MSC Software Assists Knud E. Hansen A/S with Largest Ship Lengthening in the History of Vessel Conversion

SANTA ANA, CA - (Marketwire – September 29th, 2011) - MSC Software Corporation, the leader in multidiscipline simulation solutions that accelerate product innovation, today announced that it assisted Knud E. Hansen A/S in executing a feasibility study for the most extensive lengthening project in the history of ship conversions. The study was submitted to the Marine Classification Society by Danish Naval Architectural firm Knud E. Hansen A/S on behalf of a European ship owner, and was carried out using MSC’s Finite Element Analysis (FEA) software solutions.

Building a new 240m long vessel to transport cars and passengers (RO-PAX vessel) takes two years’ work in the shipyard and is a tremendous investment of about 120 million Euros. Conversion, and more specifically lengthening, of a vessel can efficiently tackle the problem that some operators face with increased traffic demand. It is possible to do a lengthening within three months once the vessel is taken temporarily out of service for shipyard work. In this particular case, Knud E. Hansen’s goal was to add an additional 65 meters (from 175m to 240m) to the length of an existing vessel. This can be done by cutting the vessel into two parts and including an additional 65 meters as its middle section.

In order to identify the most critical areas for this exceptional vessel lengthening and propose the required structural design solutions, a global finite element modeling (FEM) and analysis was carried out on the entire vessel. The lengthened model was investigated for the two operational loading conditions that produce the maximum hogging and sagging conditions as required by the Marine Classification Society. The most stressed areas of the vessel were then highlighted and shown by plot diagrams to identify the most crucial parts of the design.

MSC’s Nastran and Patran capabilities helped produce high quality results in a short timeframe. The creation of the FEM model and the first global strength analysis of the vessel took about two months. The software also helped investigate the necessary modifications to reinforce the ship structure, for the design approval of the Marine Classification Society.
“MSC’s Patran and Nastran allowed easy creation of the FEM model by importing the geometry from the CAD model, and provided a quick analytical solution for such a complex task,” said Mirco Zoia, Naval Architect and Offshore Engineer at Knud E. Hansen A/S. “Thanks to the reliability of the software and to Knud E. Hansen’s experience, the submission for approval of the calculation to the Classification Society has been quite straight forward and very successful.”

About Knud E. Hansen A/S
Knud E. Hansen A/S is an independent consultancy and a leading provider of innovative and customized solutions in key areas such as conversions, transport and logistical studies, marine and offshore structures and land based interfaces. Knud E. Hansen A/S was founded in 1937 in Denmark and has built more than 600 vessels and done over 225 successful conversions. For more information, please visit www.knudehansen.com.

About MSC Software
MSC Software is one of the ten original software companies and the worldwide leader in multidiscipline simulation. As a trusted partner, MSC Software helps companies improve quality, save time and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,000 professionals in 20 countries. For additional information about MSC Software’s products and services, please visit: www.mscsoftware.com.

The MSC Software corporate logo, Simulating Reality, Adams, Dytran, Easy5, Marc, MD Adams, MD Nastran, Patran, Mentat, OpenFSI, MSC, MSC Masterkey, MSC Nastran, Mvision, SimDesigner, SimManager, and SimXpert are trademarks or registered trademarks of the MSC Software Corporation in the United States and/or other countries. NASTRAN is a registered trademark of NASA. All other trademarks belong to their respective owners.

Press Contact:
Leslie Rickey
leslie.rickey@mscsoftware.com