Delings-økonomi I olje og gassbransjen
Hva er i drift, og hva kommer

Offshore Norge

Offshore Norge coordinates several collaboration projects and services for the industry.

Facts about Offshore Norge:

Offshore Norge is a professional body and employer’s association for oil and supplier companies.

We cover several functions:

- employers’ association;
- interest organisation towards government and society;
- collaboration projects in the industry;

We represent more than 100 member companies with a total of 35 000 employees.

Offshore Norge is a part of NHO

INVENTORY & EQUIPMENT SERVICES

OUR AMBITIONS

OFFSHORE NORGE

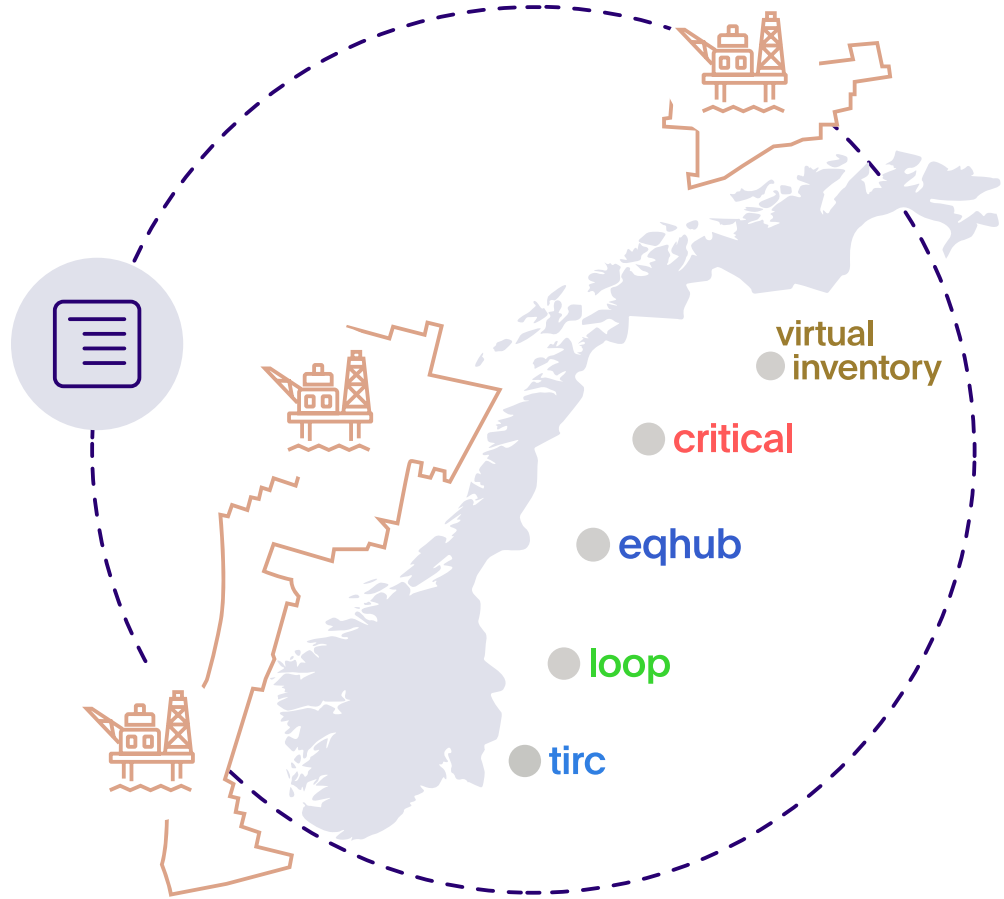
Sustainable and circular economy

Substantiall savings

100% Industry digitalization

Decreased overlap of equipment in stock

Offshore Norge Contribution towards the competitiveness of NCS



COLLABOR8 IN MATERIAL MANAGEMENT

OFFSHORE NORGE

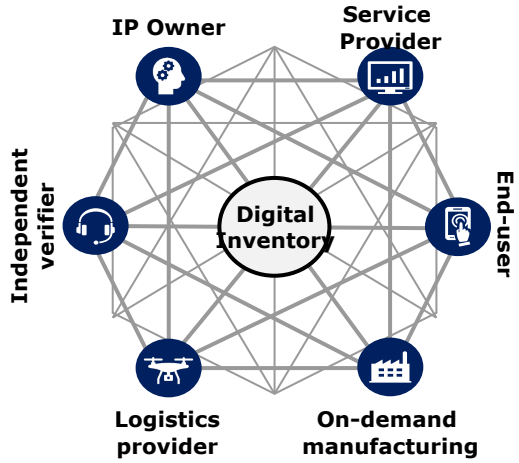
- **EqHub** – Common repository for gathering and sharing of equipment data and documentation
- **Virtual Inventory** – Service for sharing of inventory across all operators on NCS
- **Critical** – Service for request for critical material
- **Loop** – Service for sales handling of surplus material
- Common standards for information and document gathering
- Digitalt spare parts. 3D printing/ on-demand manufacturing

Collabor8 eqhub

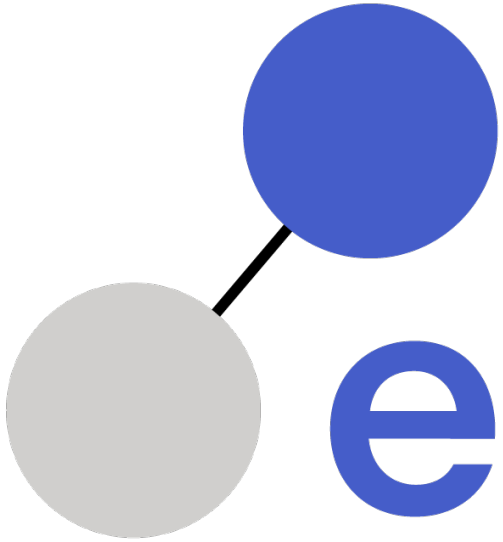
Collabor8 loop

Collabor8 critical

Collabor8 virtual inventory



OFFSHORE NORGE

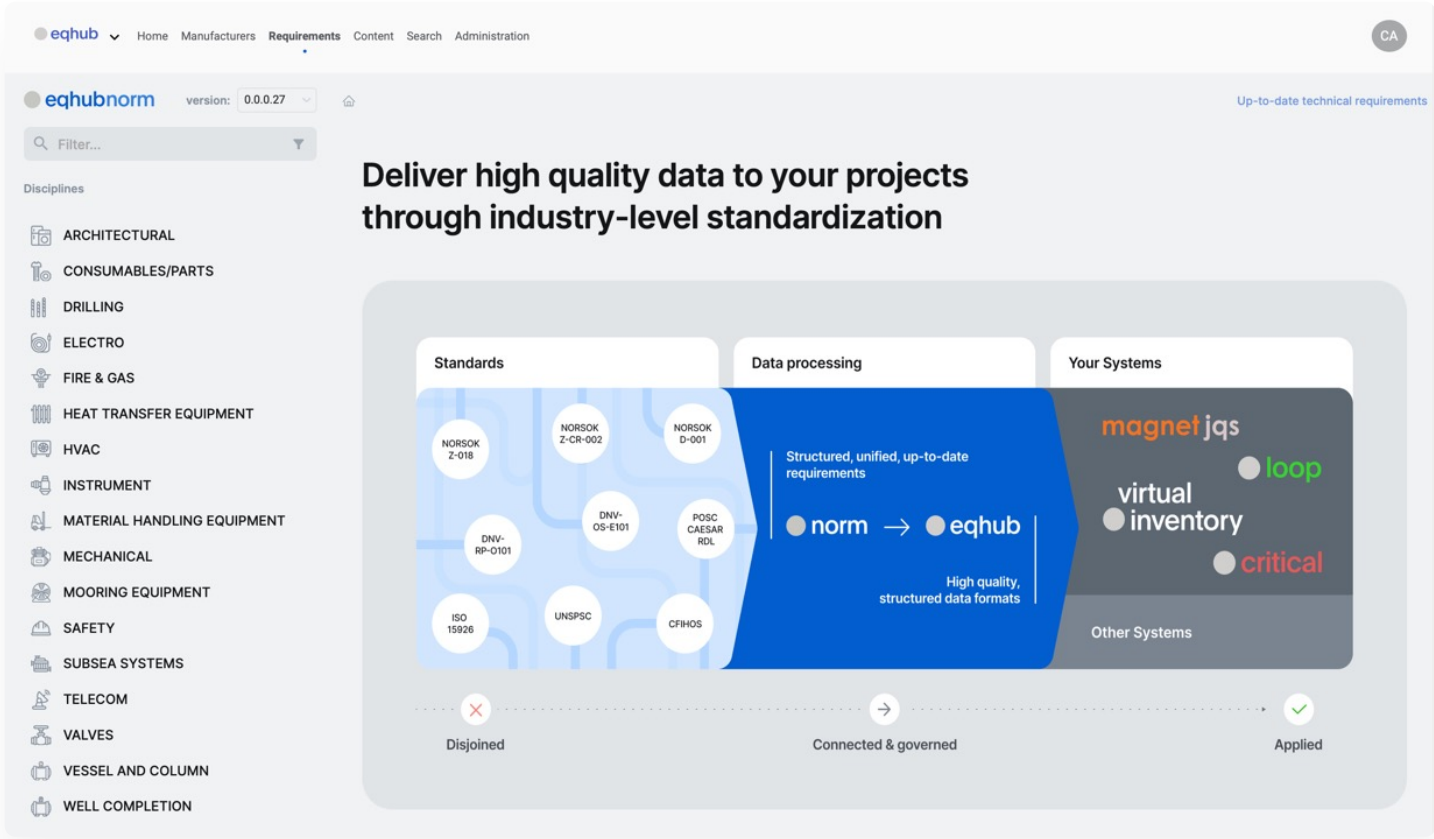


Collabor8

eqhub

EQHUB

In EqHub, users will at any given time have access to up-to-date industry requirements (properties and documents) for any product category.



Required by:

equinor

ConocoPhillips

AkerBP

OKEA

vår energi

Sval

REPSOL

Collabor8 eqhub

Supported by:

TOTAL

DNO EST - 1971

OMV

TechnipFMC

ROSENBERG

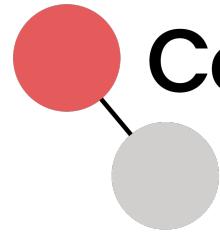
AkerSolutions

aibel

moreld apply

OFFSHORE NORGE

Collabor8 virtual inventory



Collabor8 critical

EXAMPLES OF MATERIAL SHARING

OFFSHORE NORGE

virtual inventory

Real-life examples

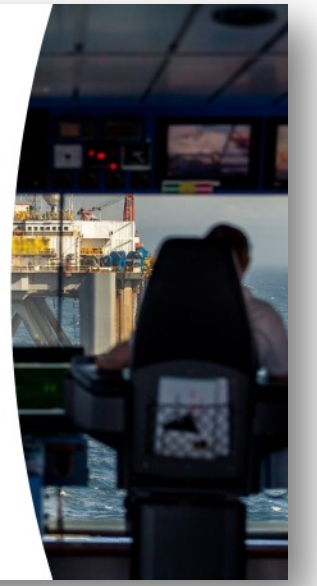
Alvheim

The Alvheim license needed spare parts for a pump to avoid a potential production shutdown. These components were identified within 12 minutes after the submission of the request. Alvheim received the required parts in less than a day after the posting on the VI platform. Meanwhile, the delivery time from the supplier was estimated to be nine weeks.

This collaboration avoided potential downtime not only for the Alvheim license but also for the tied-back Bøyla, Volund, and Vilje fields.

Norsk olje&gass

AkerBP ConocoPhillips Lundin Energy



virtual inventory

Real-life examples

Skarv

The Skarv license had an urgent need to acquire proximity sensors for its compressors to avoid production losses.

It would take several weeks to deliver this item from the supplier, ut another operator had a surplus inventory of the required product and could share it within 24 hours.

In this way, Skarv avoided downtime with a potential income loss calculated at NOK 18-84 million for the operator and its fellow licensees.

Norsk olje&gass

equinor PGNiG wintershall dea AkerBP

Sources: virtual inventory information brochure

virtual inventory

Real-life examples

Eldfisk

A circuit board was required for the Eldfisk fire-alarm system. Equinor responded to the request within six minutes and fetched the component from an offshore installation by helicopter within a day. The board was installed offshore on Eldfisk within four days, saving the licensees 12 weeks of the delivery and installation time which they would otherwise face if ordering from the supplier.

Norsk olje&gass

equinor ConocoPhillips petoro TOTAL vår energi

OFFSHORE NORGE

LOOP

OFFSHORE NORGE

Operators

Master data:
- P/N
- Attributes
- UNSPSC
- Documents

Condition data:
- Maintenance history
- Certificate(s)
- Usage history
- Test documentation

Collabor8 loop

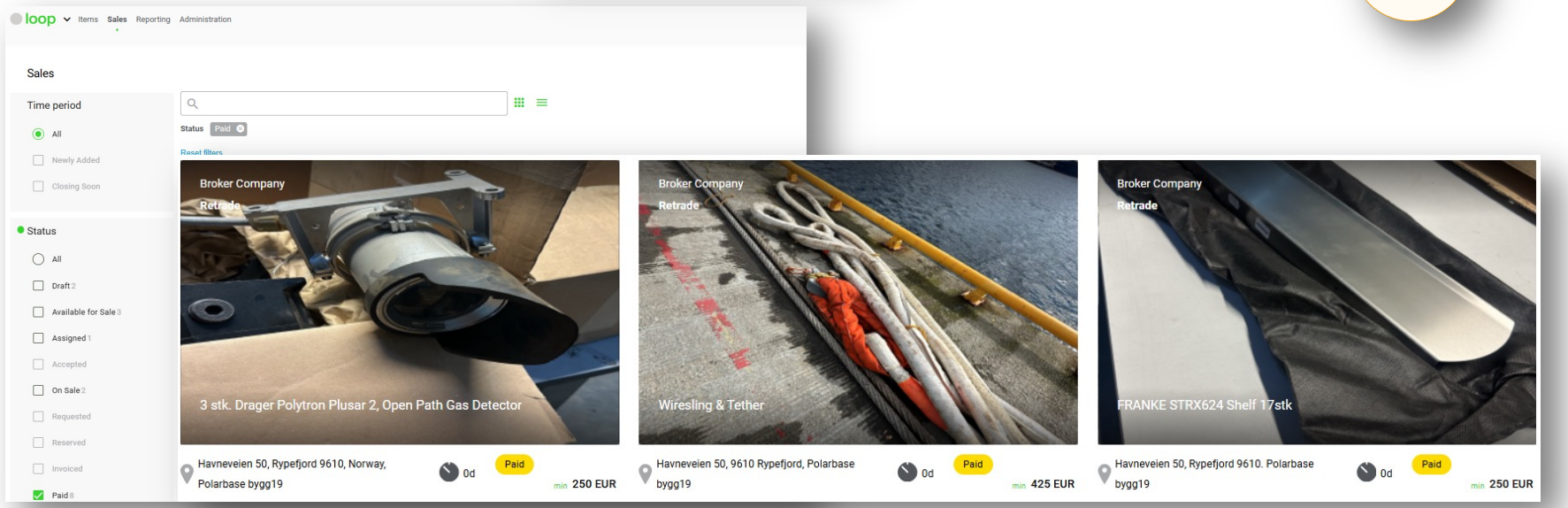
Broker 1

Broker 2

Broker 3

Broker n

Buyer

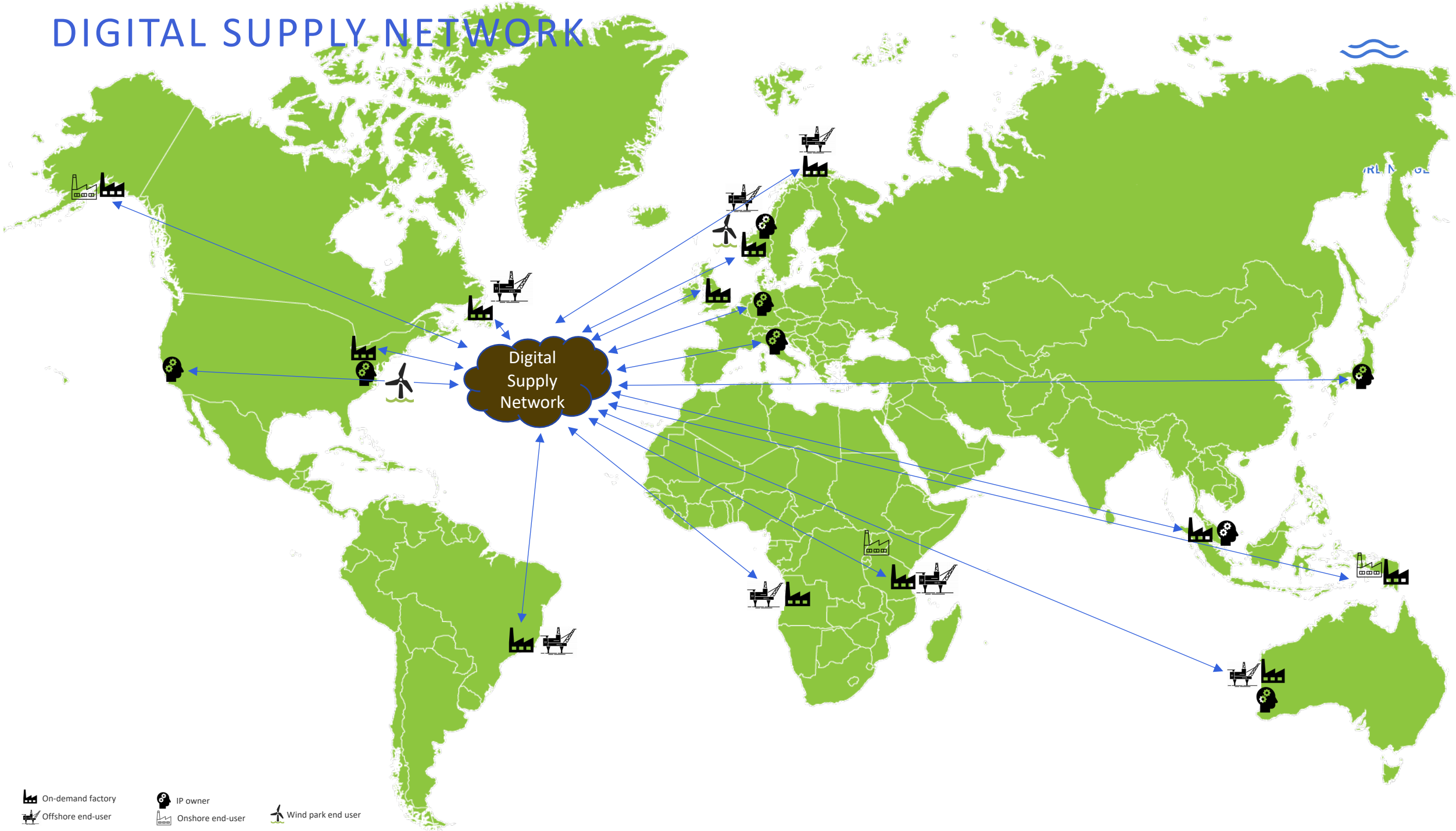


OFFSHORE NORGE & NORSK INDUSTRI

GUIDELINE FOR ON-DEMAND MANUFACTURING

EXECUTIVE SUMMARY GREENFIELD & BROWNFIELD PROJECTS

DIGITAL SUPPLY NETWORK



THERE ARE OPPORTUNITIES TO ENHANCE RESILIENCE AND REDUCE VULNERABILITY IN THE OIL AND GAS SUPPLY CHAIN

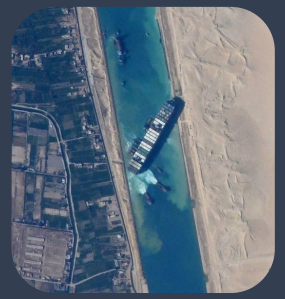
The oil and gas industry continues to innovate and contribute to global energy needs. However, challenges related to supply chain inefficiencies, sustainability, and responsiveness highlight the need for further optimization.

High inventory costs and long lead times

Billions of NOK are tied up in physical assets, many of which will never be used. Traditional manufacturing and procurement processes result in long lead times

Waste and sustainability

Physical inventories often lead to surplus parts that expire or become obsolete, resulting in increased waste.



Supply chain vulnerability

Dependency on global supply chains for parts creates risks of delays and bottlenecks, especially during crises

Outsourcing of production capacity

Reliance on external production often causes inefficiencies and reduces the agility needed for operational maintenance and project demands.

These challenges highlight the need for a more resilient, agile, and efficient supply chain. **On-demand manufacturing offer a powerful, transformative solution to address these challenges**

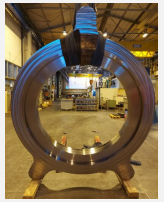
MULTIPLE USE CASES EXISTS FOR HOW ON-DEMAND MANUFACTURING ENHANCES PROJECT DELIVERY

Obsolete parts

- **Gullfaks**: Rather than replacing several entire connection boxes, polymer screws are now 3D printing at Meisle in Bryne.
- **Business Case**: Estimated cost savings of 100MNOK per year, faster delivery time and reduced environmental footprint

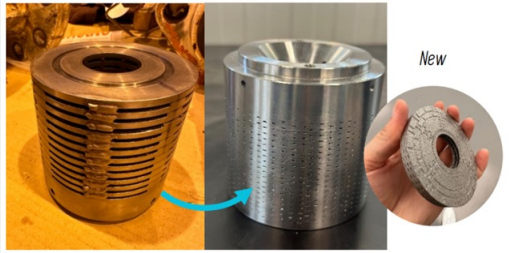
Reduced lead time

- **Norne FPSO**: 3D print mounting flange (diameter: 3-meter, weight: 3-ton, material: steel and Inconel) for thruster. Design owned by Kongsberg Maritime, produced at Wellmax in Larvik.
- **Business case**: Reduced lead time by 30 weeks (from 40 to 10), reduced risk of downtime, costs savings of reduced downtime



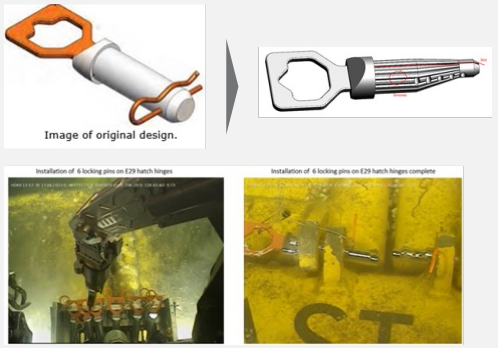
Obsolete part recycled powder

- **BALDER FPSO**: Printing of an obsolete cage for valve in recycled 316L powder.
- **Business case**: Estimated cost savings of 56%, Reduced lead time by 59 days (from 84 to 25), cut CO2 emissions by 40%, reduced energy consumption by 31%, and enabled a single piece design



Redesign on-demand

- **Goliat:** CNC machined produced on-demand of a redesigned subsea pin.
- **Business case:** Produced in 14 days. No qualification requirements, tested and approved according to NORSOK.



ADDITIVE MANUFACTURING (AM) AND DIGITAL INVENTORIES (DI) OFFERS STRATEGIC ADVANTAGES FOR BOTH GREENFIELD (DEVELOPMENT) AND BROWNFIELD (MODIFICATIONS & MAINTENANCE) PROJECTS

GREENFIELD

BROWNFIELD

Development

Development - / Greenfield projects focus on **developing new resources**, following concept studies and sanctioned by an approved PDO/PAD/PUD. These projects are complex, span several years, and involve multiple disciplines across several phases.

Modifications

Modification projects involve **changes or extensions to existing equipment and facilities**, requiring updated technical documentation. Includes change projects and reconstruction outside of maintenance or operational investments.

Maintenance

Maintenance projects cover all **maintenance activities** for offshore **facilities, land plants, and pipelines**, including inspection, preventive and corrective maintenance, and maintenance support.

ILAP – brief overview

The ILAP solution is a cross-industry solution for exchange of schedule data across parties independent of scheduling tool

The solution increase safety on our facilities, reduce cost and enables radical changes in the way we work.

ILAP:

- **I**ntegrated **L**ifecycle **A**sset **P**lanning
- ISO standard
- Software suite for exchanging schedule data between different scheduling tools
- Offshore Norge

Exchange of interoperable schedule data across different scheduling tools and parties

Problem & challenges

- Manual punching
- Resource demanding
- Time consuming
- Data not in sync
- High cost
- Quality risk
- Safety risk

Example: Snøhvit Future Project

aibel

Safran

Nexans
ELECTRIFY THE FUTURE

ORACLE
PRIMAVERA P6

Statnett

Microsoft Project
Project management software

LNS

Microsoft Project
Project management software

equinor

Project Master Schedule

Safran

COLLABORATION SOLUTIONS

- The **Collabor8** portal in Offshore Norge offers several services today within:
  - asset and licence management,
  - authority communication and reporting
  - Material management
- The expansion of material management and ILAP necessitates a new organisation outside Offshore Norge
- A new company will now be established, owned by the operators on NCS
- Will be in operation end Q2 2025
- Will offer services to the energy industry both in Norway and internationally

SCALING & GROWTH-
ILAP AND MATERIAL MANAGEMENT