



**Wednesday 1<sup>st</sup> June 2022**  
**at 18:00 hrs**

at the  
**Institution of Civil Engineers, Godfrey Mitchell Theatre**  
**One Great George Street, London, SW1P 3AA**

## **HOW HEEREMA'S SIMULATION CENTER MAKES THE IMPOSSIBLE POSSIBLE ONSHORE.**

Presented by

**VINCENT MULLENDERS**

**(Simulation Engineer, Heerema Marine Contractors)**



What better way to understand the feasibility of an offshore heavy lift operation than by performing a real-time virtual practice run before the actual operations actually take place?

The offshore environment is changing, where complexity of projects is increasing and new products are being delivered. At the same time costs need to go down and the golden offshore rule of 'First time right' is still very much applicable. It is required to be fully in

control on every aspect of these critical operations. With the use of our simulation center these challenges can be overcome.

Heerema's Simulation Center (HSC) is a real-time virtual offshore environment in which we integrate our customers' proposed project activities into a realistic 3D world of operations.

Before executing our projects offshore the high fidelity simulator is able to test and verify critical parameters such as wave conditions, Dynamic Positioning (DP), lift capacity, clearances and vessel stability. This digital tool completely changed engineering in all phases of the project life cycle since its first use in 2015. Being able to combine our offshore crew and project teams together in an early stage has already led to an efficiency improvement for all parties (i.e. client, fabricator and offshore operator) involved and has improved the Operational Excellence offshore.

Our DNV-GL-certified offshore simulator facility is equipped with two offshore crane operator domes, winch operation stations and a full mission bridge that has DP simulation capability. A team of dedicated simulation engineers and visual designers is continuously preparing our offshore projects and developing new tools to expand our possibilities. Simulation models are constantly being improved and refined with data captured from live operations. The fidelity of the models ensures that we can trial any planned operation in our simulator and find out exactly what will happen at sea under various conditions. With high confidence in the accuracy of the results at the simulator center, we optimize complex operations before our vessels leave port. We can test different approaches, in different weather and sea states, to ensure we are ready for various conditions on the day. Making the impossible possible onshore.

We believe that simulation is not a stage in the process but a tool throughout the process. During this presentation we will give you an insight in to how we prepare, execute and learn from simulations and what sort of results can be achieved from 'Engineering with the Human Factor in the loop'. We show you some examples ranging from module installation on a floating production platform for the Oil & Gas industry to completely new installation methods in the offshore renewables industry.





**Vincent** is a Simulation Engineer with Heerema Marine Contractors in Leiden, The Netherlands.

He began working in the Heerema Simulation Center in 2019. His master's thesis was carried out at HMC on the topic of "Design of a Motion Monitoring System for Unmanned Offshore Topside Installation based on real-time Visual Object Tracking using drones and fixed cameras on an SSCV". To examine the developed algorithm during his research the Heerema Simulation Center was used. He received his master's degree in Marine Technology from the University of Delft in 2019. During the past years his work at HMC has focused upon delivering simulations for several projects within the company.

His work over the past three years can be summarized as covering the following subjects:

- Preparing simulations for a variety of different projects such as record breaking topside installations, module installations on floaters, wind turbine installation, offshore rigging hook-on and many more.
- Development and evaluation of new offshore equipment
- Assisting the commercial department with simulations to convince clients of our method and capabilities

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## **BOOKING INFORMATION**

Please book your place at this event through the online booking link at:

[Booking link to follow](#)

If you experience any difficulty booking online, please contact Elira Alushi <elira.alushi@ice.org.uk>

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