding position of a subsea valve took me less than a minute in VCOG compared to 45 minutes(+) with our conventional solution”

Oliver Harding
HW Lead Shell

“Inspection: A generic Inspection task including check of 49 valves was according to SAP estimated to 13.5 hour was done in 50 minutes with VCOG.”

Trond Netland Jacobsen
Materials & Inspection | Sr. Inspection Engineer – EKOJ – ConocoPhillips

“Using the Dynamic Digital Twin, this work went from the not-common half an hour to just under three minutes (and that includes the time I took to note my progress)”.

Eric Andersen
Area Authority | BP Argos

“You don’t now how good it is. It’s magic and it helps me in my everyday job”

Ørjan Hoff
Senior Facilities Engineer, Vår Energi AS

“VCOG is transformational and is helping us perform better during project execution, but also in life of a field”

Torgeir Gjersvik
Principle System Engineering, TechnipFMC

“The simplicity of accessing information about equipment with just a click or two is extremely impressive. Offshore maintenance planner position will be transitioning to onshore.”

J.R. Johnson
Maintenance Planner | BP America

Deployment Road Map

Background: VCOG Digital Twin Solution is in production for several Owner-Operators and is delivered as an end-to-end solution with deep domain knowledge understanding the difference in complexity between Surface, Subsea and Sub-Surface, between Greenfield and Brownfield, and between high and low digital maturity.

PoC: Rapidly deploy VCOG Basic to users to deliver value fast, generate learnings and creating a basis for decisions and a springboard (6w)

Pilot: Together with you we optimize architecture setup and implement modules that directly support your most critical workflows (COGs) and measure KPIs. (8w-24w)

Production: VCOG live inside your tenant, and we implement more COGs ready for scale

Scale: Re-use setup across assets (fast-track)

Onboarding: Our “User First!” approach is all about securing a smooth transformation to a new way of working. VCOG is made for non-digital natives and is easy to use and training material is intuitive and customized for every asset.

Follow-Up: We can keep your asset evergreen and support users and technical personnel to the level you want.

Strategic Partner: We can help you identify and categorize all your assets in relation to digital maturity and provides a realistic digital roadmap that are aligned with your objectives.

Business Model

1

vCog Basic

- Setup Cost Per Field
– fixed fee
- No Subscription

2

Optional Cogs

- Setup Cost per COG
- Subscription plan per Facility, per Region or Global agreement

3

SLA

- According to agreement

4

Strategic Partnership

- According to agreement

Asset Community

EPCI

Operation & Maintenance

De-commissioning

VCOG Digital Twin Solution

Desktop & Laptop

Mobile Tablet

Big Screen

Virtual Reality

AR & Mixed Reality

COG

COG

COG

COG

COG

COG

COG

COG

COG

COG

Platform

Visual Environment

Semantic Data Model

Data

EPCI

PDMS

XYZ

PHOTO

SCAN

VIDEO

ERP

TECHNICAL

OPERATIONAL

REAL-TIME

3. PARTY

Industry Standard

DNV has verified VCOGs “New Way of Working”, and we scored high

DNV·GL

RECOMMENDED PRACTICE

DNVGL-RP-A204

Edition October 2020

Qualification and assurance of digital twins

References

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Shell

Oliver Harding

Subsea Hardware Engineer - Technical Delivery
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M: +47 480 75 708

Case Studies

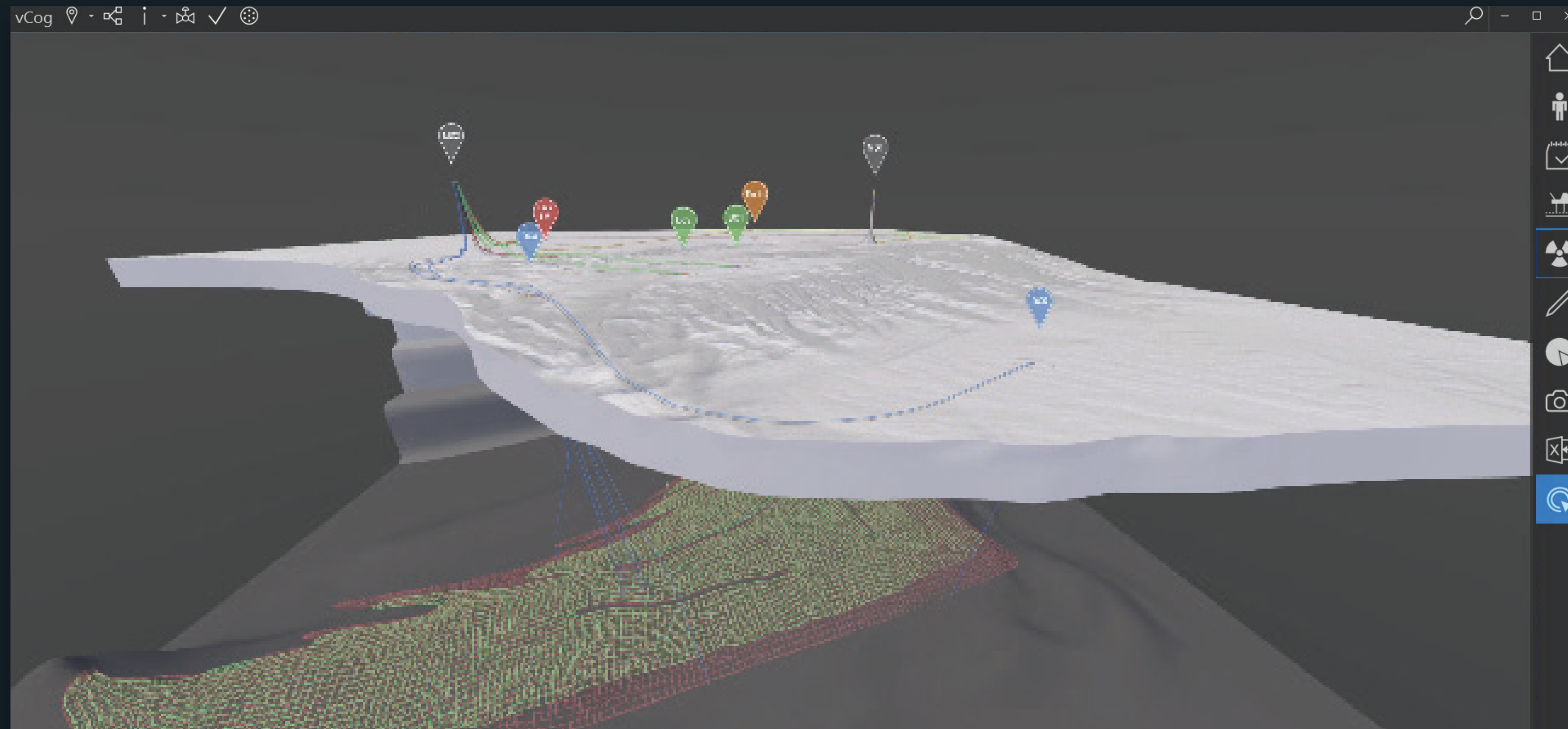
Conoco Phillips – Ekofisk and Eldfisk – Brownfield



Basic setup: 2 field with 10 platforms and subsea field

Case Studies

BP – Mad Dog 2 – Greenfield



Basic setup: Surface, Subsea & Sub-surface. COGs: 16 in production, 3 WIP

Case Studies

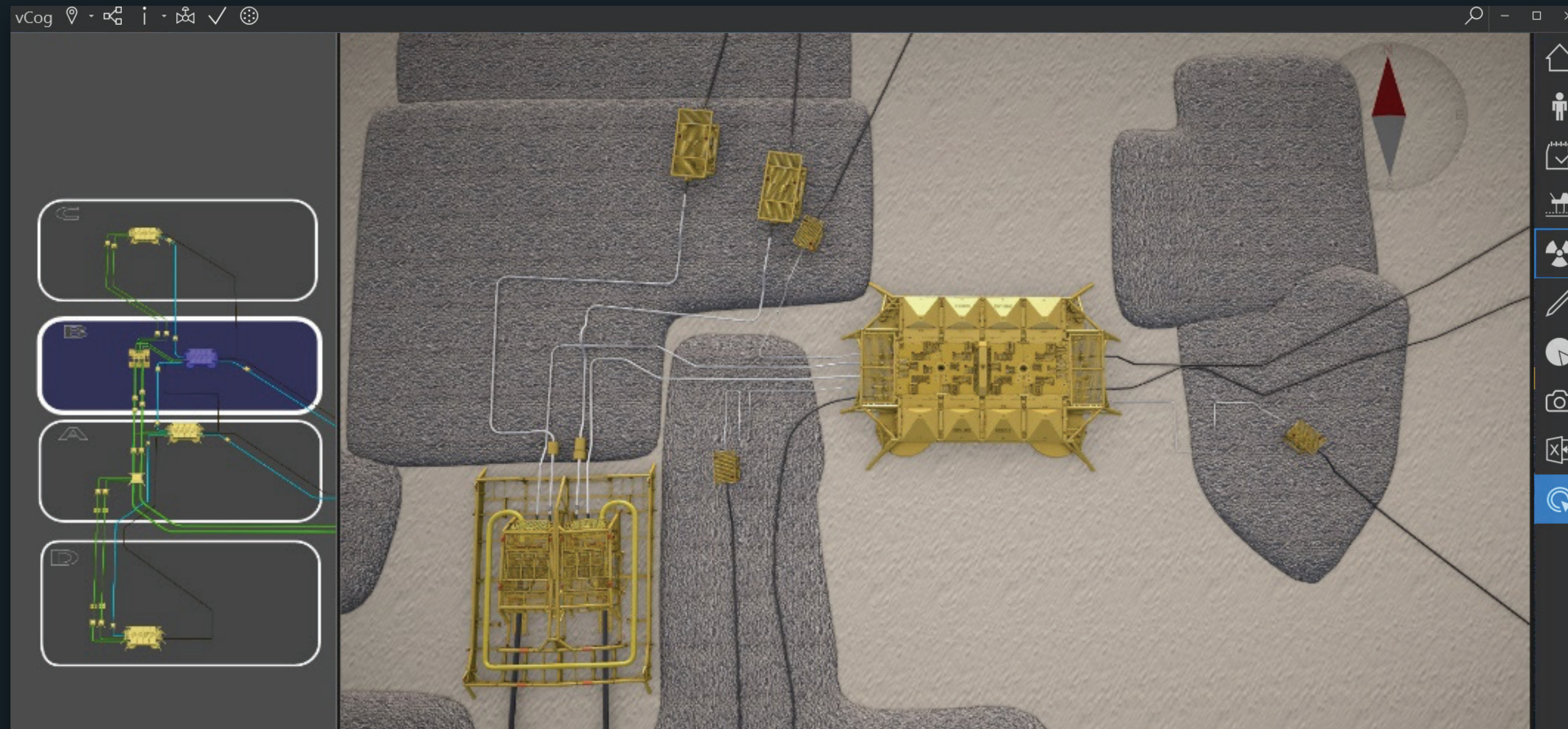
BP – Mad Dog 1 – Brownfield



Basic setup: Spar Platform

Case Studies

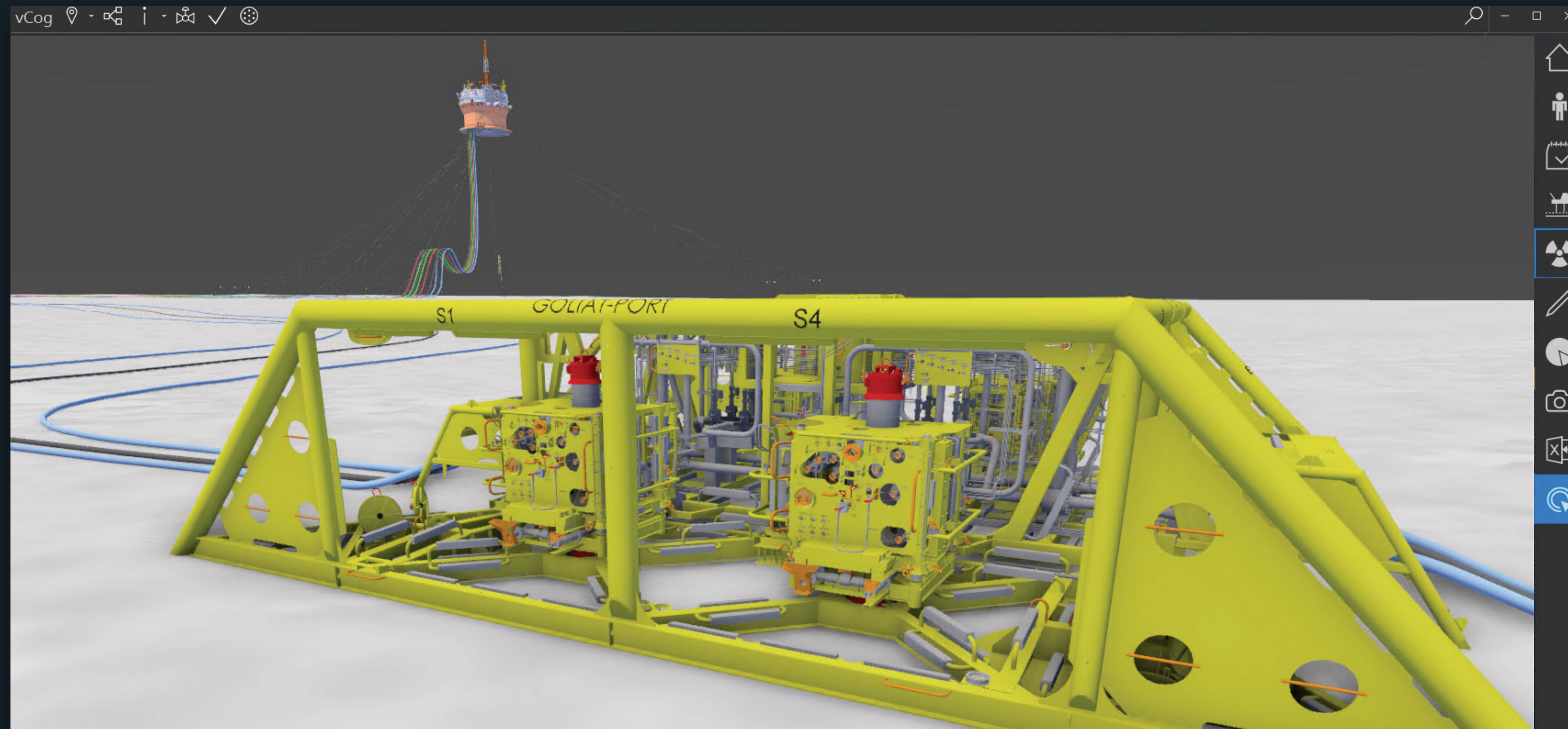
Shell - Ormen Lange - Brownfield / Greenfield



Basic setups: Entire subsea field. COGs: Simulation

Case Studies

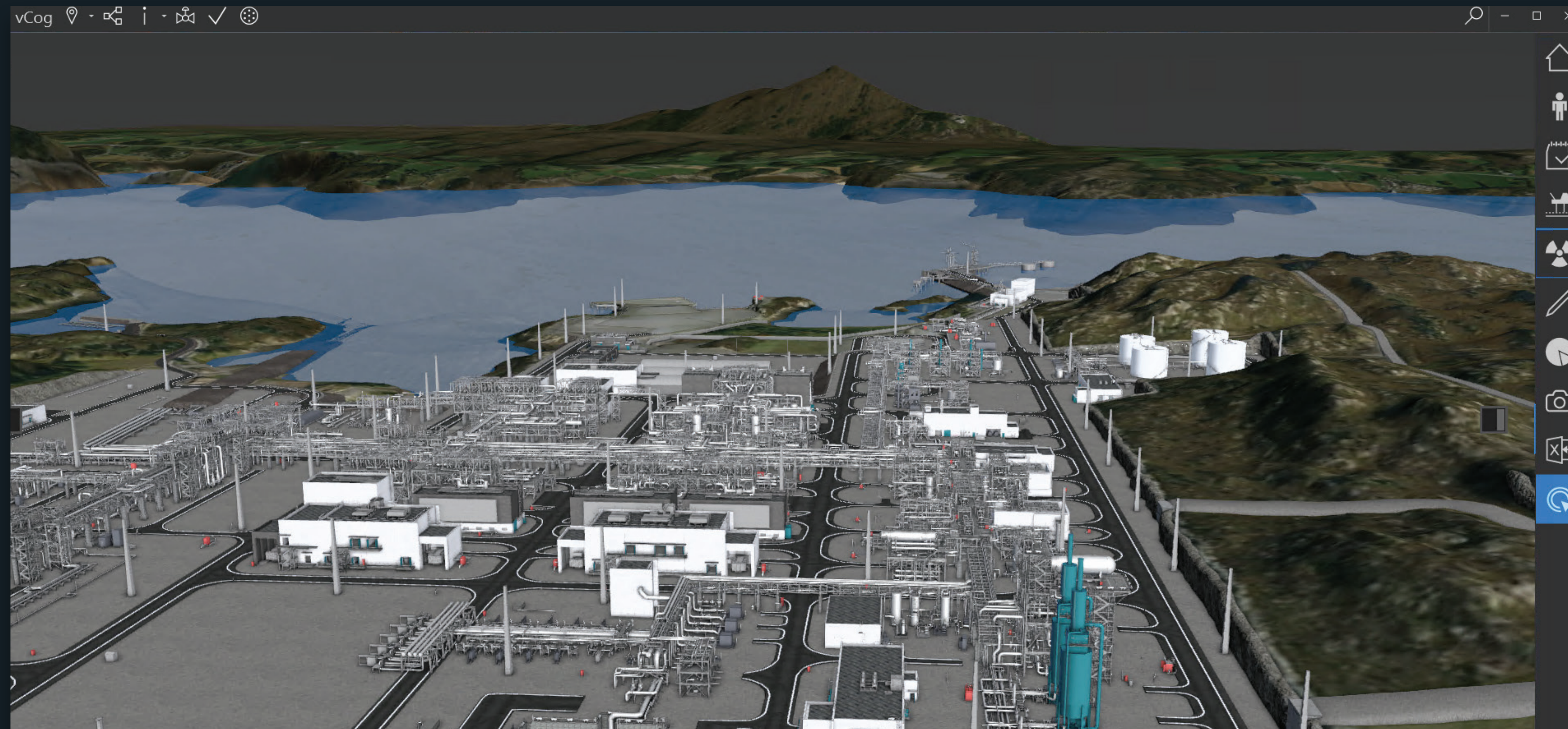
Vår Energi (ENI) – Goliat – Brownfield / Greenfield



Basic setup: FPSO with subsea field and subsurface. COGs: Work-Permit

Case Studies

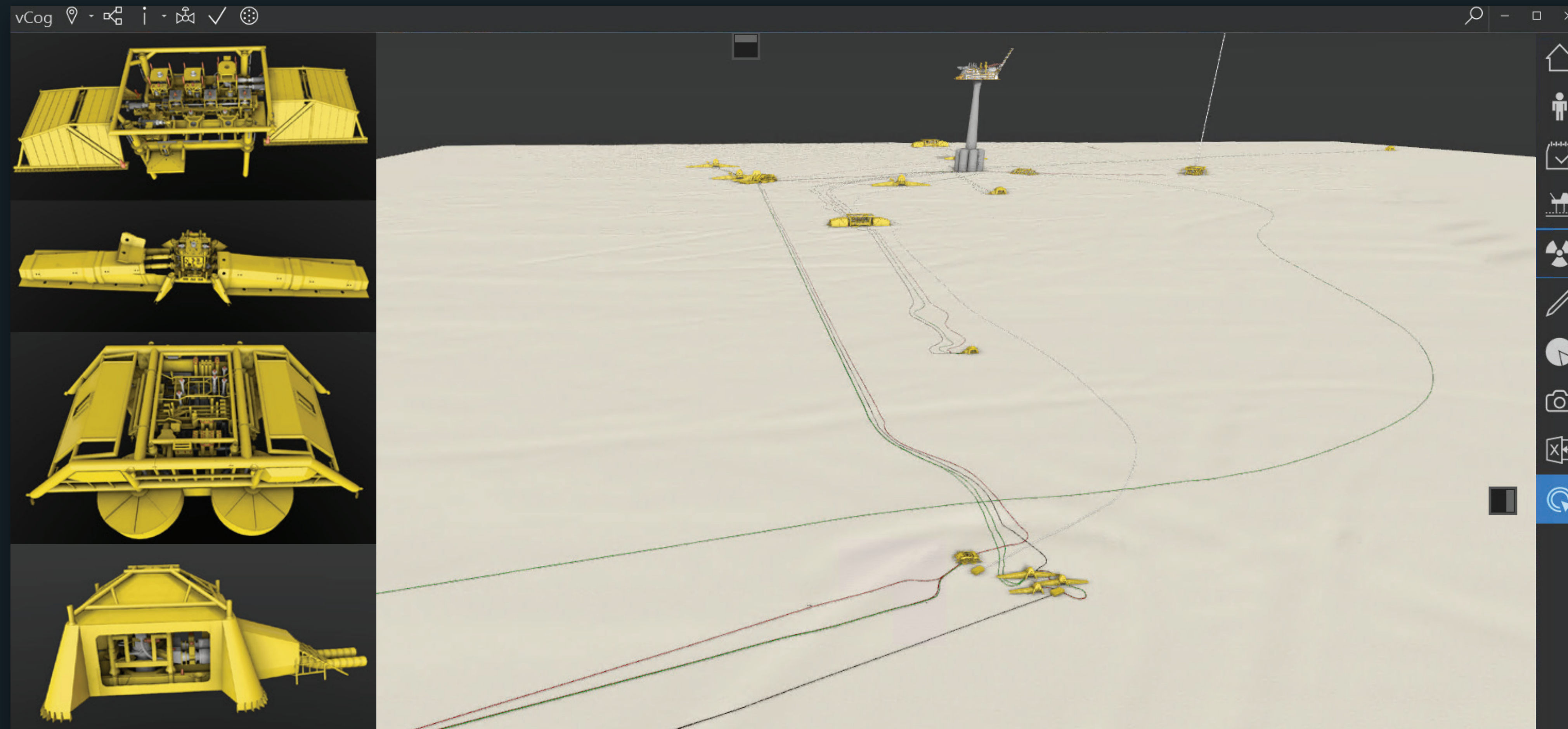
Shell Nyhamna Plant (spec) with subsea field - Brownfield



Basic setup: Entire subsea field. COGs: Inspection, SIMOPs, Work-Order, CUI

Case Studies

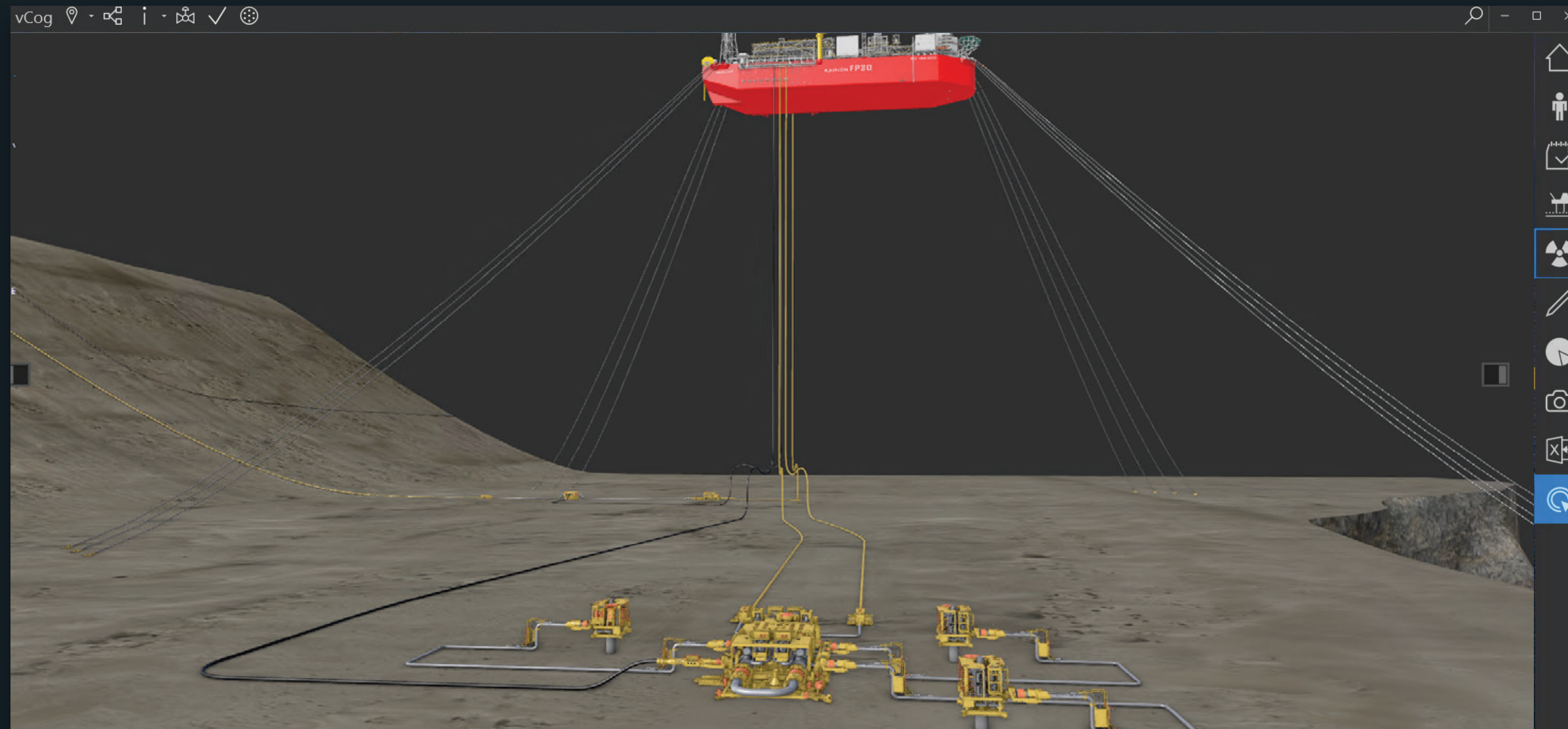
OKEA (previously Shell) – Draugen – Brownfield



Basic setup: Modeling all subsea installations based upon 2D drawings

Case Studies

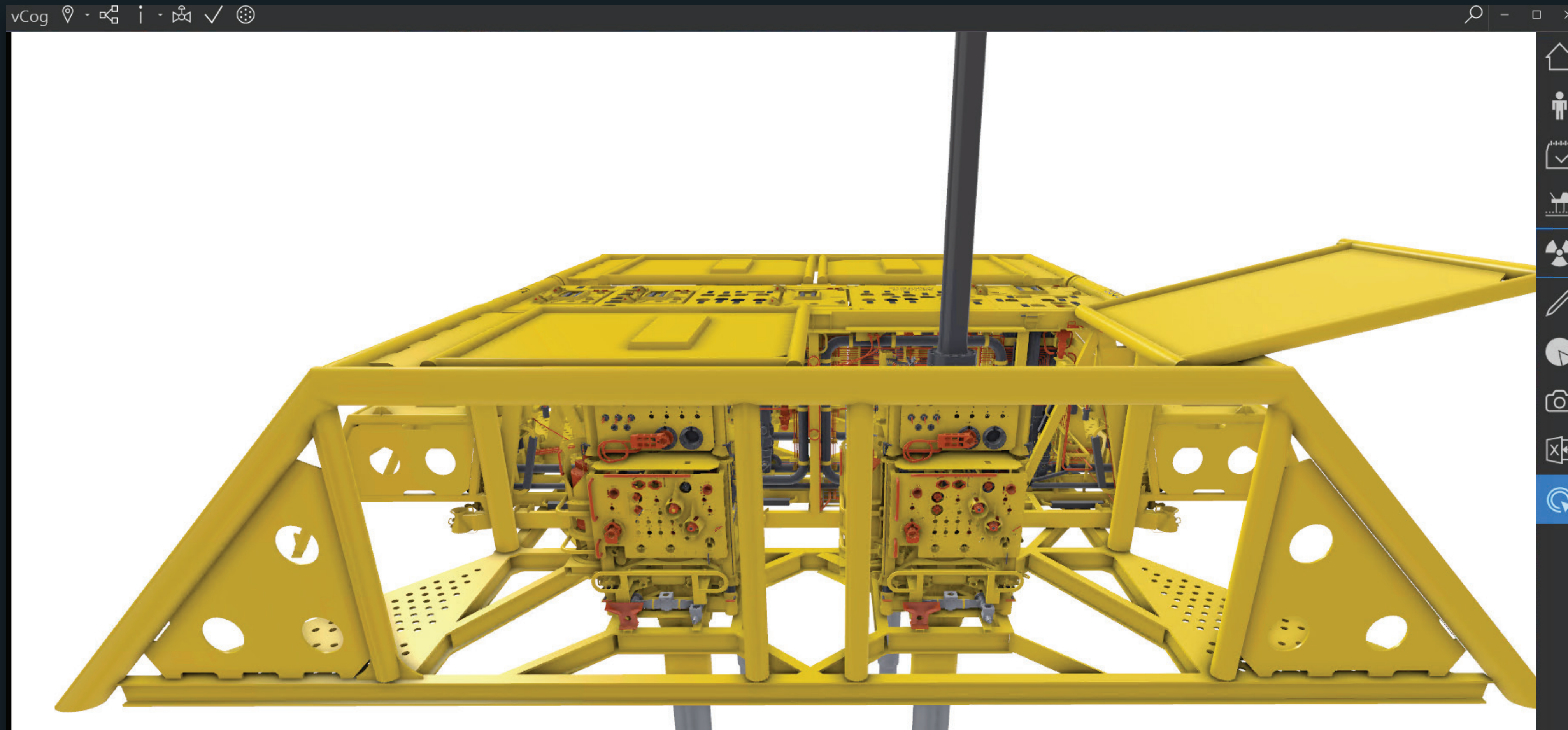
TechnipFMC – Karisch Field – Greenfield



Basic setup: FPSO, Subsea Field and Power station at shore

Case Studies

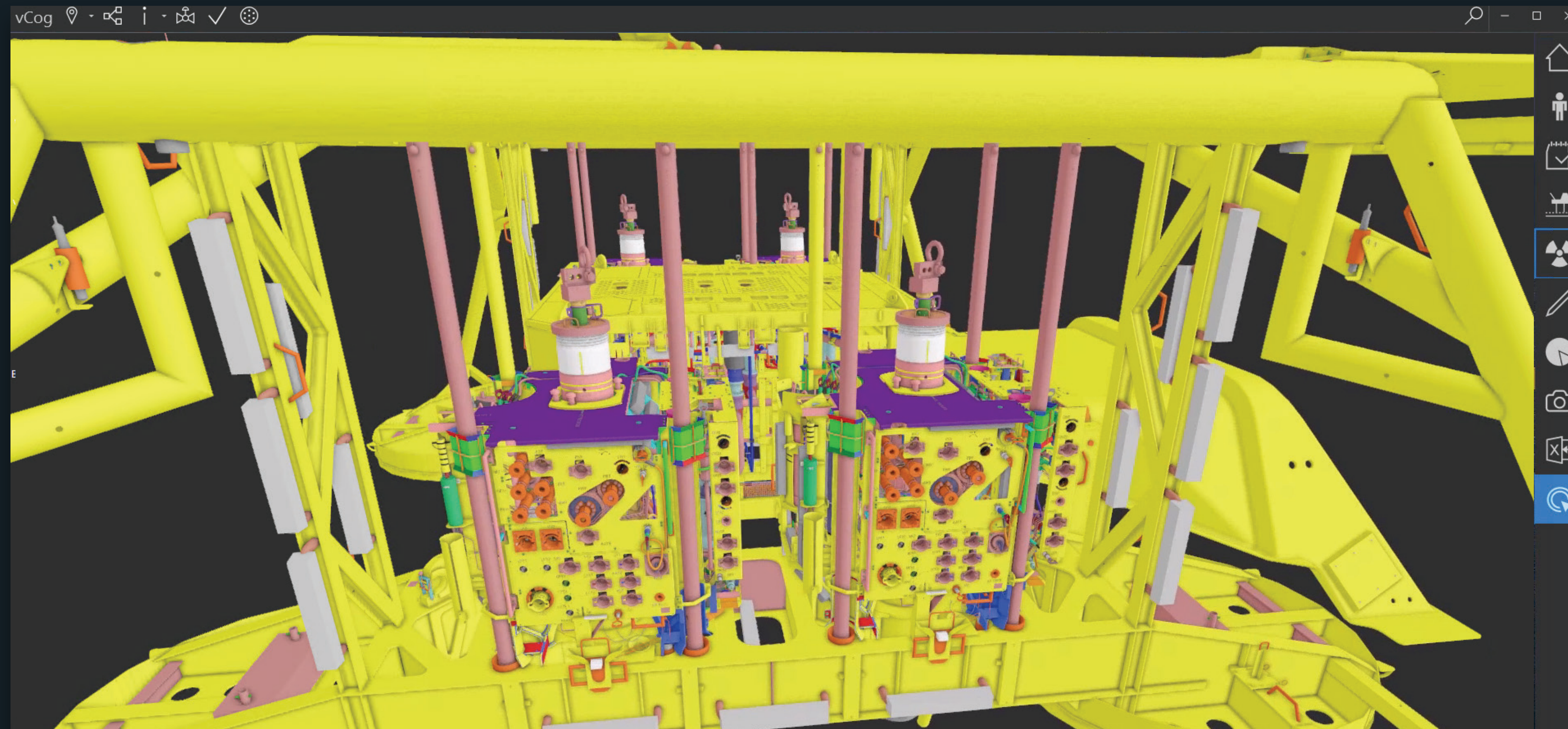
Lundin - Brynhild - Greenfield



Basic setup: Subsea transponders

Case Studies

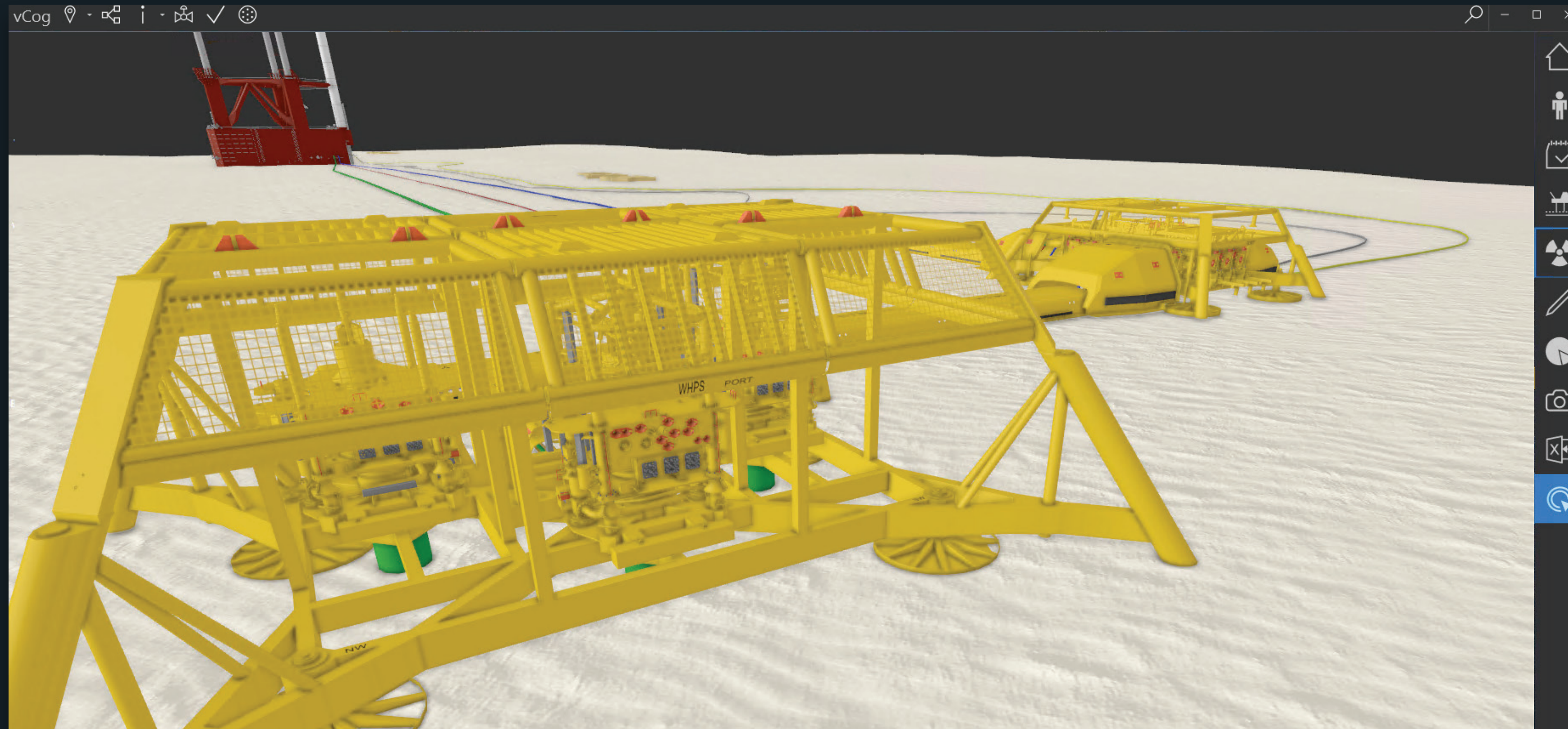
Conoco Phillips – Tor



Basic setup: Subsea component

Case Studies

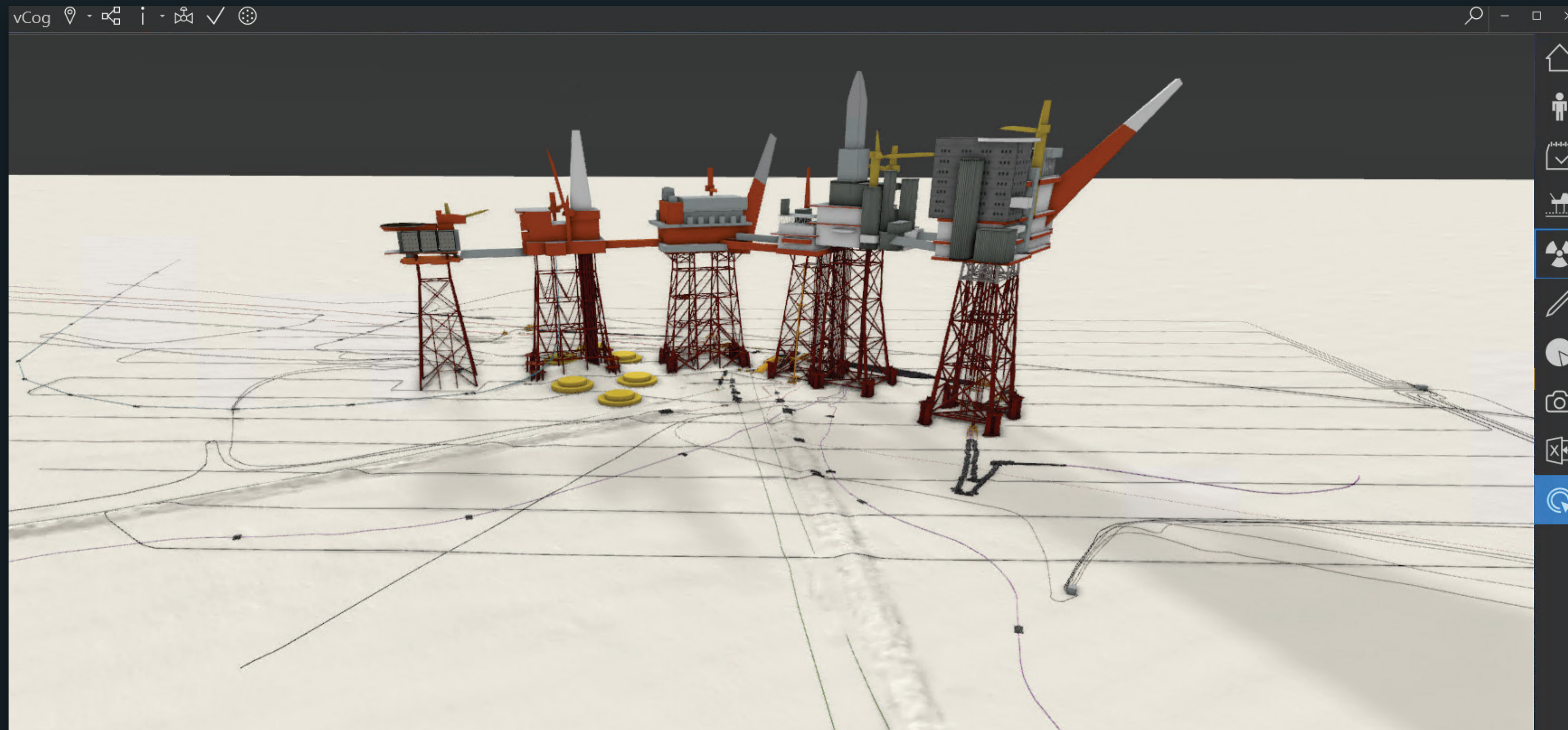
Repsol - Yme - Greenfield



Basic setup: Subsea transponders

Case Studies

BP / AkerBP – Vallhall – Greenfield



Basic setup: Subsea transponders

Case Studies

Equinor – Mariner – Greenfield



Basic setup: Mariner Drilling Platform and CAT J. COGs: Material Handling, Deck Management

Q&A

“Too much of the debate on Digital Twins has been fixated on the technology itself, when the real prize for business actually lies in solutions supported by intuitive visualizations that are fully integrated with business processes. Such applications appeal to our deep-seated human senses and improve our abilities to act in the physical world.”

Øystein Stray

CEO VISCO AS

CREATING VISUALS.MAKING SENSE