The Human Element & Maritime Safety

EU Project CASCADe

A ships bridge is the nerve center of each vessel and its complexity constitutes a risk factor in shipping. Almost 80% of collisions and groundings are due to a failure of bridge systems and their usage. To increase safety on board, both the ship bridge and the bridge procedures of the crew need to be combined and optimally designed.

A new 3-year EU-funded project CASCADE - Model-Based Cooperative and Adaptive Ship-based Context Aware Design aims to close the gap between the design of the bridge system and the bridge procedures themselves. The focus of this project is to optimize human-machine interfaces on the bridge. Studies have shown that too much information on screens or having instruments with varied user interfaces have led to numerous operator errors and poor decision-making by the crew.

CASCADe is primarily about the human element on the bridge and how the entire bridge system of machines and humans can be seen as one co-operative element.

The project uses safety-based scenarios to investigate bridge procedures. Potential failures due to human errors caused by loss of situational awareness, will be analysed during the design phase of a bridge. We will develop an adaptive bridge system that will recognize, prevent and recover from human errors by increasing cooperation between all crew and machines on the bridge. The main outcome will be a new human-centered design methodology to support the analysis of agent interactions at early development stages.

Under the coordination of OFFIS - Institute for Information Technology from Germany a consortium of seven project partners from five EU countries will collaborate, such as the British Maritime Technology Group Ltd., Raytheon Anschuetz GmbH, Mastermind Shipmanagement Ltd., the University of Cardiff, Marimatech AS and Symbio Concepts & Products SPRL as well as four associated partners such as the Maritime Cluster Northern Germany, Nautilus International, NSB Niederelbe Schiffahrtsgesellschaft mbH & Co. KG and the University of Tasmania.

CASCADe will run for 36 months from January 2013.

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