



# Omnio™ System

## Introducing the Oceaneering Subsea Tool Changer

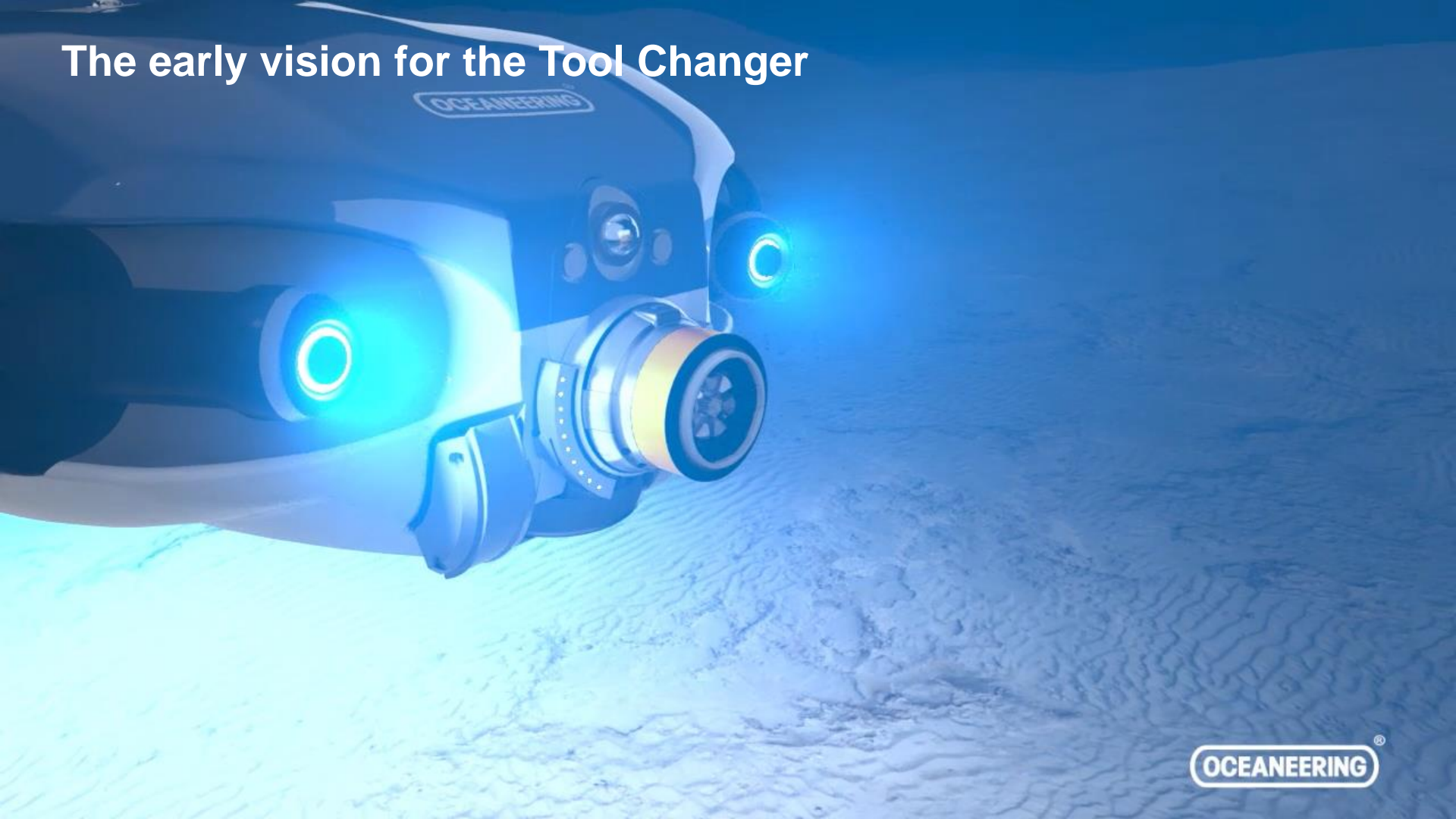
*FFU-seminar 2025*

*Kenneth Solbjør, Product Manager Subsea Robotics*

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# The early vision for the Tool Changer







# Why the Tool Changer System?

*The clutter of multiple hydraulic tools*



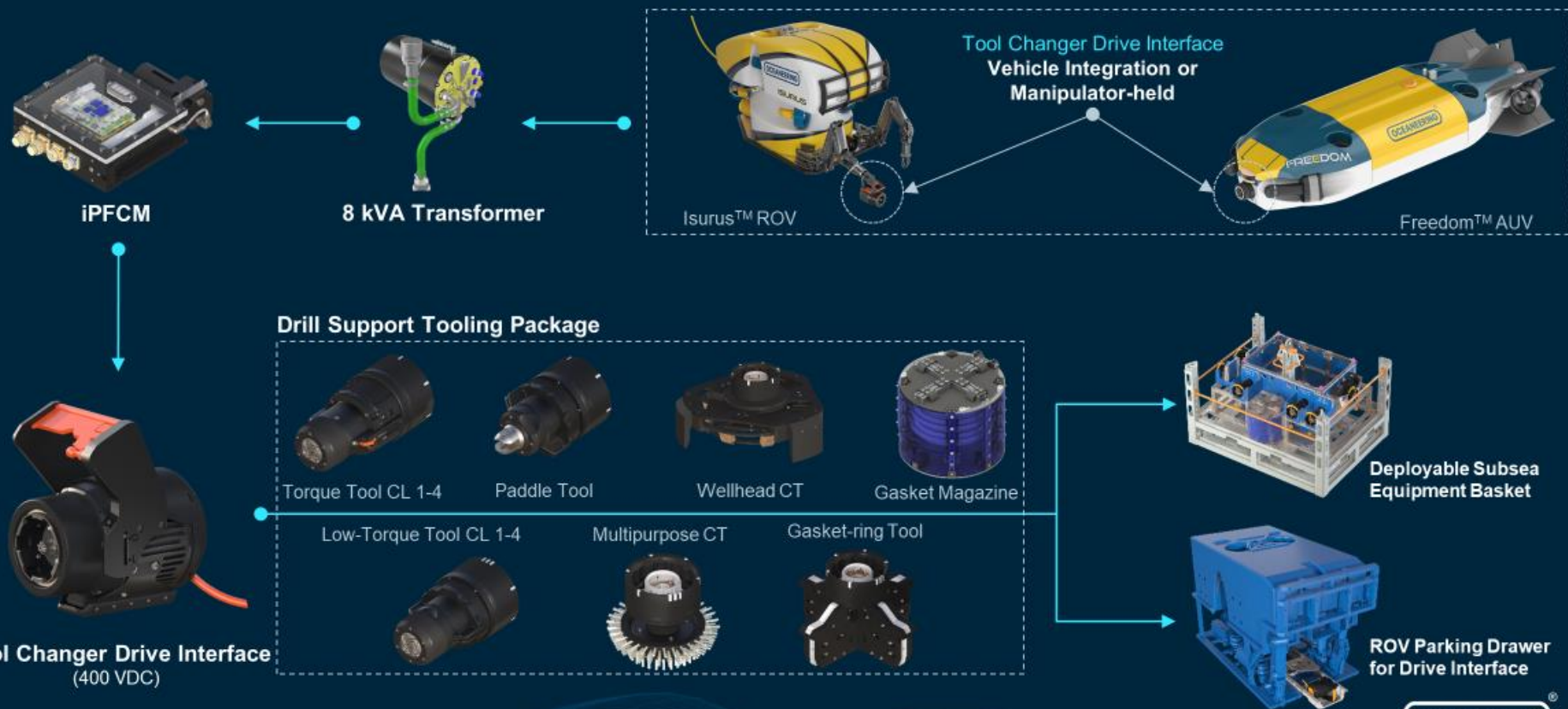
## Key Drivers for Developing the Tool Changer System

-  Eliminating Hydraulic Oil
-  Enabling Seamless Subsea Tool Changes
-  Standardizing and Future-Proofing
-  Maximizing Cost Efficiency



# Subsea Tool Changer Architecture

*An all-in-one resident tooling solution set to revolutionize subsea operations*



## One Electric Drive Unit for Unlimited Tooling Versatility

## One Electric Drive Unit for Unlimited Tooling Versatility



## Tool Changer Drive Interface

-  **One Electric Drive Unit** seamlessly adapts to a variety of tooling adapters to **replace the clutter** of **multiple hydraulic tools**, streamlining efficiency and performance
  -  **Environmentally Sustainable Design** significantly reduces risk for oil spill with electric drive technology
  -  Subsea wet storage and tooling changes **enhance operational efficiency**
  -  **Unlimited Versatility** for **tooling solutions** and **semi-permanent drive** for subsea equipment

# Torque Tool Adapters

*Delivering superior flexibility and precision torque control*

## Class 1-4 Torque Tool

Torque up to **2700 Nm**

Class 1-4 Interface

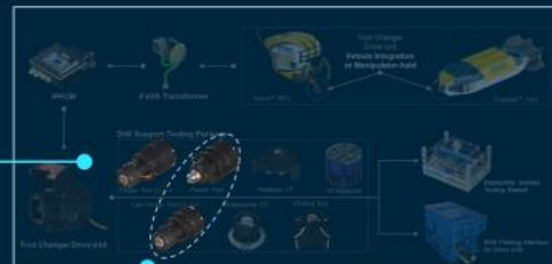
Auto Lock in 17D Bucket



**Torque Tool CL 1-4**

Two Different Torque Tools;

1. Class 1-4 Torque Tool
2. Low-Torque Tool



**Paddle Tool Class A Interface**

One unit designed to support  
**multiple end effectors,**  
**Class 1-2 Torque**



**Class 1-4 Interface**

**Low-Torque Tool**

## Low-Torque Tool

Torque up to **300 Nm**

High accuracy torque control at  
lower torques

Cost effective solutions and  
easily adaptable



# Cleaning Tool Adapters

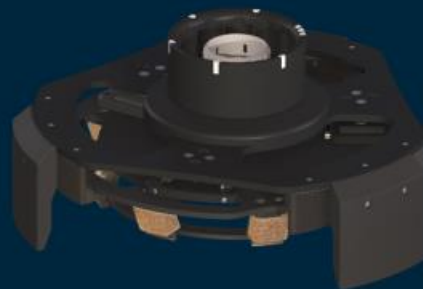
*Delivering superior cleaning performance*

## Wellhead Cleaning Tool

18  $\frac{3}{4}$  Wellheads

Direct drive, no reduction gearing

Superior cleaning performance  
and visibility of cleaning surfaces



Wellhead Cleaning Tool



Cleaning Brush

## Cleaning Brush

Multipurpose tool

Direct drive, no reduction  
gearing

Multiple rotary cleaning end  
effectors can be adapted to  
suit varied geometries



## Jetting Unit

Prototype built, but not released with  
the "Drill Support Package"

Release expected 2026

Jetting Unit also serves as Docking  
Position for Tool Changer Drive Unit



## Wellhead Gasket Ring Tools

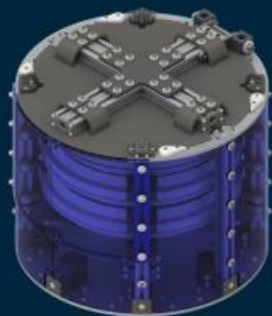
## On-demand wellhead gasket ring storage and installation

## Gasket Ring Magazine

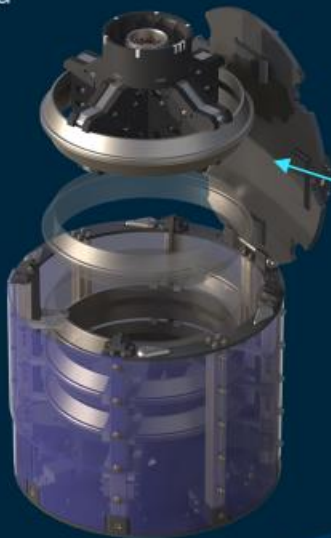
For storage of 18 ¾ gasket rings  
(AX, DX, VX)

## Capacity for multiple rings

ROV-operated lid



## Gasket Ring Magazine



### Gasket-ring Tool Adapter



## Gasket Tool Adapter

Handles 18  $\frac{3}{4}$  gasket rings  
(AX, DX, VX)

## Mechanical self locking, drive release

Designed to allow for inclined  
Gasket-ring handling



# Subsea Deployment and Storage

*Your subsea on-demand toolbox - right where you need it!*

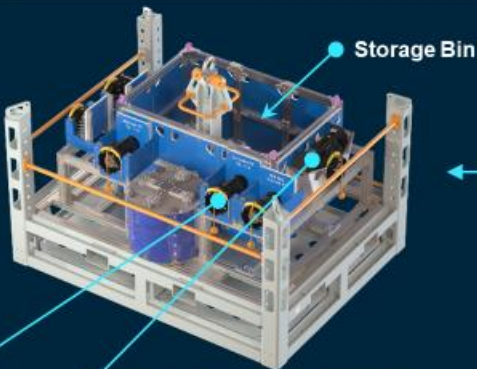
## Subsea Equipment Basket

Modular design for **diverse tooling configurations**

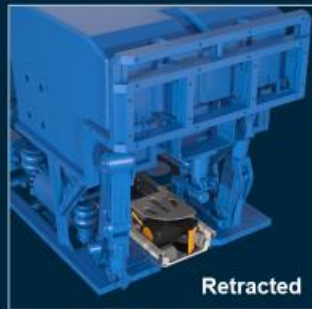
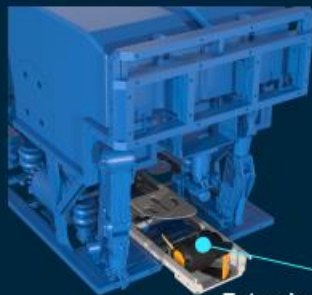
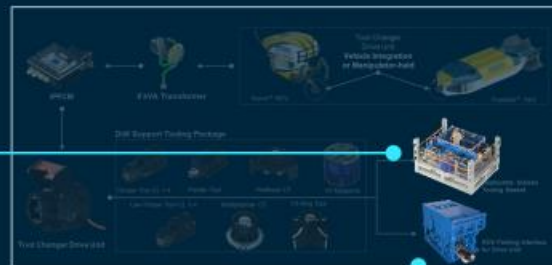
**Storage bin** around center lifting column

**Single point lift** for subsea deployment

**Parking adapters** can be used **independent of basket**, i.e. integrated on subsea robotics and equipment



Subsea Equipment Basket



## Parking Drawer for Drive Unit

Retractable Parking Drawer for **Instant Access and Storage** of the Drive Unit.



# Power and Control

## Vehicle Agnostic Power & Control



Compact 8 kVA Transformer



iPFCM



Tool Changer Drive Interface  
(Shown docked in Jetting Unit)



Magnum ROV Test Vehicle

Vehicle-agnostic power and control with  
standard **110 / 220 VAC** tooling compatibility  
for seamless integration



# Unlocking the Advantages of the Omnio System

*Tool Changer transforming subsea operations performance*



## Increased Operational Efficiency

Subsea tool change reduces launch & recovery, and on-deck tooling swaps



## Enhanced Sustainability

- Minimizing vehicle deployments reduces power consumption
- Designed to optimize raw material use
- Offshore serviceability minimize footprint and handprint
- Durable design for maximum operational life



## Reduced HSE Risk

- Electric Drive Technology significantly reduce risk for hydraulic oil spill
- Fewer on-deck change-outs reduce crew exposure to handling risks
- Reduced crew exposure to lifting operations for vehicle deployment



## Standardization & Future Proof

Omnio interface adapts to future capabilities like smart tooling and subsea equipment control



## Maximize Cost Efficiency

- One Drive Unit, standard Omnio interface powering multiple tooling adapters
- Seamless subsea tool changes minimize risk for delays in operations



## Unlock Resident Tooling Intervention Operations

Resident tooling enable intervention for extended periods of subsea operations without vessel support.



## Empowering AUV Intervention Capability

Vehicle integration unlocks seamless AUV intervention capabilities





**Parking adapters** installed on the **Liberty Resident System** Subsea Docking Station



**Low-Torque Tool** docked in **17D Bucket**

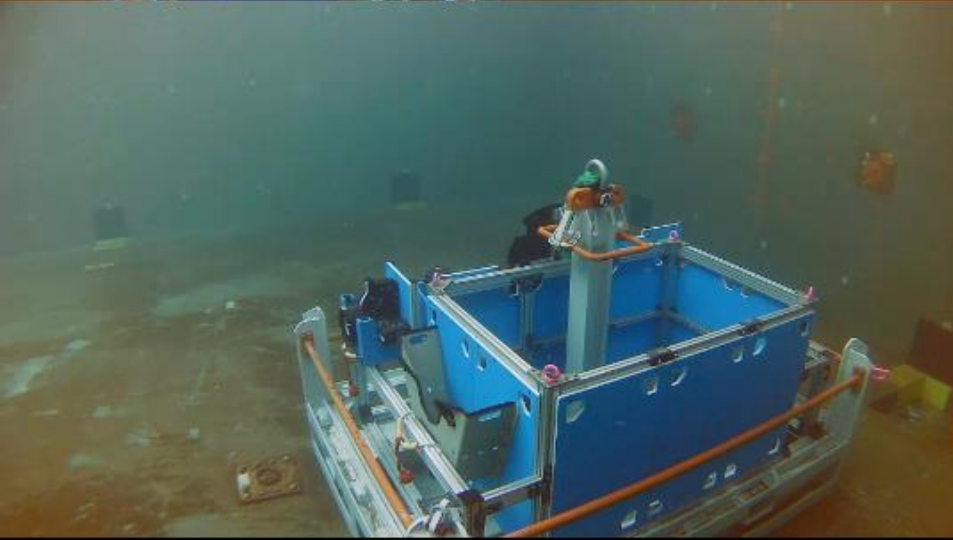
*Unlocking Resident Tooling Intervention Operations*

# NextGen



## TOOLING





Basin Test of  
Wellhead Cleaning and Gasket Ring Placement



# Innovative Advancements on the Horizon

*Dedicated to continuously advancing the Tool Changer System to meet evolving needs*

The **Standardized Omnio Interface** provides **Unlimited Versatility** for tooling solutions

Development of tooling adapters / use case applications to meet **customer needs**

2025

Future

Tool Changer  
Drill Support Package

Tool Changer  
Jetting & Suction

Tool Changer Smart Tools  
(Power & Comms to Tool  
Adapter)

ROV / Cage based  
Tooling Deployment

Tool Changer Freedom  
AUV Integration

Production of Tool Changer Kits to meet **Market Demand**

OCEANEERING®

# Let's Connect!

*Have questions? Want to chat? Here's how to find us*

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## OMNIO™ SYSTEM

Visit Website at:

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Connecting What's Needed with What's Next™