

Press Release

## **SAFEDOR – European Maritime Research Project concluded**

Hamburg, 11 February 2009 – The maritime research project on the significance of risk-based design and approval has been concluded after four years of intensive study. The multinational research project SAFEDOR (Design, Operation and Regulation for Safety) was co-ordinated by ship classification society Germanischer Lloyd. 53 project partners from all sectors of the maritime industry were working on an innovative design approach to enhance safety at sea.

The concluding working meeting took place at Germanischer Lloyd head office in Hamburg where the SAFEDOR members met to discuss and exchange ideas and project results. At a press conference, achievements of the project and an outlook were presented *by the steering committee consisting of Dr Pierre C. Sames (Germanischer Lloyd, Chairman of the SAFEDOR Steering Committee), Karl-Christian Ehrke (SAM Electronics), Christian Breinholt (Danish Maritime Authority), Rolf Skjong (Det Norske Veritas), Tom Strang (Carnival Corporation & plc), Dracos Vassalos (The Ship Stability Research Centre), Thomas Witolla (Meyer Werft).*

Seeing safety treated as an objective rather than a constraint imposed by design rules was the initial goal of the EU-funded research project SAFEDOR. In the past four years, the project partners discussed and developed possibilities to enhance the safety of ships. Three major achievements have accomplished: SAFEDOR partners created a framework for risk-based design which is now documented in a handbook for naval architects and marine engineers. The second achievement was the development of an approval process for risk-based ships which is being submitted to IMO. The third pillar of SAFEDOR are applications. A series of innovative ship and system designs were generated that show the practicability of the SAFEDOR approach. To document the current risk level, five formal safety assessment studies for major ship types were conducted and also submitted to IMO. *All documents of submission can be all be downloaded from the website [www.safedor.org](http://www.safedor.org).*

The goal of the SAFEDOR project was ambitious from the very beginning: Enhance safety through innovation to strengthen the competitiveness of the European maritime industry. Incorporating safety in the design process is not a new concept but in the past, safety was added to a design during its later stages based on existing rules. The SAFEDOR approach offers ship designers greater flexibility and ship owners new economic opportunities. SAFEDOR research focused on five ship types that are of major economic importance for Europe – cruise ships, ro-ro/ro-pax vessels,

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gas tankers, oil tankers and container vessels. For these, formal safety assessments and novel designs were generated.

SAFEDOR has been focusing on the development of a risk-based regulatory framework, a risk-based design framework, advanced probabilistic simulation tools and their integration as well as a series of application examples. The elements of the risk-based regulatory framework include an approval process, risk evaluation criteria, requirements for documentation and key personnel as well as onboard documentation. Risk-based design is an extension of the traditional design process in that it integrates assessment of the safety performance into the design process. Prevention and / or reduction of risk to life, the environment and property are embedded as a design objective, alongside conventional design objectives such as speed and capacity. SAFEDOR developed this design framework offering an enhanced decision-making to balance traditional objectives – performance and cost – with the new objective – minimize risk.

At the press conference, Dr Pierre C. Sames, Chairman of the SAFEDOR Steering Committee, gave an outlook of further research fields: "We expect that the number of risk-based design and approval applications will continuously grow, that the application of risk-based approaches in rule-making will increase and that the linking with risk-based approaches during operation will increase."

With the regulatory framework for shipping changing towards a more goal-based style and new regulations addressing fire safety, damage stability and – in the near future – life saving appliances, the design solution space available to the ship designer is expanded. Ship designers have now available increasingly sophisticated methods and tools supporting advanced and risk-based ship design and including safety as additional objective into the design process. Risk evaluation criteria are eventually becoming explicit and accepted also at maritime administrations and enable a holistic decision-making. Taken together, all necessary elements and the frame are now available to produce innovative ships with enhanced economics and increased safety.

*The book "Risk-Based Ship Design" (ISBN 978-3-540-89041-6) is another result of the SAFEDOR project. It describes methods, tools and application of risk-based ship design and aims to provide an understanding of the fundamentals and details the of the integration of risk-based approaches into the ship design process.*

*The project will officially close with the Final Conference on April 27 and 28, 2009 in London at the International Maritime Organisation.*