



Delmar Systems

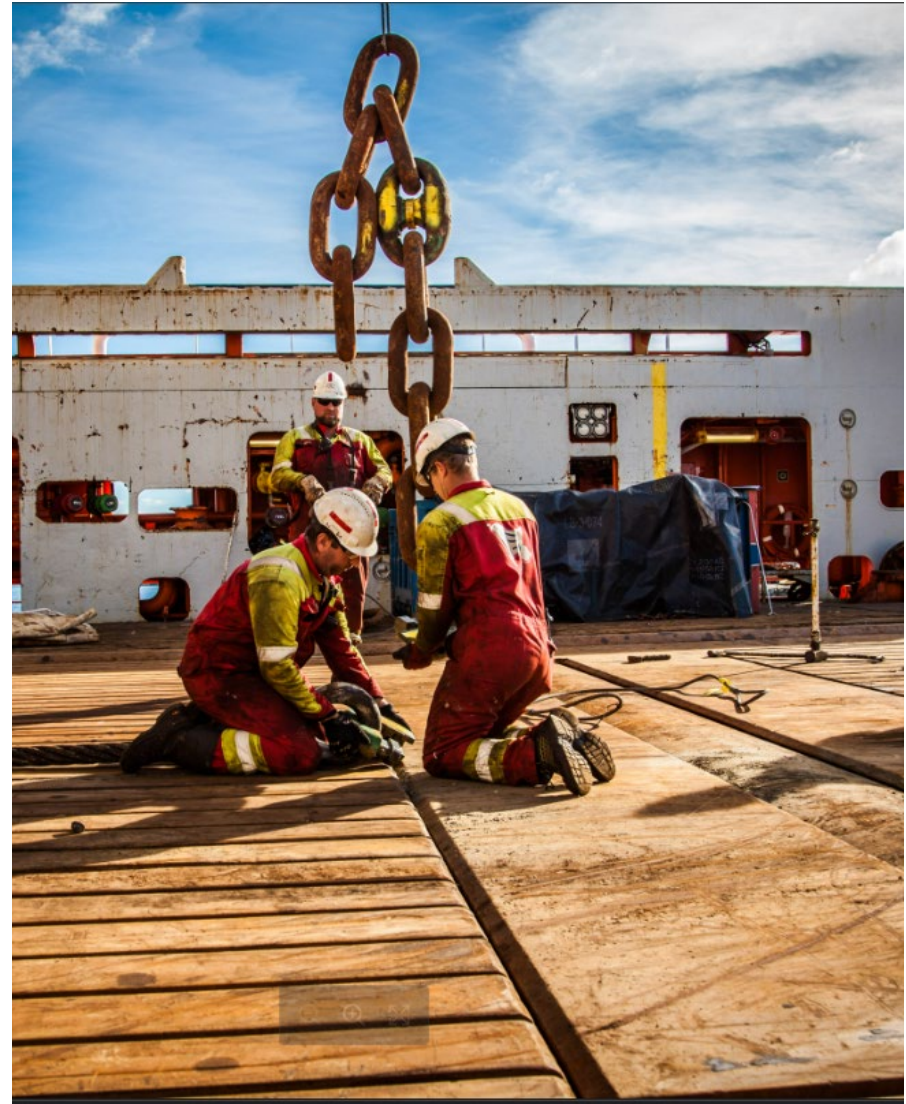


Ny design metodikk for redusert utstørsbehov og økt oppetid på riggene

Marine operasjoner i praksis 17.04.2024

Agenda

- Background
- How?
- Case study
- Benefits
- Summary



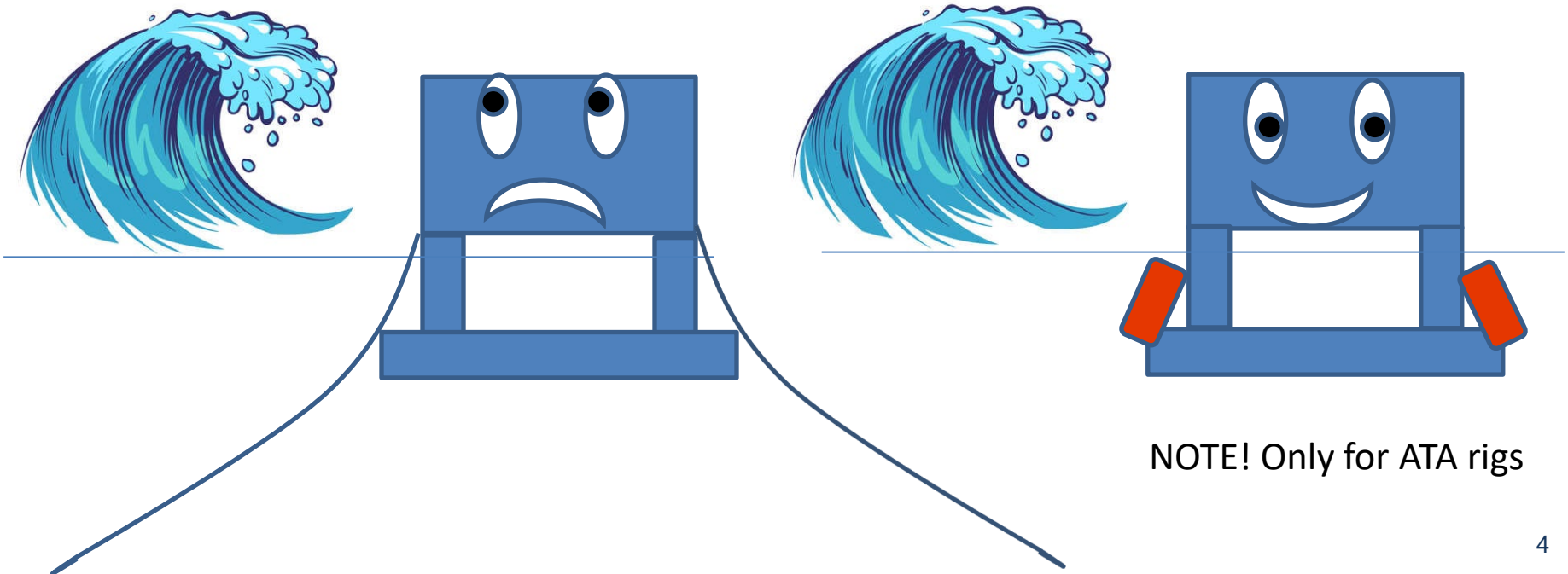
Background

- What if could design to a lower environmental condition, by simply disconnect from the mooring system when severe weather conditions are forecasted?
- Allowing for such a philosophy has a large potential for safer, green and more effective mooring operations.
- Based on this; Equinor, AkerBP, Vår Energi and Delmar Systems, has initiated a process to explore how this can be implemented on NCS for mobile drilling units with DP capabilities. Both Havtil and NMA have participated as observers.



How?

- Design the mooring systems to a lower return period than 100 year enabled by RAR+ (with a redundant release mechanism) and maintain the same safety level.
- Use the RAR+ to disconnect when the limiting weather criteria is forecasted.
- Design is done slightly different based on a study from Dnv.



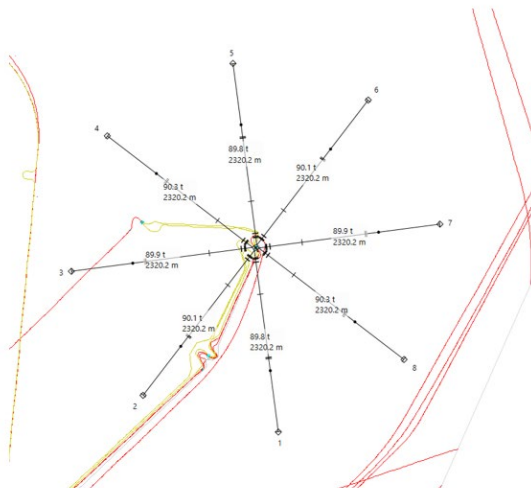
NOTE! Only for ATA rigs

Case study

- COSL Promoter@Statfjord
- Water depth 120m
- Environmental return periods corresponding to 10 years and 100 years



RP=100 years – 8 x 1200m fibre rope



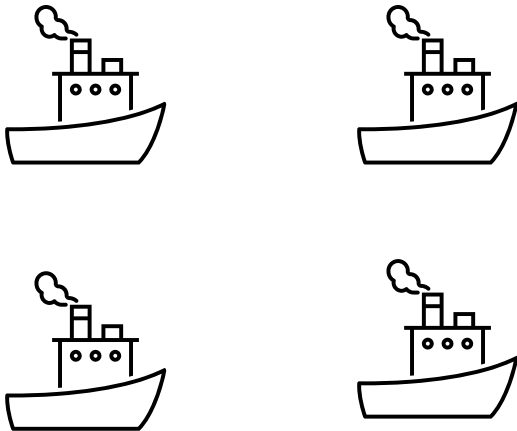
RP=10 years – 8 x 400m fibre rope



Reduced fibre ropes and AHVs

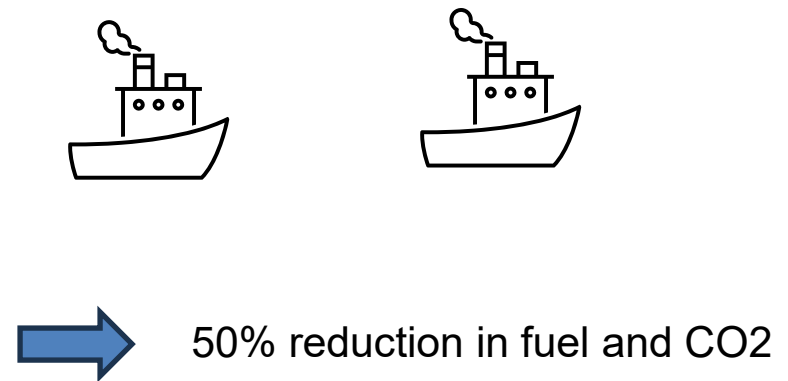
Current practise

1200m x 8 = 9600m

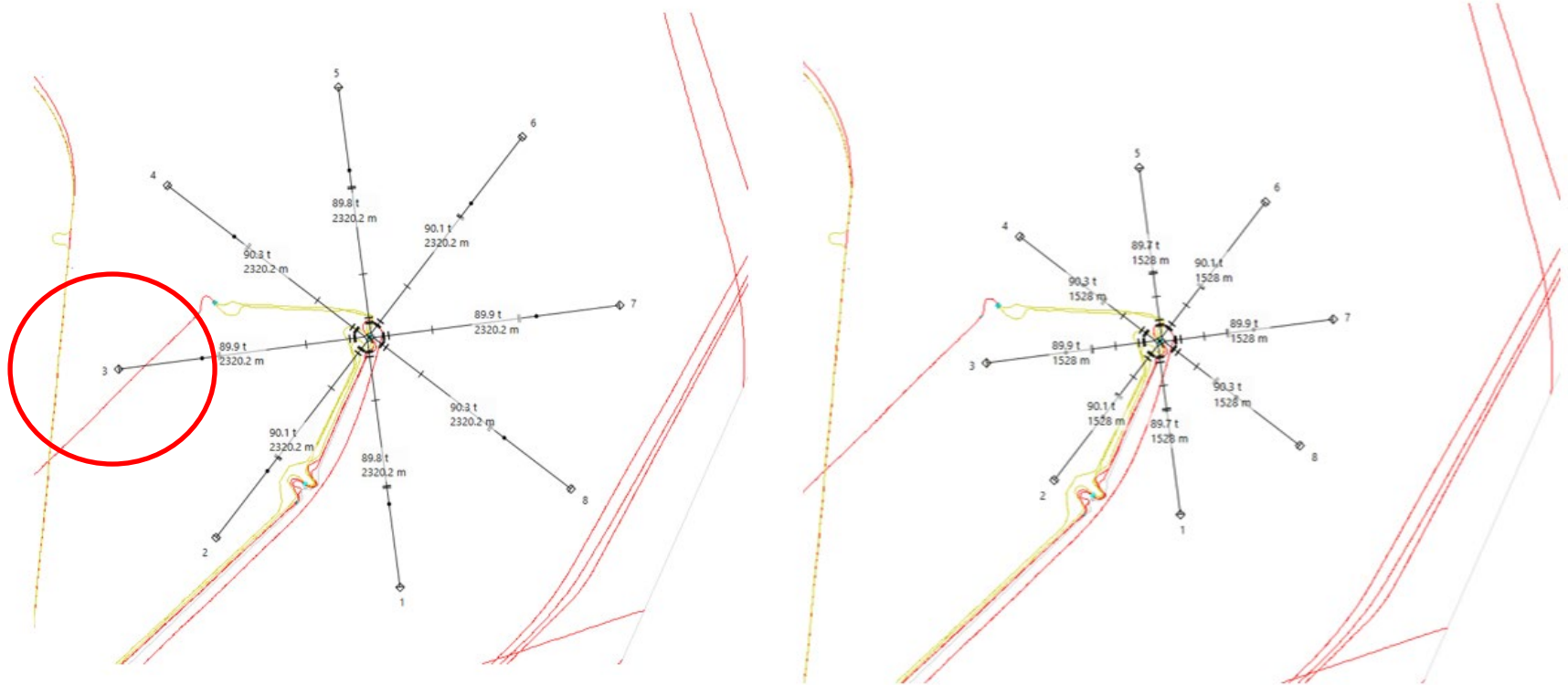


New method

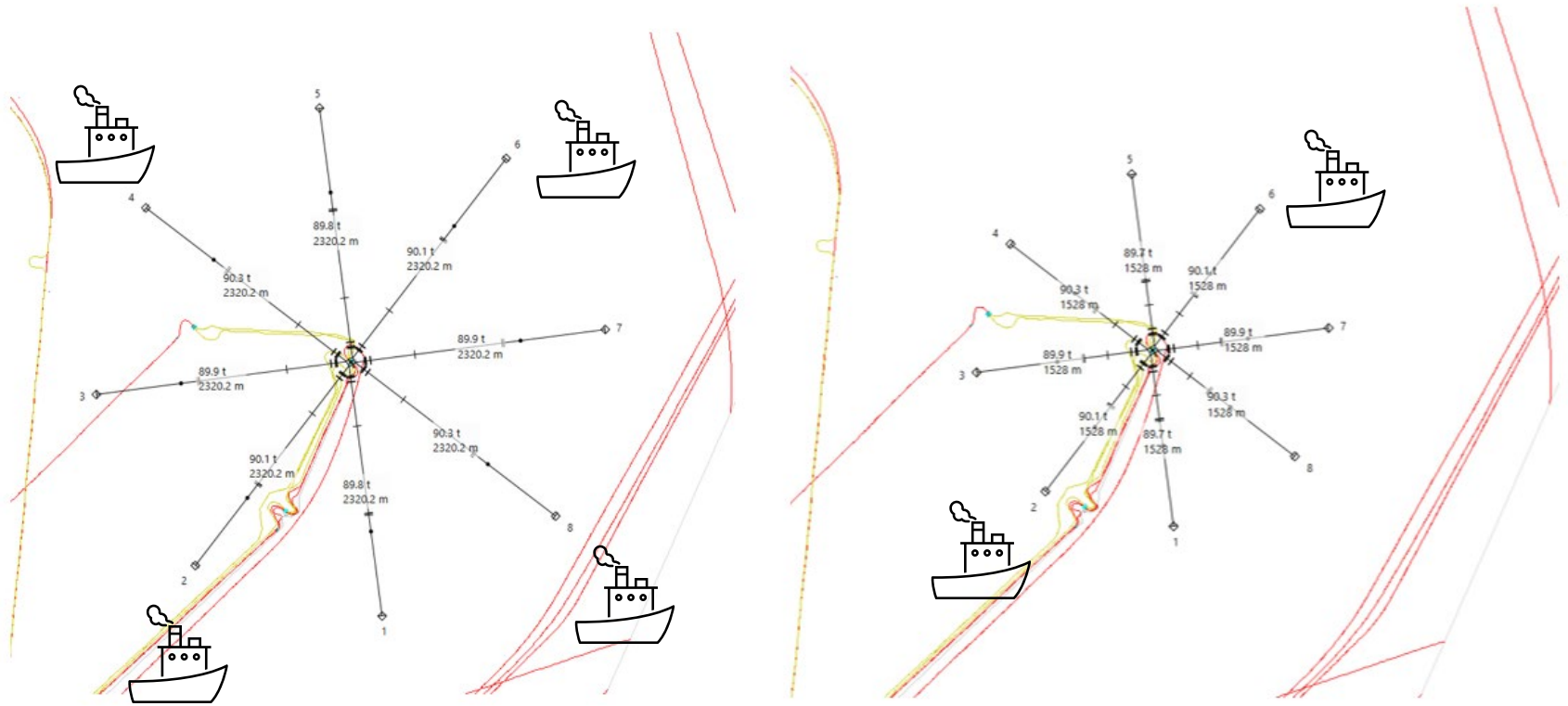
400m x 8 = 3200m



Reduced crossings of infrastructure



Safer marine operations



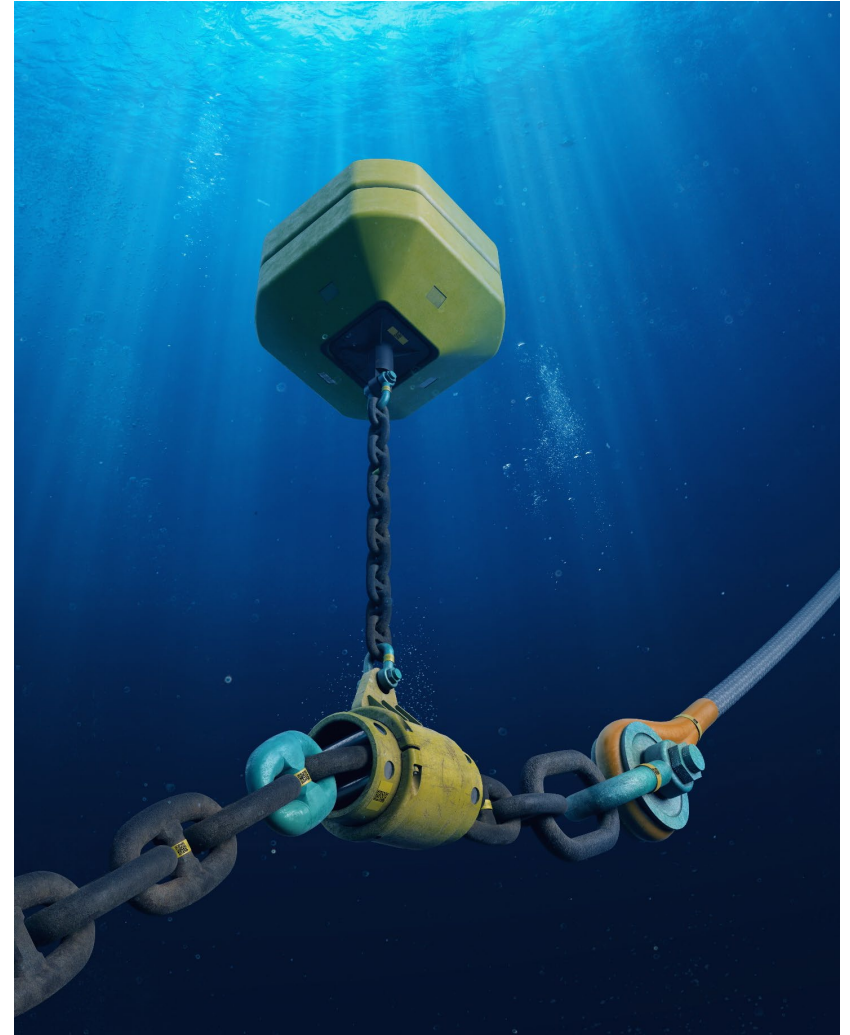
Less personell exposure



More effective mob and de-mob operations



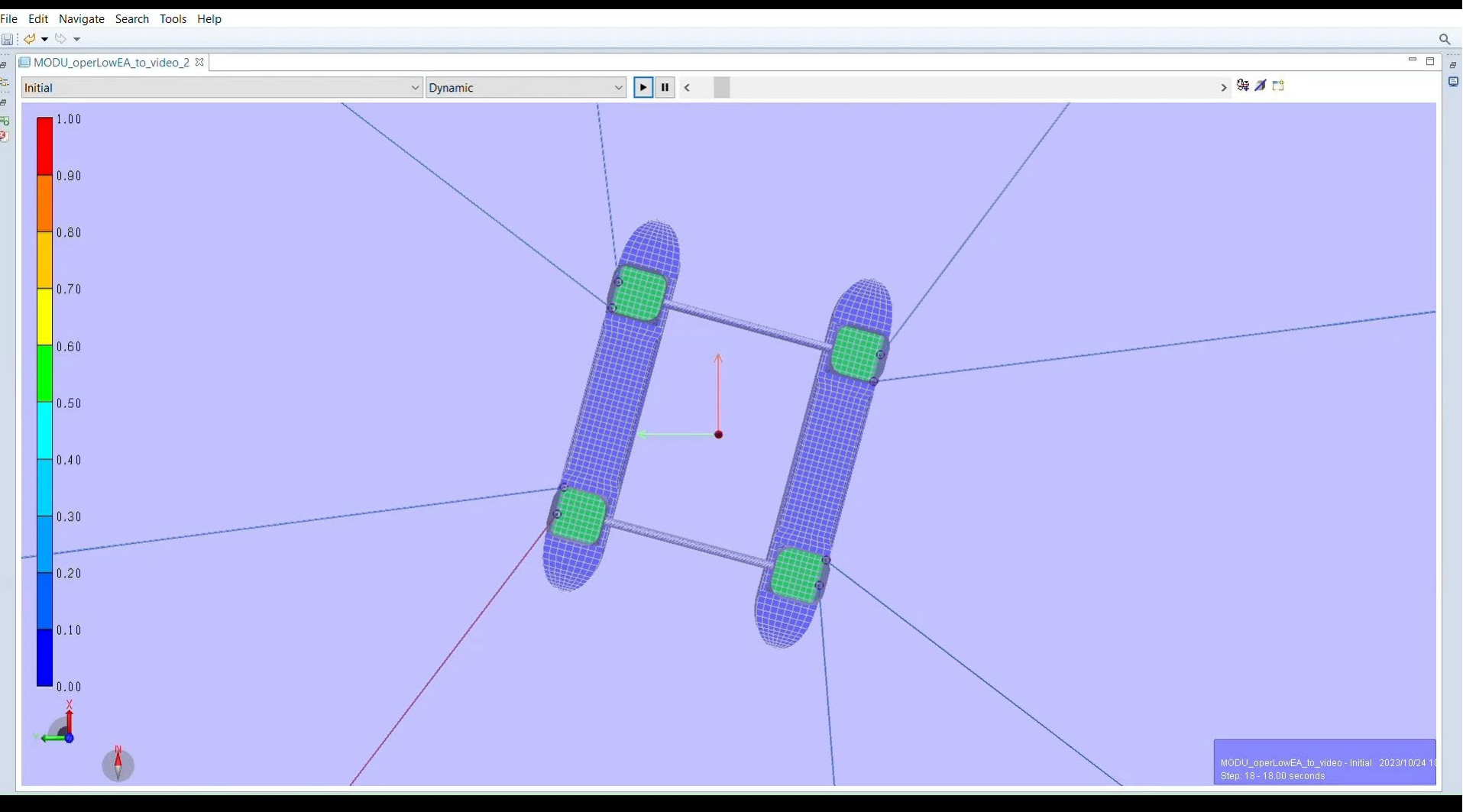
Less components, reduce the risk of failure



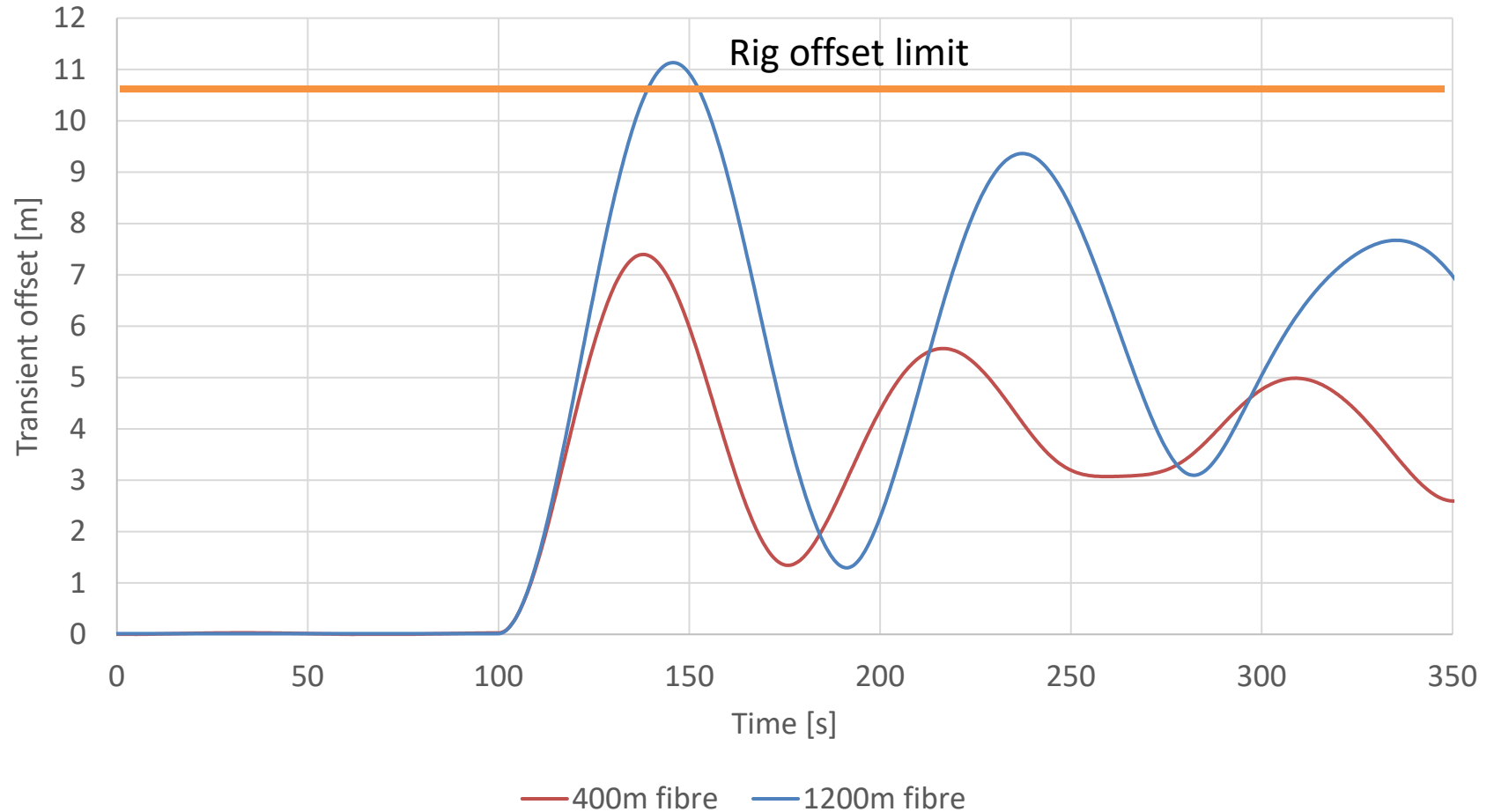
Significant fuel savings

2 volunteers from the audience?

Significant fuel savings



Significant fuel savings

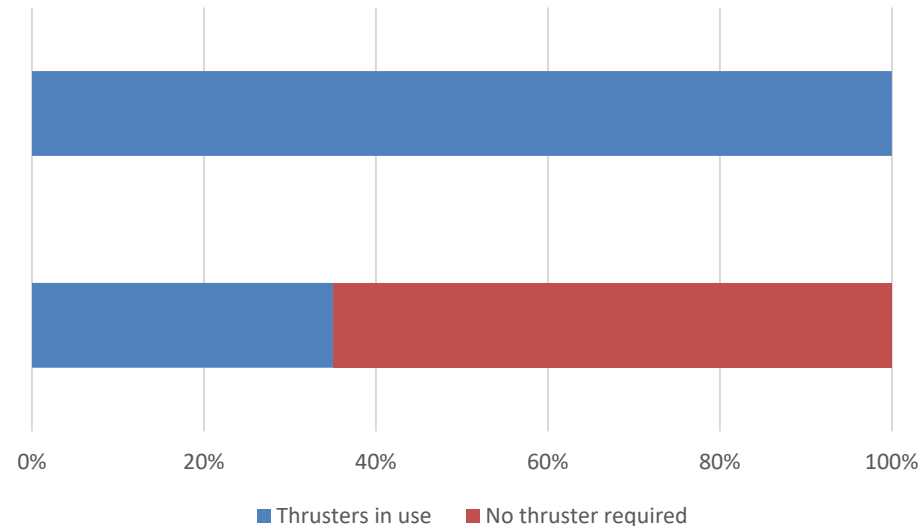


Significant fuel savings

- So, a long fibre rope elongates more than a short for the same load.
- Shorter fibre ropes reduce the rig offset and allows the rig to work in higher sea states.
- Transient motions are much less with shorter fibre ropes

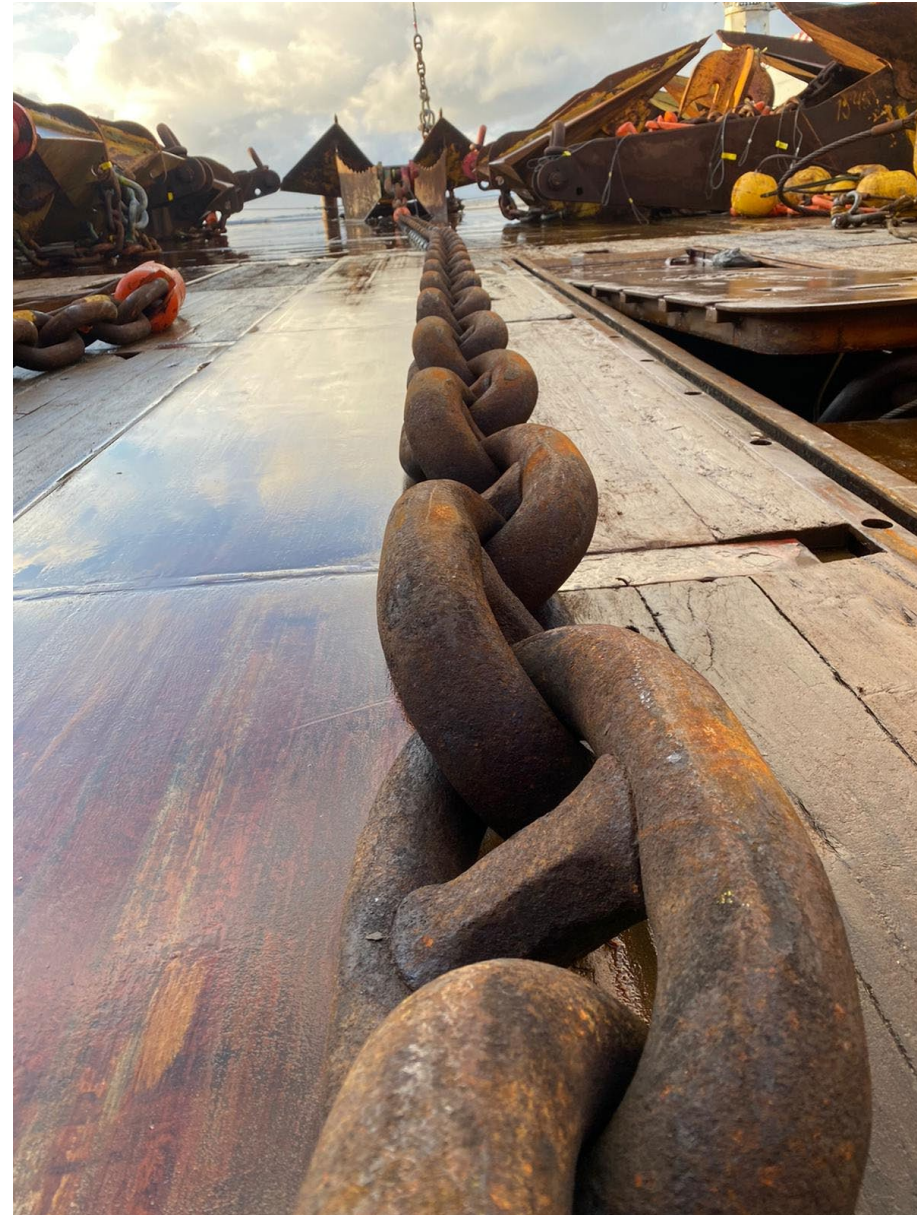
65 %

reduction is thruster usage and fuel/Co2 for positioning



Summary

- Allowing for disconnectable mooring systems has a large potential for safer, green and more effective mooring operations.
- The mooring design can be tailored based on target objectives, e.g. fuel and drilling efficiency, reduced anchor loads and number of anchor handling vessels.





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Questions?