Digitale Innovation im Offshore Einsatz

Siemens Gamesa nutzt digitale Technologien um den globalen Bedarf nach Offshore Wind zu decken. Ein Einblick wie die Baustelle der Zukunft schon heute auf rauer See Wirklichkeit ist.

SIEMENS Gamesa
RENEWABLE ENERGY

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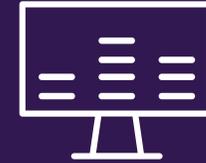# Key facts and figures[1]

127.5 GW
Globally installed

27,600
People

€9.8 billion
Annual revenue

€12.2 billion
Market capitalization

€35 bn
Order book

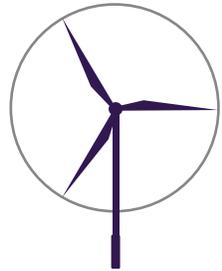Truly **global**,
modern and scalable
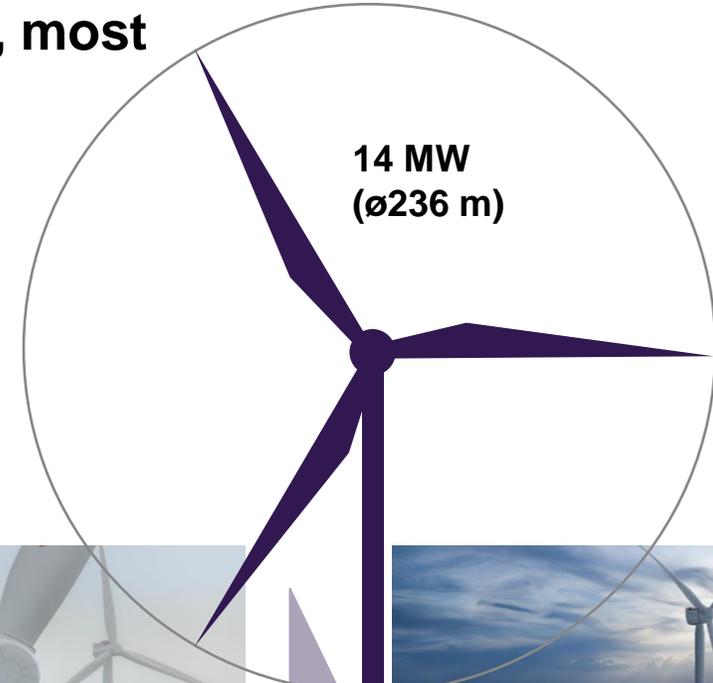**footprint**

Advanced **digital**
capabilities

Portfolio
covering all requirements

Simon Slapka (Offshore Construction)

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The offshore wind turbine manufacturer with the longest, most extensive history in the industry

450 kW (ø35 m)

14 MW (ø236 m)

World's first offshore project	First power plant-sized project	First large-scale offshore DD project	First subsidy-free offshore project
4.95 MW Vindeby, DK	630 MW London Array, UK	574 MW Race Bank, UK	1.54 GW Hollandse Kust Zuid, NL

1991	2011	2018	2022

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Why do we need to accelerate on Digitalization?

Units and average WTG size
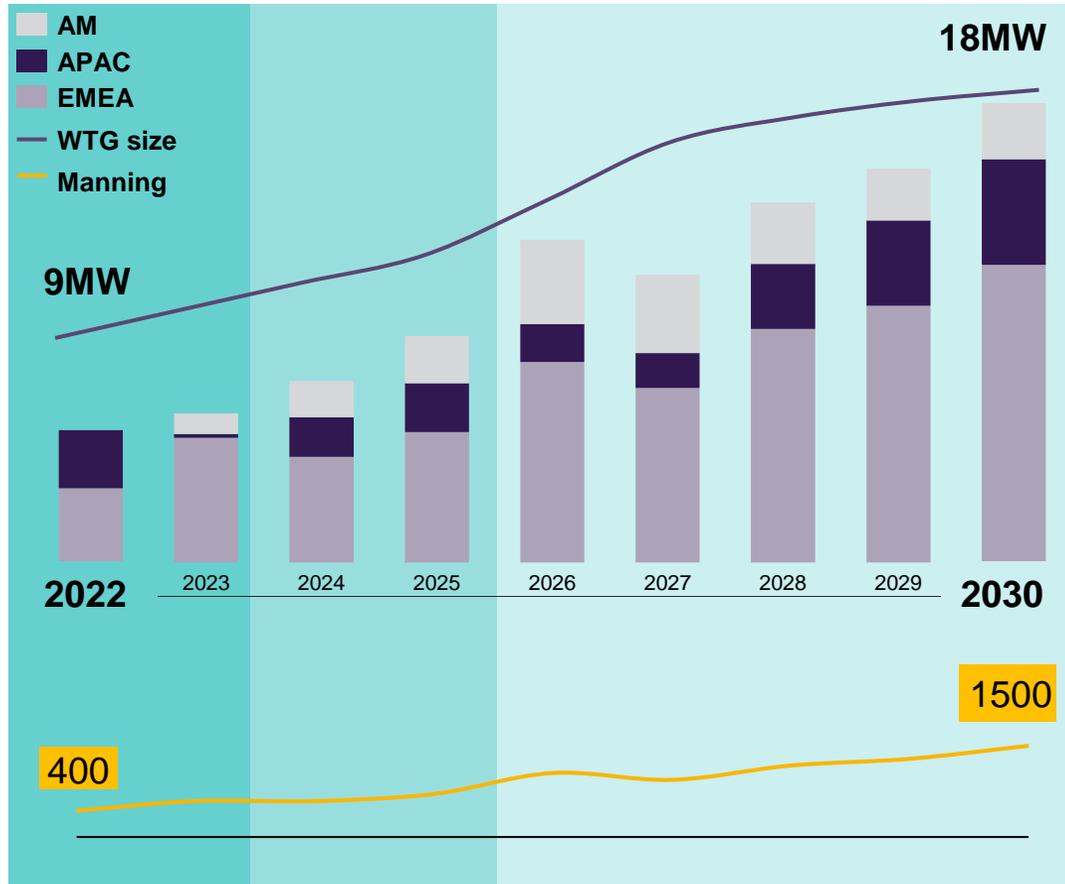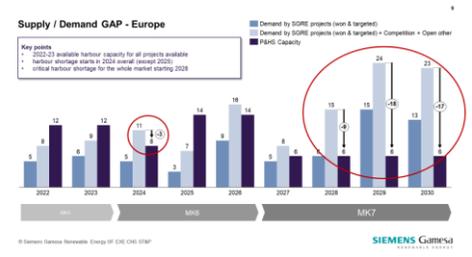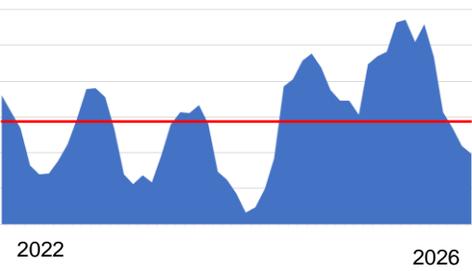
Simon Slapka (Offshore Construction)

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Insights into 3 areas of digital Innovations for Offshore sites

**Predict
Digital Twin**

**We can´t prevent all errors….
So let´s do them virtually!**

**Prepare
Connected Worker**

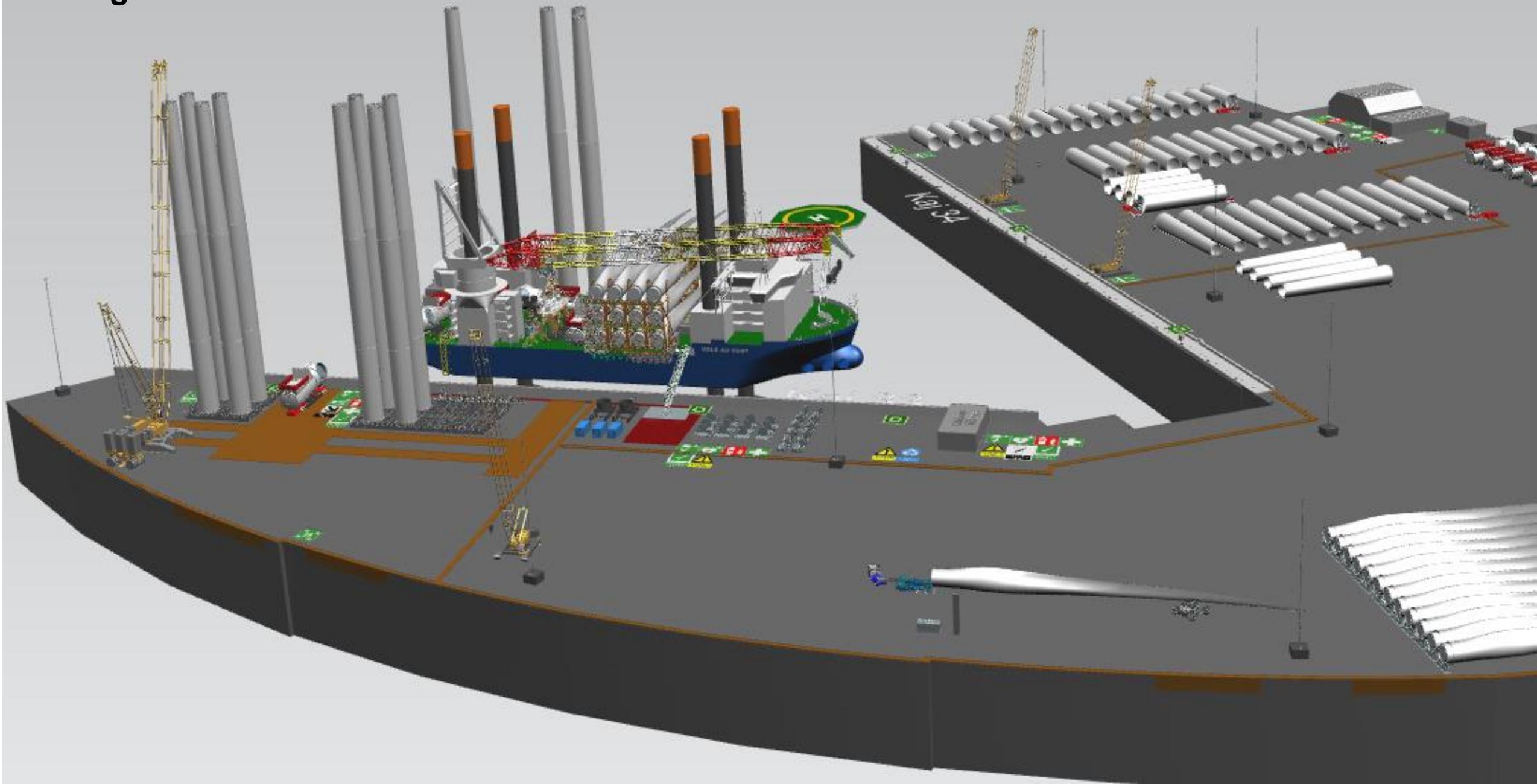**Support your workers with cutting edge digital technology**

**Perform
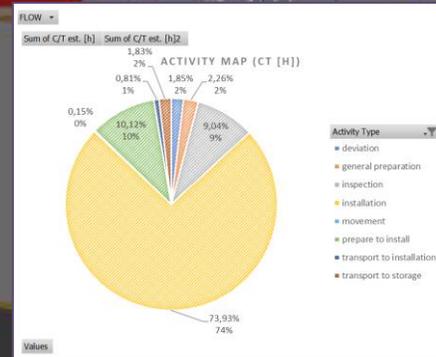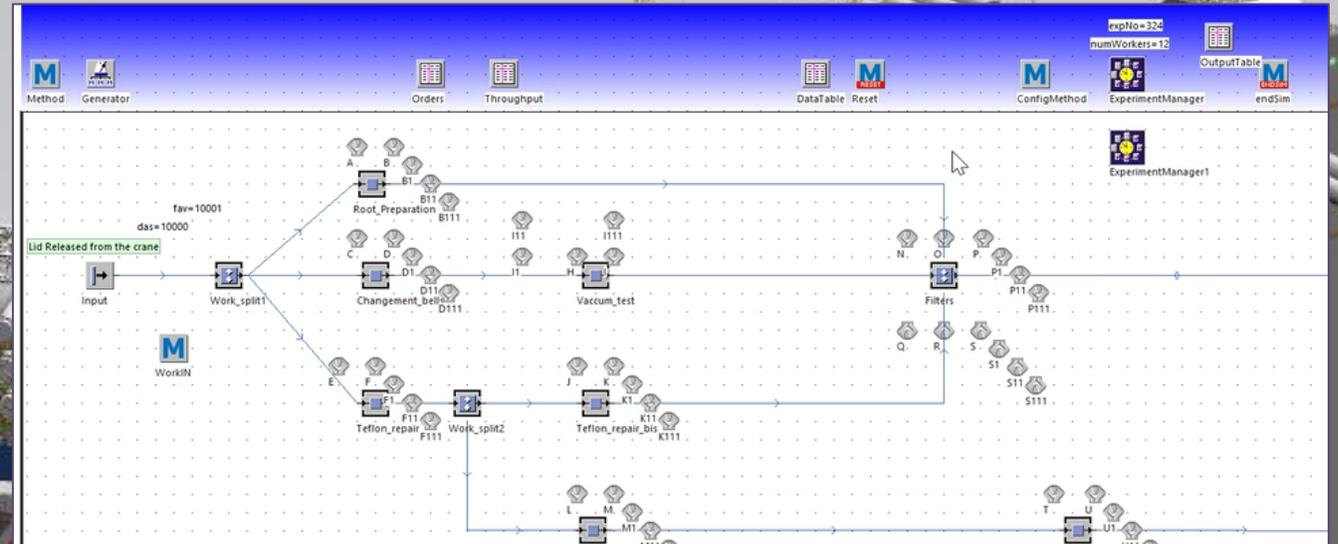Advanced Sensors**

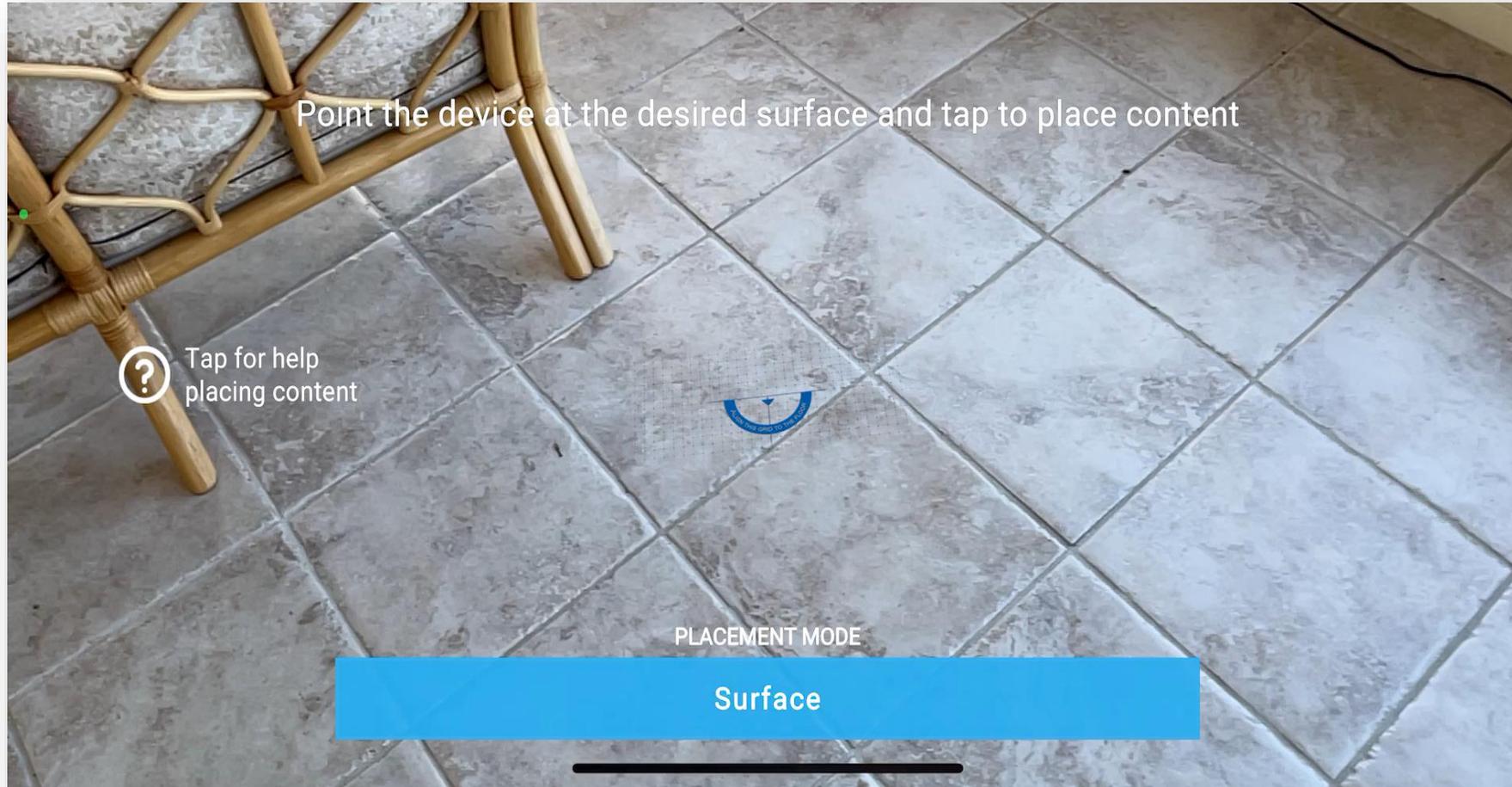**Manage Performance with data based approaches**

Safety is my choice

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Digital Twin - Process Simulations

Digital Twin - Process Simulations

Digital Twin "to-go"

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Connected Worker - what are we talking about?

Remote Assist
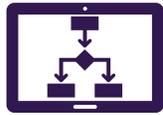
XR Manuals

Digital TRIR viewer

Digital Caliper

Digital Troubleshooter

─── current   ─── upcoming

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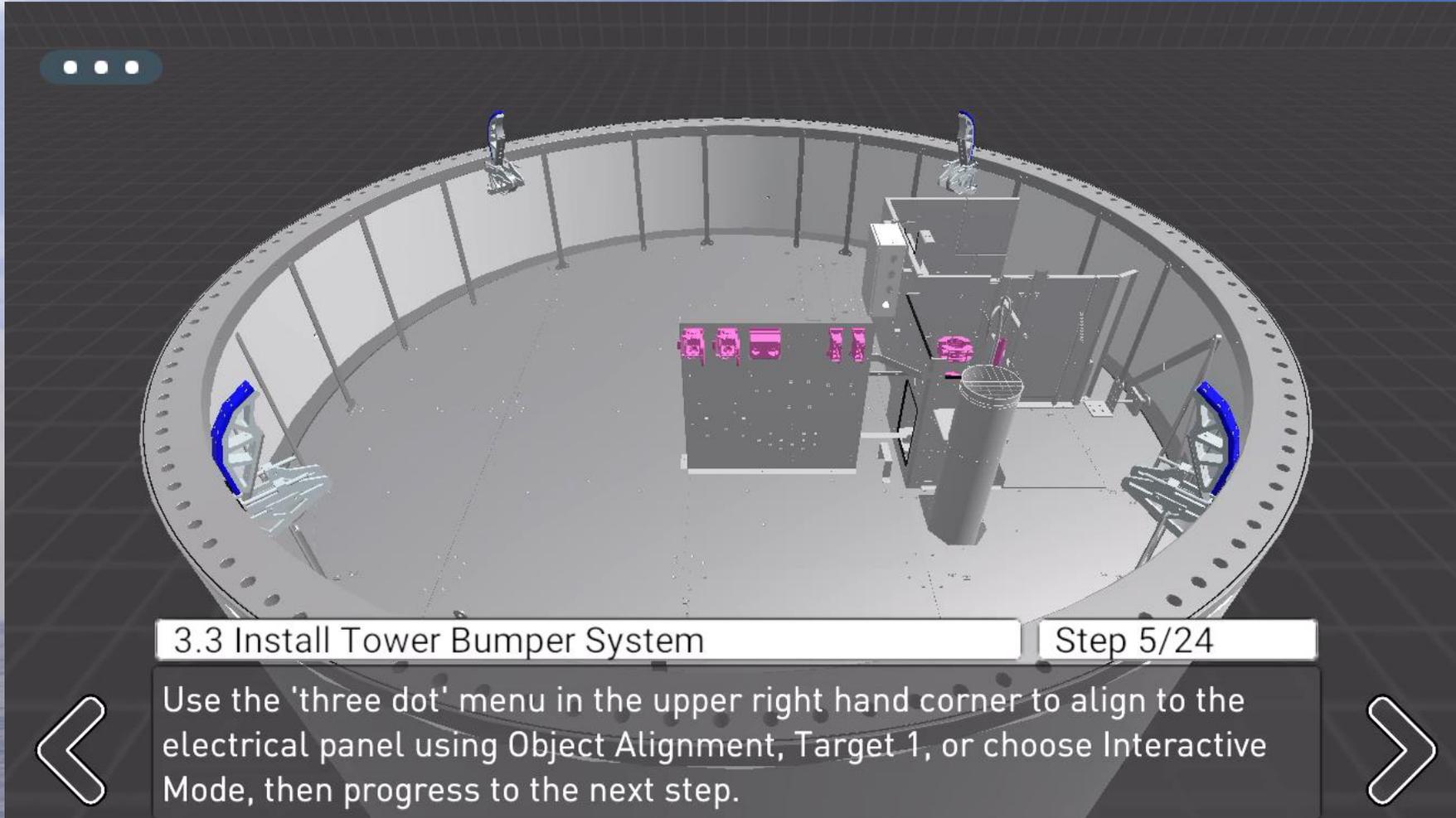
Remote Assist

- Hands-free assisted reality headsets
- Microsoft teams on devices
- Operator point-of-view for back-office specialists
- On-device library of hotline support contacts:
  - HV support
  - SCADA support
  - LOTO support
  - Product support

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XR Manuals

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XR Manuals

3.3 Install Tower Bumper System | Step 5/24

Use the 'three dot' menu in the upper right hand corner to align to the electrical panel using Object Alignment, Target 1, or choose Interactive Mode, then progress to the next step.
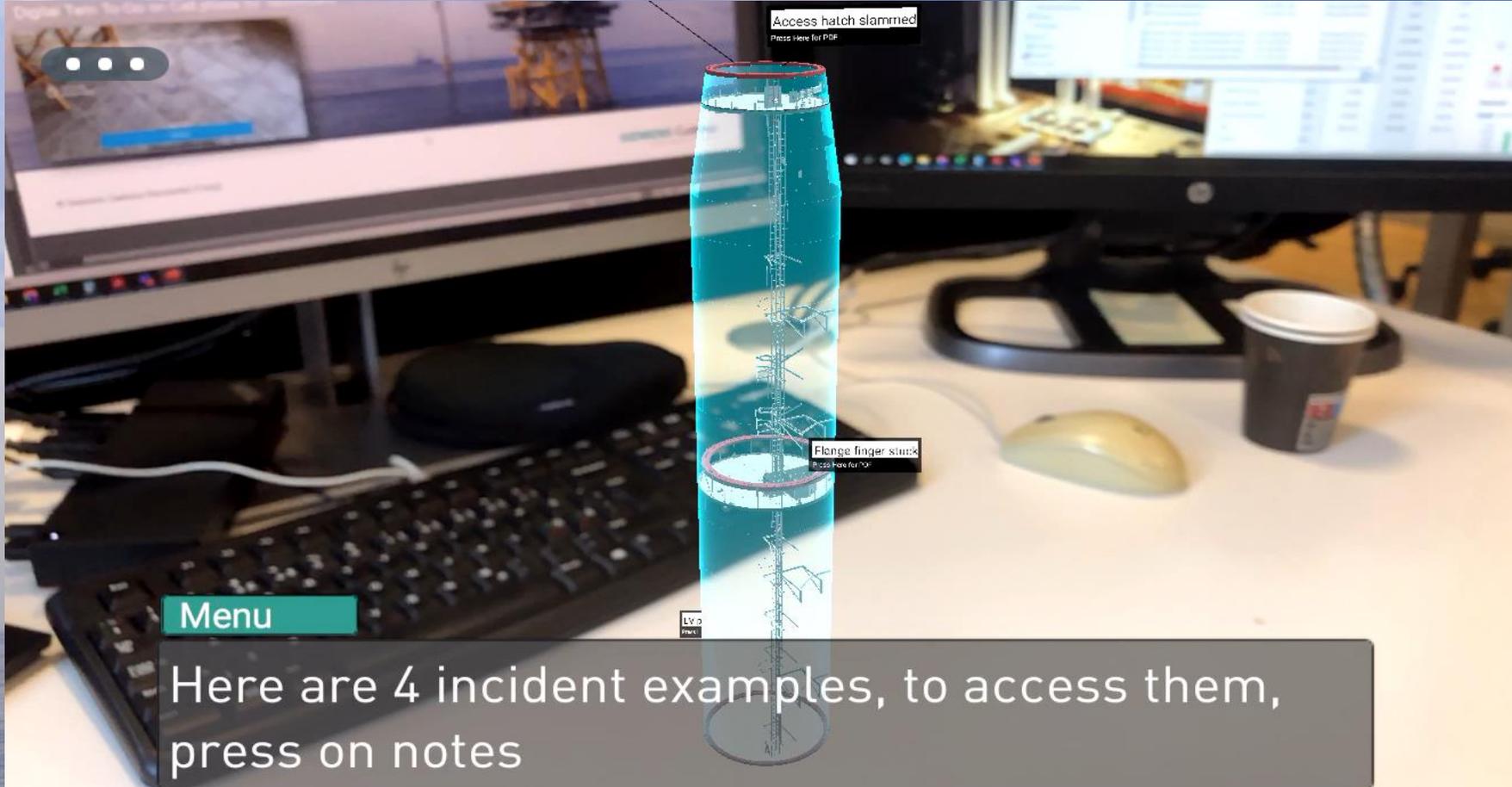
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Digital TRIR viewer

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Digital TRIR viewer

Advanced Sensors - what are we talking about?

Environment Sensors

Lifting Events

Cameras
Pre-Assembly

Cameras
Installation

Safety
Observations

- **Internal Analysis & Reporting on Performance on site**

- **Customer Dashboard with automated DPR**

- **Increased Safety on site**

—— current   —— upcoming

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Starlink as preferred solutions in the Offshore environment

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Environmental conditions sensors

Wave radar

Wind Lidar

Lifting Events

Lean workflow

TIMELINE

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Blade Installation

JannetYoke rigging   Blade 1/2/3 rigging   Blade 1/2/3 unrigging   JannetYoke unrigging

Blade 1/2/3 lift
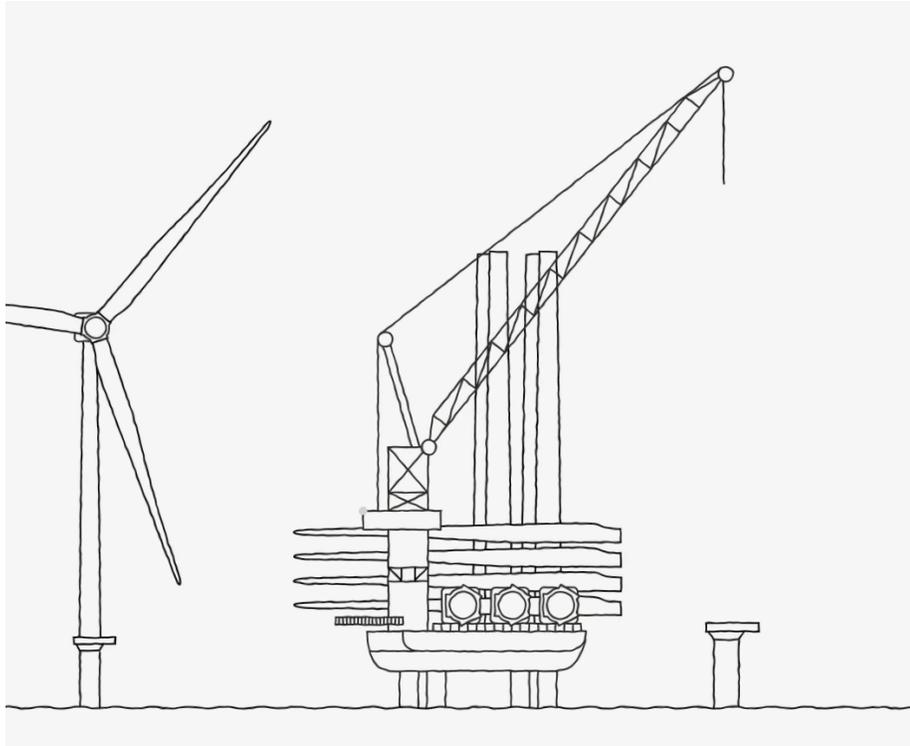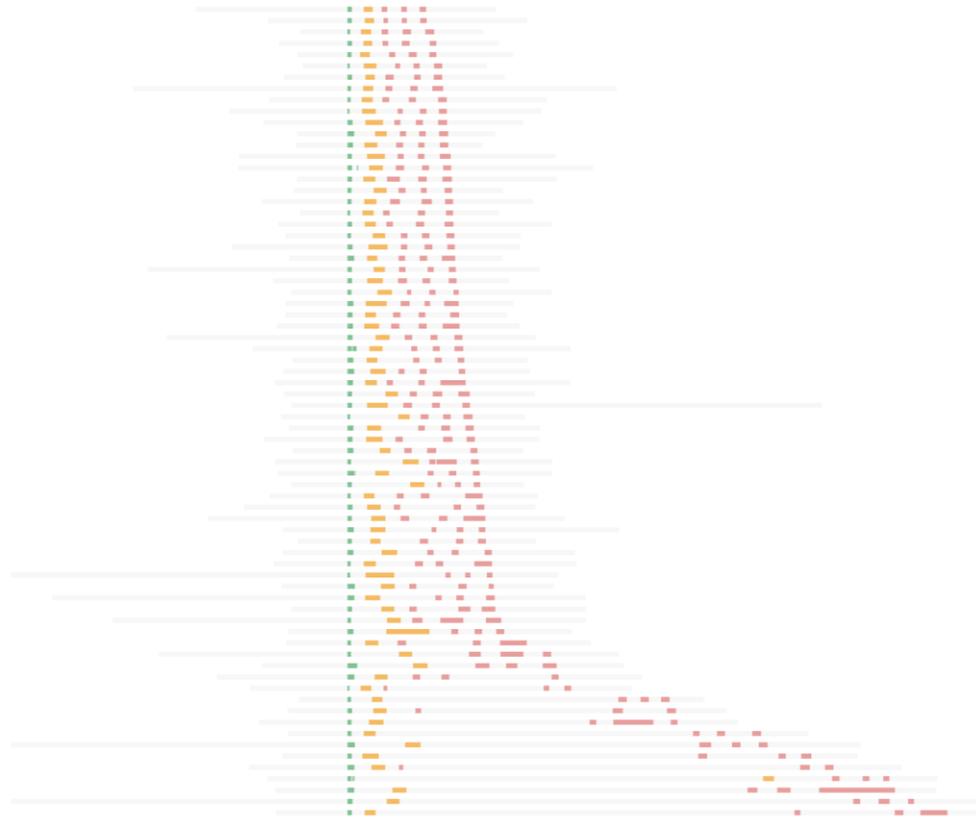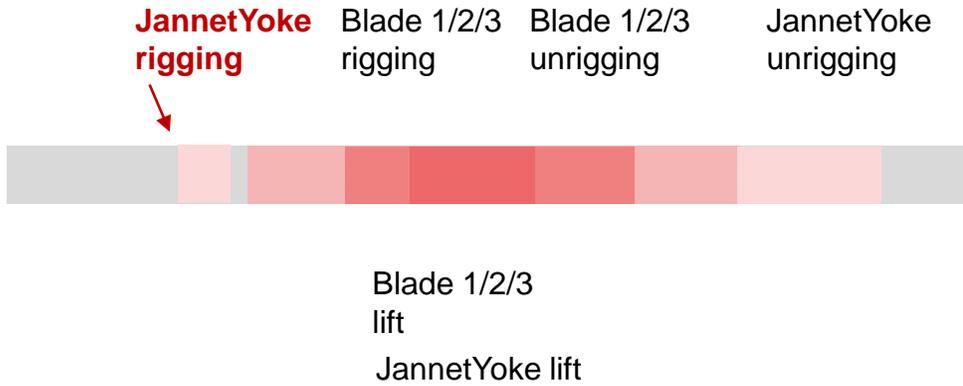
JannetYoke lift
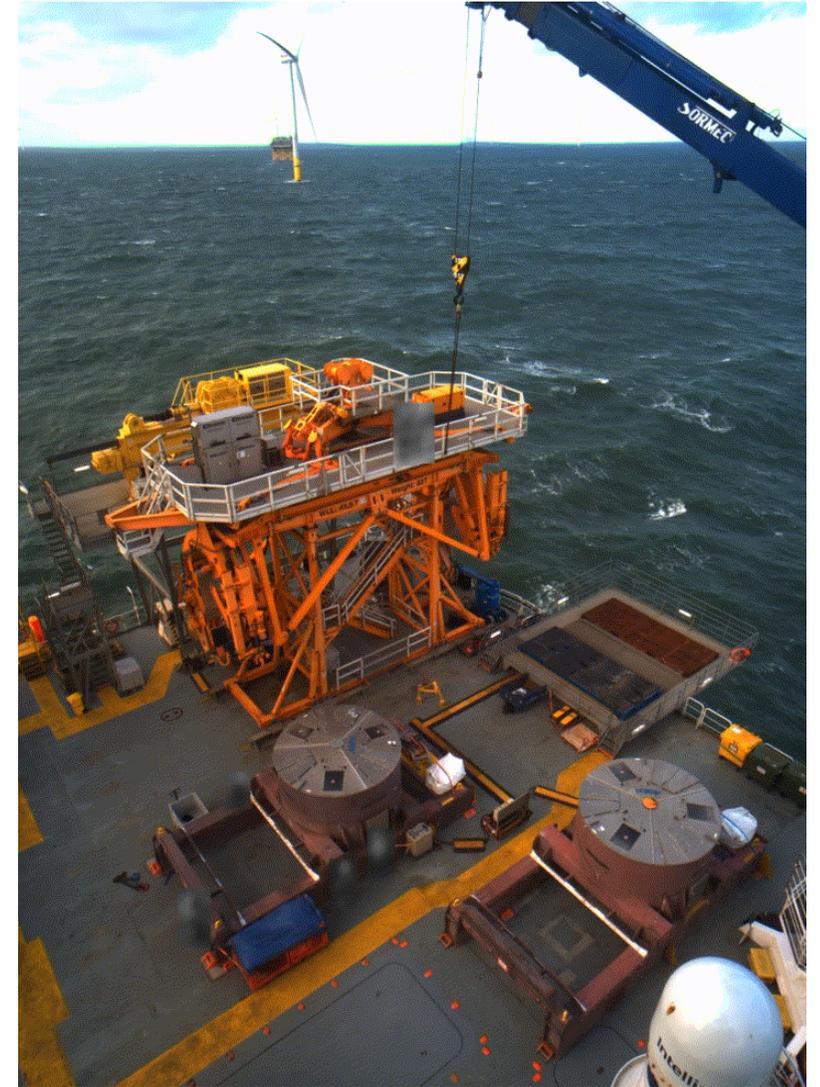
JannetYoke rigging start
Frame: 153

Personnel starts interacting with the black straps on the crane hook

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Blade Installation

**JannetYoke
rigging**

Blade 1/2/3
rigging

Blade 1/2/3
unrigging

JannetYoke
unrigging

Blade 1/2/3
lift
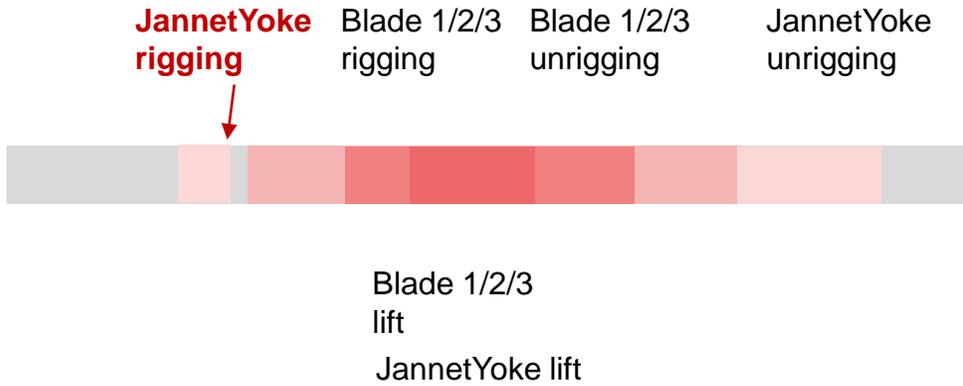
JannetYoke lift

JannetYoke rigging end
Frame: 156

*Personnel stops operating on the
smaller submodule*

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Blade Installation

JannetYoke
rigging

Blade 1/2/3
rigging

Blade 1/2/3
unrigging

JannetYoke
unrigging

Blade 1/2/3
lift
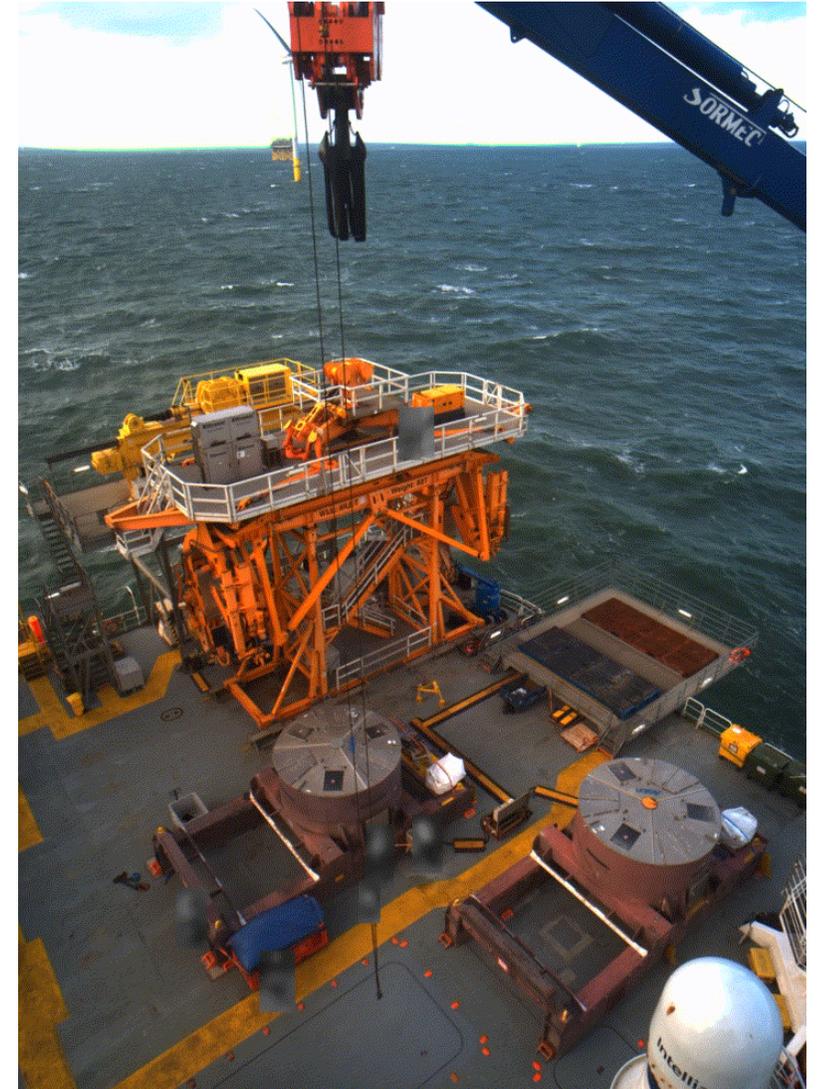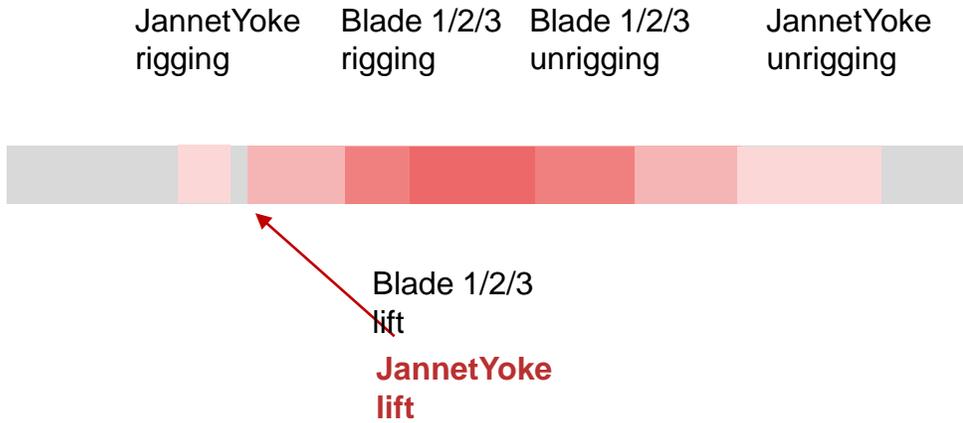
**JannetYoke
lift**

JannetYoke lift start

Frame: 22

*Hook straps are tight and the lift
of the whole yoke starts*

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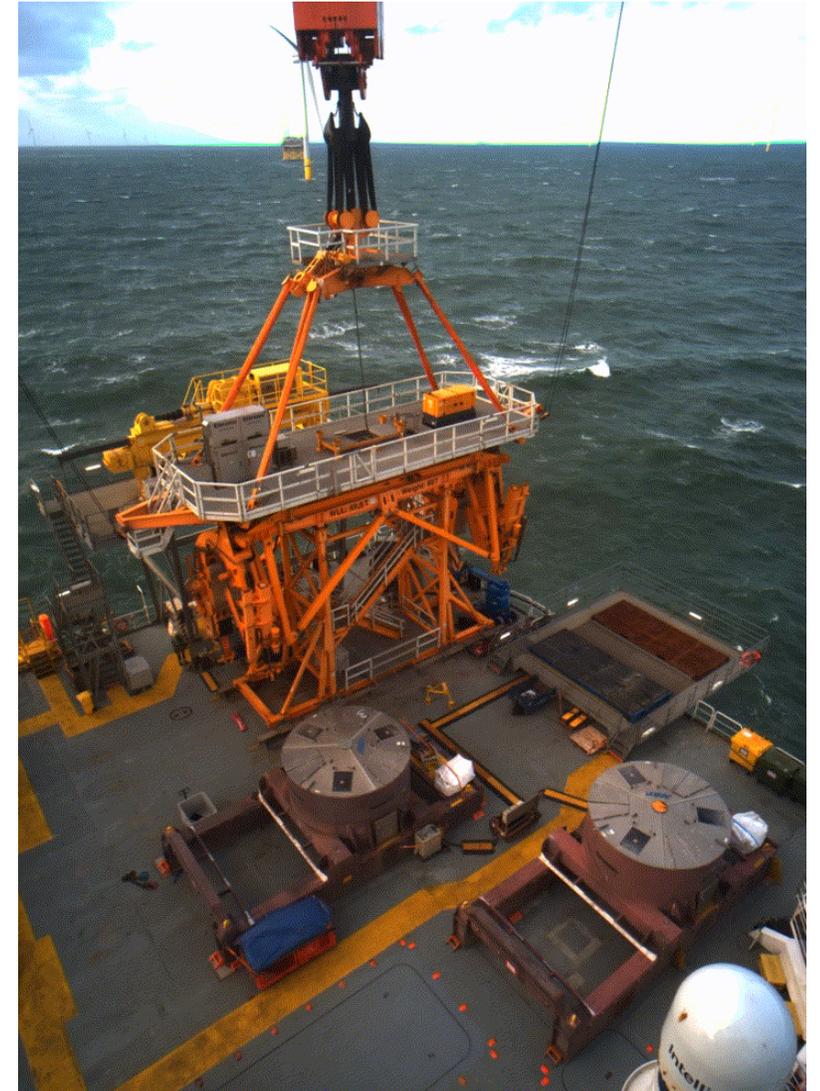
Our Commitment to Safety

Identifying Personal Protection Equipment

Computer Vision models that can analyze camera footage in a fraction of a second detecting…
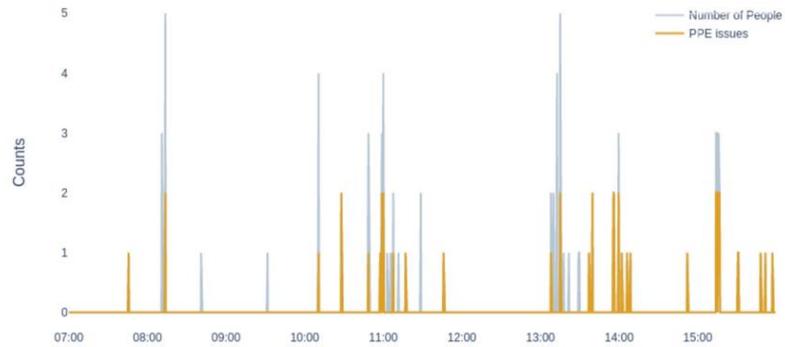
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Thank you!

Simon Slapka

Head of Innovation Solutions
Offshore Construction

Beim Strohhause 17-31
20097 Hamburg
Mobile: +49 173 4523792

simon.slapka@siemensgamesa.com

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