

**5<sup>th</sup> IAMU Student Assembly**  
**- Virtual Dredging of a River -**  
**A Project for Waterway design using a Ship Handling Simulator**

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### **SUMMARY**

It is a well known trend in shipping that the ships become bigger and bigger. For the adaptation of waterways expensive dredging and construction measures are necessary. Especially simulation studies are suitable methods to estimate the potential effects and costs of such activities in advance. For the purposes of scientific case studies several models for coastal and inland navigation traffic scenarios were developed and implemented at the Shiphandling simulator of the Maritime Simulation Centre Warnemuende.

The project here deals with pre-research work to a further enlargement of a waterway. As a basis for the simulator set up the Electronic Navigation Chart (ENC) has to be prepared according to the real and future layout of the waterway. Specifically for these investigations the new water depth and tidal data have to be integrated into an existing ENC. These ENC data are not only representing the underwater topography and the current for the simulation, they also form the basis for the ECDIS system to be used on the simulator bridges and they will also used for the generation of the RADAR images and the sea areas for the visual system.

Within this simulation environment a big container vessel and a large bulker will be tested in various conditions to get some information on the quality of the waterway design and the procedures how to handle the ships in an optimal way.