This is the fourth newsletter of the *Knowledge Centre Manoeuvring in Shallow and Confined Water*, which aims to consolidate, extend and disseminate knowledge on the behaviour of ships in shallow and confined water. This newsletter contains a summary of the accessibility studies for class Va inland vessels and an update of the tests being carried out under the SIMMAN project.

Flemish inland waterways are part of the European network for inland transport but their capacities are under investigation. Not all waterways are accessible for the larger class Va and class Vb vessels. Instead of performing a potentially risky full-scale trial with the desired CEMT class in an existing channel or river, simulations on inland simulators can help in defining the capabilities for both ship and waterway.

In September 2010 a new inland simulator was installed at Flanders Hydraulics Research especially designed for research and development. The mathematical models for the manoeuvring behavior of the class IV (85 m x 9.5 m) and Va (110 m x 11.4 m) vessels in open water have been implemented and additional external effects such as bank effects and ship-ship interaction have been modeled. Validation was based on trial voyages with inland vessels on for example the Upper Sea Scheldt, which is now accessible for class IV inland vessels from the Durme estuary to the locks in Merelbeke. The Upper Sea Scheldt is a tidal river characterized by many bends with bend radii which are often smaller than the values recommended by national and international guidelines for inland waterways. Very shallow zones restrict the channel width so that loaded class IV vessels can only sail the river at high tide.

To examine all possible bottlenecks, such as narrow areas, touching the bottom, the passage of bridges and quays and encountering other ships, real-time simulations can help in evaluating the priorities to modify the existing waterway. Studies for both national and international companies are under investigation or are being prepared. These studies show the importance of constant improvements to the simulation models for inland vessels. Read more

In 2008 the SIMMAN workshop was held to benchmark the capabilities of different ship manoeuvring simulation methods including systems and CFD based methods through comparisons with results for tanker (KVLCC2), container ship (KCS) and surface combatant hull form test cases. Systems based methods were compared with free-model test data using provided PMM and CMT (circular motion mechanism/rotating-arm) data, whereas CFD based methods were compared with both PMM/CMT and free-model test data. More information can be found on http://www.simman2008.dk .

The next workshop is scheduled for 2012 and will particularly deal with the shallow water manoeuvring behaviour of the tanker KVLCC2 and container ship KCS. For that reason the SIMMAN organizers contacted Flanders Hydraulics Research to cooperate on the execution of captive model tests with the KCS, free running tests with the KCS, captive model tests with the KVLCC2, free running tests with the KVLCC2 and captive model tests with the KVLCC2 – bare hull.

The above mentioned tests are being executed (September-November 2010) in the shallow water towing tank of Flanders Hydraulics Research. Read more

On 3 December 2010, the Flemish Minister of Mobility and Public Works Hilde Crevits will officially open and name the new inland simulator of Flanders Hydraulics Research. In conjunction to this event, a workshop and a round table discussion on Inland Navigation will be held at our premises. Please do not hesitate to send us an e-mail if you are interested to attend this event.

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