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INNOVATION

Splash Zone Experts

**Robotic Solutions in the splash zone -
excluding the need for divers and supply
vessels!**



MODIFICATION

REPAIR

INSPECTION

CLEANING



Technology and research have been crucial to ensuring that the oil and gas industry remains Norway's largest and most important industry after more than 50 years. This will also be important when the next chapters in Norwegian oil and gas history are written.



CLEANING | INSPECTION | REPAIR | MODIFICATION

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How Robotic solutions enables Oil & Gas to understand more about the crucial splash zone



**Execute tasks
beyond the
capabilities of
ROVs and divers**





«The Splash Zone Concept»





MODIFICATION

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Method

Control container



Winch

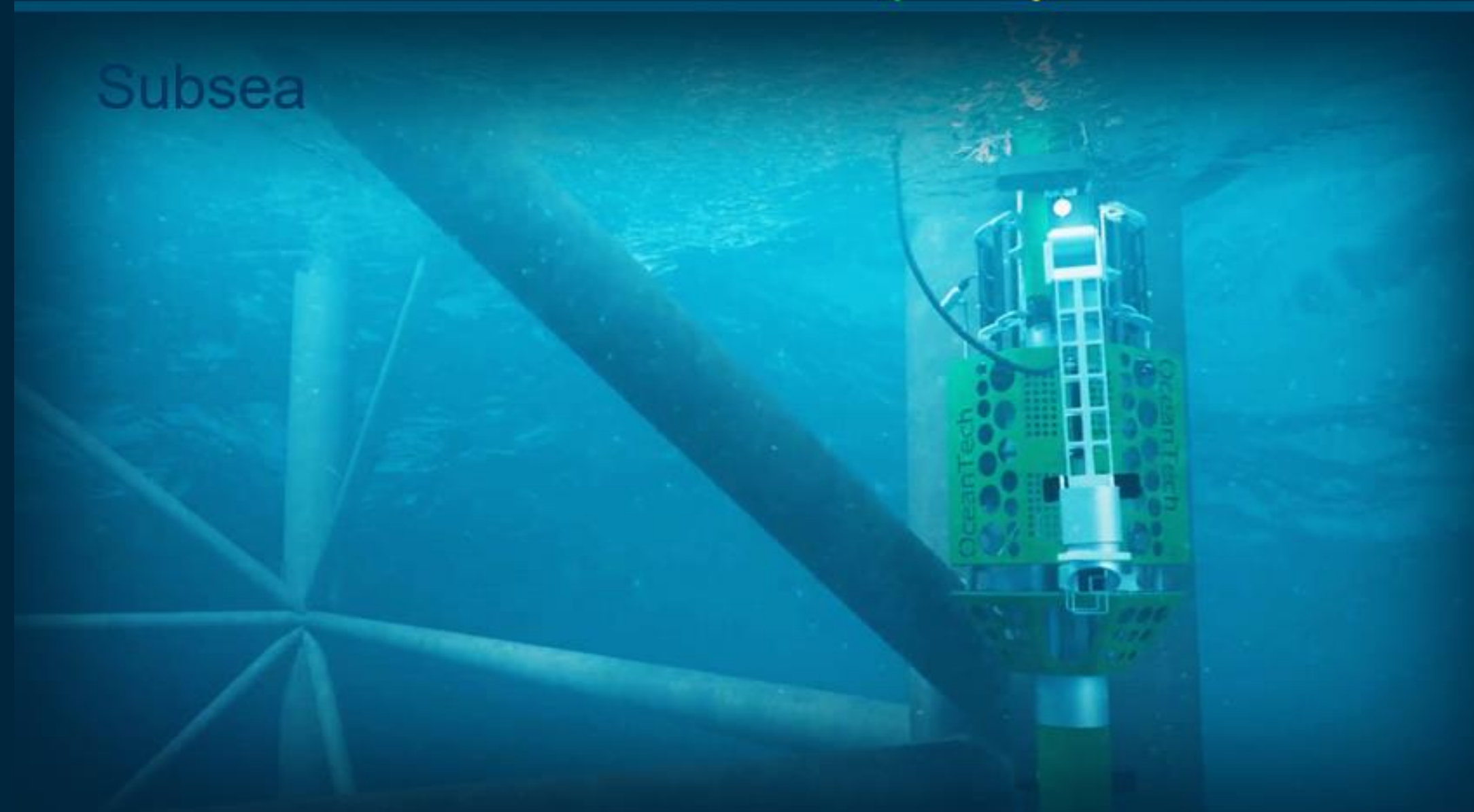


Umbilical

Winch wire

Topside

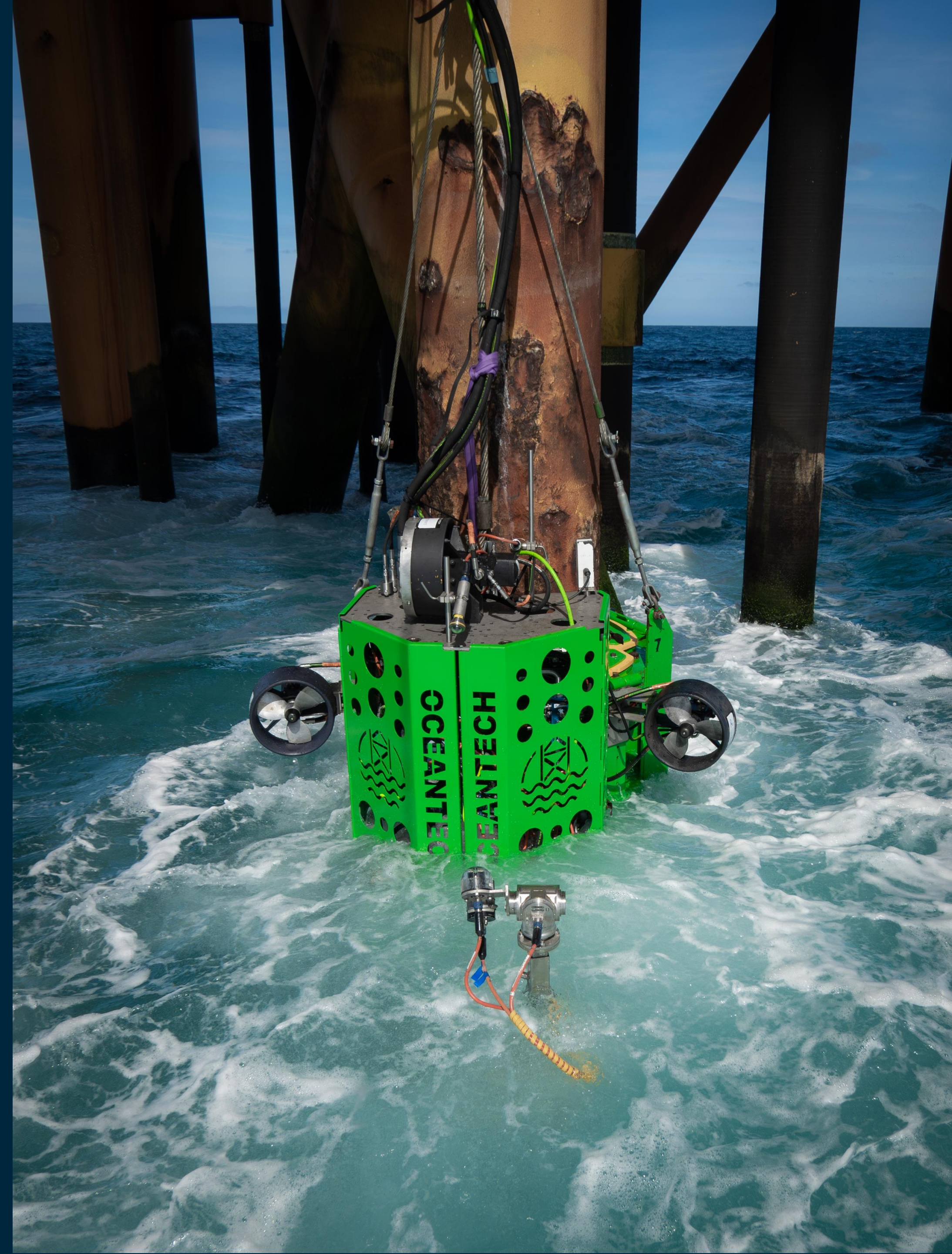
Subsea





Why use robotic solutions?

- Execute tasks beyond the capabilities of ROVs and divers due to waves and currents
- Less waiting time for weather windows compared to traditional solutions (divers and ROVs).
- Less stop in production due to no use of large vessels close to the installation.
- Operational in bad weather
3m HS (6M)





CLEANING | INSPECTION | REPAIR | MODIFICATION

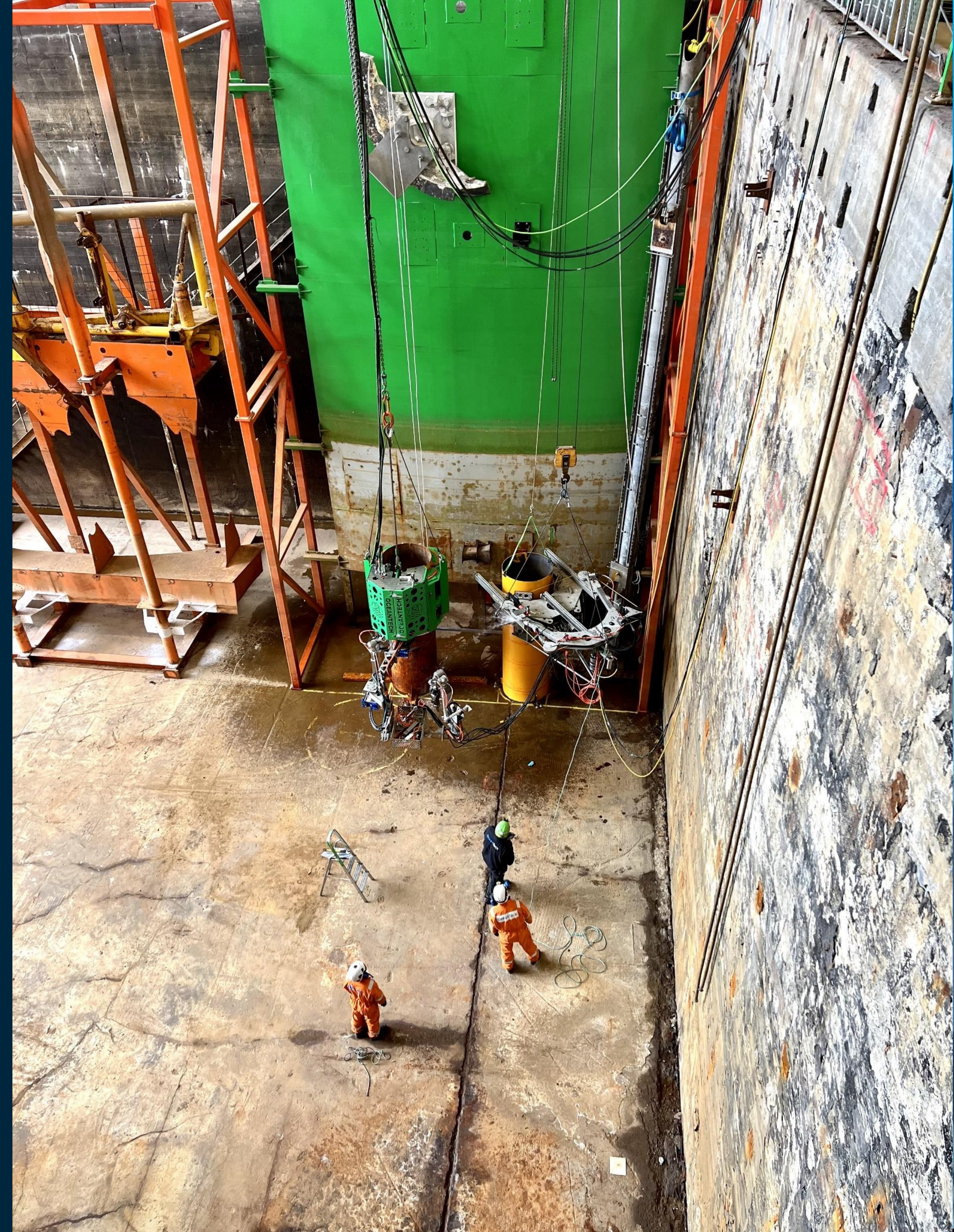
CLEANING | INSPECTION | REPAIR | MODIFICATION

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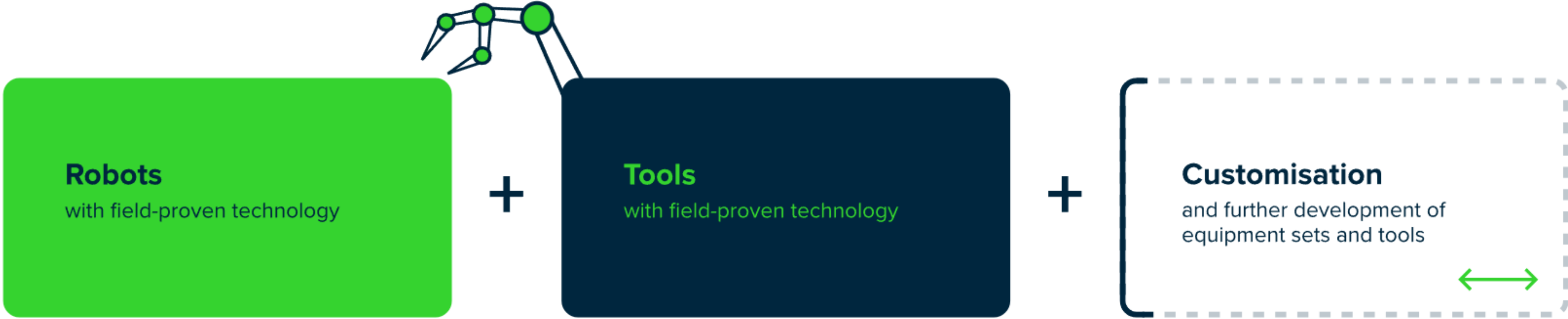
CLEANING | INSPECTION | REPAIR | MODIFICATION

What do robotic solutions solve?

- Cleaning of marine growth
- Inspection
- Installation
- Cutting and Removal

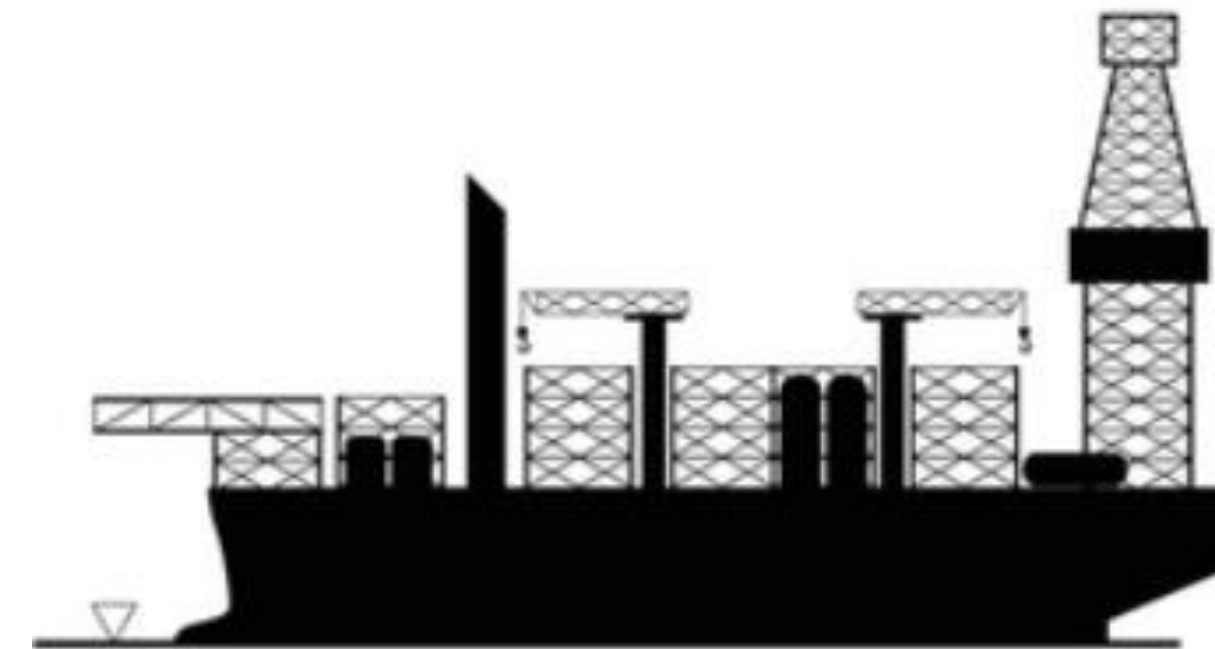
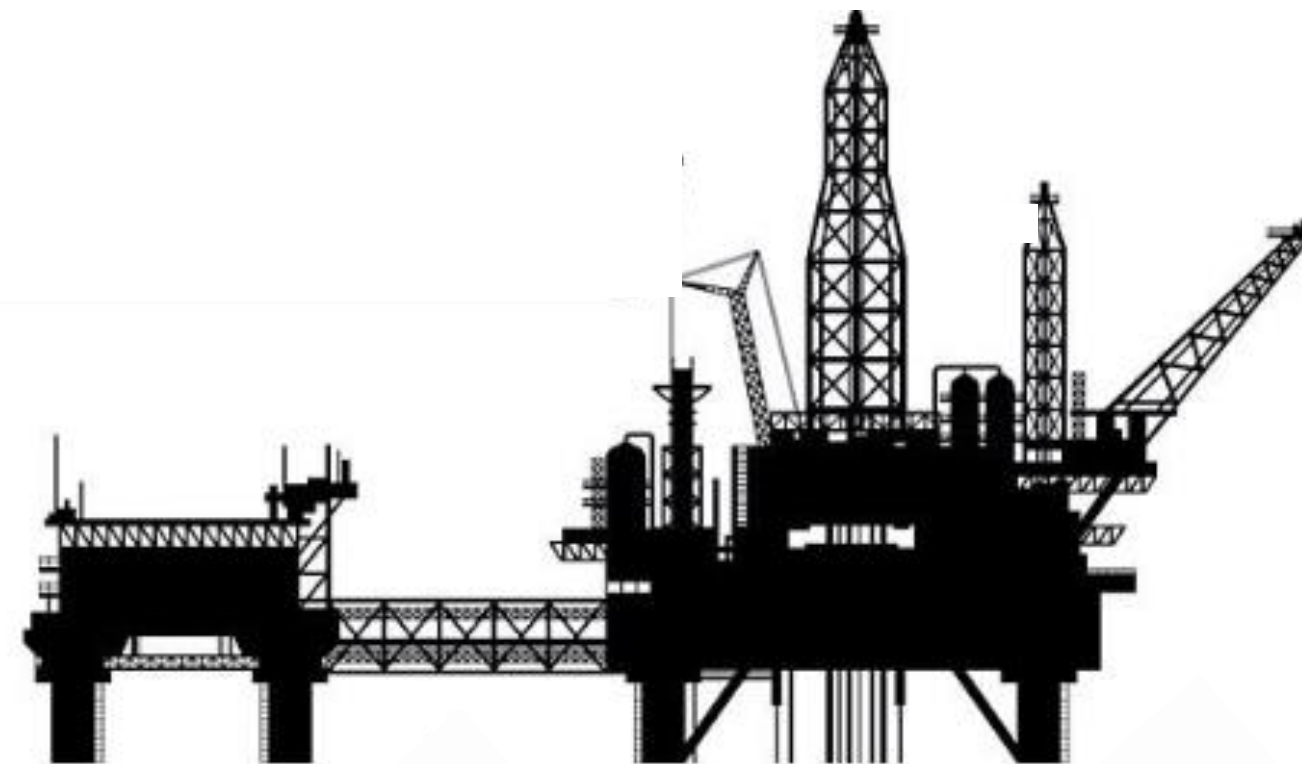


Modularity- like building LEGO



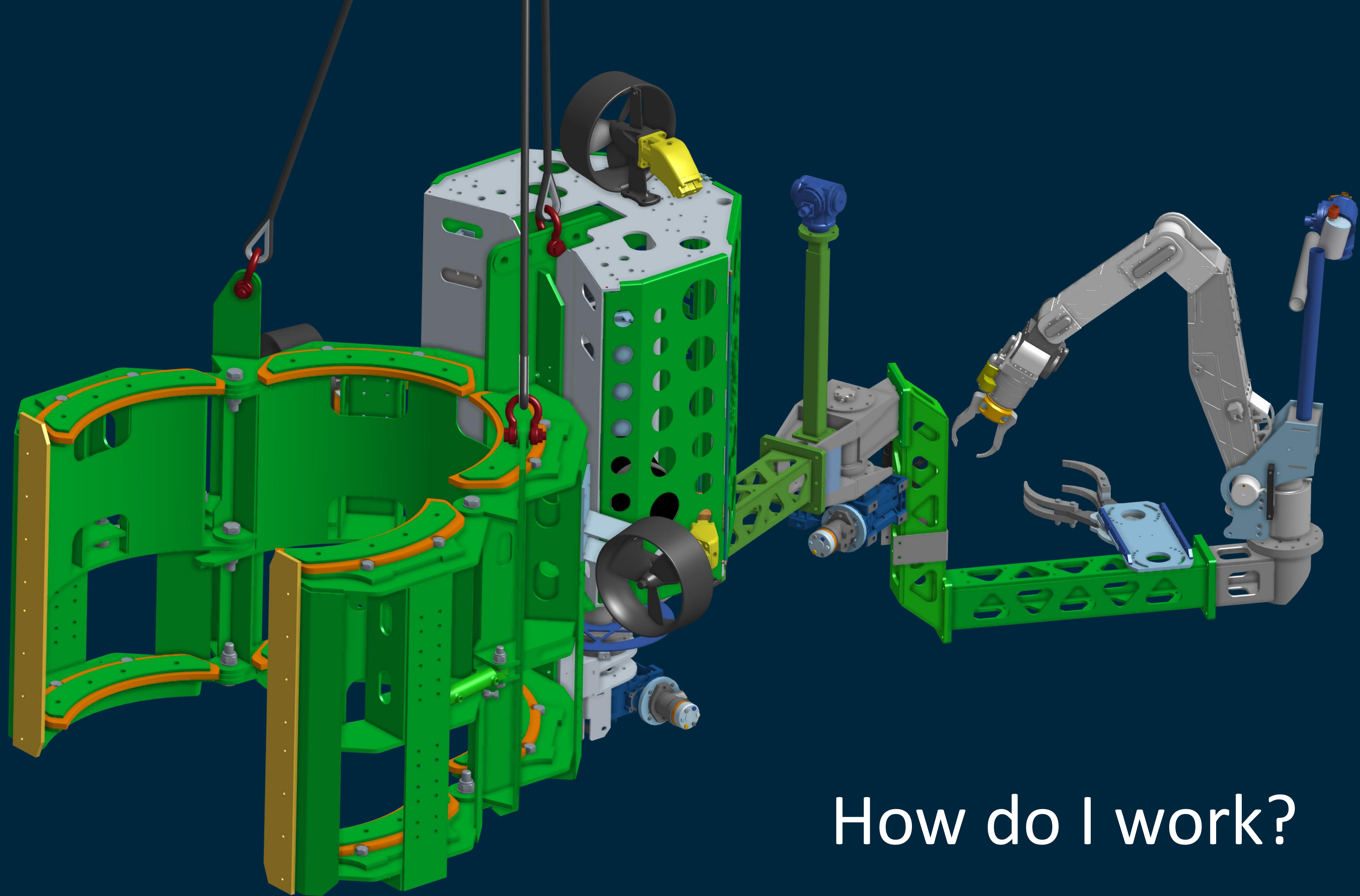
Modularity- like building LEGO

Our modular approach, along with our technology's adaptability to diverse materials, geometries, and surface conditions, enables our access robots and tools to connect to any offshore asset





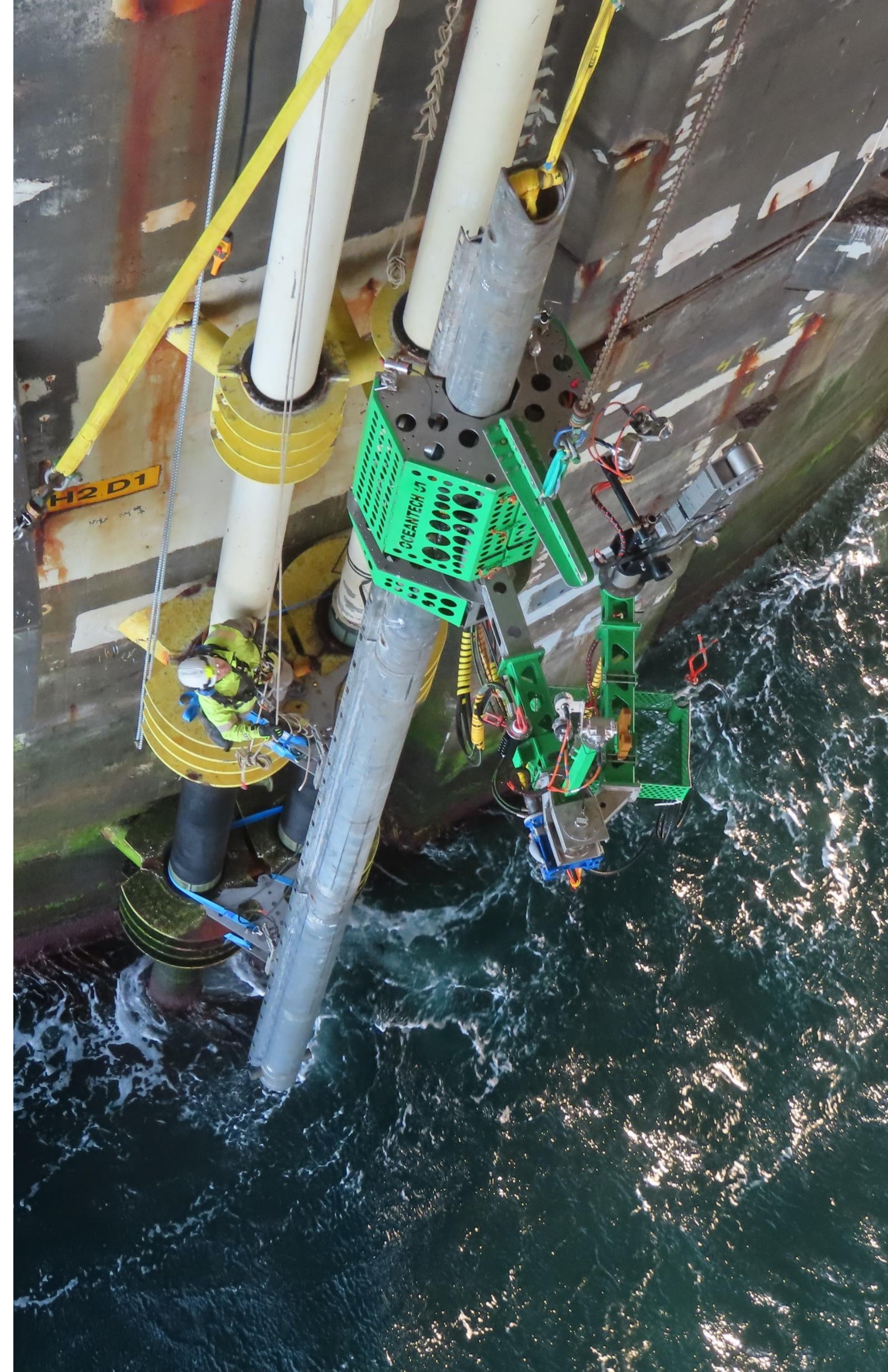
CLEANING | INSPECTION | REPAIR | MODIFICATION



How do I work?

Global Track record!

- Track record over the last 15 years with more than 70 projects
- “Worldwide” experience (AUS, Brazil, GOM)
- HSE - no large accidents or spill to nature –
“License to operate”





MODIFICATION

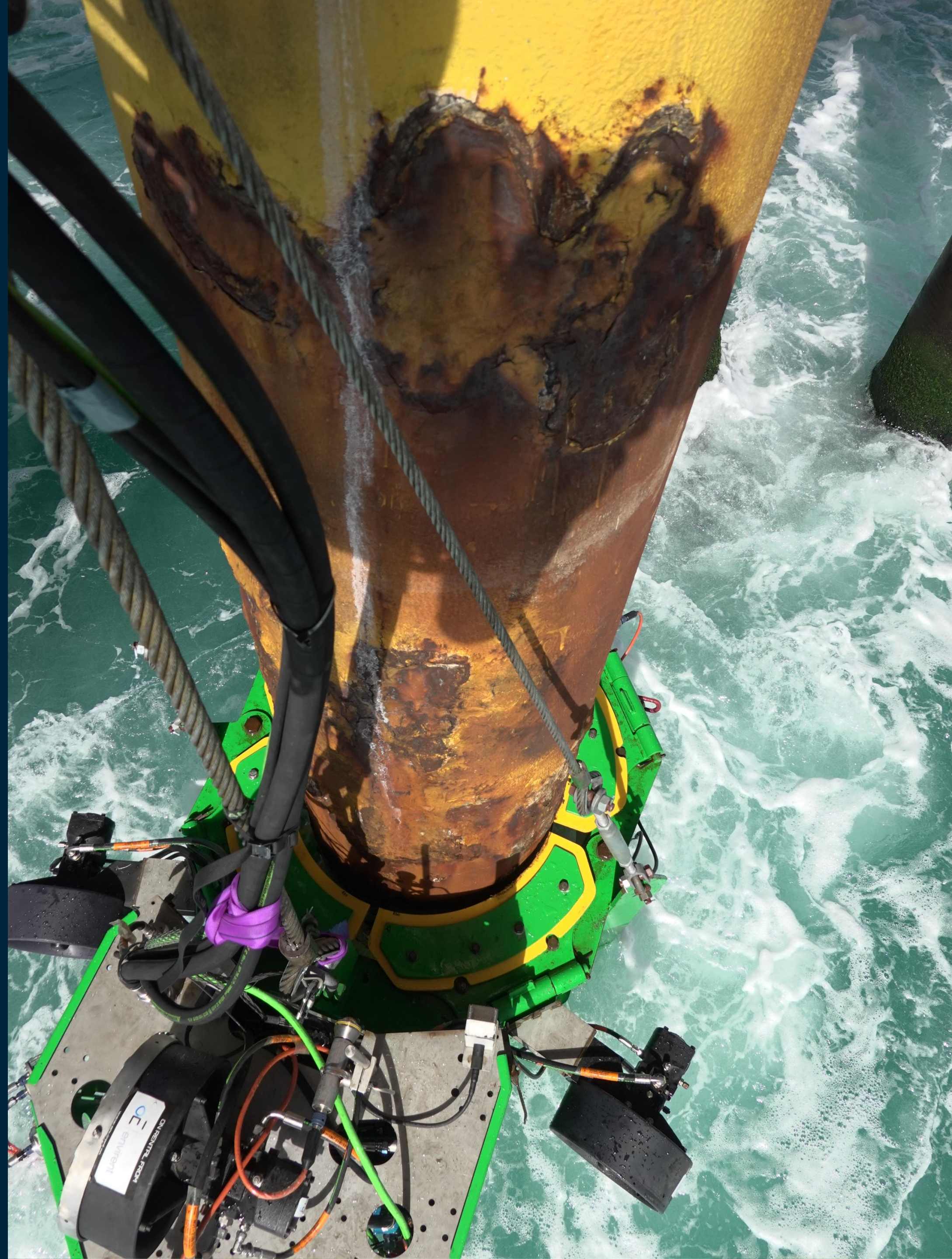
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Clamp Access Tool CAT

Risers, Conductors, Caissons, Jacket legs, Anchor chains.





MODIFICATION

REPAIR

INSPECTION

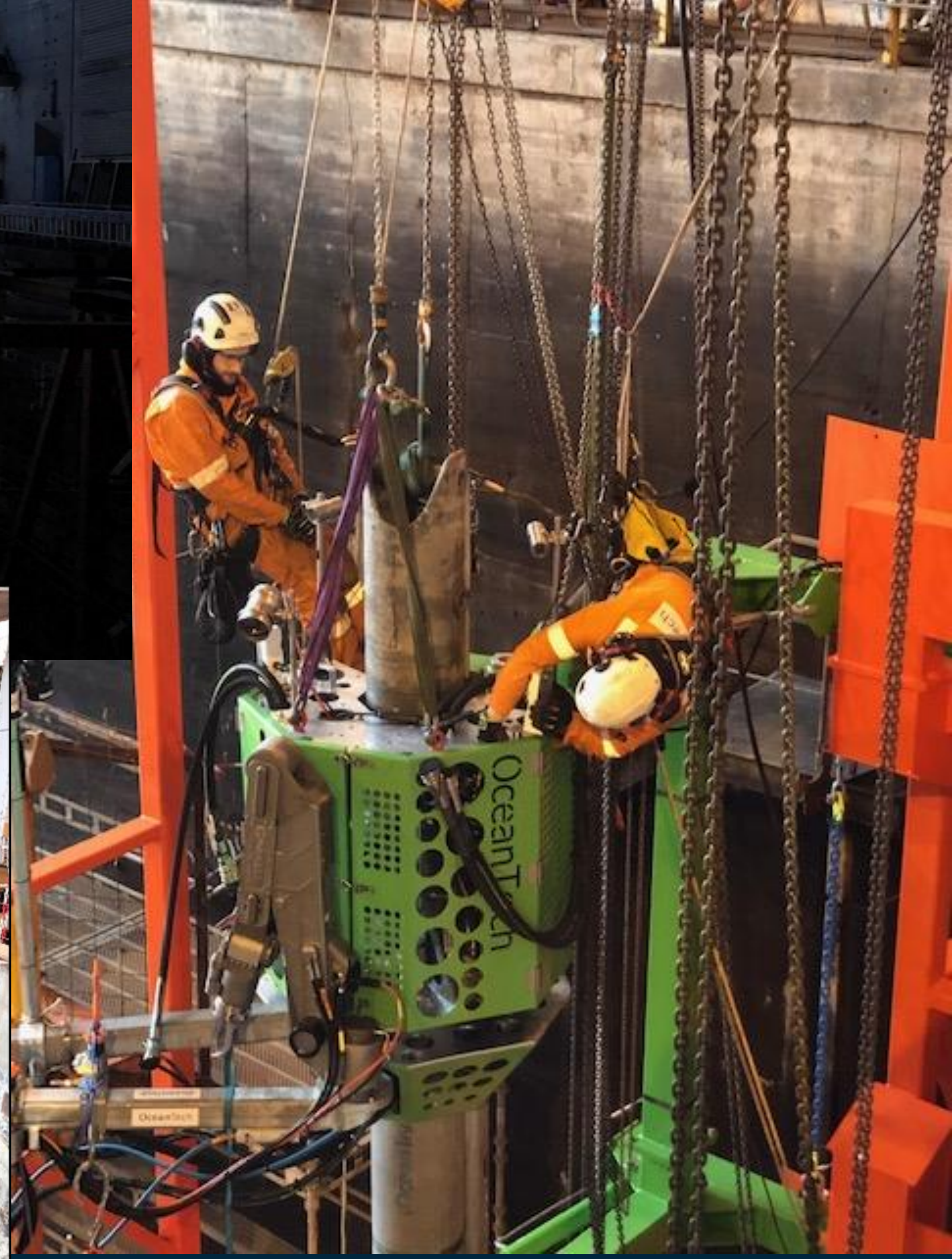
CLEANING

Vertical Access Tool VAT

Using a guide to access the splash zone, the VAT Tool could be fitted to any asset

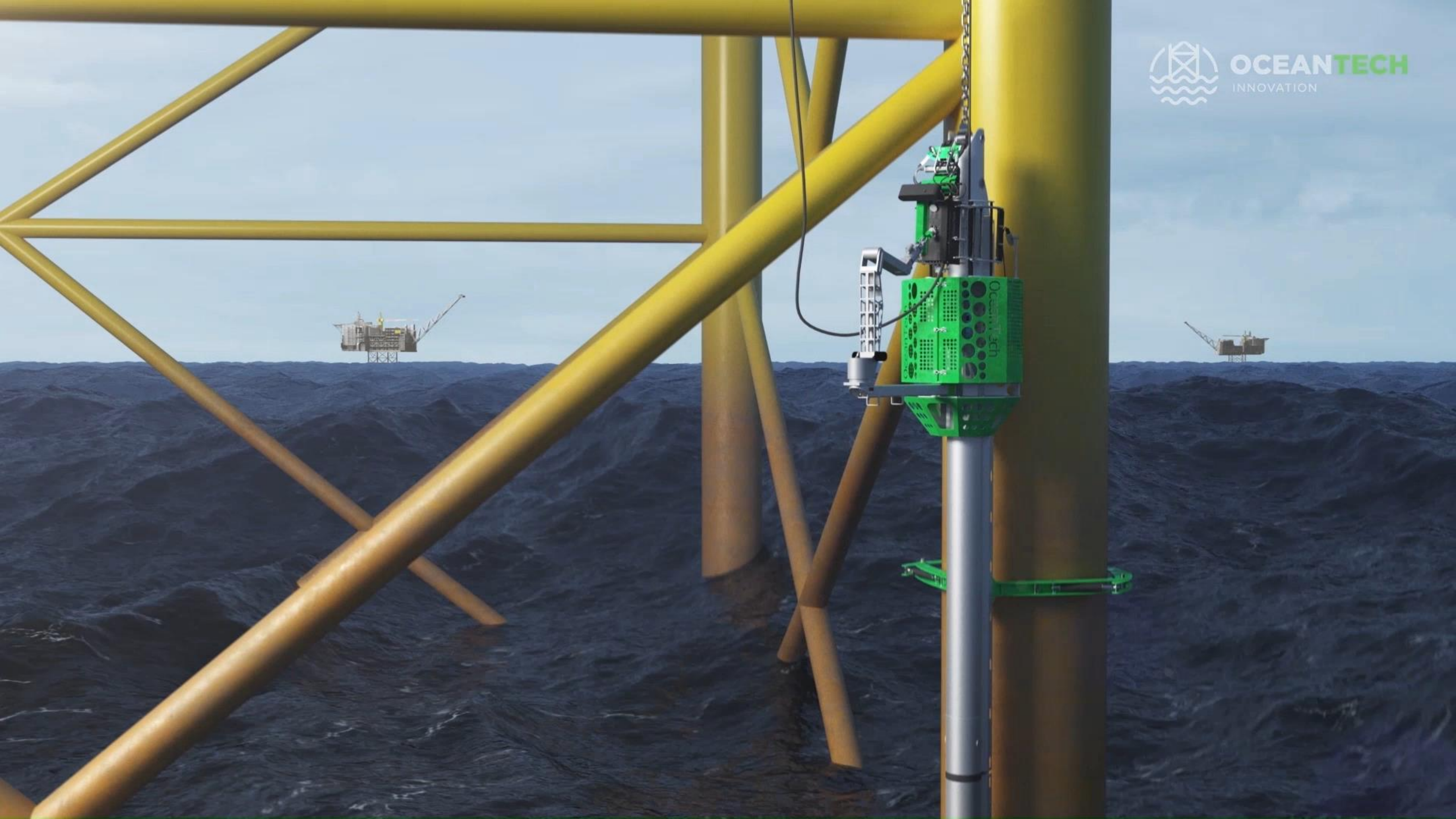


Testing and training
is key to safe and
cost reducing
offshore campaigns

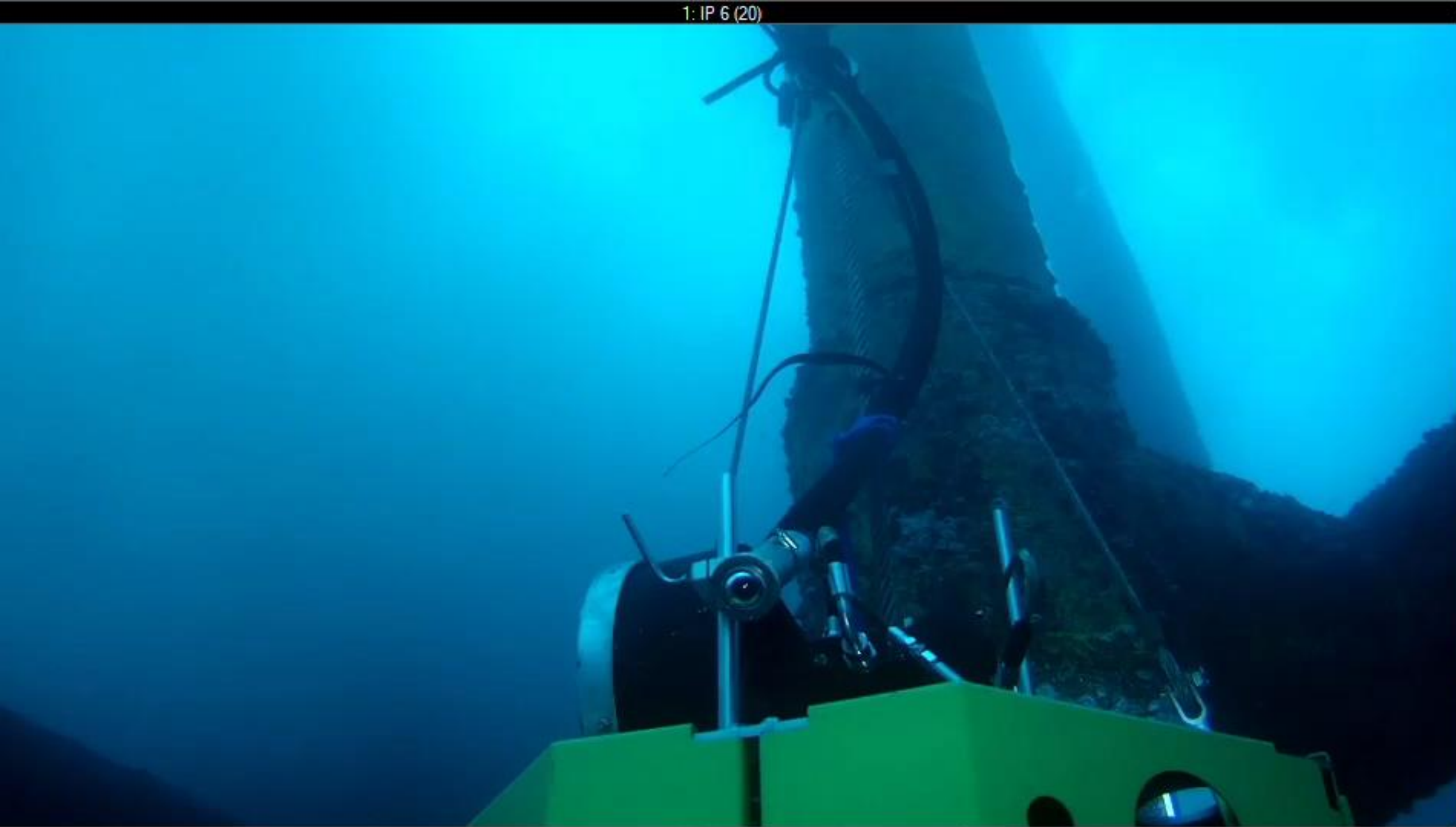




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1: IP 6 (20)



2: Wide Cam 3 (25)



3: IP 2 (25)



4: Wide Cam 1 (25)



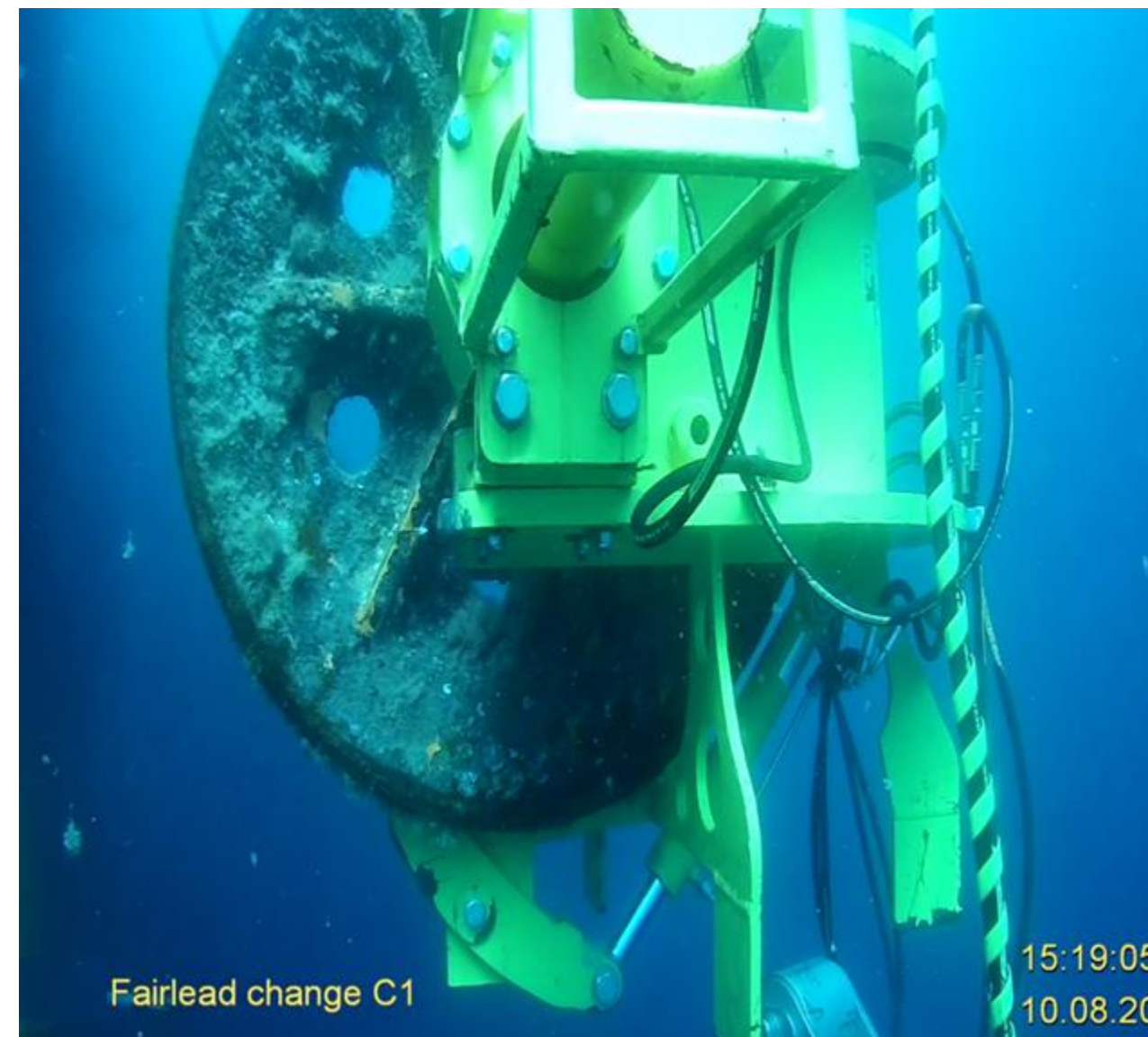
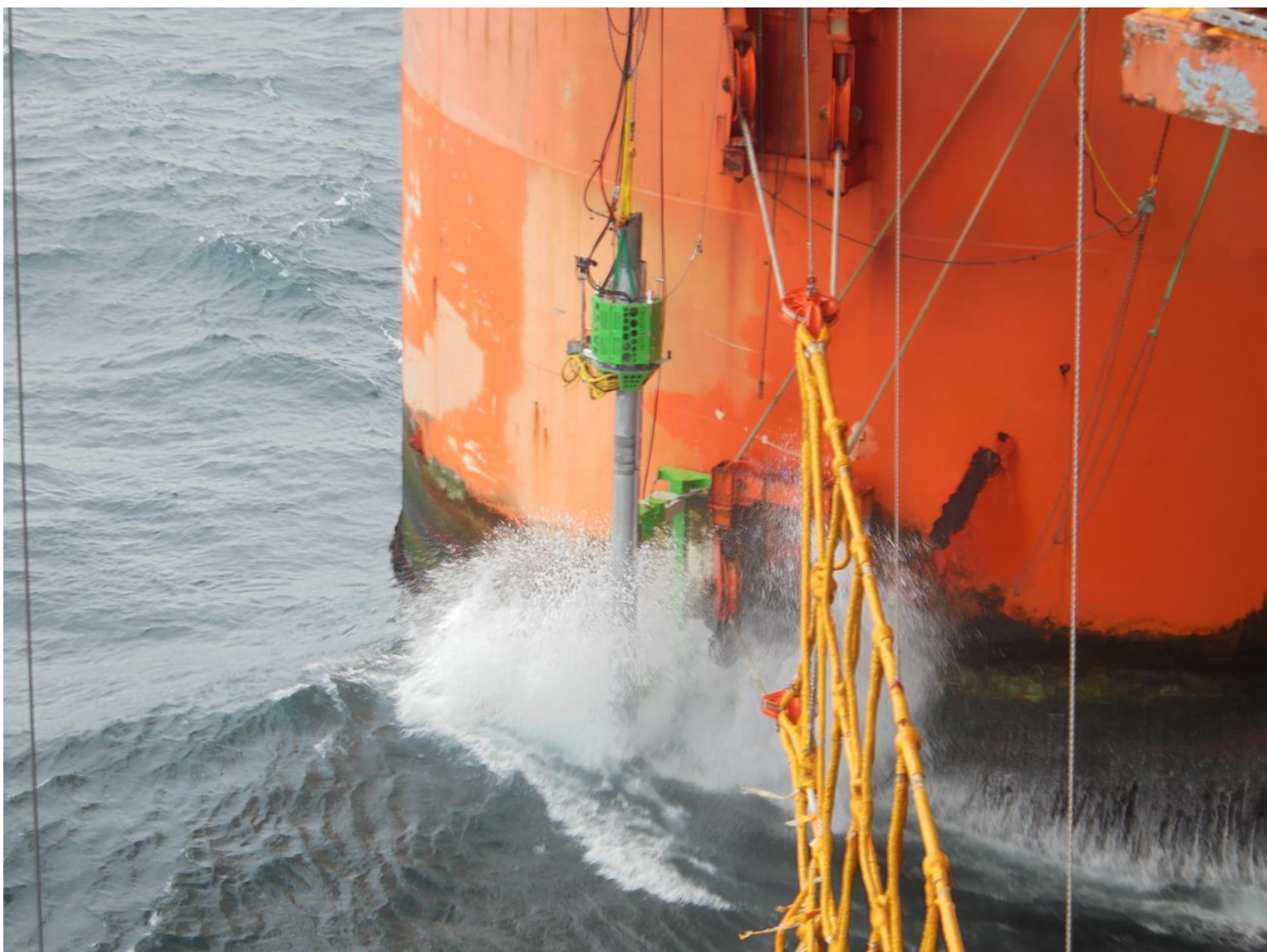
Although robotic technology gives us opportunities, competence is still an important ingredient in many projects

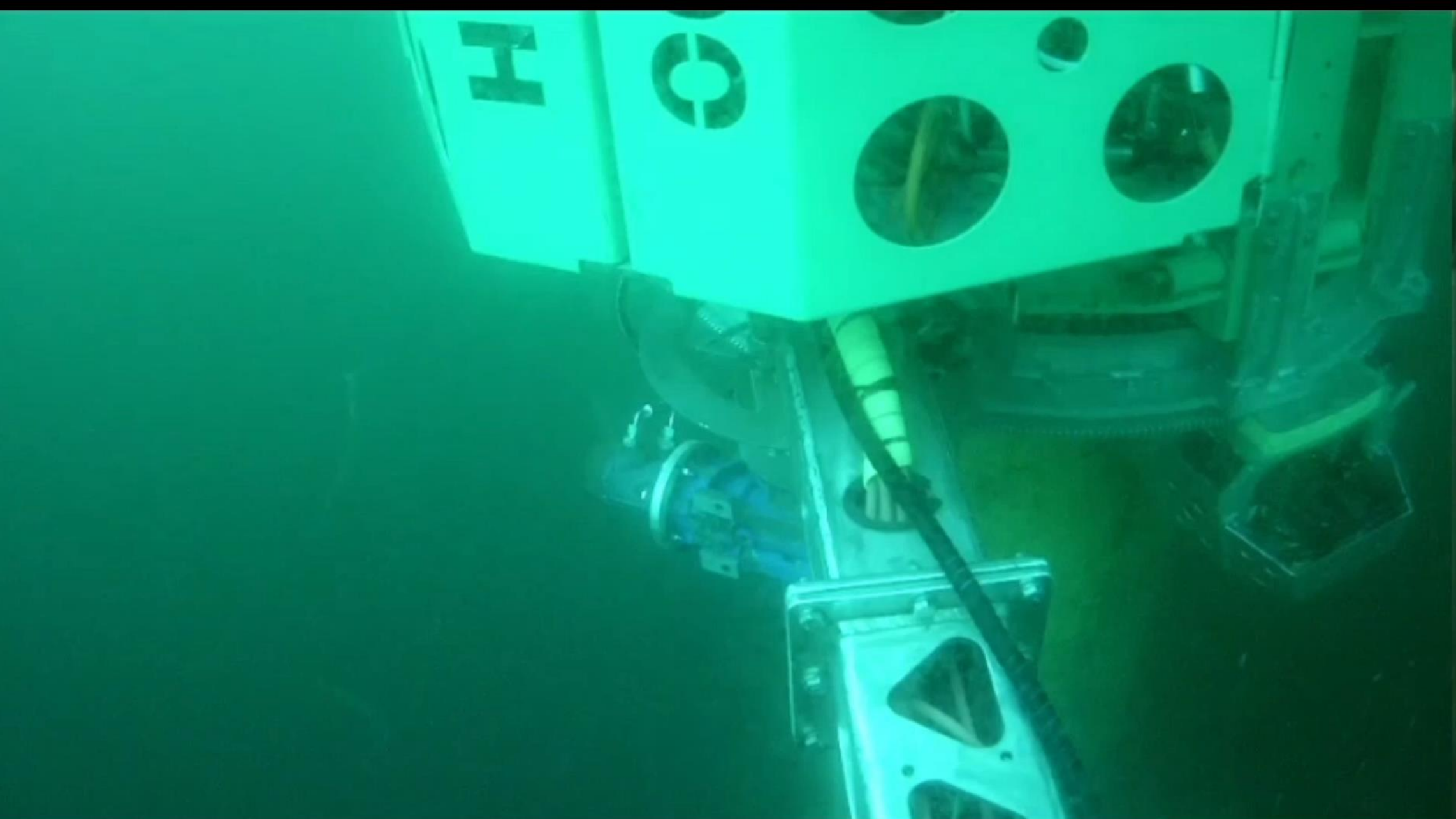




Fairlead Replacement (2020 – 2021)

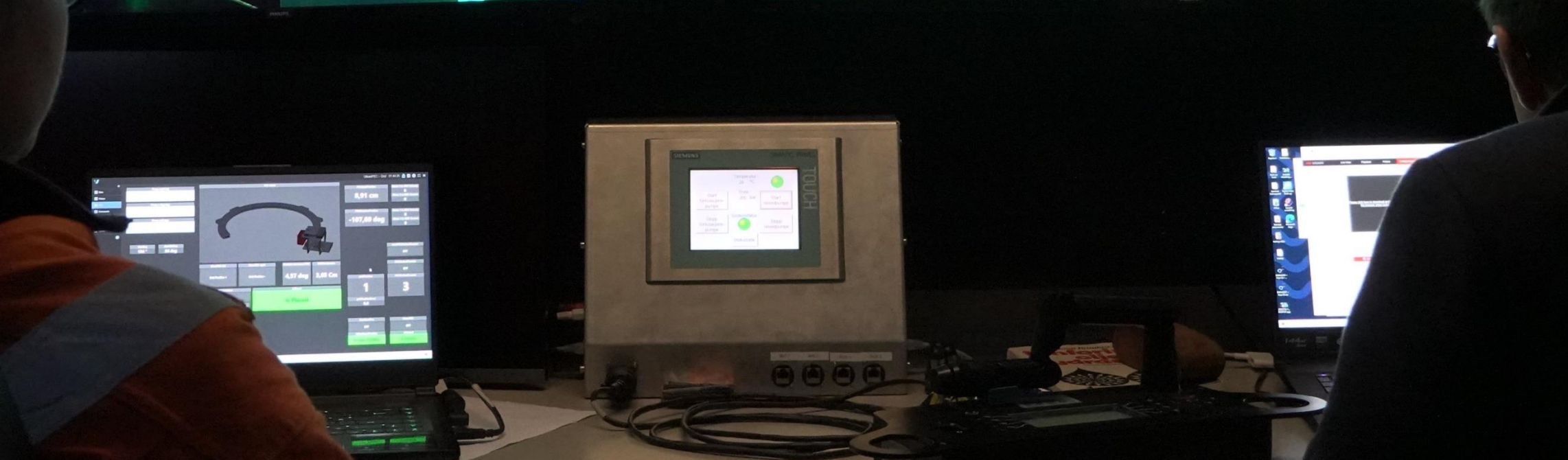
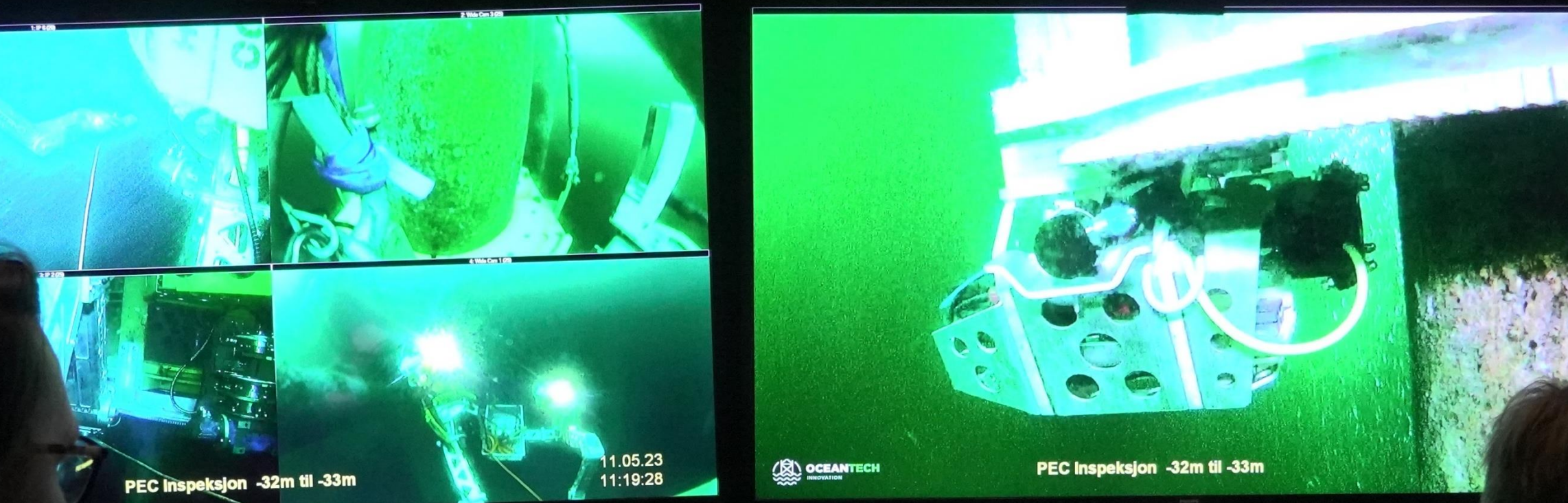
- Changing fairlead wheels at 8m depth using remote controlled operations
- No use of divers or lifting vessels
- Testing at OceanTech subsea test centre
- Offshore removal and installation of new fairlead wheels





Wall thickness measurement Produced water Caisson

- Cleaning of caisson from +1 meter down to -38 meters
- Used Pulsed Eddy Current (PEC). 6700 measurements.
- Clamp Access Tool used for all operations.





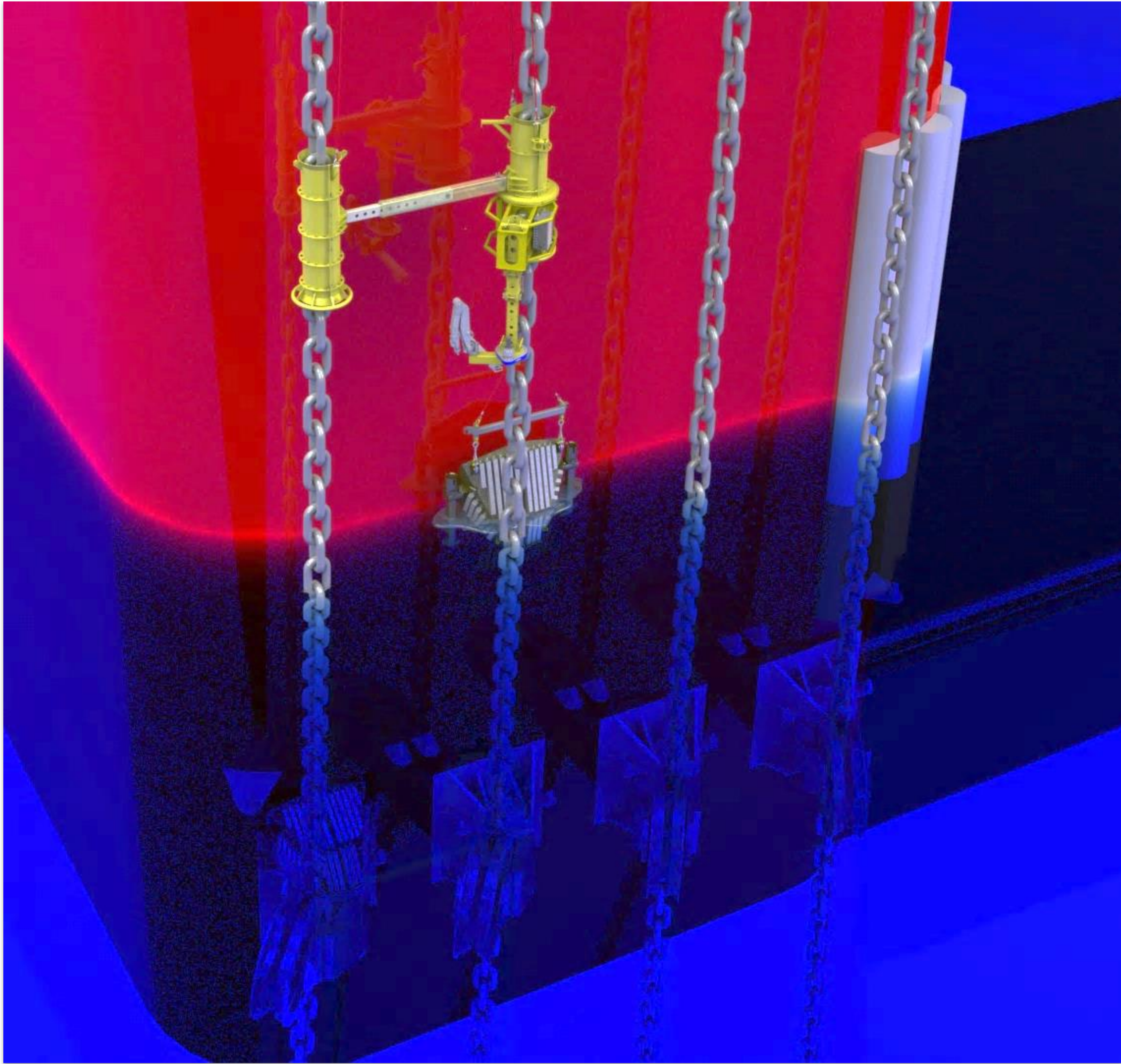
Anode installation, Norway

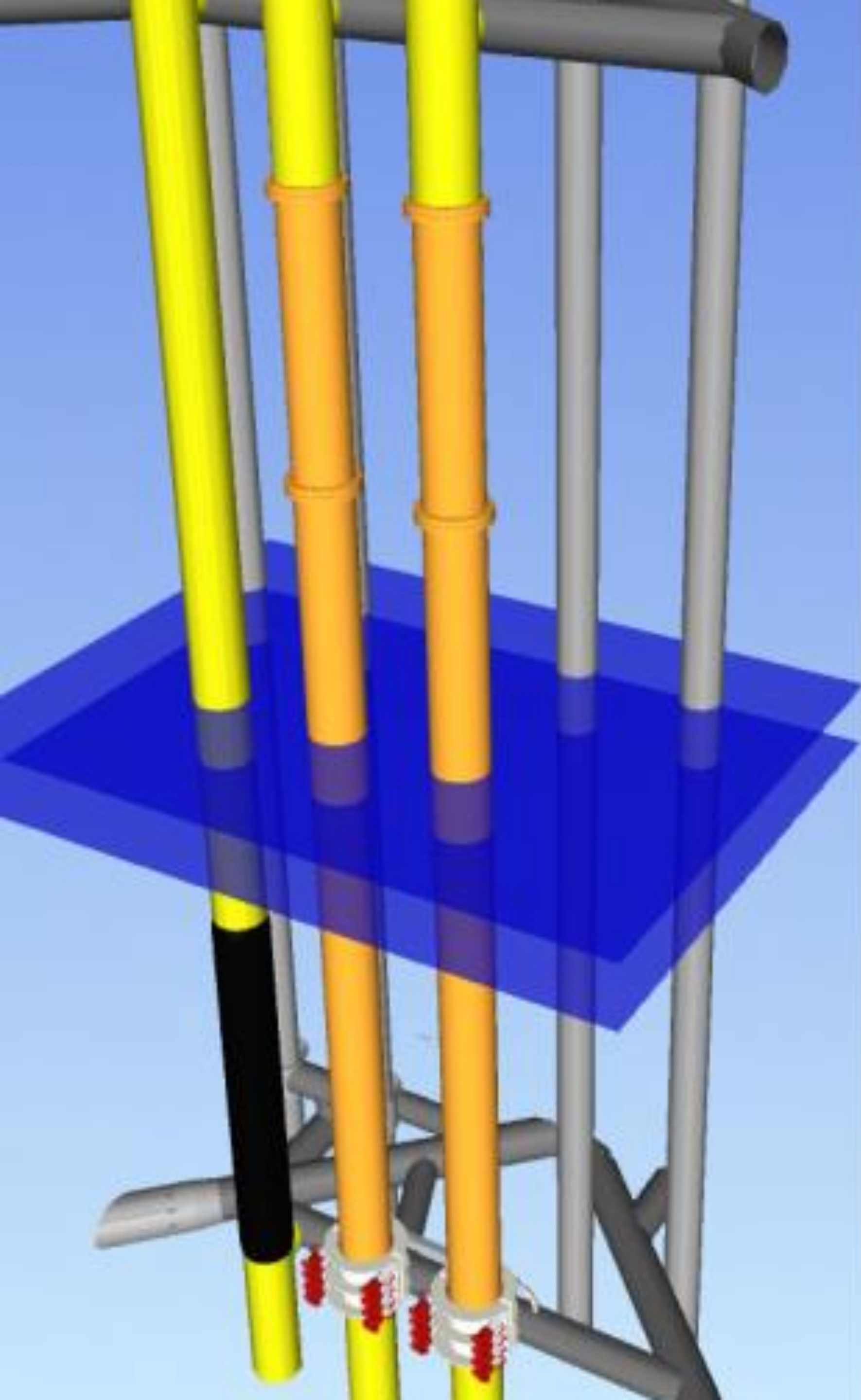
Installation of sacrificial anodes on platform hull.

Project details:

- Development, fabrication, testing and offshore execution.
- Design of tools and anode frames.
- Chain sledge used for underwater operations.
- Installation of 16 anode frames at minus - 12 meters depth.







Caisson change-out

The caissons at a jacket platform had extensive corrosion problems, and the structural integrity was at a critical limit.

- Caisson cut at -8 and +12 meters and new section installed.
- Cleaning of caisson
- Cutting with wire diamond saw.
- Clamp installation and bolt tensioning.
- Clamp Access Tool used for all underwater operations.



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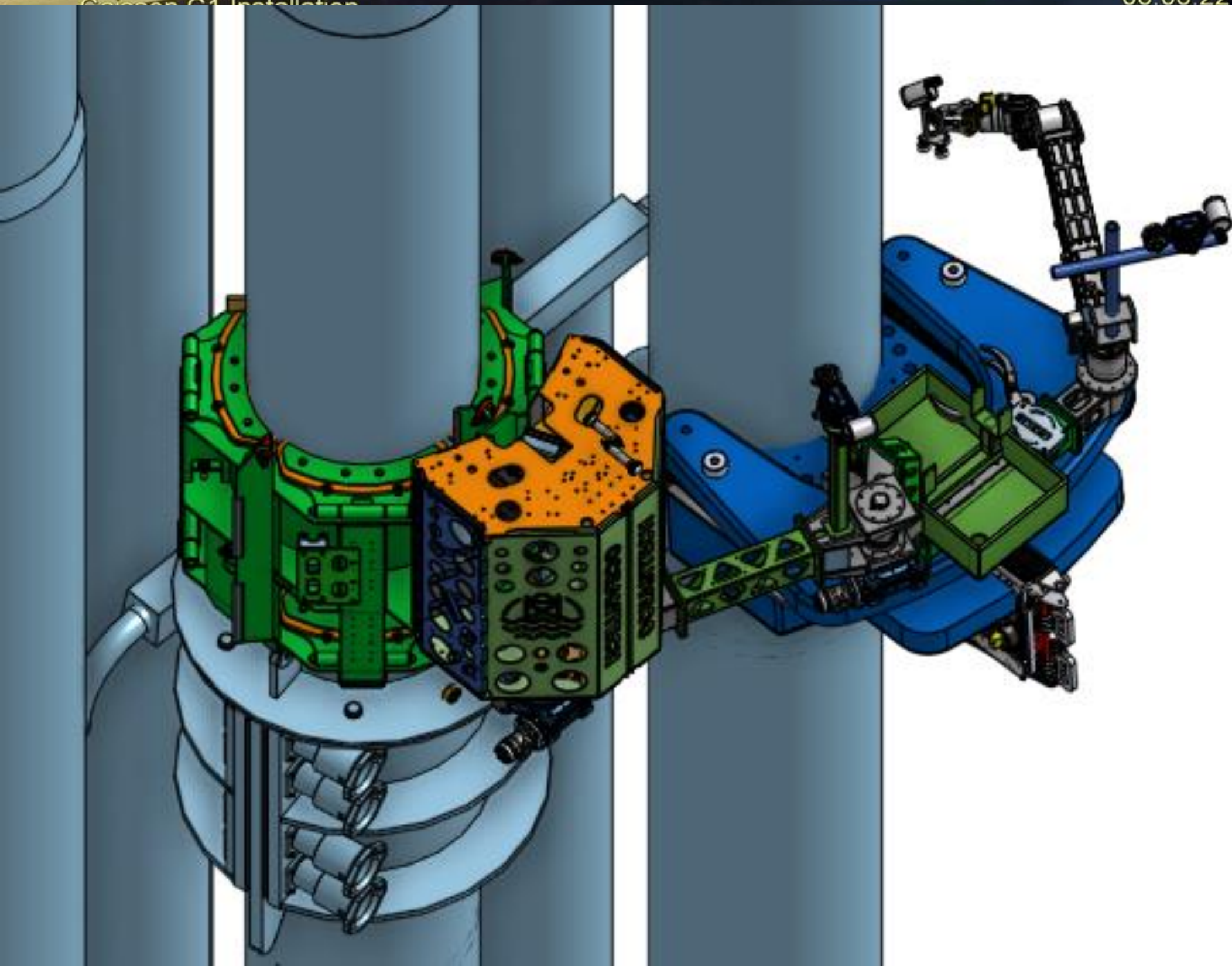
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2.5m
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