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A SCALED DOWN PIETER SCHELTE

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MMID TESTS LIFTING BEAMS PIETER SCHELTE

[body text]

*Pieter Schelte*, the world's largest vessel owned by offshore company Allseas, will moor at Maasvlakte 2 at the end of this year for its final completion. It is able to pick up complete topsides and jackets (the top and bottom parts) of offshore oil and gas platforms for installation or removal. Allseas developed a Topsides Lifting System (TLS) for the installation or removal of topsides, and enlisted the expertise of the MMID designers to test the effects of the TLS on the movements of the vessel.

Although the topside will still be supported by them, the platform's legs are cut, and all further required preparations are carried out before *Pieter Schelte* arrives at the location. There are four lifting beams with hydraulic clamps on both sides of the U-shaped bow of the vessel that can lift the entire topside of the platform in one go. During the lifting process, the beams must be able to move freely in every direction, in order to compensate for the movements of the vessel caused by swell, tides, and wind.

MMID designed a guiding system for the scale model, with efficient bearings and grinded steel rails in order to reduce friction between beams and deck to a minimum. The system incorporates a 'brake system' that allows for the controlled adding of friction. This model, scale 1:55, allows Allseas to measure and control the friction between beams and deck, while monitoring vessel movement and the reaction of the Dynamic Positioning (DP) system.

The scale model beams, each measuring 1.40 metres and containing 32 low-friction bearings, 5 sensors and 11 actuators, were tested in a large basin at Océanide in Toulon, France. After MMID designers placed the TLS model on a scale model of *Pieter Schelte*, it was tested with simulated sea swell and winds.

This project saw a close cooperation between Allseas and MMID. Elise, Roman and Edward were regulars at the MMID lab where the test rig of the TLS model was built. The system was designed together, with MMID focussing on hardware, and Allseas on software. Everything was built, adjusted and fine-tuned together.

The actual Topsides Lift System will be installed in Rotterdam.

[intro newsmail]

*Pieter Schelte*, the world's largest vessel owned by offshore company Allseas, will be in Rotterdam at the end of this year for its final completion. It is able to pick up complete topsides and jackets (the top and bottom parts) of offshore oil and gas platforms for installation or removal. For the installation or removal of topsides, Allseas developed a Topsides Lifting System (TLS) and enlisted the help of the MMID designers to test the effect of the TLS on the movements of the vessel.

Read here how the test was built.

[Project text]

"Develop a scale model of the lifting beams of *Pieter Schelte* that allows us to measure and control the friction between the beams and the vessel's deck."

*Pieter Schelte* is able to pick up complete topsides and jackets (the top and bottom parts) of offshore oil and gas platforms for installation or removal. For the installation or removal of topsides, Allseas developed a Topsides Lifting System (TLS). During the lifting process, the beams must be able to move freely in every direction, in order to compensate for the movements of the vessel caused by swell, tides, and wind.

This model, scale 1:55, allows Allseas to measure and control the friction between beams and deck, while monitoring vessel movement and the reaction of the Dynamic Positioning (DP) system. The TLS model, containing 32 low-friction

bearings, 5 sensors and 11 actuators per beam, was placed on a scale model of *Pieter Schelte*, and tested in a large basin.