

# Retrofitting sensor data on older ships

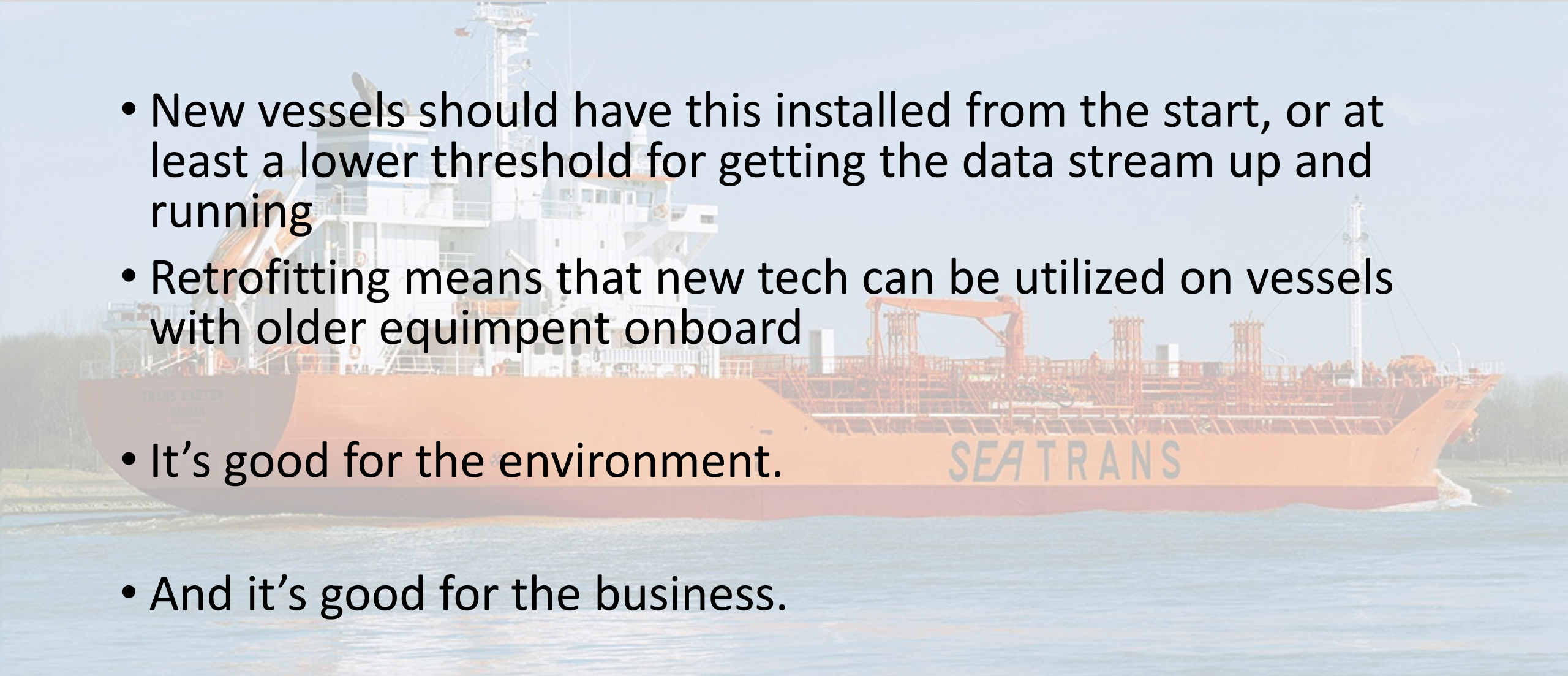
Ådne Brunborg

Data Architect, Seatrans Group



# Retrofitting

- New vessels should have this installed from the start, or at least a lower threshold for getting the data stream up and running
- Retrofitting means that new tech can be utilized on vessels with older equipment onboard
- It's good for the environment.
- And it's good for the business.





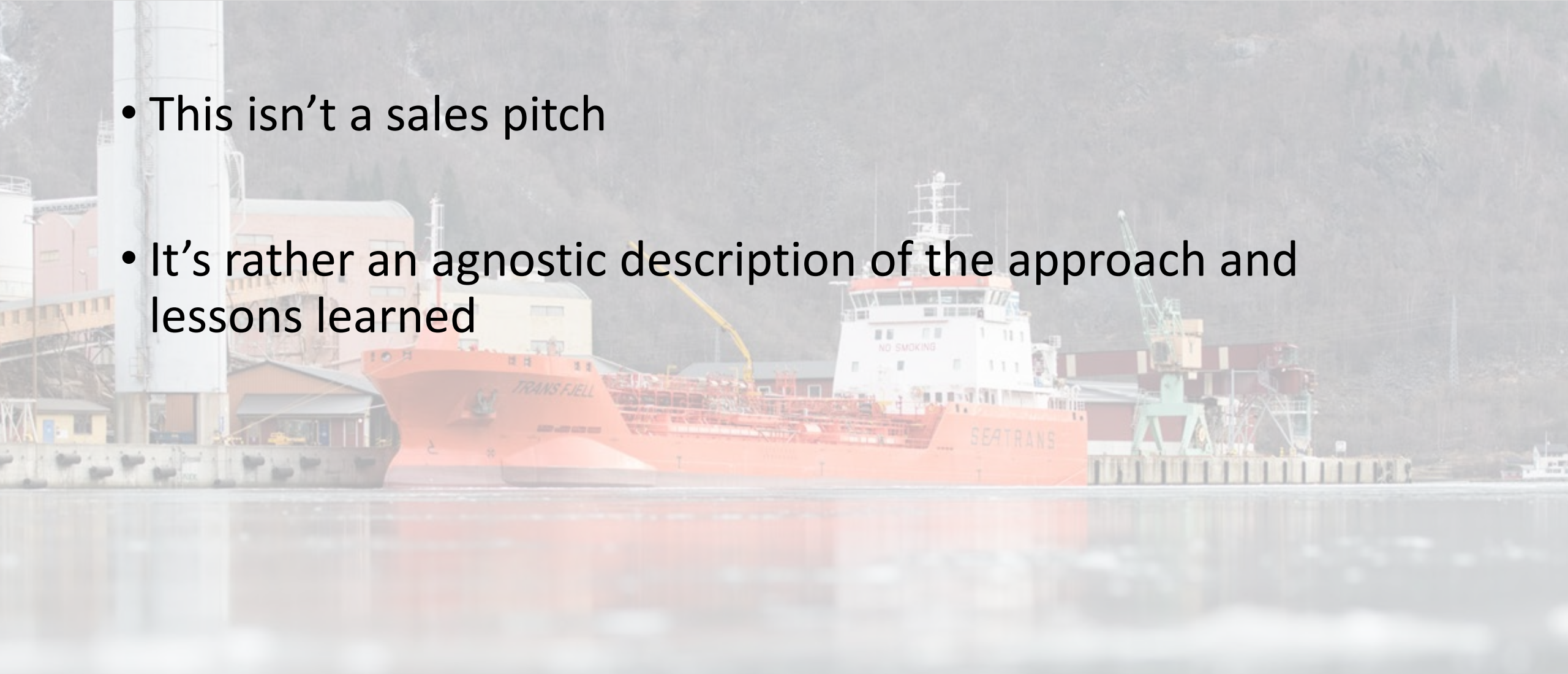
# Who am I?



- Ådne Brunborg, Data Architect in Seatrans Group
- Five years of experience in shipping, and in Seatrans
- Total of 26 years in various areas of digitalization
  - From programming, testing, designing, integration, software architecture, datawarehouse, big data, management, business intelligence, data migration, and more
- (I'm also a decent skier, hunter, and hobby musician.)

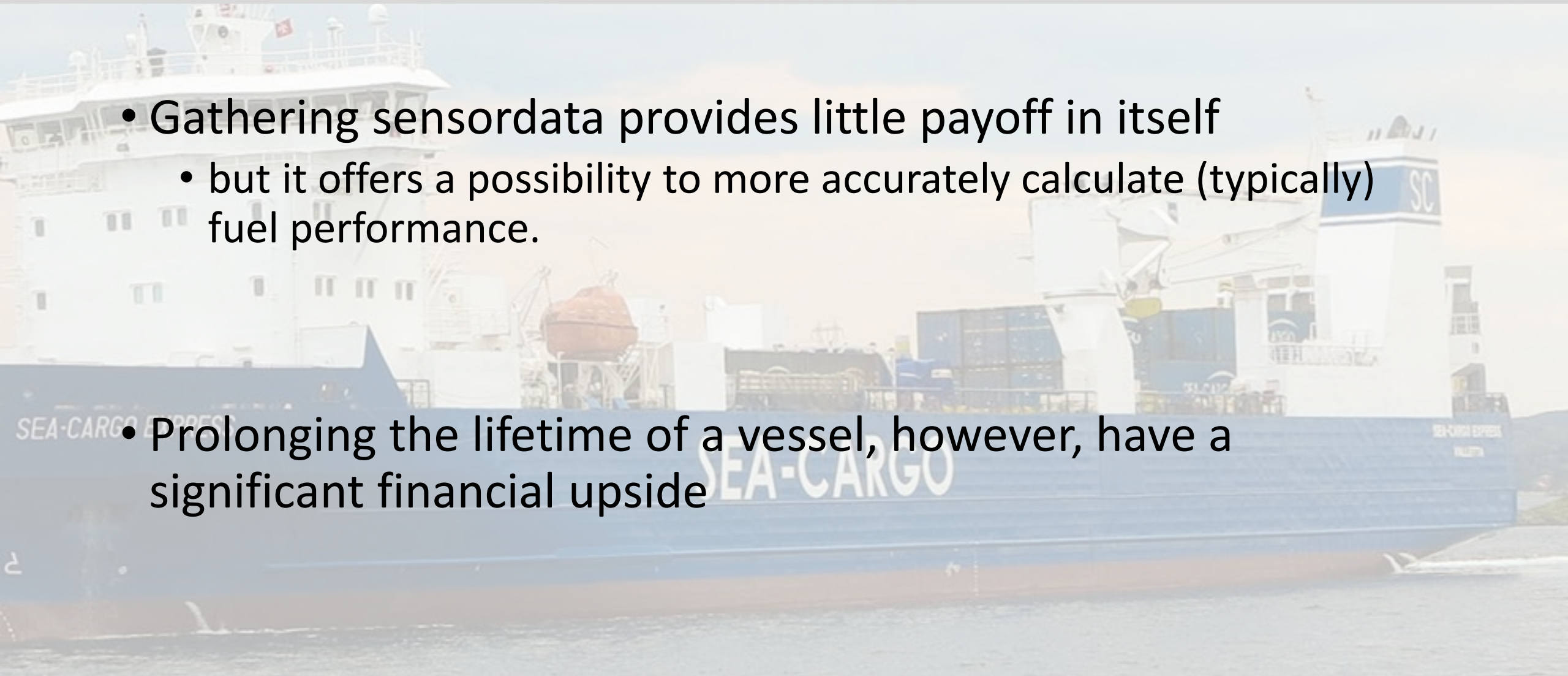
# Before we begin...

- This isn't a sales pitch
- It's rather an agnostic description of the approach and lessons learned





# Financial Sustainability

- Gathering sensor data provides little payoff in itself
    - but it offers a possibility to more accurately calculate (typically) fuel performance.
  - Prolonging the lifetime of a vessel, however, have a significant financial upside
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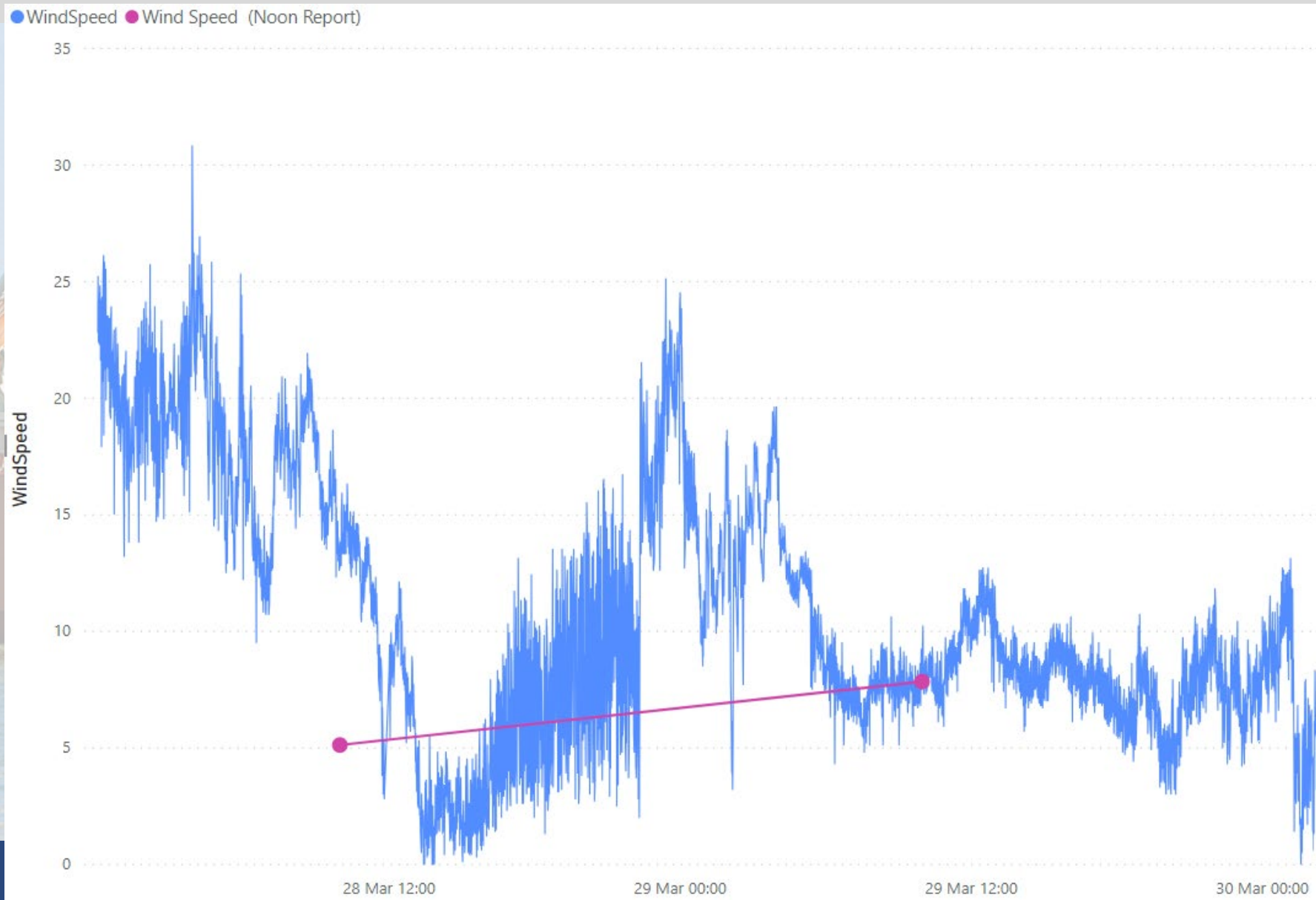
# Environmental Sustainability

The background image shows a large white cargo ship with a blue hull, passing under a large steel truss bridge. The ship has "SEA CAROL" written on its side. The bridge has several cars on it. The scene is set on a body of water, and the sky is overcast.

- Decarbonization is on everybody's lips these days
- You can only go so far with manual reporting, like noon reports and similar
- Data of higher granularity enables more detailed analysis of (typically) emissions, laying the groundwork for emissions reduction

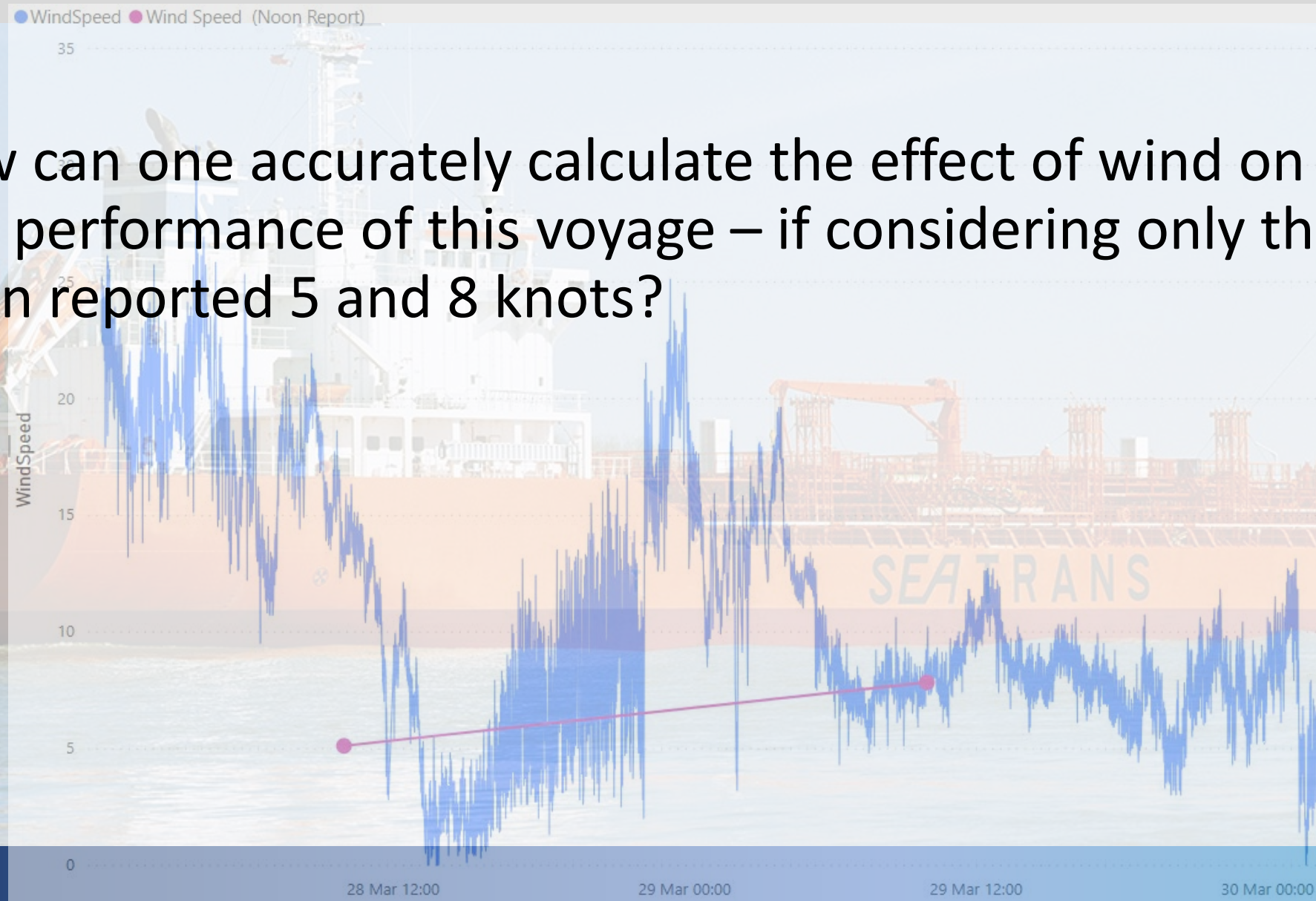


# Data Granularity - visualized



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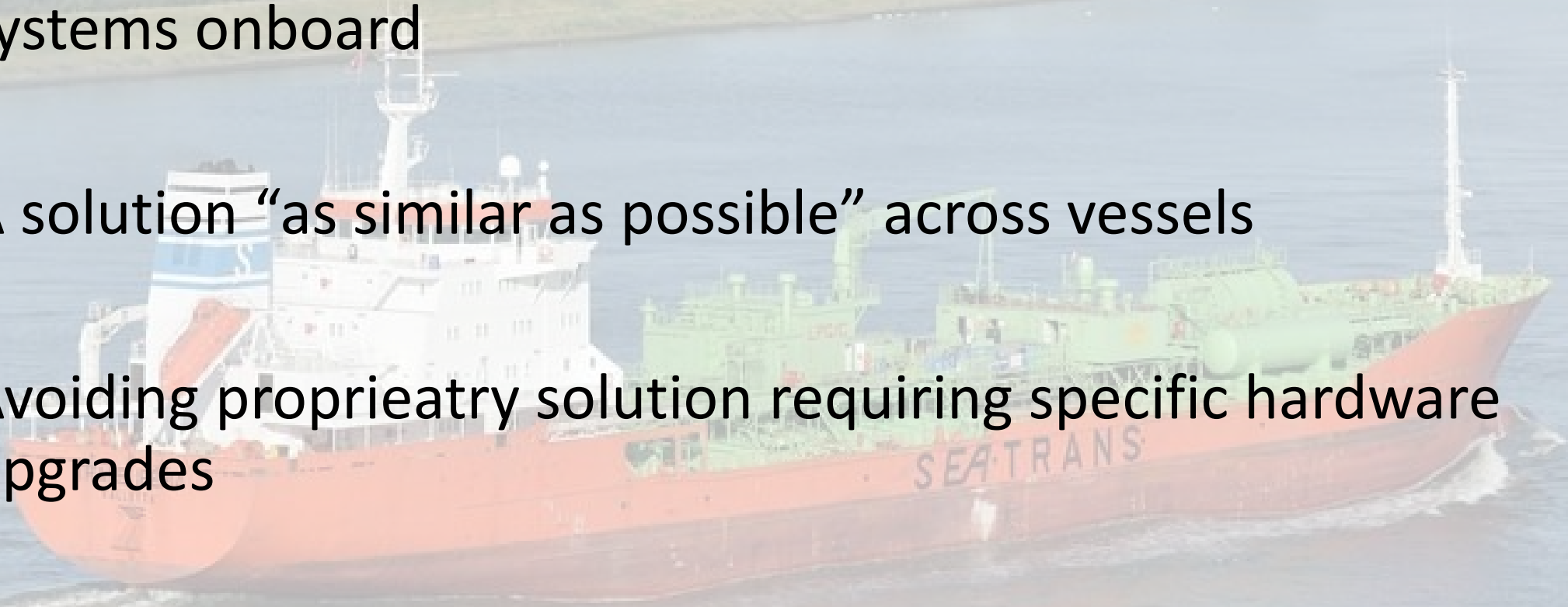
- How can one accurately calculate the effect of wind on the fuel performance of this voyage – if considering only the noon reported 5 and 8 knots?



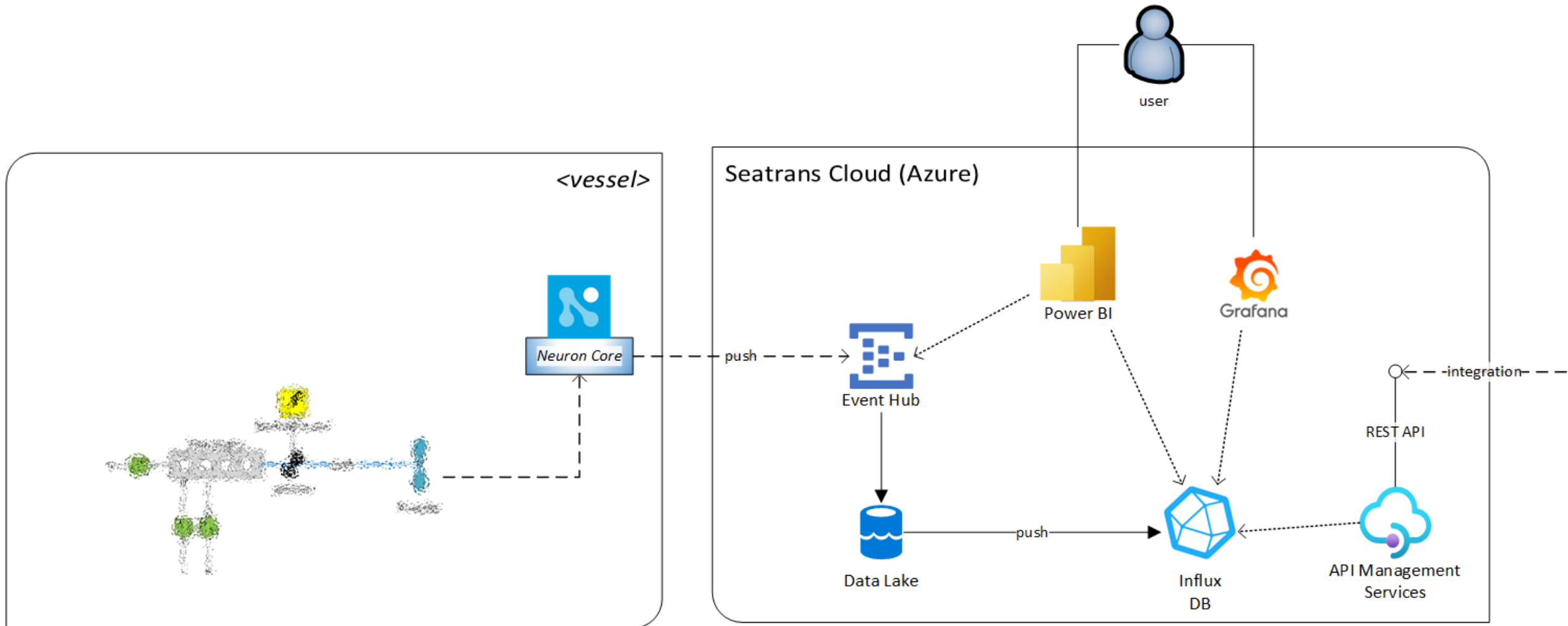


# Finding a solution

- Seatrans has a diverse fleet of vessels, often with different systems onboard
- A solution “as similar as possible” across vessels
- Avoiding proprietary solution requiring specific hardware upgrades



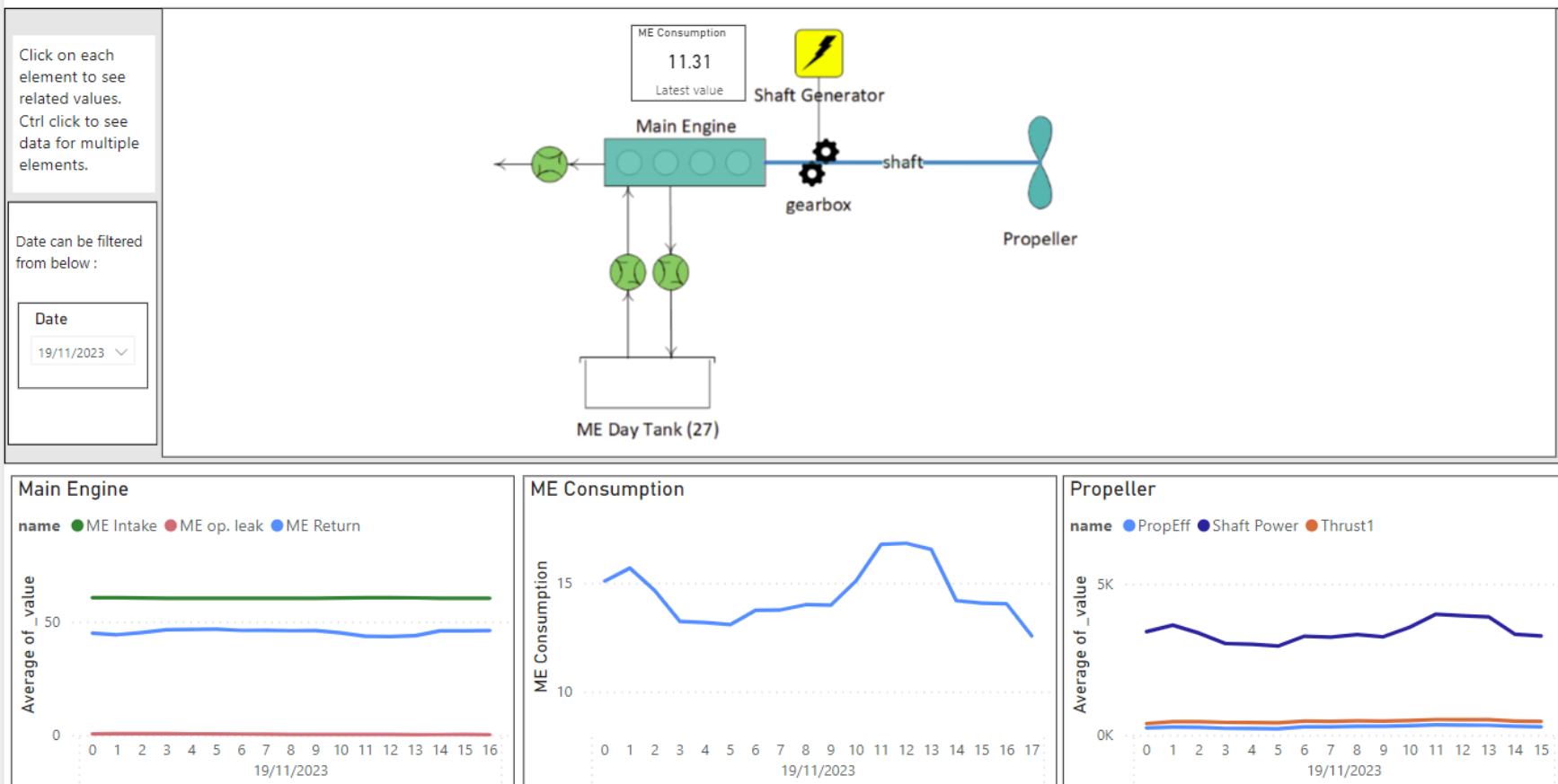
# Conceptual



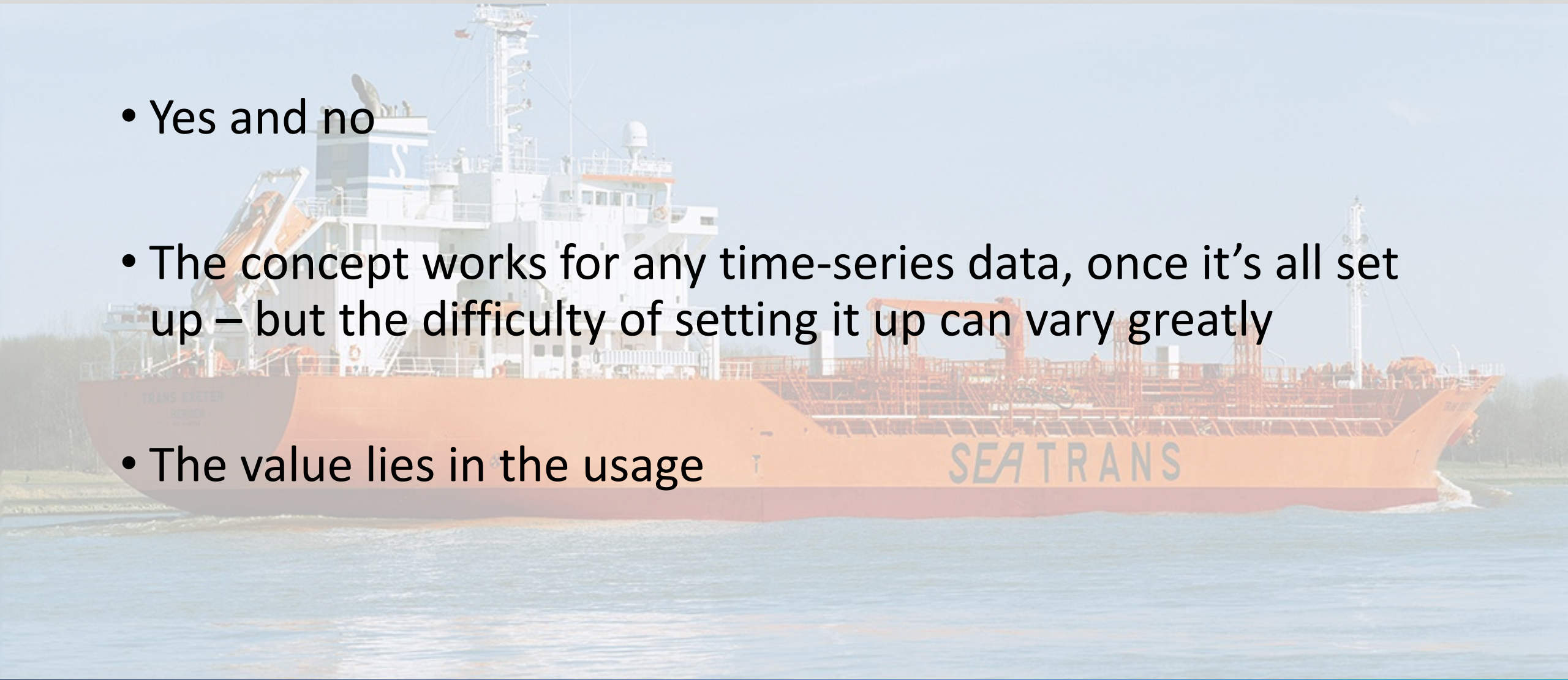


# Actual

- (...it doesn't have to be very complex to add value)



# So it's really simple then?

- Yes and no
  - The concept works for any time-series data, once it's all set up – but the difficulty of setting it up can vary greatly
  - The value lies in the usage
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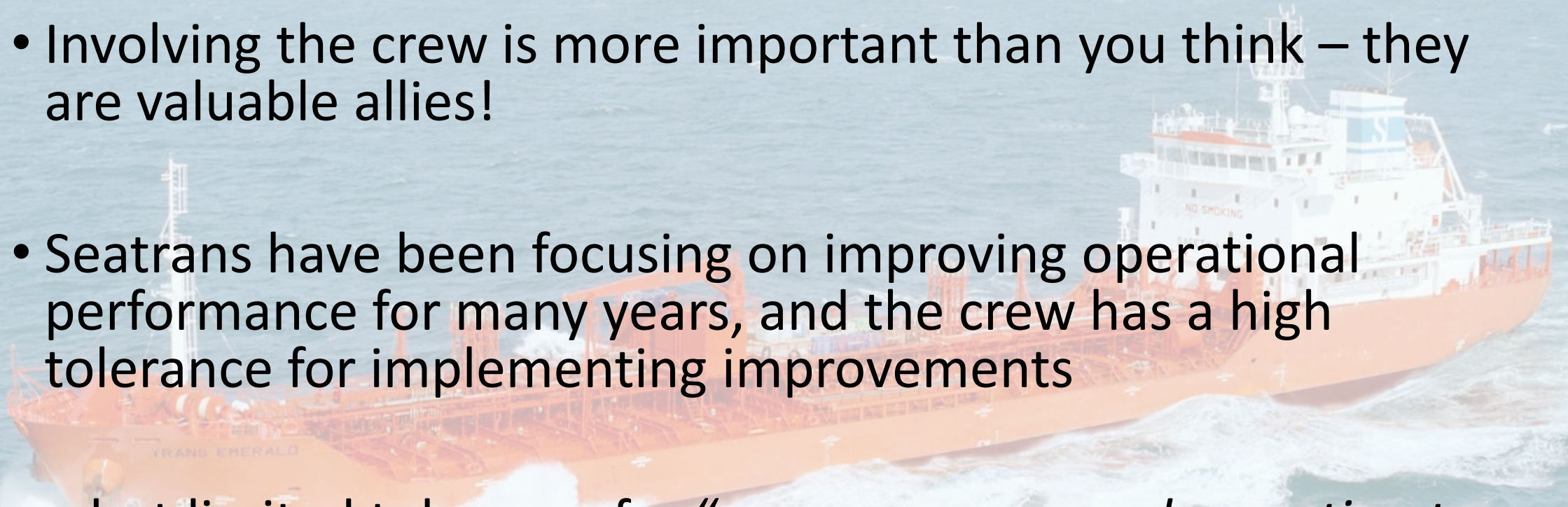


# Vessel IT

- Don't underestimate the importance of IT operations in a project like this
- Introducing new software, and possibly new cabling, onboard an older vessel is **expected to** provide challenges
- Even if the data isn't currently used, ensuring that it's actually captured means it can be used for "things we haven't thought about yet"

# The crew

- Involving the crew is more important than you think – they are valuable allies!
- Seatrans have been focusing on improving operational performance for many years, and the crew has a high tolerance for implementing improvements
- ...but limited tolerance for “*even more manual reporting to be done*”

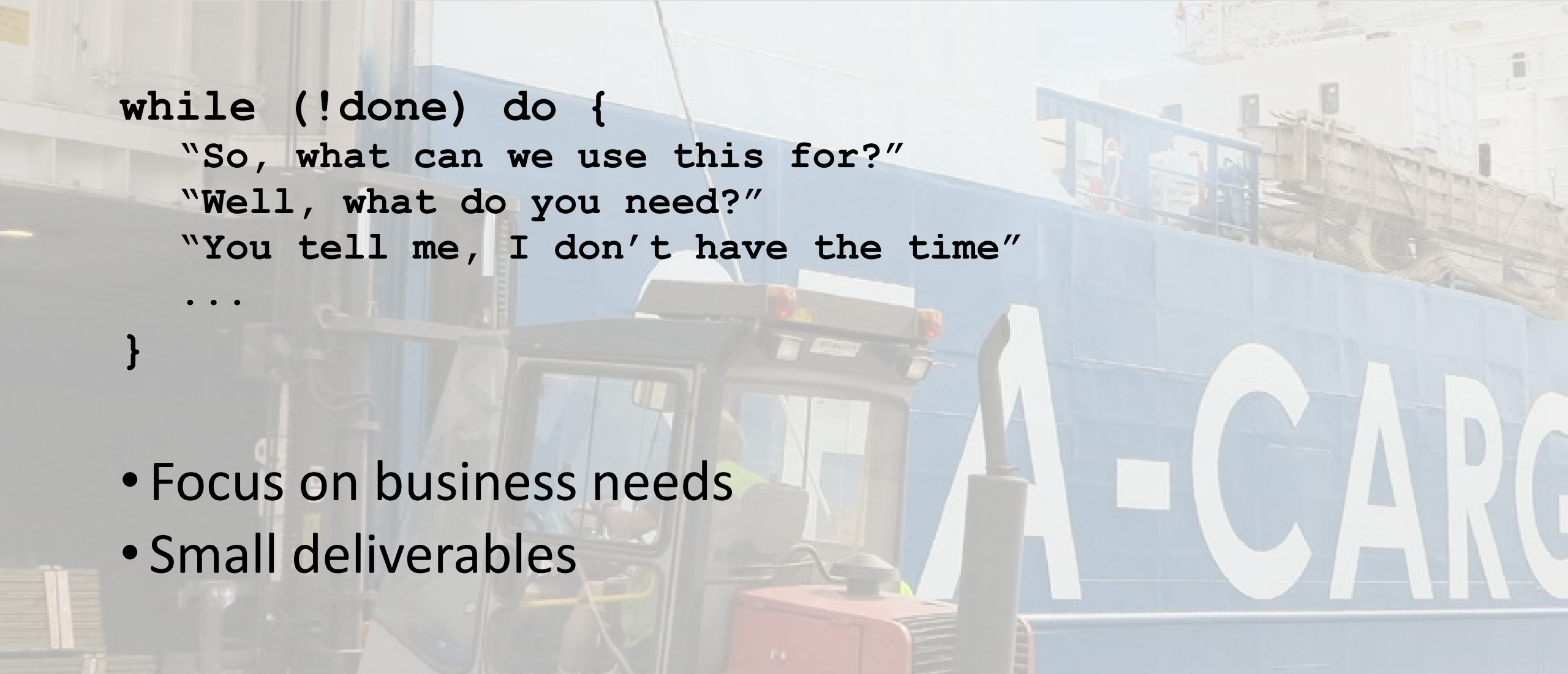




# Office-side adaption

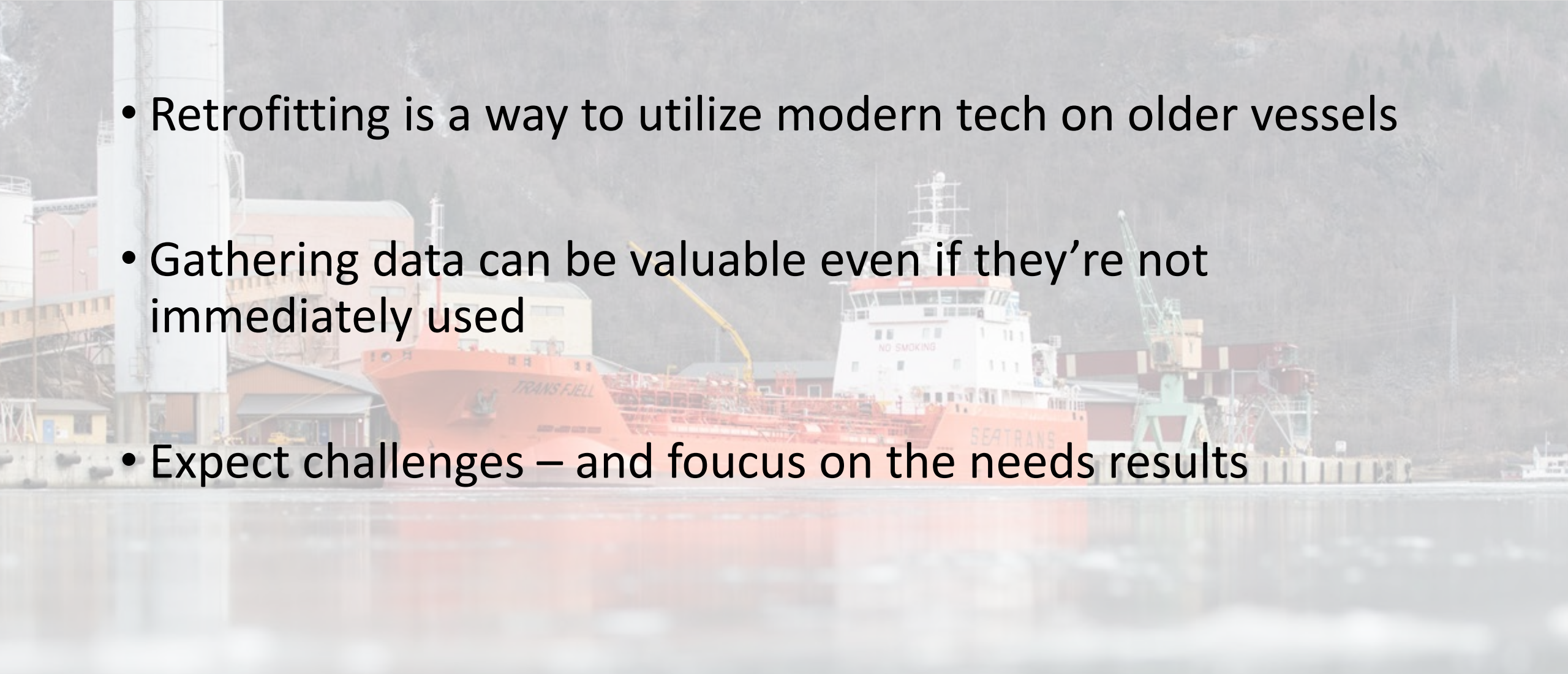
```
while (!done) do {  
    "So, what can we use this for?"  
    "Well, what do you need?"  
    "You tell me, I don't have the time"  
    ...  
}
```

- Focus on business needs
- Small deliverables



# Summary

- Retrofitting is a way to utilize modern tech on older vessels
- Gathering data can be valuable even if they're not immediately used
- Expect challenges – and focus on the needs results





# Questions?

- Thank you

