aNySIM*pro*: the future of validated multi-body simulations

Last year MARIN introduced the aNySIMpro concept and already the new product is proving successful. Report provides an update.

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aNySIM is our in-house, multi-body, time domain simulation that has been developed over the last three years. The aNySIM program includes wind, waves and current forces on multiple floaters, fenders, mooring lines (including nylon stretchers), catenary moorings and if needed, a full DP system on every vessel in the simulation.

MARIN's *pro* concept allows clients to use the aNySIM program on a *pro*ject by *pro*ject basis. Depending on the client's needs, these studies can be completely carried out at MARIN, including model tests. After the tests a tuned simulation model is delivered. However, if preferred, an empty model with only a diffraction database can be delivered. In this case the client carries out the tuning process and computation study using the same software as MARIN does.

A number of studies were carried out in 2008 and 2009. Some have been operability studies for side-by-side LNG offloading systems where complete 10-year time histories of wave statistics were assessed in time domain. Other studies have involved two-body DP simulation, whereby a supply vessel follows a weather vaning FPSO to enable a walkway between the two ships.

DODO project underway One specific example is the DODO cooperation project that was started with MTI/IHC Merwede BV. Here, aNySIM*pro* was connected to dredging simulation software. The dredging simulator computes the forces in the cutter arm and takes into account the soil mechanics model. An interface between this Matlab® based model and aNySIM was implemented and delivered. The forces of the cutter arm were modelled by IHC's in- house software and the motions of the vessel and thruster system were modelled in aNySIM. The model will now be validated against model tests and full-scale measurements.

License fees from the projects will be reinvested in the program. In 2009, MARIN will continue to extend the program for lifting, ballasting and wave drift forces in directional seas. Model tests to validate a complex lifting arrangement including DP and ballasting, are scheduled for May 2009.

References:

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