

Carl von Ossietzky University of Oldenburg
Safe Automation of Maritime Systems

Autumn School Presentation, 1. October 2015; Block 11:15 – 12:45

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Title: The tide is high: Automatic Collision Avoidance

Abstract: Global transportation of goods by shipping is not only facing rapidly growing ship dimensions but also increasing industrial off shore activities, changing the relation between the need of areas for safe and reliable vessel traffic and its availability. Off shore activities are increasingly limiting available navigable spaces and concentrating traffic flows, especially in coastal waters and port approaches resulting in higher risks of collisions and groundings and requiring adequate measures to compensate the increasing risks.

Enhanced technical systems and equipment with numerous added functionalities are in use and under further development providing new opportunities for traffic surveillance and interaction. Integrated Bridge and Integrated Navigation Systems on board modern ships not only support the bridge teams and pilots on board in managing any risk of collision, but also allow for re-thinking of existing regimes and procedures and a wide range of scientific approaches to innovative and sophisticated applications.

The presentation will address, i.a., the following topics:

1. Development of collision avoidance in shipping
2. The IMO's Convention on the International Regulations for Preventing Collisions at Sea
3. Collision cases today – Lessons learned?
4. Onboard systems to support Collision Avoidance – State of the Art
5. Future Developments

Short - CV: Michael Baldauf holds the position of an Associate Professor in Maritime Safety and Environmental Administration at World Maritime University (WMU) and is Head of Maritime Simulation at the MaRiSa Simulation Lab. Moreover; Michael Baldauf is also Deputy Director at Hochschule Wismar's Institute for Innovative Ship Simulation and Maritime Systems (ISSIMS) in Rostock-Warnemünde. He has a mariner's background and a Ph.D. in Safety Science from Bergische Universität Wuppertal, Germany.

Besides lecturing on Maritime Safety Systems and Maritime Operational Risk Management in WMU master courses and PDCs, he is active in a number of research projects. Furthermore he is involved in IMO-work dealing with studies into e-Navigation developments. One of his favourite research interests is simulation and its application for operational purposes, like the improvement of

Alert Management as well as the harmonization of ship and shore-based interaction. Actual research projects are e.g. ACCSEAS, CyClaDes and METPROM, where, a.o., training modules and courses for e-Navigation applications and port security are developed.

He is member of The Nautical Institute, The German Institute of Navigation as well as The German Association of Transport Sciences.