# OceanTech Innovation AS

From world leading technology in the Splash Zone at Oil & Gas
– to Offshore Wind and Fishfarms

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# Who we are!

**OceanTech – ‘’The Splash Zone Expert’’**

**Unique experience from projects worldwide**

**Robot Technology developed in Trondheim**


- **40 Employees**
- **120 MNOK revenue/year**
- **Subsea Test Center DORA II, Trondheim**

MODIFICATION | REPAIR | INSPECTION | CLEANING

# What we do!

## Focus on Splash Zone projects

- ❑ Studies
- ❑ Engineering
- ❑ Development of equipment
- ❑ Testing
- ❑ Offshore execution – worldwide!

- ✓**Cleaning**
- ✓**Inspection**
- ✓**Repair**
- ✓**Maintenance**
- ✓**Installation**
- ✓**Cutting and removal**

**Oil and Gas >>**

- Jacket Structures
- Hulls
- Caissons / Risers / Conductors
- Clamps
- Anodes
- Cutting and removal

**Offshore Wind Power >>**

- Monopiles
- Anodes
- Jackets
- Floating foundations

**Transport >>**

- Jetty Piles
- Bridge Columns
- Floating bridges

**Aquaculture >>**

- Fish Farming cage / net
- Offshore Fish Farming structures
- Fairlead and Anchoring
- Launching/Recovery of IMR robots
- Anode installation

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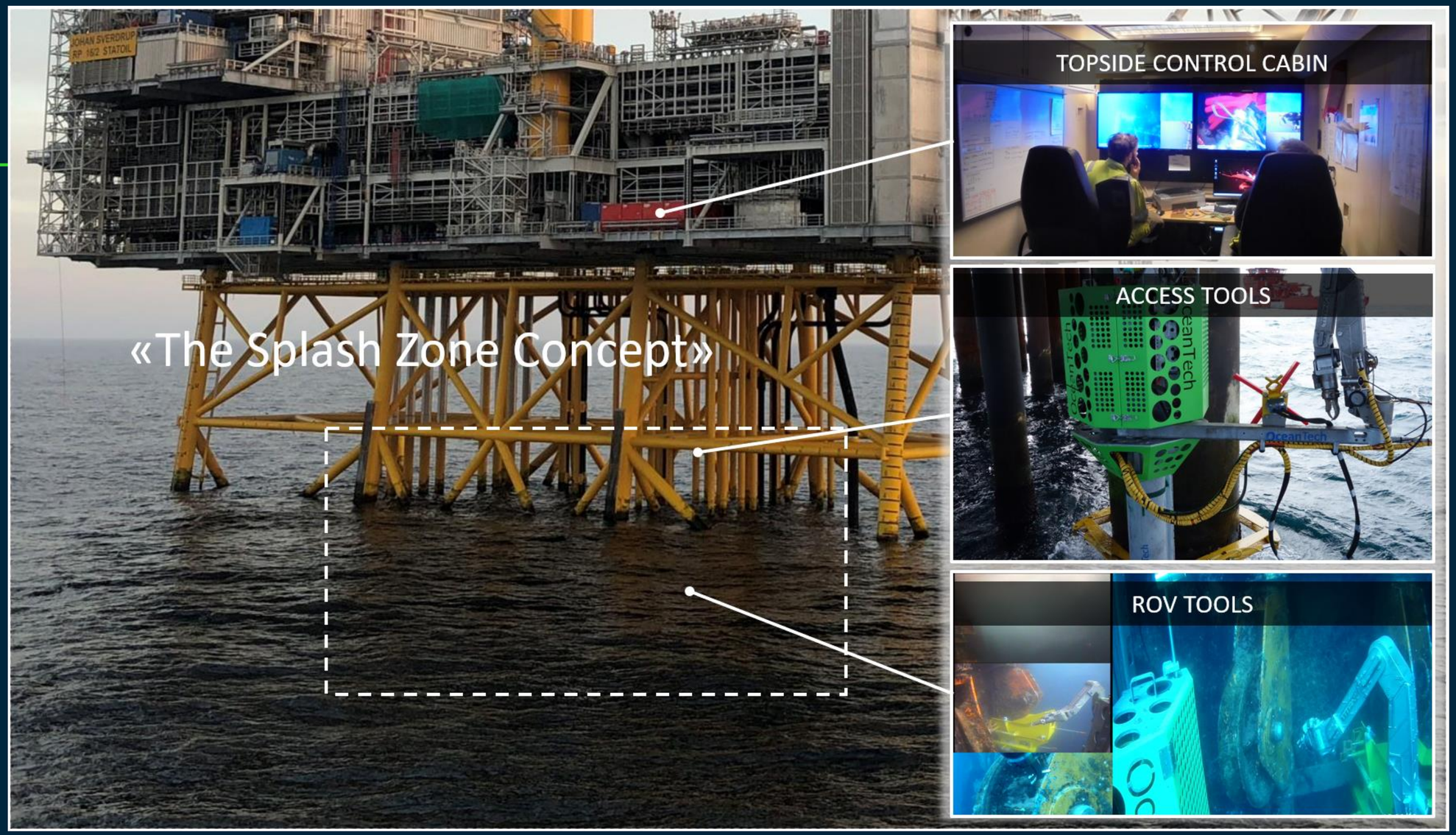
# How we do it!



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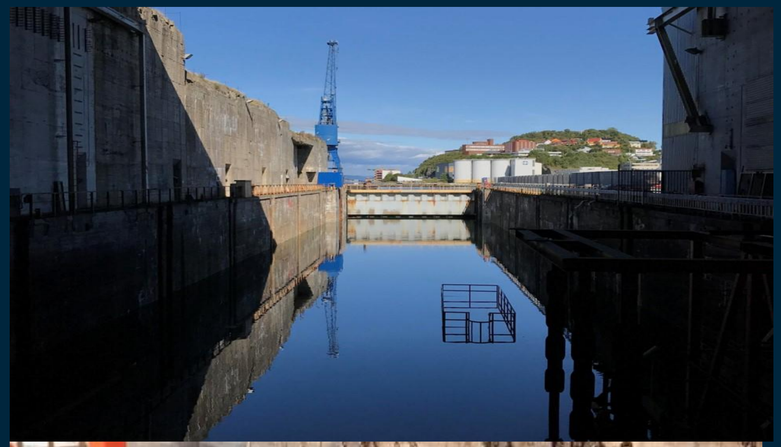
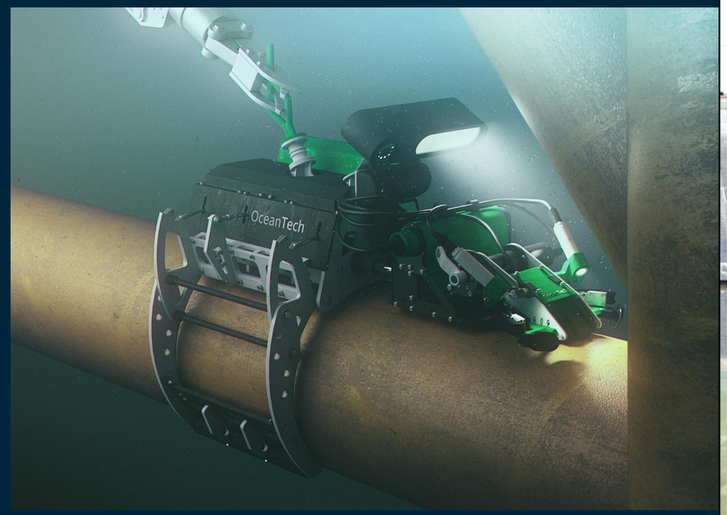
# Subsea Test Center



- Workshop, Warehouse and Subsea Test Center
- Dry Dock 120m long x 20m wide x 12m deep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# Subsea Test Center – at historical ground

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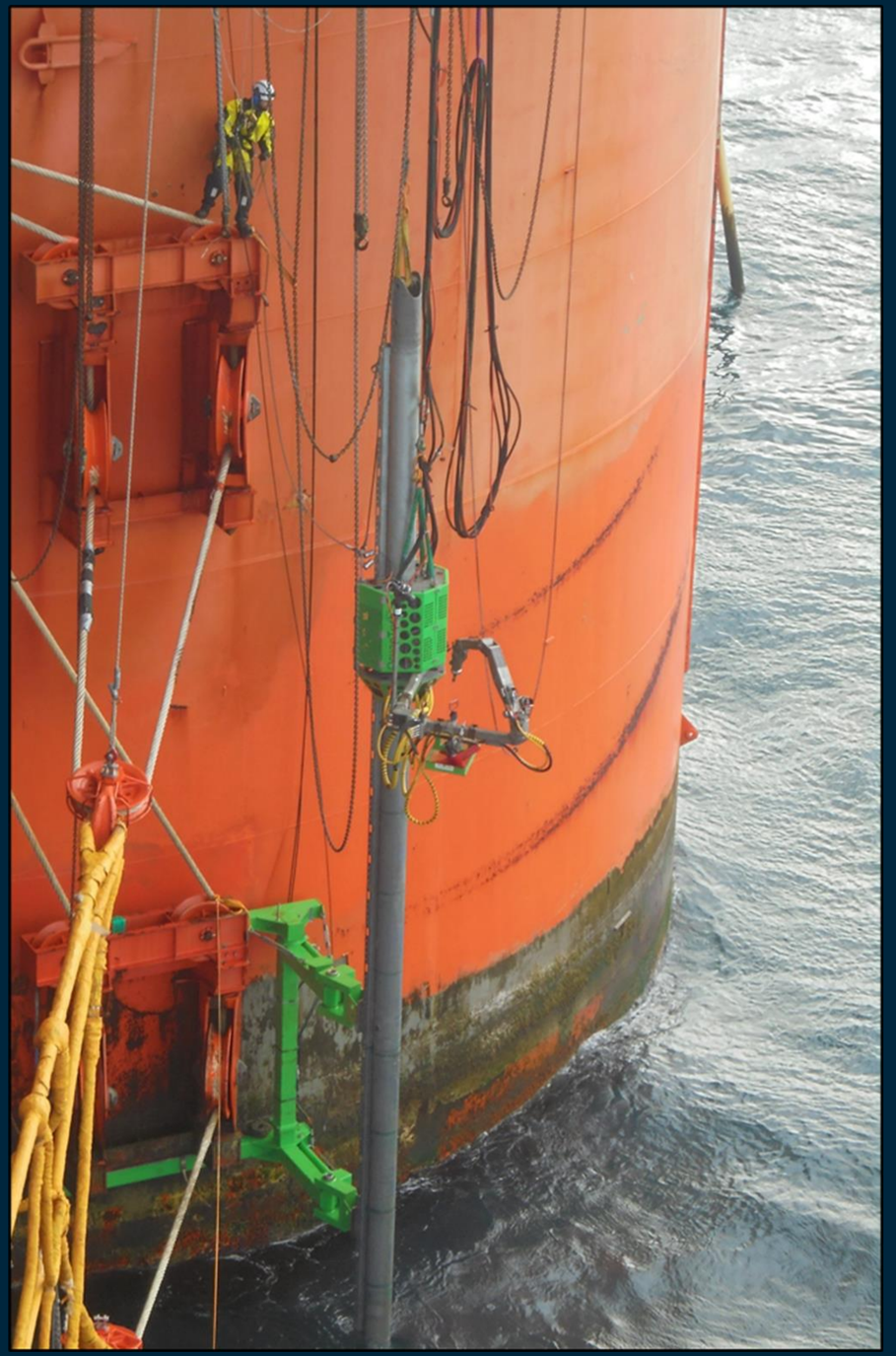
# Offshore Execution!

- Complex rigging
- Safety precautions
- Advanced robot technology
- Under water operations

EXPERIENCE – Field prooven!

# How to transform our technology and business to Offshore Aquaculture and Offshore Wind?

As everybody else, we need to secure our business by transformation to the ‘’green change’’

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# Aquaculture and Wind-farms are going offshore!

- Increased fish production, new production areas offshore
- Offshore Wind-farms at deeper waters (floating)
- **More exposed locations** and larger production units
- Many different design at Aquaculture – a challenge for maintenance and operation
- Will meet the same challenges as the Oil & Gas structures

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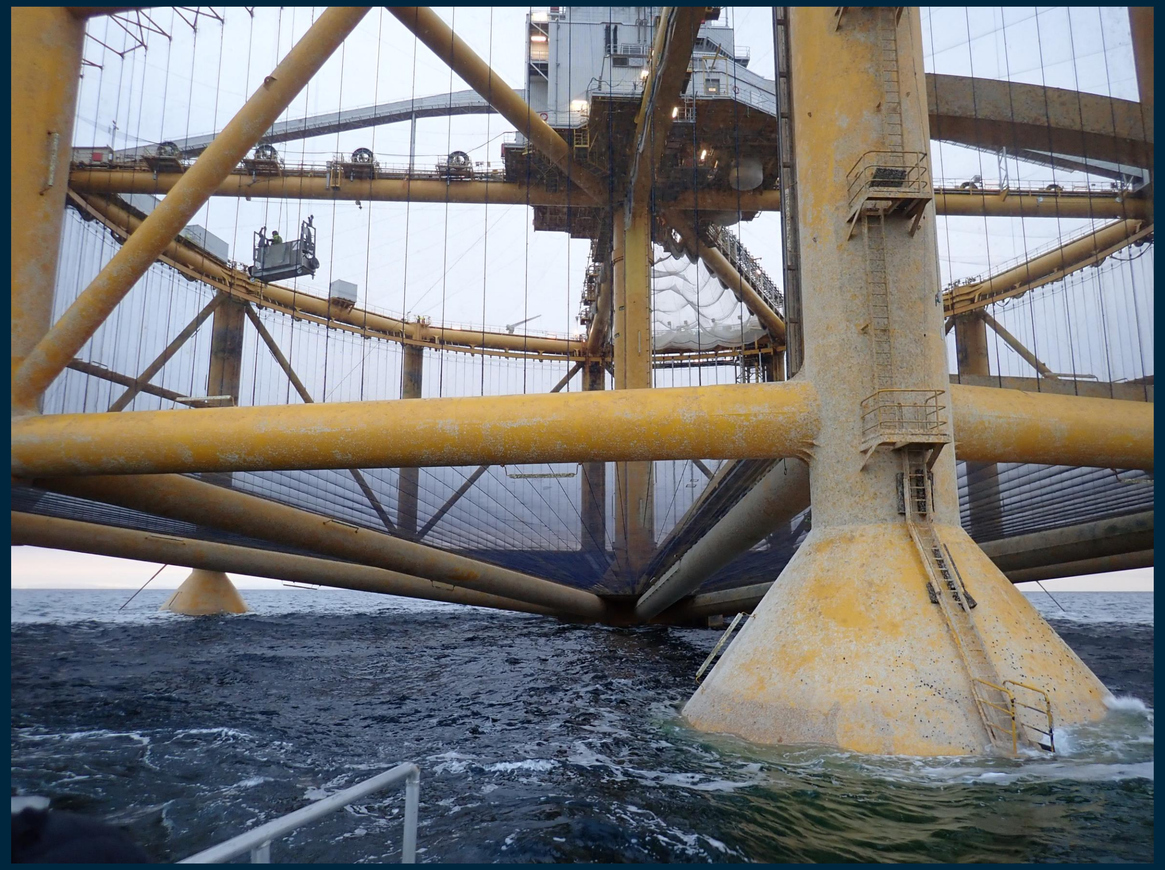
# Aquaculture Challenges

- Need to clean the Cage-net continuously – not only a Campaign once a year!
- The Net is a moving target…
- Rough sea conditions
- Need to typically **clean the steel structures** before a new production batch are set out in the Cage. The structures are often complex and with **obstructions** all over!



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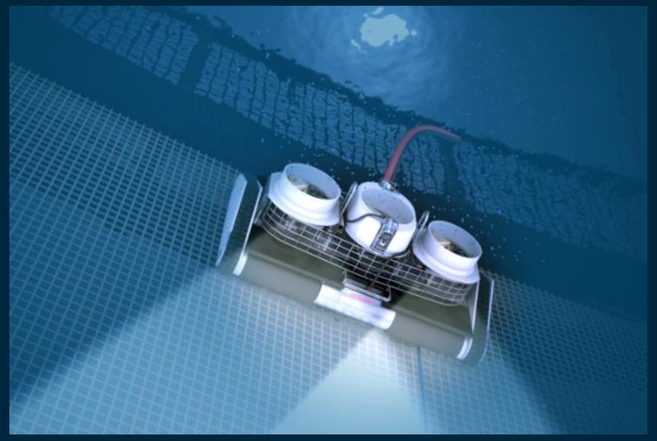
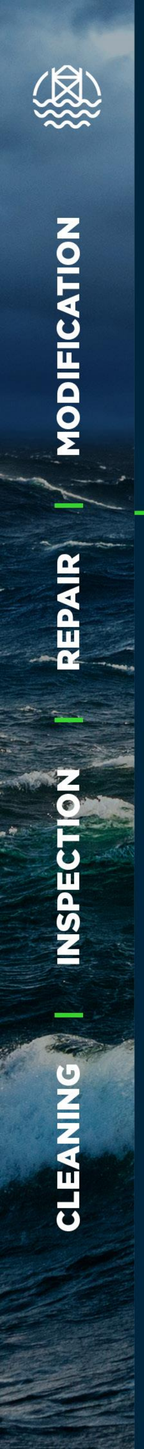
# Net Cleaning and Inspection



- The traditional **Remotely Operated Vehicles (ROV's)** and **Net cleaners** have challenges with the sea movement in the upper part of the water!
- The next generation robots need's to:
  - ✓ Compensate for the movements, but follow the net, which is tighten up and only partly follow the sea movement
  - ✓ Must not destroy the net
  - ✓ Limit the wear and tear on the net – clean carefully
  - ✓ Able to work 24/7 with limited maintenance
  - ✓ Inspect and recognize damages at the net and report




# Oil & Gas vs Aquaculture

For O&G platforms - The ‘’Splash Zone’’ has been defined as an inaccessible area – no work shall be needed in this area.

An increased need for maintenance and inspection has been seen!

Fish Farms need almost continuous maintenance (Cleaning and Inspection) in this Splash Zone area…

# How to transform our Robotic Solutions to these new structures

**What we see:**

**Structures not designed for robotic maintenance**

- Expensive maintenance  solutions –
- Development needed
- Different design (fish-farms) – even more development needed

Standardisation?

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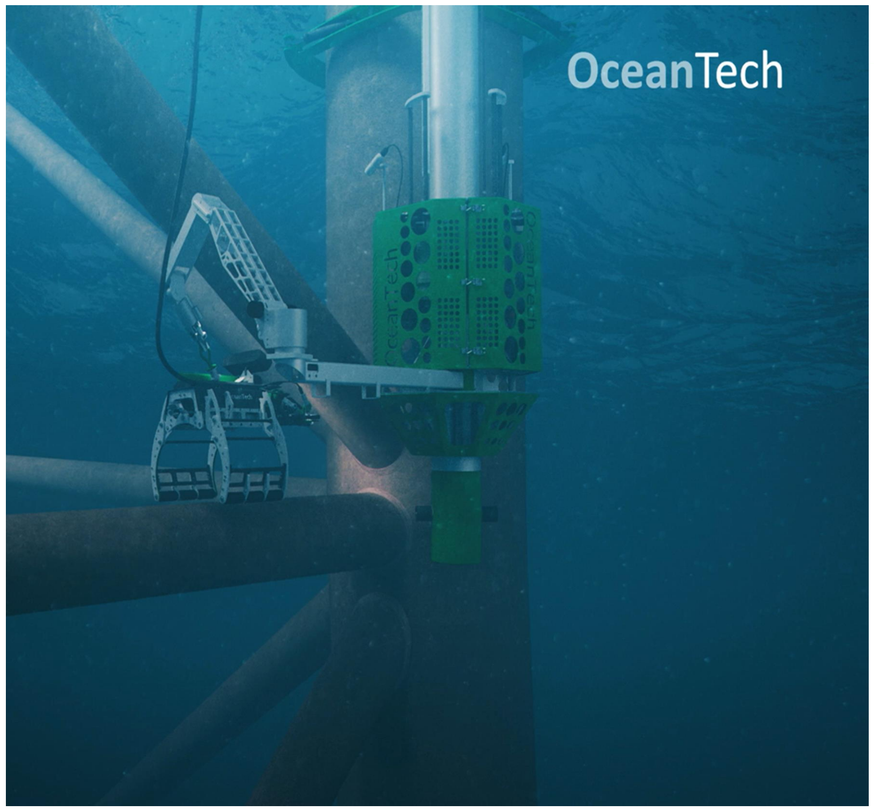
# Our experience

- ✓ Robotic solutions for cleaning and inspection of Offshore Fish Cages **not taken into account in the early design of the asset,** or not enough developed/tested.
- ✓ Due to the complex challenges, the solutions need to be **integrated with the other operations onboard.**
- ✓ **Wind Farm structures** more comparable to Oil and Gas structures with regards to maintenance and inspection. Equal design for the hole wind park – one tool works for all!
- ✓ **Autonomous robotic solutions** are needed in the future to save cost and save personnel onboard.
- ✓ The Oil & Gas industry has long experience that can be reused in Wind and Aquaculture



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# Thank you for your attention!