



# The Hub-and-spoke redesign proposal with small autonomous feeder shuttles

Kenneth Johanson

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Navigating the Future of European Waters with Autonomous Innovation

7 November 2023, Rotterdam



These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 815012, 859992, 861678.



Chief Technical Officer

**Kenneth Johanson**

# Great to meet you!

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38 years old

Interaction designer gone project manager

Background from IT development

CTO @ NCL

Married to a microbiologist and father to two boys

Very interested in how everything works and how people use things

Believe in technology, but it must be the right technology for the job





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50% reduction  
(from 2020)



1<sup>st</sup> - MeOH vessel

2<sup>nd</sup> - MeOH vessel

NH3 vessel

250 TEU NH3 Shuttle

2 x 150 TEU Battery Shuttle





Thank you

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Rotterdam Ahoy  
7 November 2023



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