

Crawler Inspection of Floating Structures using ACFM

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Organized by   Quest Offshore

Building the future, off the steppingstones of the past.

- **Parallels between O&G and the emerging Offshore Wind.**

- **Structure Design**

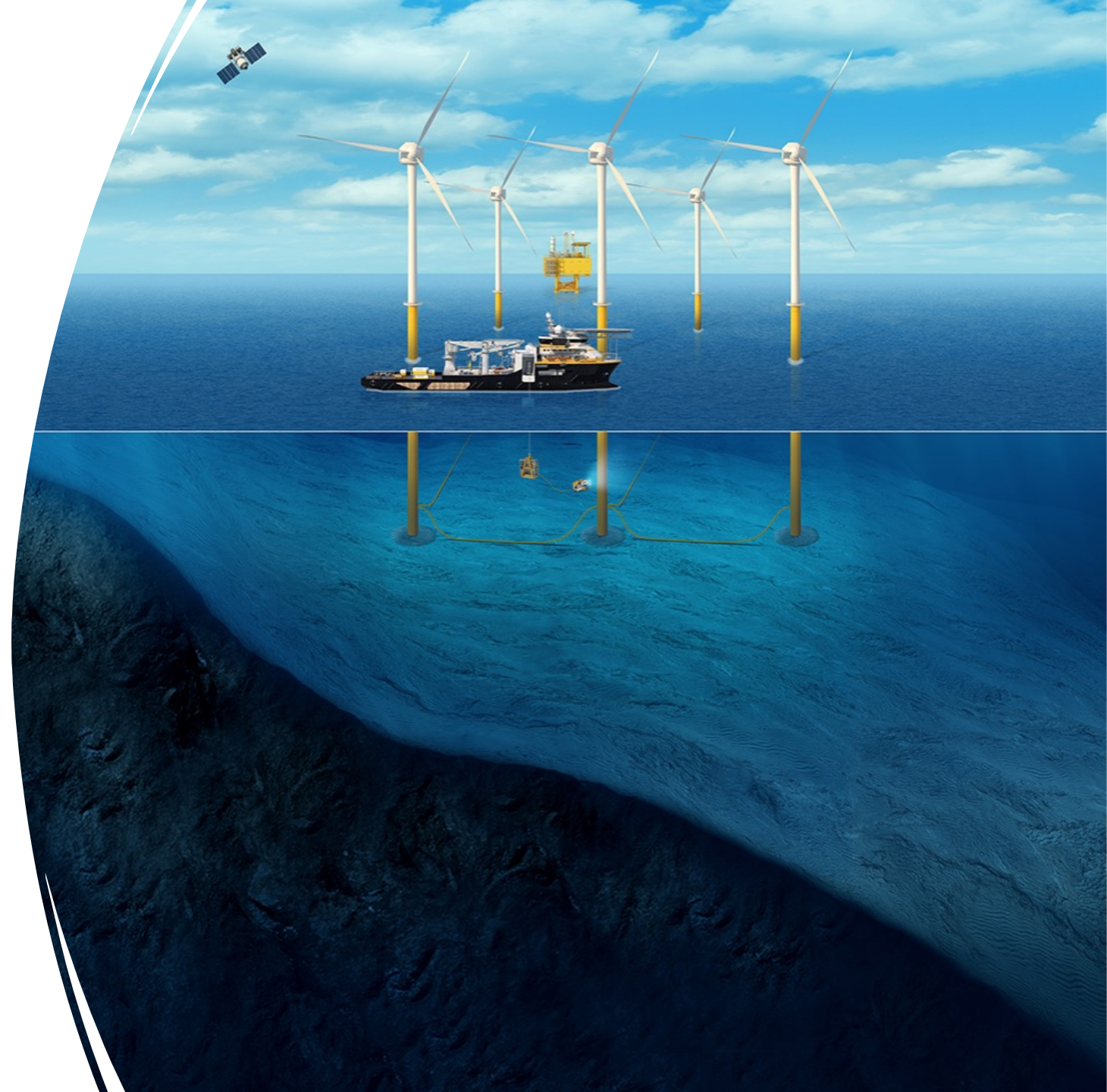
- From land to the deep sea (land rigs, monopiles, jackets, tension leg platforms, semi-submersibles, and spars)

- **Environmental Challenges**

- Marine Growth Biofouling
- Corrosion
- Weather Induced Stresses

- **Inspection Requirements**

- Government Standards and Requirements
- Class Regulation



• Parallels between O&G and Offshore Wind.

Structural Designs

- From land to the open sea (land rigs, monopiles, jackets, tension leg platforms, semi-submersibles, and spars)

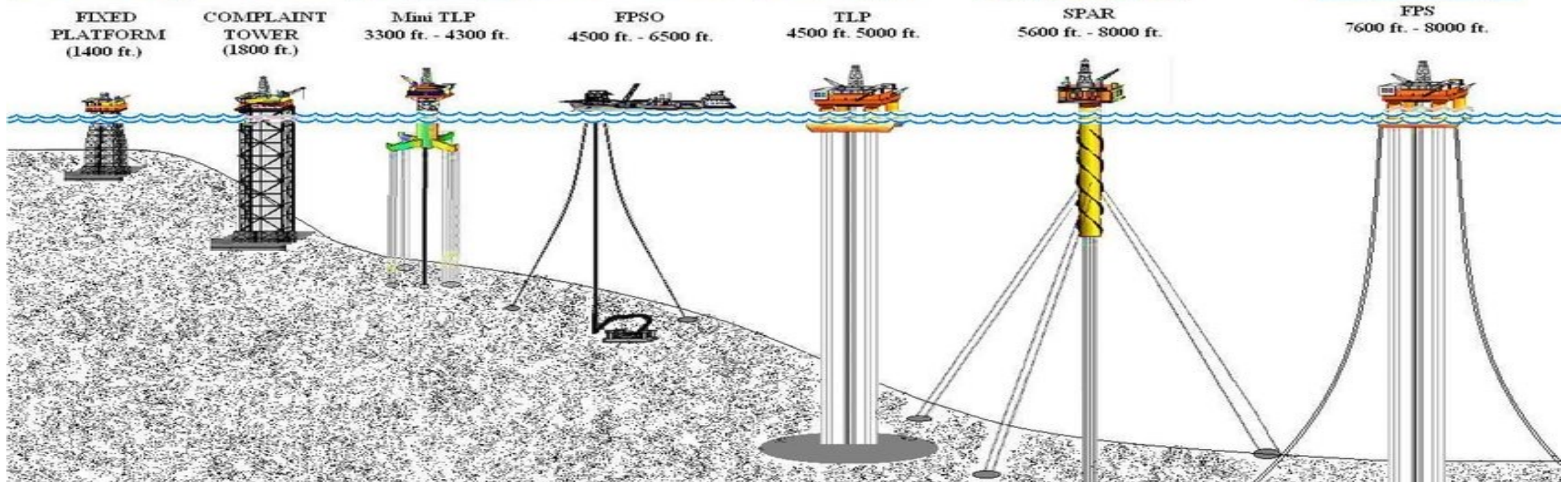


Photo clip provide by: Researchgate: https://www.researchgate.net/figure/Types-of-offshore-drilling-rigs-175_fig14_264391238">

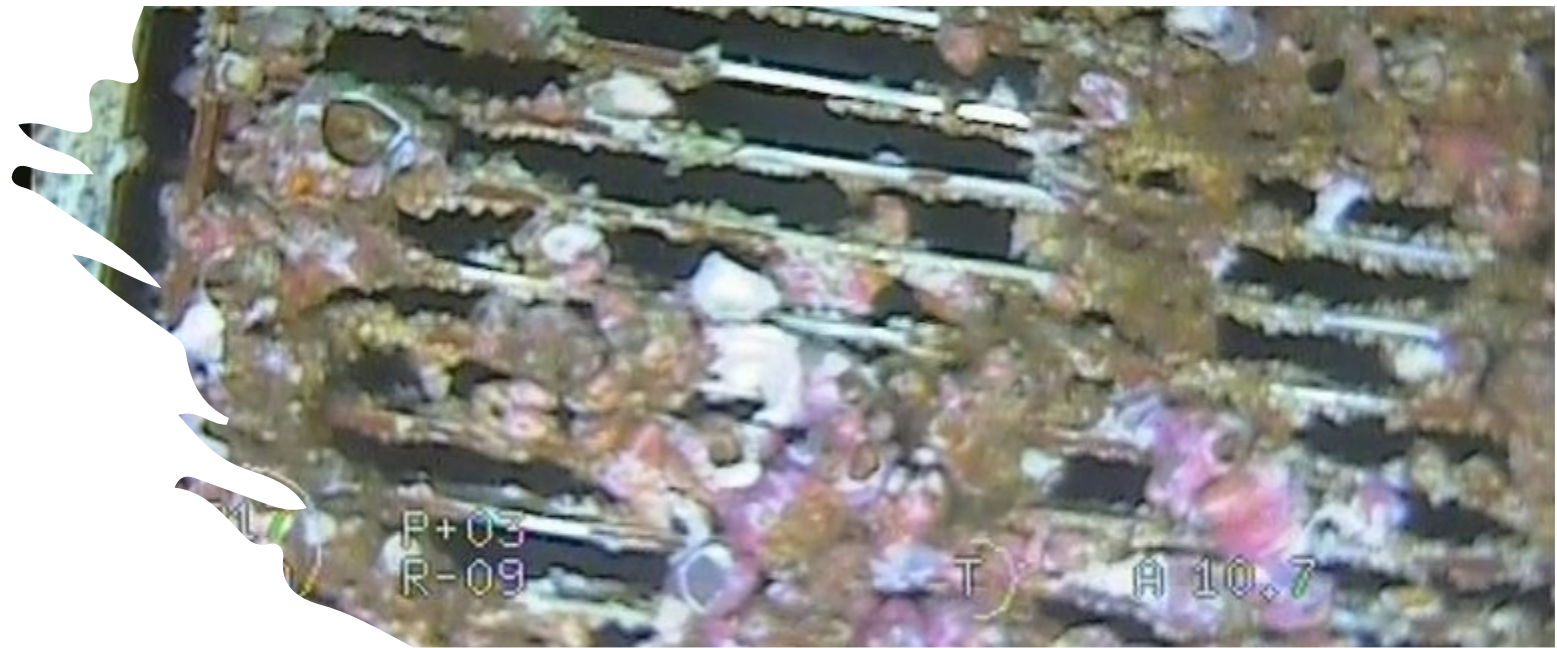
Floating Wind Solutions




A New Perspective

Parallels between O&G and Offshore Wind.

- **Environmental Challenges**
 - Marine growth or Biofouling
 - Corrosion





Parallels between O&G and Offshore Wind.

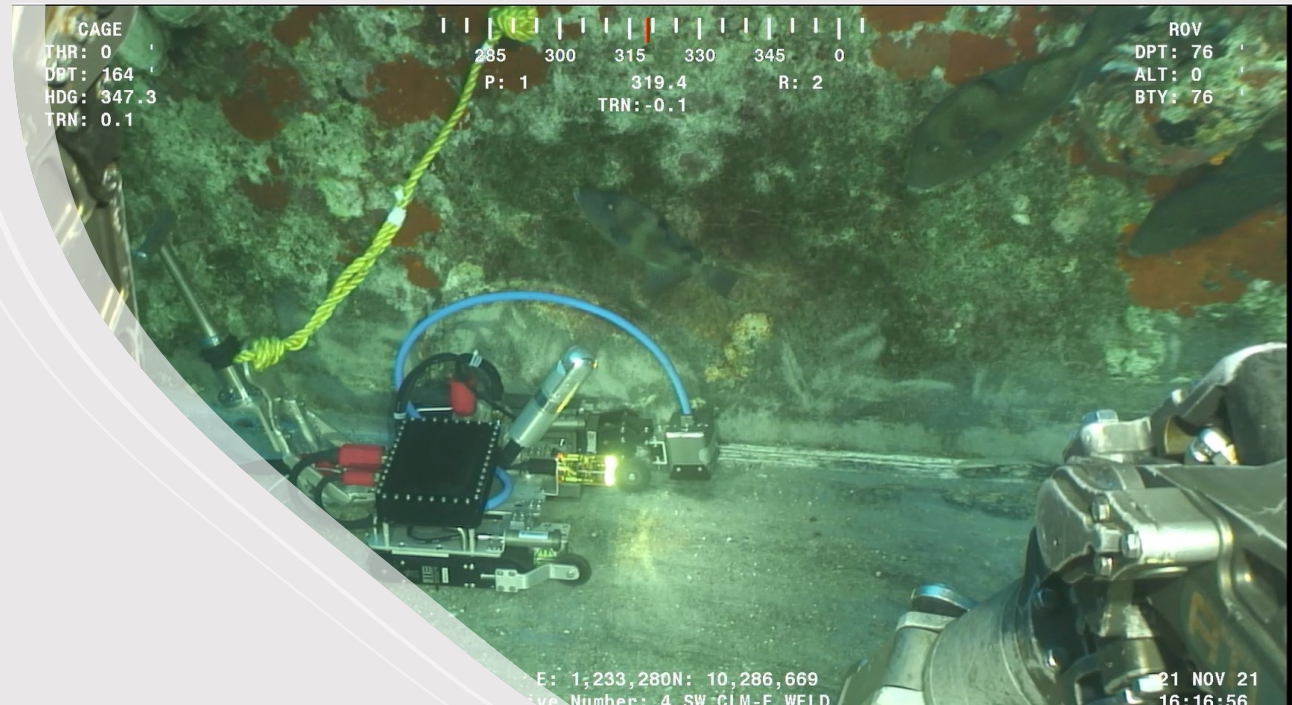
Environmental Challenges

- Structural Damages
- Weather and Storms
- Environmental Impacts



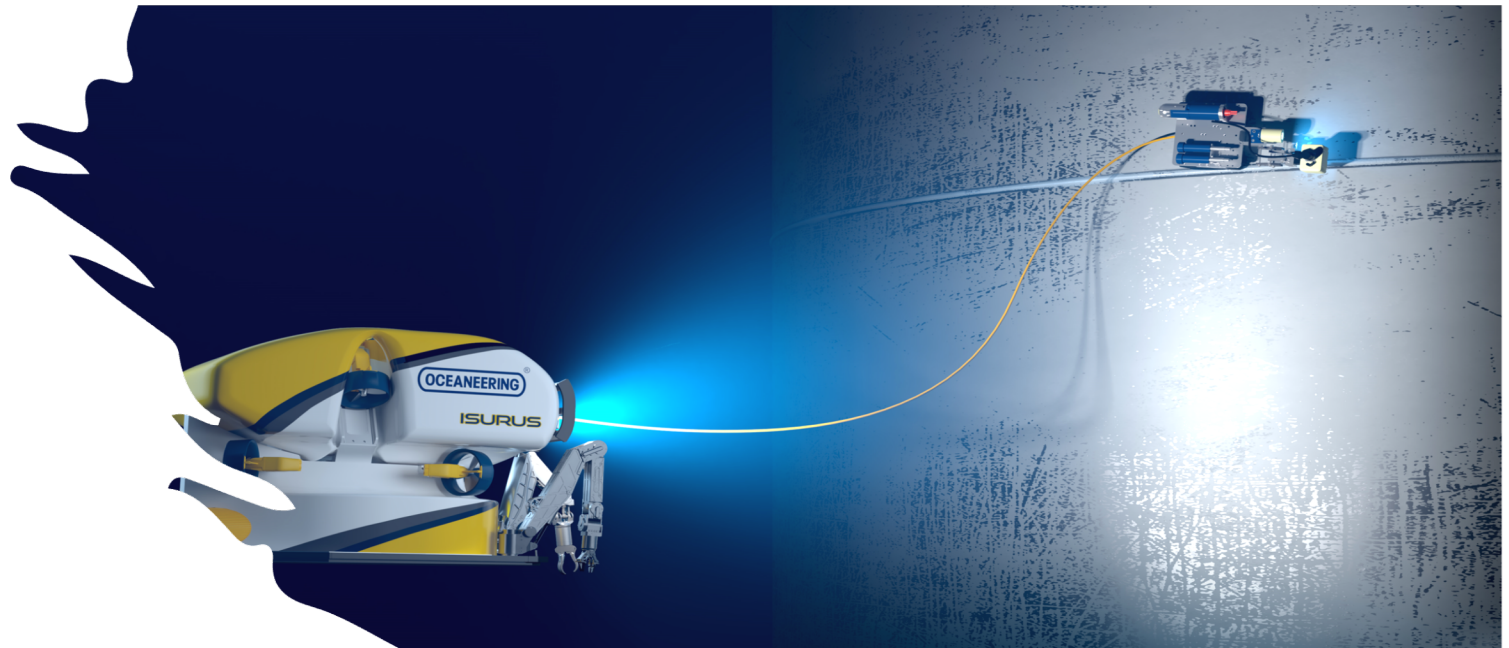
Parallels between O&G and Offshore Wind.

- **Government Standards**
 - BSEE (Bureau of Safety and Environmental Enforcement)
 - HSE (Health and Safety Executive)
- **Class Society Standards**
 - ABS
 - DNV
 - Lloyds



Satisfying the Inspection Requirements

- **Inspection Requirements**
 - GVI and CVI
 - SD, HD, 3D Imaging, Photogrammetry
 - NDT
 - CP, UT, and ACFM



Magnetic Crawlers, Capturing Data in Air or Water.

What Data do You Need

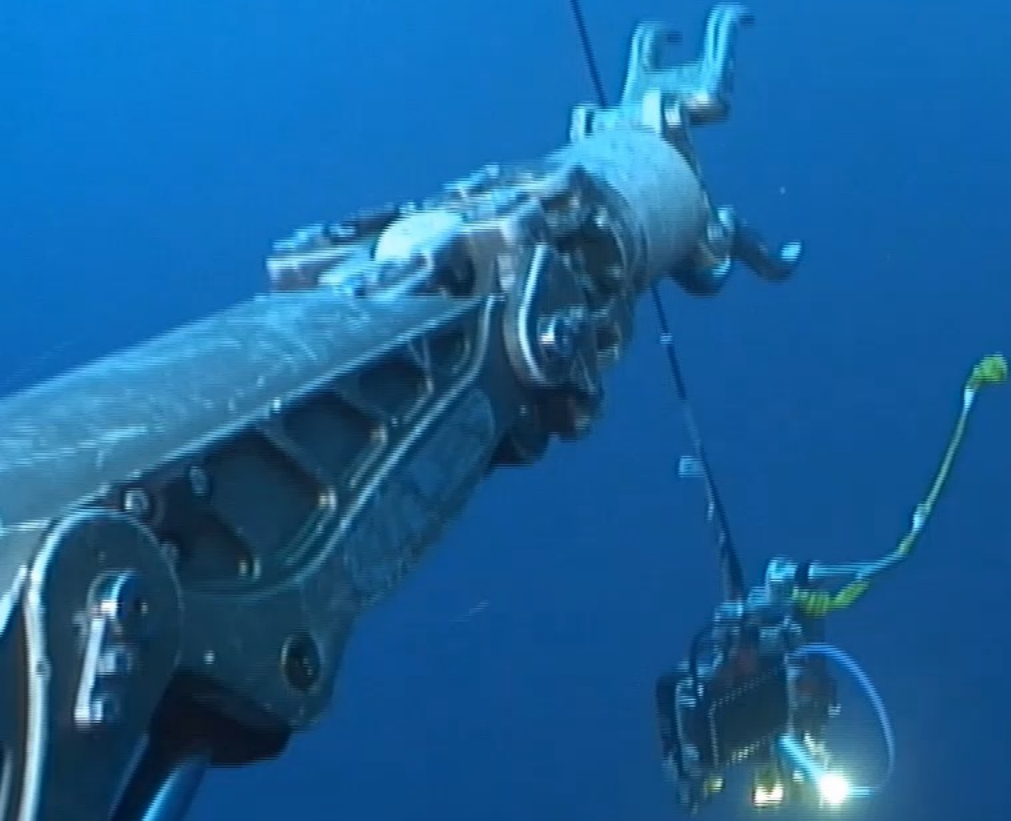
- Ultrasonic Techniques UT and PAUT
- 3D Photogrammetry
- Cathodic Protection Testing
- Electromagnetic Inspection Technique: ACFM

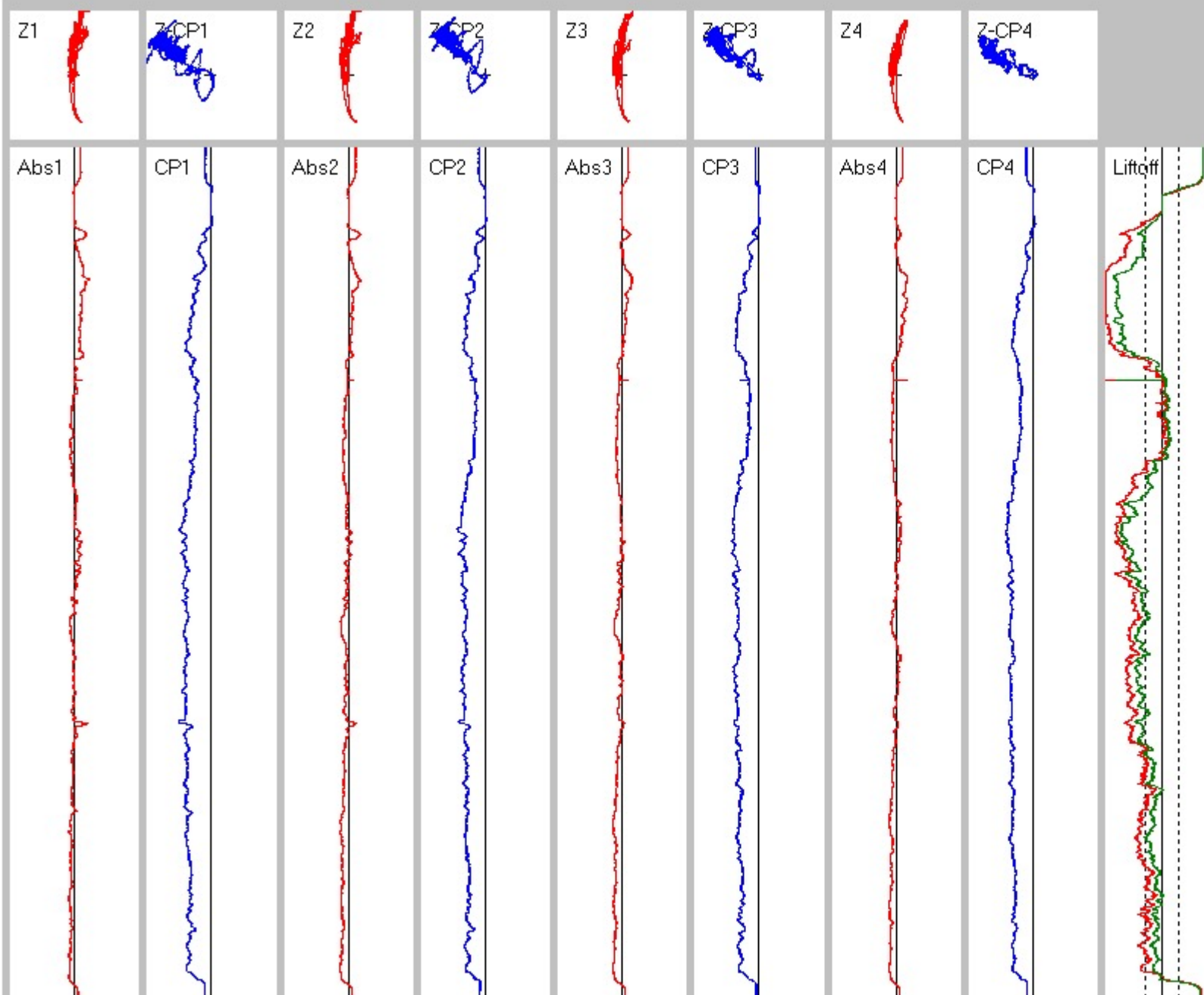


CAGE
THR: 2
DPT: 226
HDG: 221.5
TRN: 0.3



ROV
DPT: 59
ALT: 0
BTY: 59

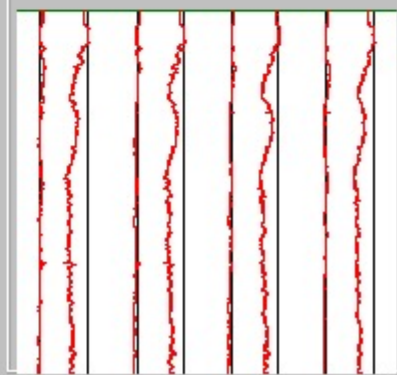


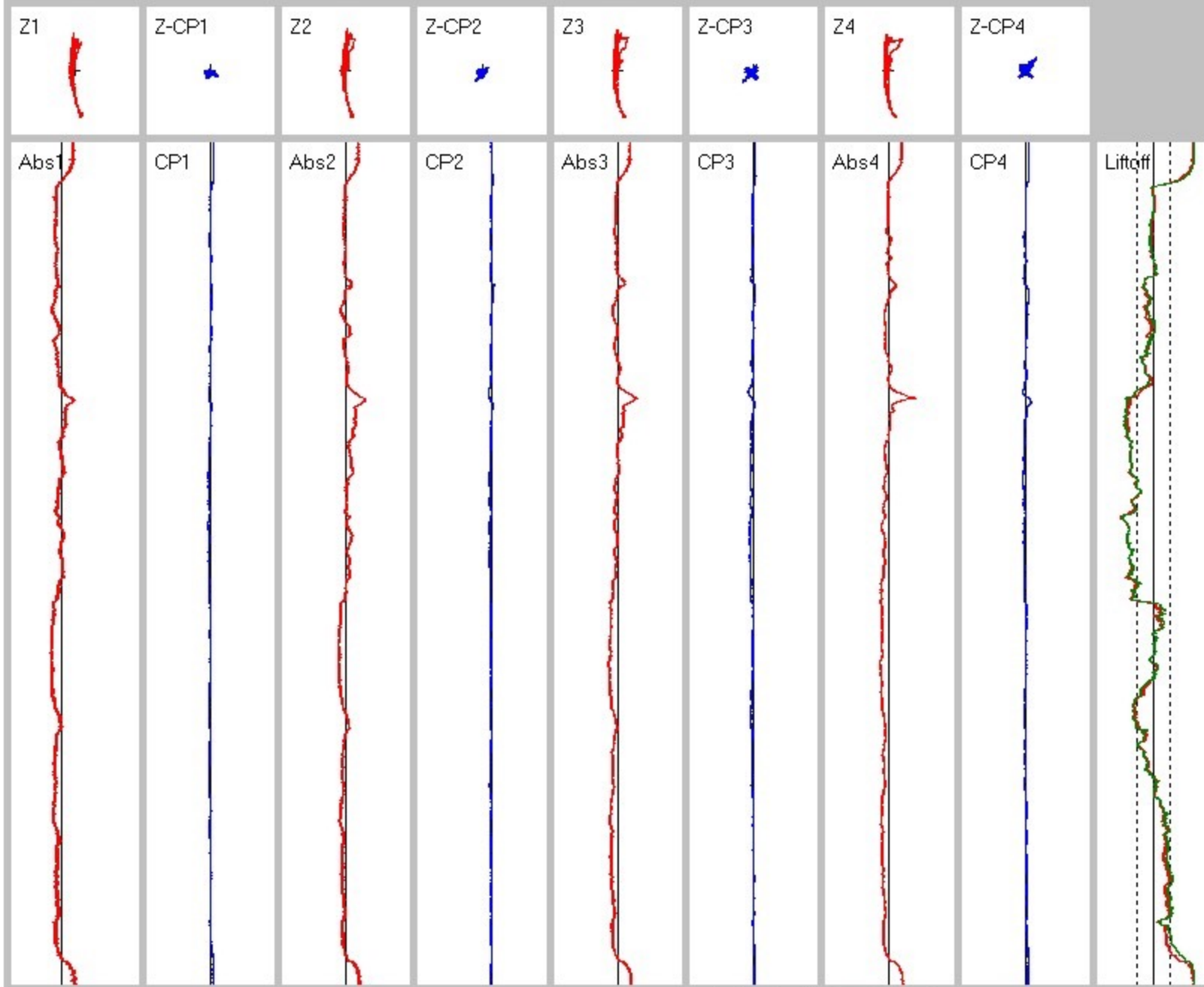


Version: Liss 1.21
 Date: 2021-11-22
 Time: 8:50:39
 Start: W End: E
 Length: Marker:

Probe: LP184SR
 Component:
 Column D, North weld
 Comment to Inspection : No
 Crack detected on the Top
 Side / HAZ of the weld.

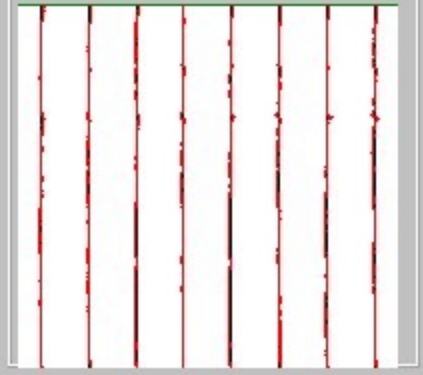
Frequency 50 kHz
 Gain 40 db
 Zoom Abs 100
 Zoom CP 50
 Scan range from 1
 Scan range to 10975
 Scan Rate 50
 Scan length 10975
 Scan Duration 20
 Sizing Constant 386.0
 Depth Reference 2





Version: Liss 1.21
 Date: 2021-11-22
 Time: 12:12:37
 Start: W End: E
 Length: Marker:
 Probe: LP184SR
 Component:
 Column B, South weld
 Comment to Inspection : No
 Crack detected on the Bottom
 side / HAZ of the weld.

Frequency 50 kHz
 Gain 40 db
 Zoom Abs 200
 Zoom CP 50
 Scan range from 1
 Scan range to 7387
 Scan Rate 50
 Scan length 7387
 Scan Duration 20
 Sizing Constant 386.0
 Depth Reference 2



Remote Inspections in Real Time

- **Utilization of Incumbent Systems**
 - Minimal hardware and personnel needed for installation
 - Use already installed coms systems
 - Multiple user access
- **Meeting Clients Needs**
 - Class approved and accepted method
 - Reduces client cost.
 - Reduction in personnel





OUR MISSION



WE SOLVE THE UNSOLVABLE.

OUR VISION

We thrive by creating industry-changing technically creative solutions for the most complex operational challenges under water, on land, and in space.