



UNITED NATIONS



COP29
Baku
Azerbaijan

International Forum

Navigating A Sustainable **Blue Economy**:
Maritime Transport's Pathway
to Climate Resilience

20
November
2024

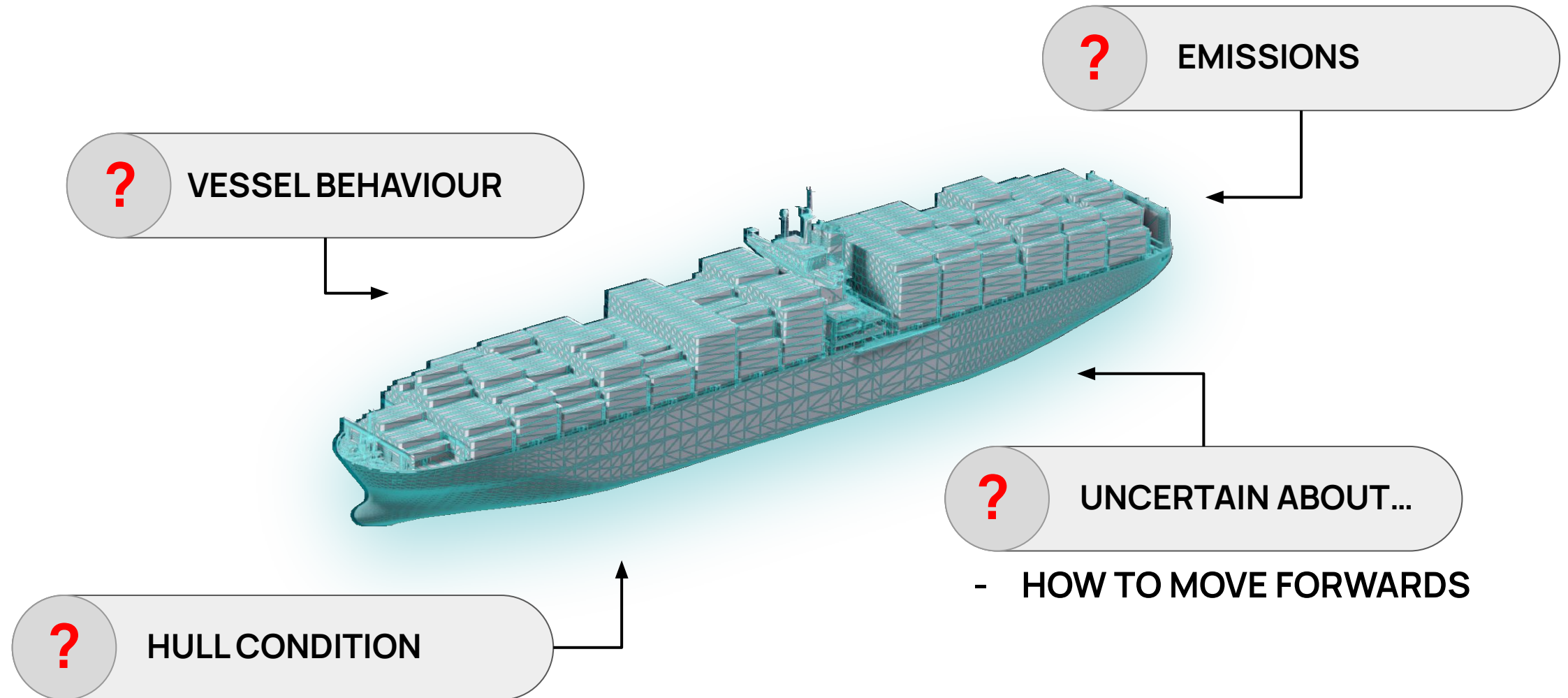




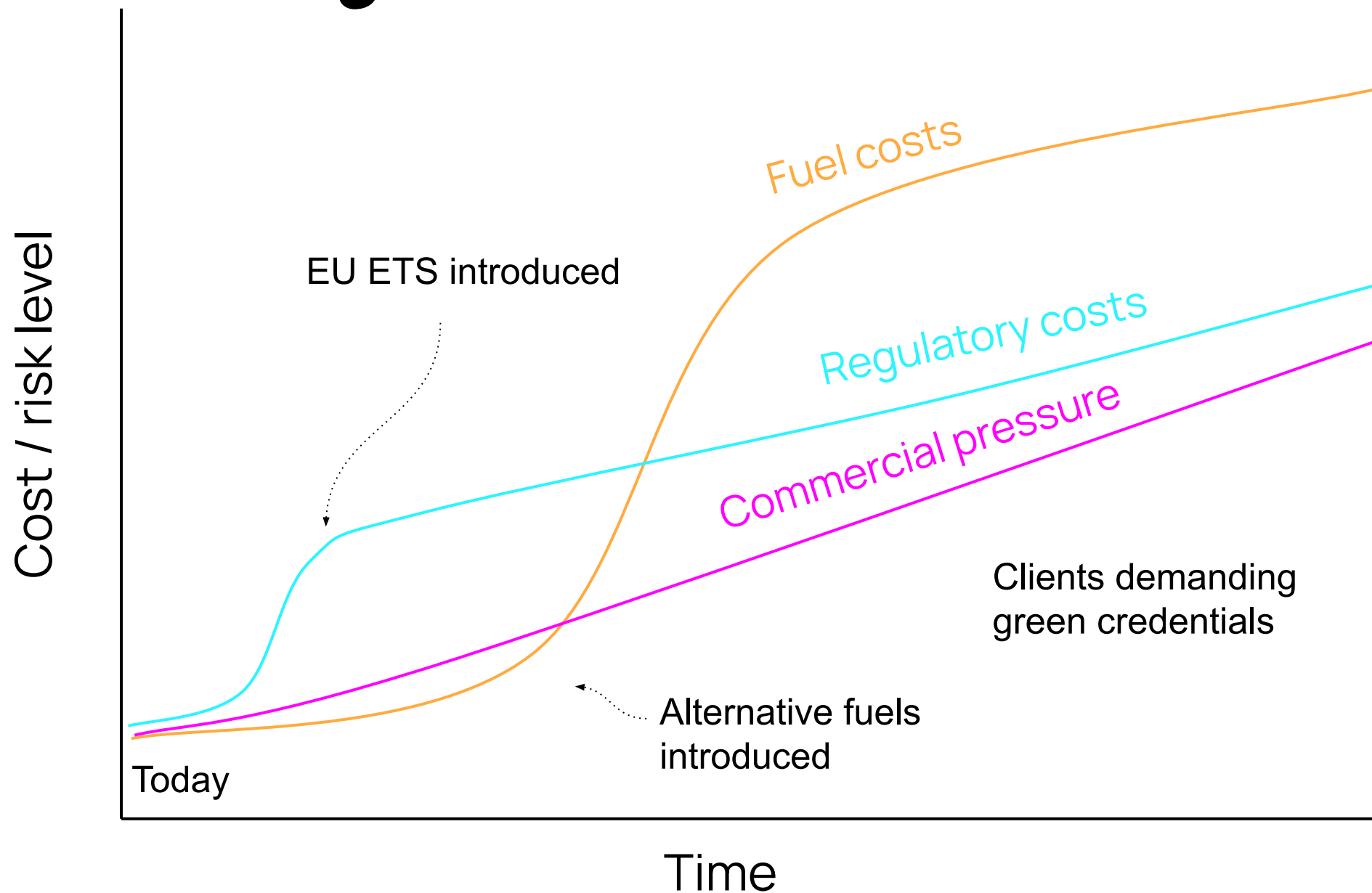
Advancing Autonomous Navigation with AI for a Sustainable Maritime Future

Christos Papandreou, Senior Fleet Performance Engineer, DeepSea

“Yesterday”



Pressure on shipping is increasing



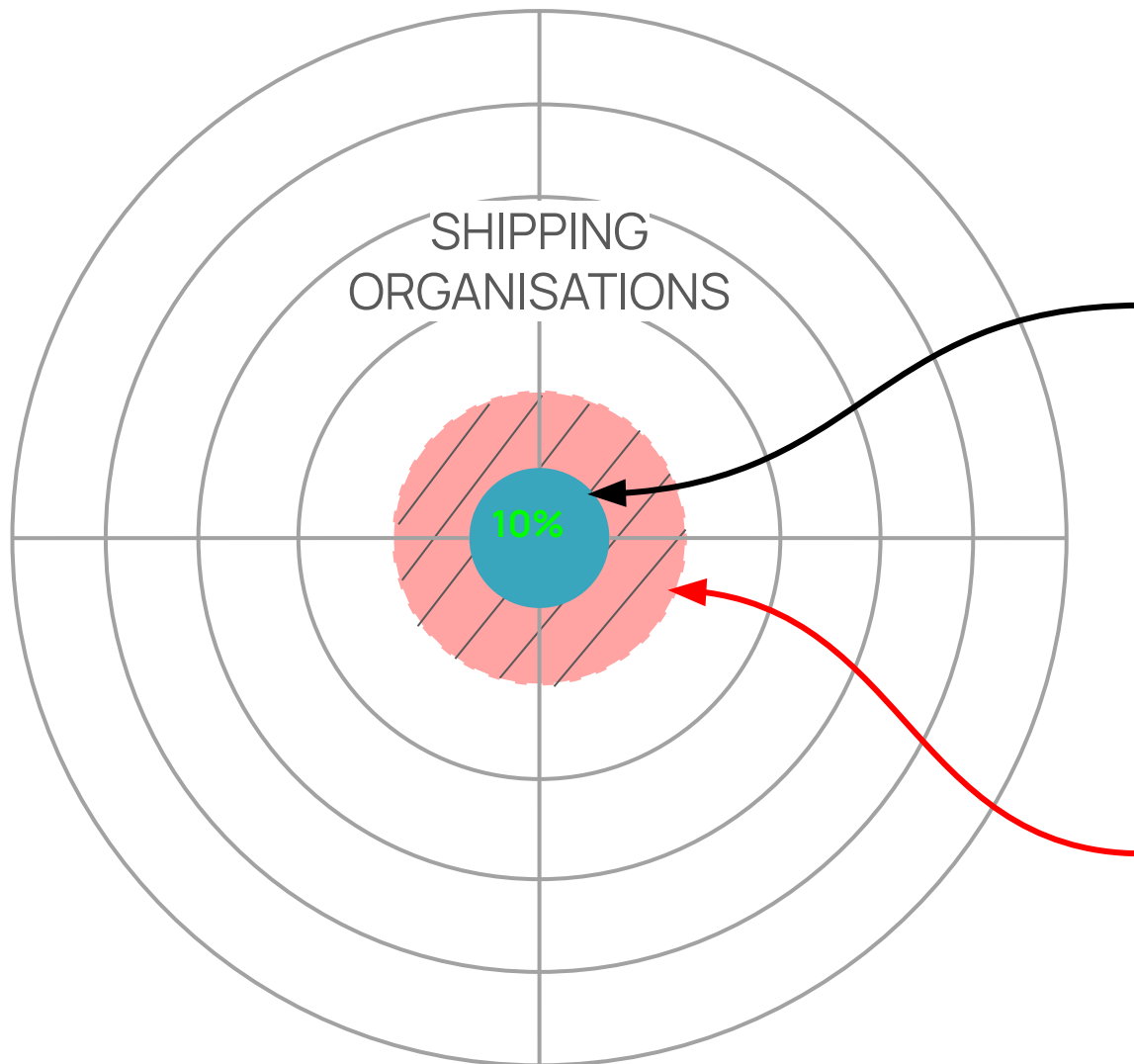


**“You can’t improve what you can’t
measure”**

“Garbage in - garbage out”



Optimisation requires insight



Optimisation potential within the industry

\$40M USD

200K MT CO₂

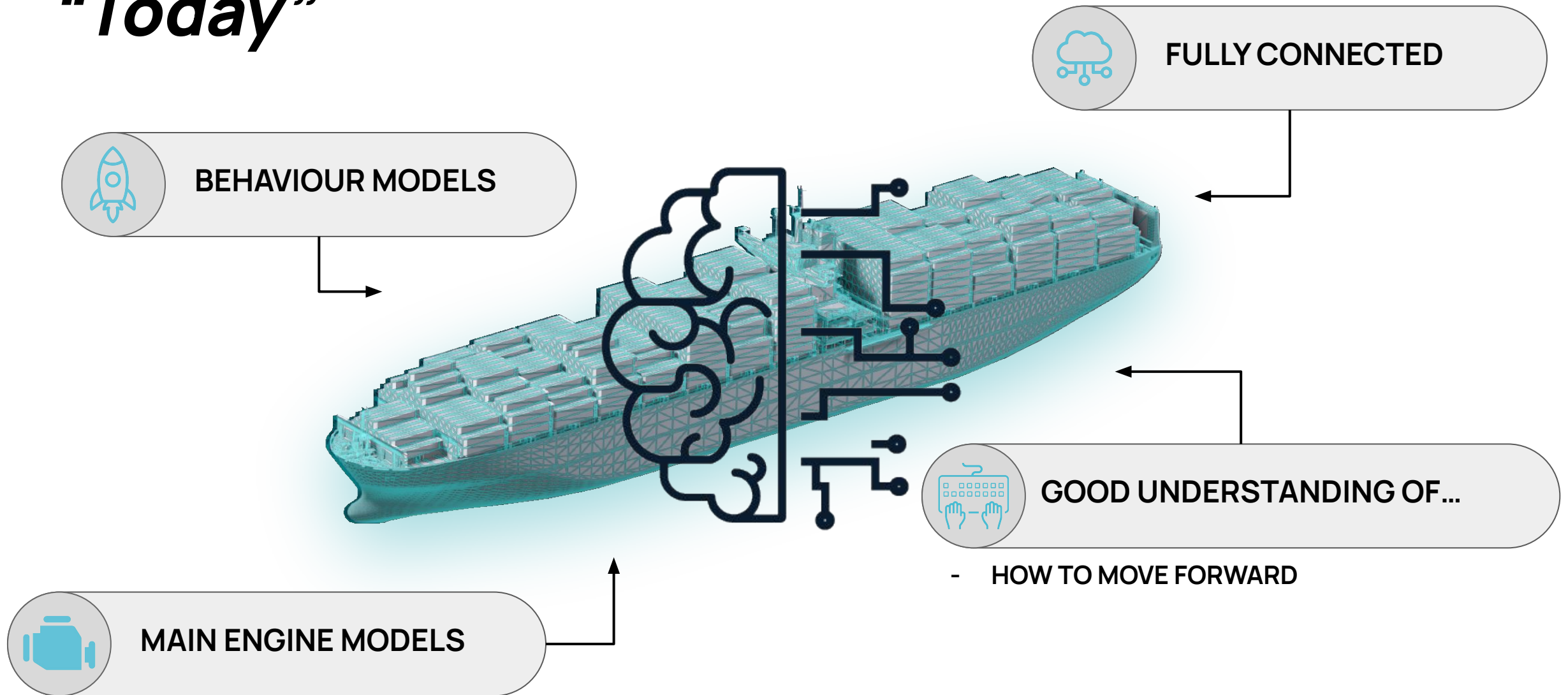
(Estimated annual cost saving for 100-vsl fleet)

Historic decision insight error:

15%

(Average error of traditional insights)

“Today”

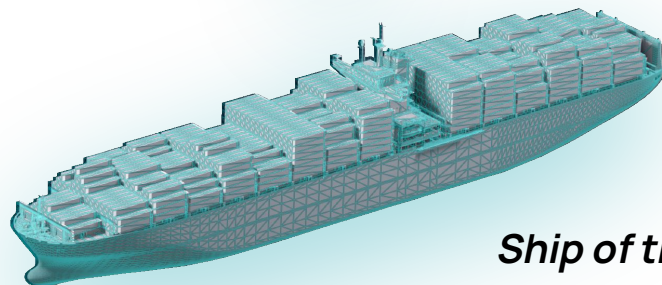


“Tomorrow”: two approaches to the future

Top-down

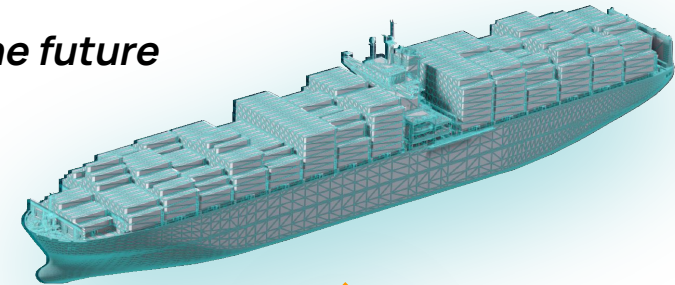
Bottom-up

“Grand vision”



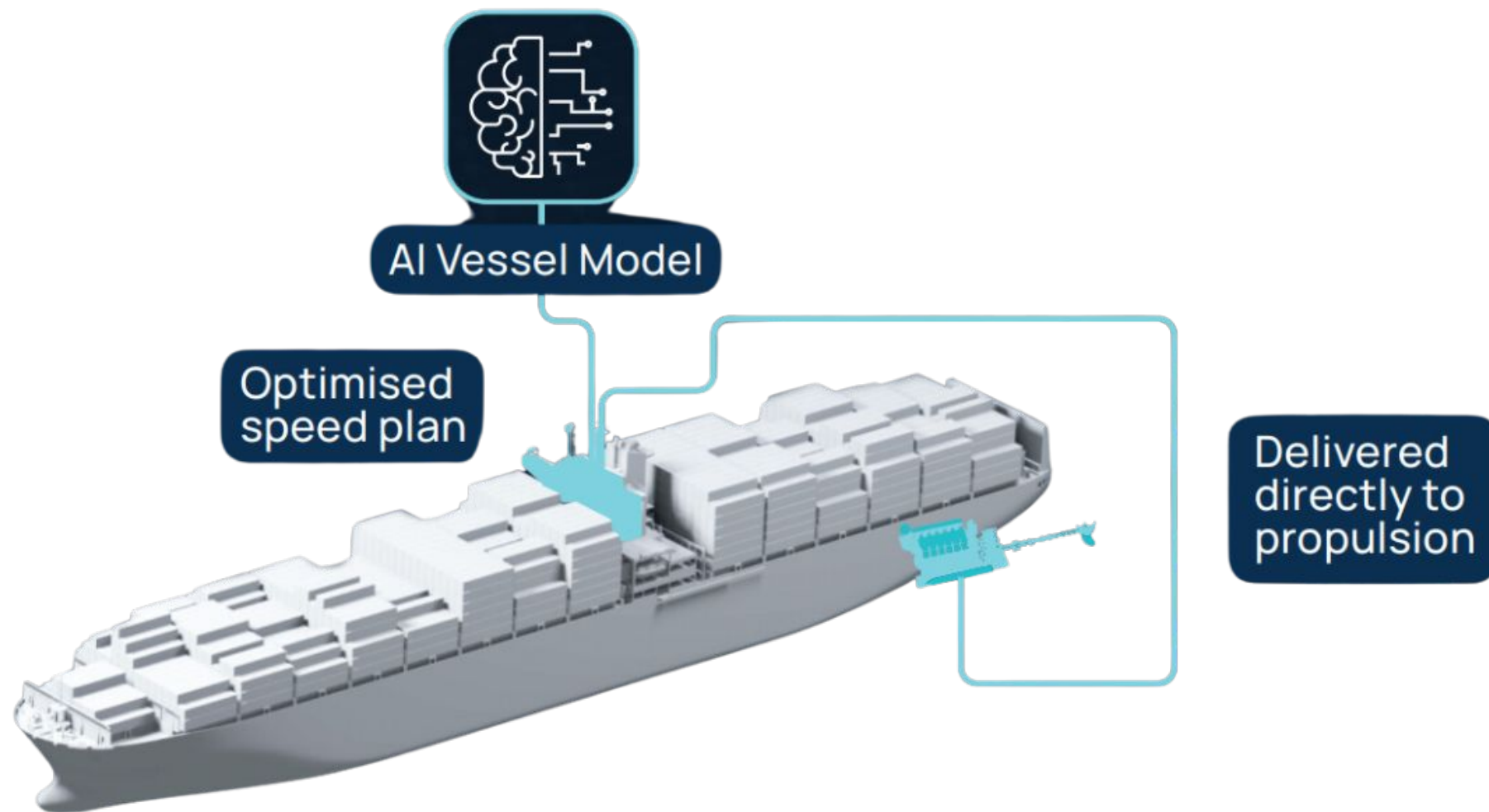
Ship of the future

Ship of the future

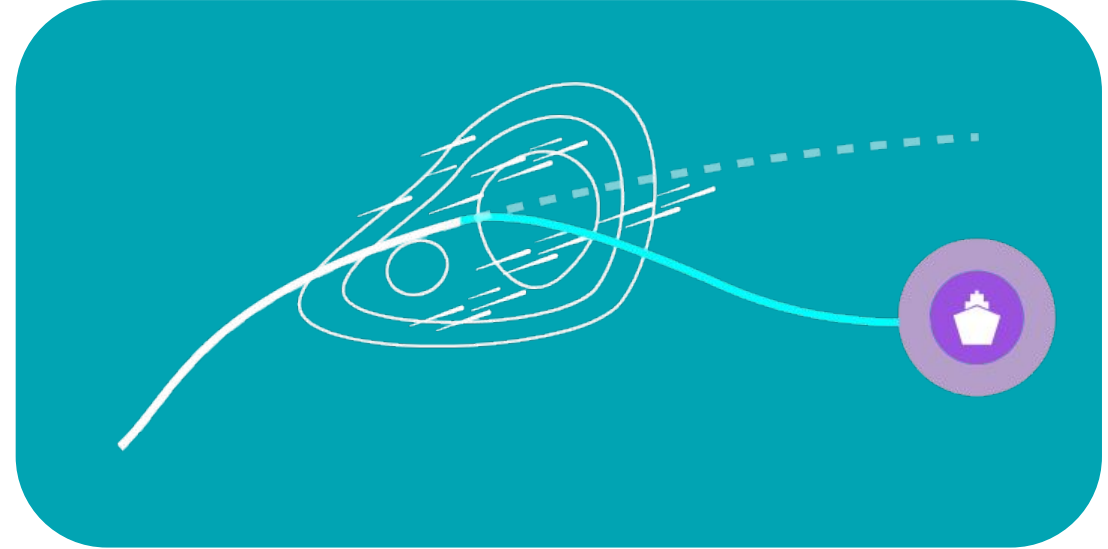


“Real problems”

“Tomorrow”: taking the next step



Envisioning the future... now.

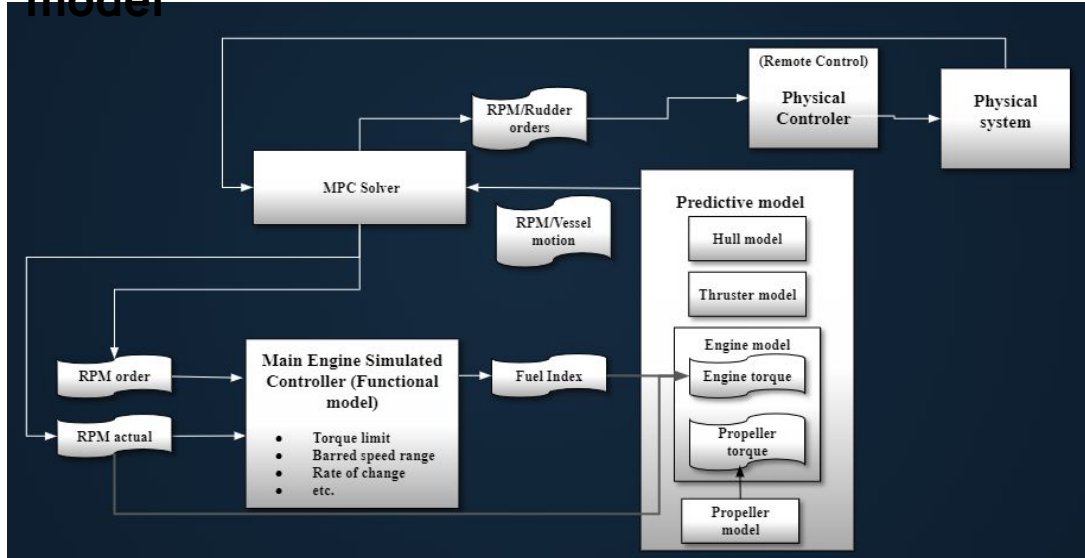


Key milestones to autonomous sailing

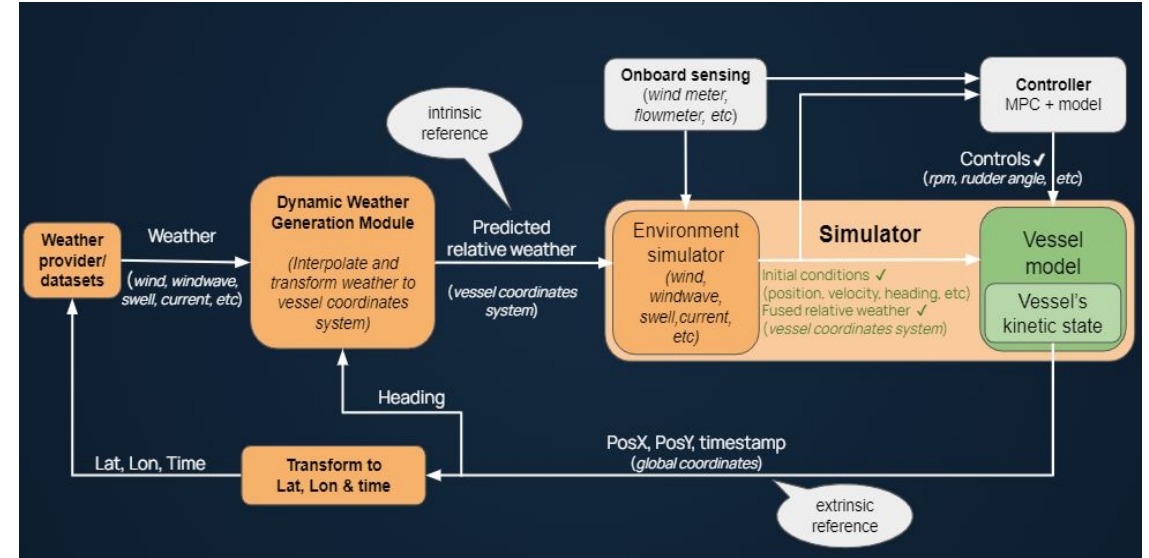
- 1) Building ship dynamics models
- 2) Flexibility and adaptability
- 3) Obstacle avoidance

Modelling the future... now.

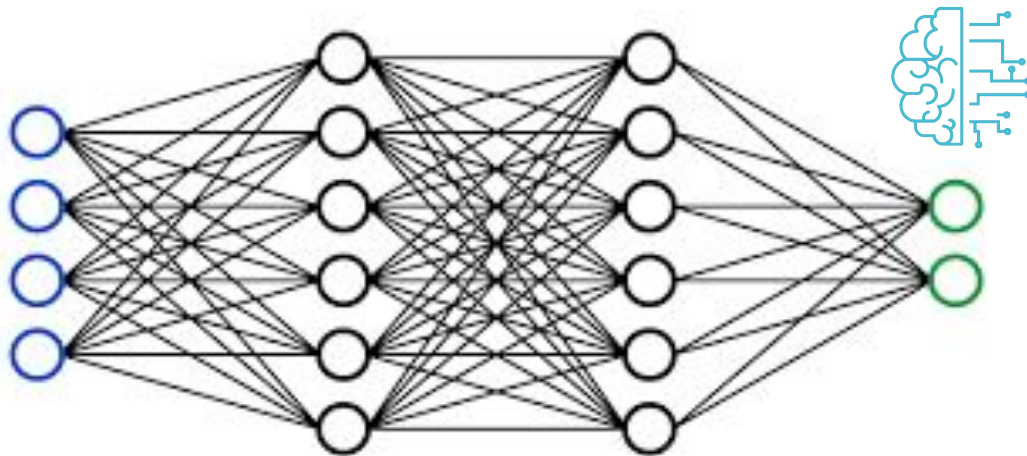
Physics based model



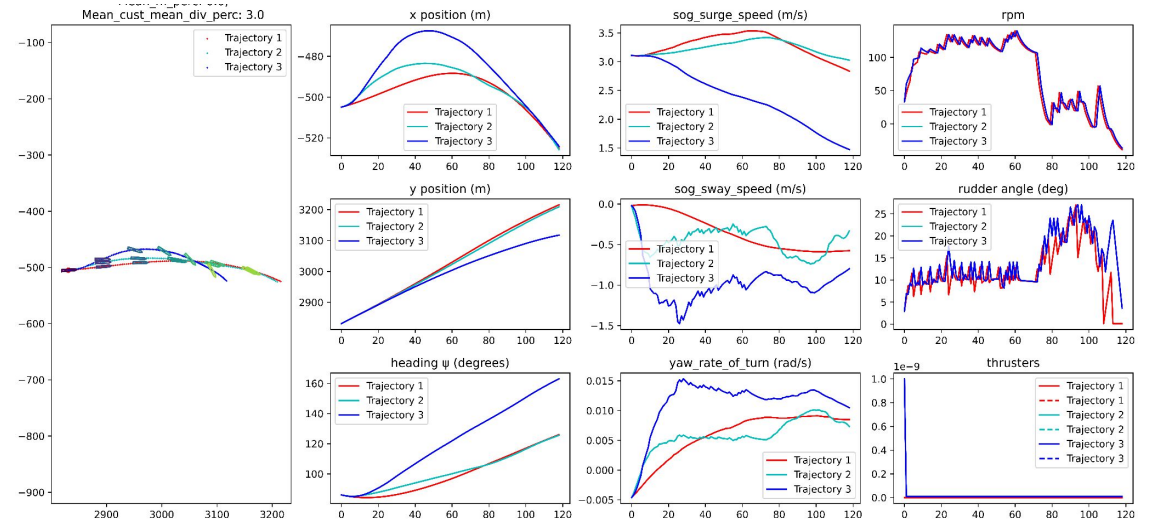
Simulation environment



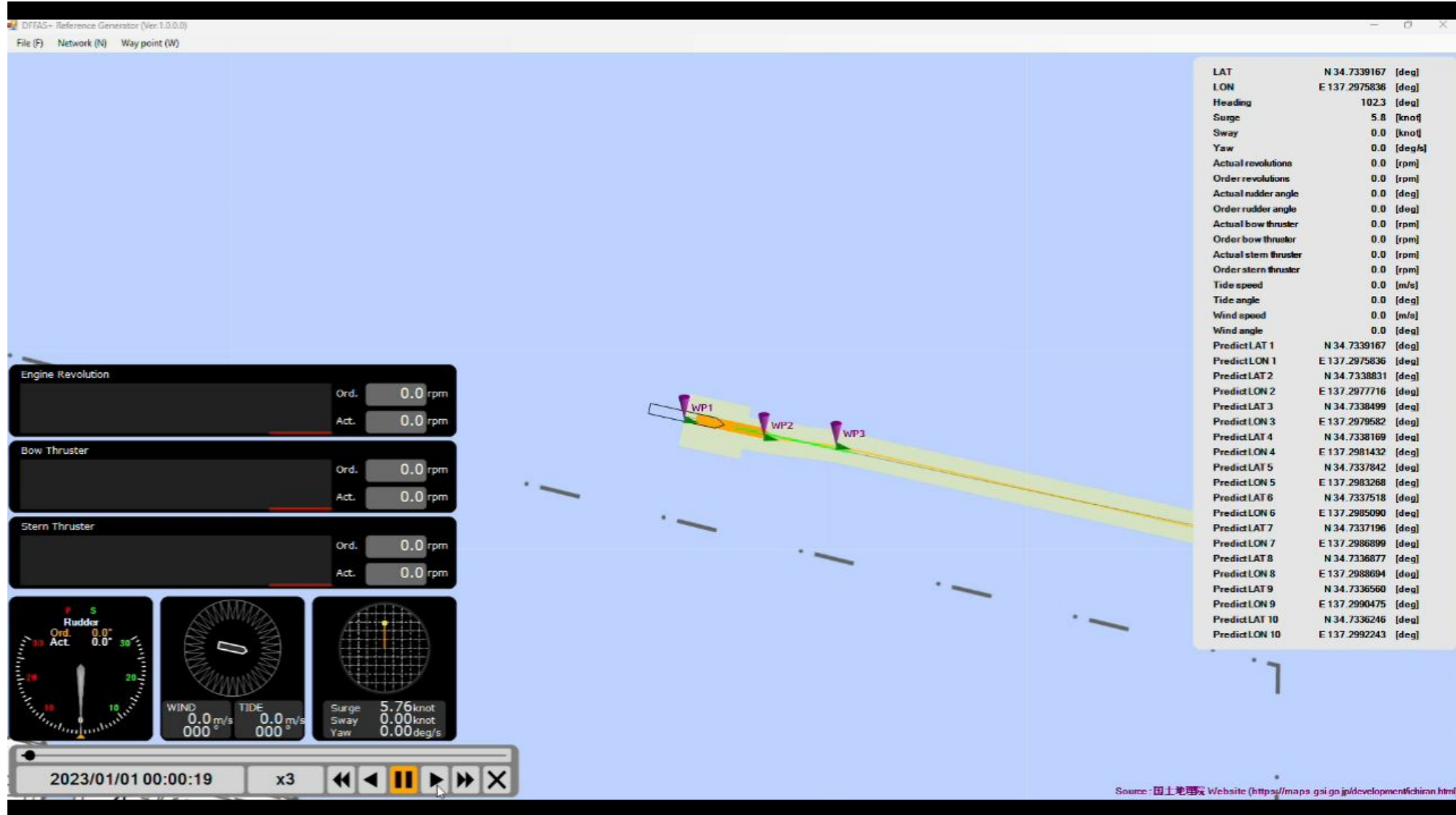
Data driven model



Hybrid model result



A glimpse of the future





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**Thank
You**



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