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NEXT LEVEL OF MEASUREMENTS FOR DP SYSTEMS

INNOVATORS OF OCEAN INSIGHTS



AGENDA

- Introduction
- Dynamic Positioning industry glance
- Available environmental information
- Call to the industry:
Let's make use of available information



MARIUS



The last 27 years:

- Dynamic Positioning: Development, engineering, service
- Digitalization in the energy and offshore industries



MIROS

For the last 40 years:

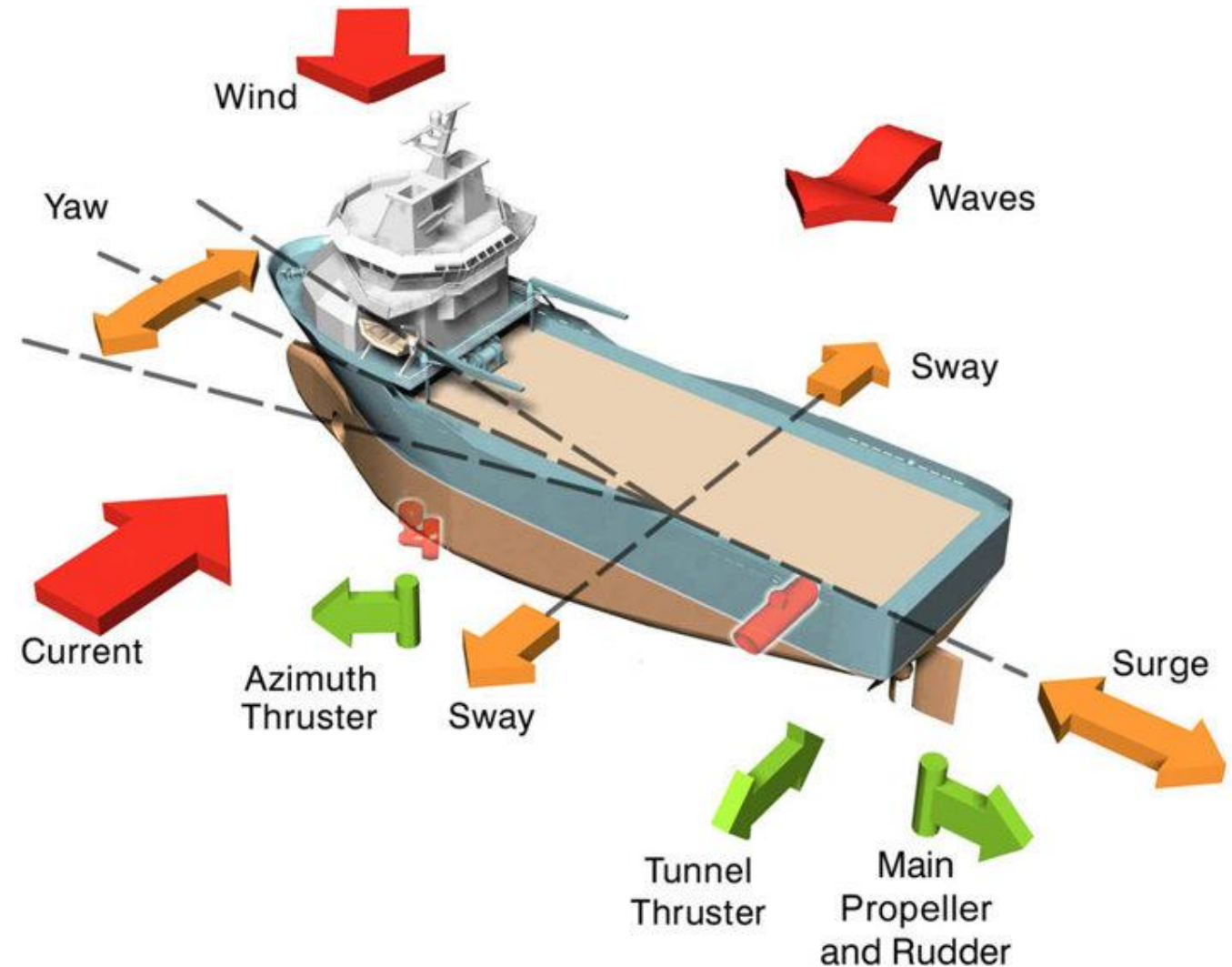
- Pioneered radar-based ocean surface measurements
- In-house developed sensor technology and applied analytics
- Committed to innovation and excellence
- Empower maritime operators with accurate sea state data as a service w/IoT



DYNAMIC POSITIONING INDUSTRY



- Available since early 1960s
- Advancements in «all areas»
 - Reliability, performance and redundancy
 - Sensors, control systems, thrusters, power system
 - Analysis of capability at failure
- Still
 - *Not applying full value of available environmental information*

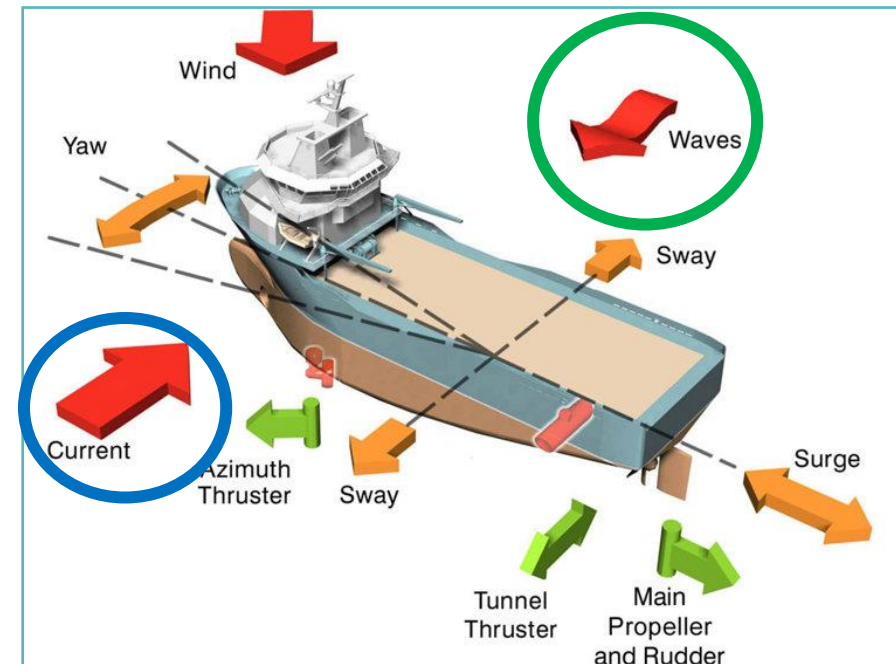




SELECTED CHALLENGES

- CURRENT: Including all unknowns
- WAVES: Forecast or visual ?
Which waves to consider ?
- CONSEQUENCE ANALYSIS:
Timely reminder

..loss of position due to a large wave train was experienced before the consequence analysis alarm was triggered..*



REFERRED COMMENTS



“We swing a hook over the side”

“It’s up to how the crew feel”

“We rely on the weather forecast”

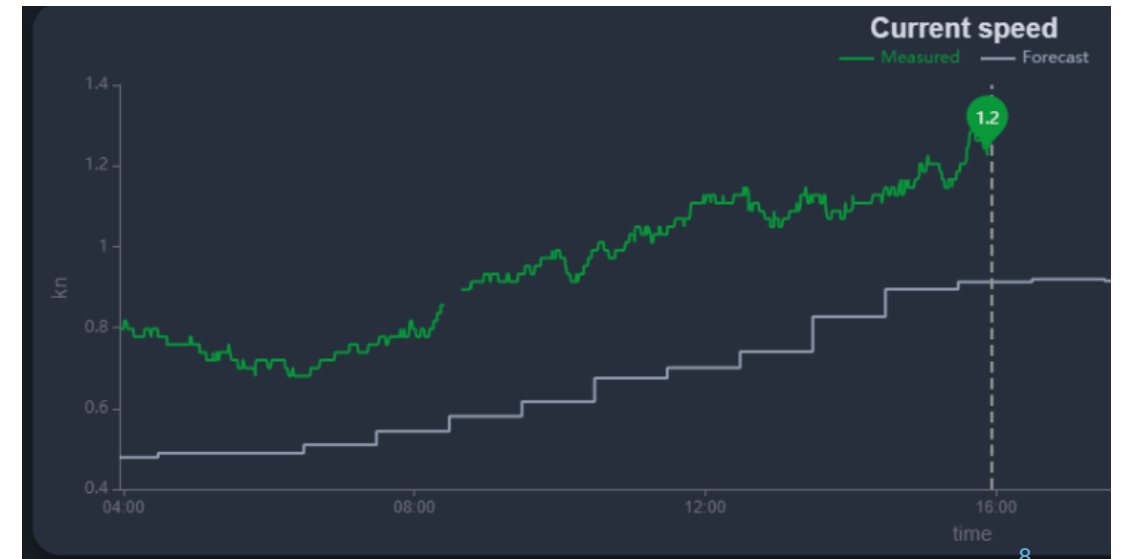
“Sometimes we have just to make a decision and go for it”



WHAT OPERATORS MAY BE MISSING OUT ON



On a Vessel in the North Sea 31 Jan 2023





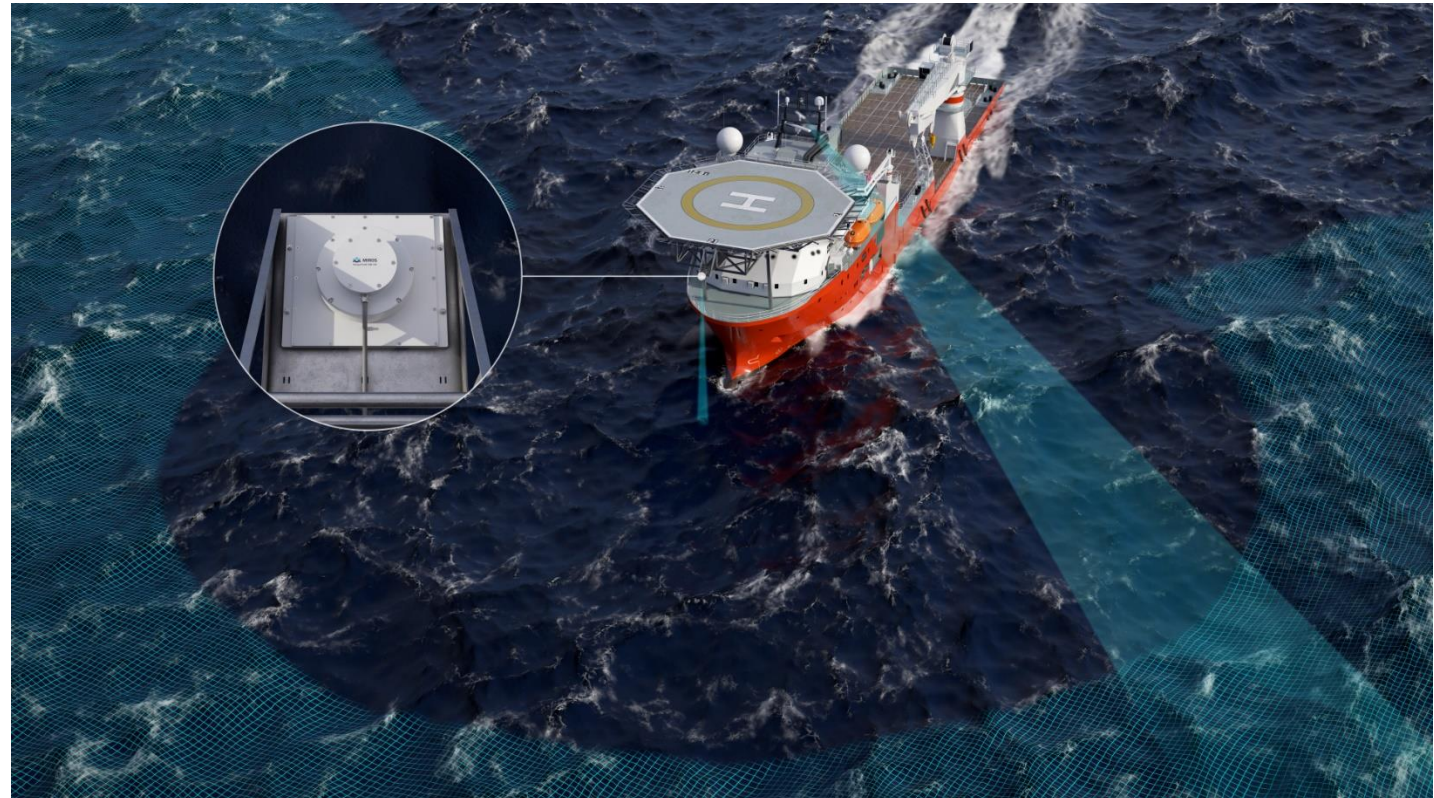
AVAILABLE ENVIRONMENTAL MEASURED INFORMATION

WAVE MEASUREMENTS

- Directional Hs: 0.2 m / 6%
- Accurate air-gap sensor: 0.01 m
- Approved and certified

CURRENT MEASUREMENTS

- Speed: 0.05 m/s
- Direction: 10°



NEW ENVIRONMENTAL MEASURED INFORMATION



WAVE & VESSEL MOTION PREDICTION

A. Statistical prediction

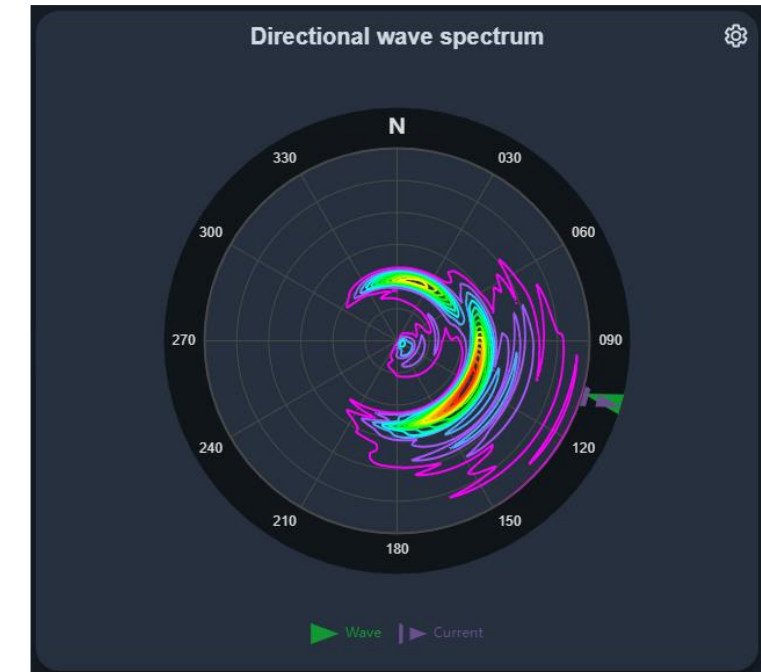
- Statistical information

~hours

B. Deterministic prediction

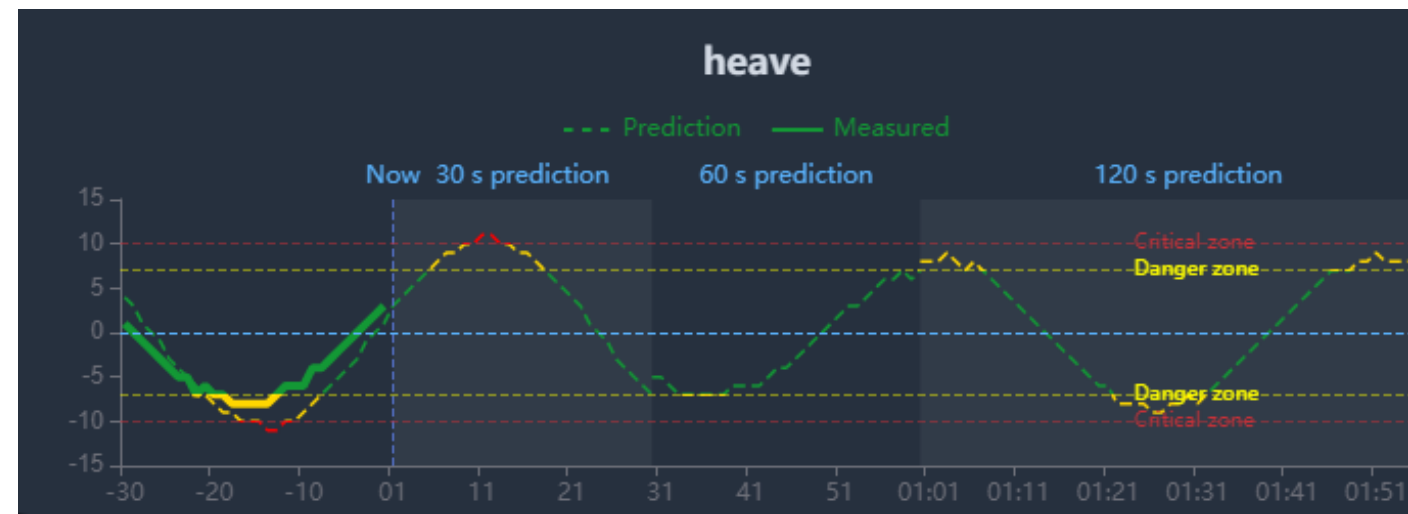
- Exact & correlated information

~minutes



USE CASES

- 1) Crew and Equipment Safety
- 2) Safe Navigation
- 3) Offshore Crane Operations
- 4) DP Operations
- 5) ...





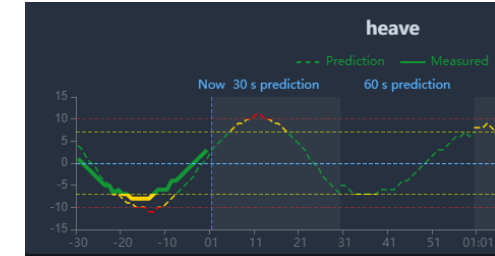
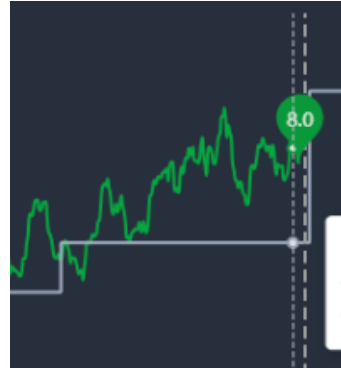
HOW TO FURTHER

- Save time
- Reduce costs
- Mitigate risks

by having precise
**measurements and
predictions** at your fingertips



WAVE & CURRENT MEASUREMENT IN DP - STAIRWAY

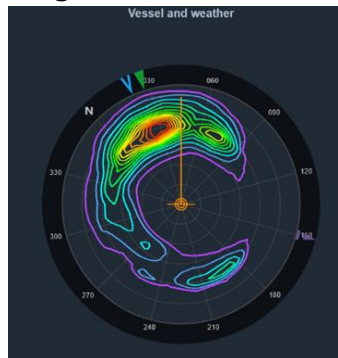


Back-office analysis

- Off-line planning & simulation

Visual situational awareness

- On-line, bridge monitors



Consequence analysis input

- On-line, integrated. Location specific data

Operational Actions

- On-line alerts → manual action

Automatic control

- On-line, integrated





WHERE ARE YOU ON THE DP - STAIRWAY?

To discuss further: Stand E500



www.miros-group.com

Real-time ocean insights on miros.app

