photos: courtesy of Mammoet
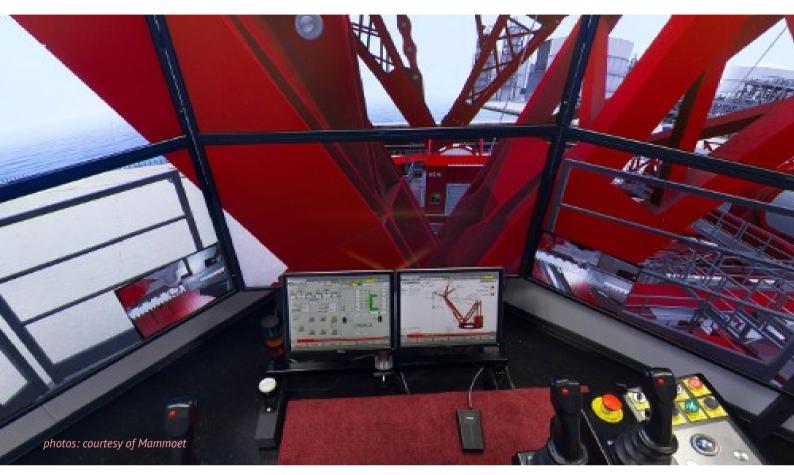
High Tech Systems – HIL Simulation

Training Simulator

The company Mammoet is specialized in the transport and lifting of heavy loads. The company is well known for the raising of the Russian submarine Kursk in 2001. Part of the equipment of Mammoet is the PTC 140 super heavy lifting crane. The PTC 140 crane is a ring crane with the crane on one end of the ring and the counterweight on the other end. With this system the crane can lift loads up to 3200 tonnes.

For safe operation of the crane, Mammoet was looking for a crane simulator to train the crane operators. Controllab helped Mammoet with the process of turning demands and wishes into clear and technical sound specifications.

The PTC 140 crane.

Specifications

During various sessions the layout of the crane and its control system were identified. Using this input, the control architecture for the crane control system and simulator were designed. Special care was given to a flexible setup that allows an upgrade to future cranes and an easy extension to other crane setups. Based on this architecture, a specifications document was made. In this document the exact needs of Mammoet for actual training of PTC crane operators where translated into clear specifications for the simulator.

Simulator

The resulting training simulator uses the original crane controls and PLCs. This enables Mammoet to train the operators not only on all kind of lifting operations, but also on the crane's assembly and disassembly, as well as regular troubleshooting and fault recovery.

Controllab

Controllab has been active in the High Tech Systems market for more than 20 years. We have excellent tooling that we can use to develop HIL simulators to test advanced control systems.

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