LLOYD'S REGISTER and NanoNord A/S PRESS RELEASE

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LLOYD'S REGISTER ENTERS INTO JOINT VENTURE TO DEVELOP REAL-TIME ONBOARD FUEL QUALITY MANAGEMENT SYSTEM

Lloyd's Register and NanoNord A/S of Denmark have concluded an agreement to offer an online onboard fuel and lubricant consultancy service that will be available, operational and effective onboard ship 24 hours a day, 7 days a week.

The new service will combine the Danish company's recently developed in-line, real-time, fuel-testing hardware and software platfom, Lab-on-a-ship, with Lloyd's Register's Fuel Oil and Bunker Analysis Service (FOBAS) to provide effective onboard management of fuel quality and lubricant condition, without any of the delays associated with shore-based sample analysis. Lab-on-a-ship has been on sea trials since October 2006 on the ship *Ivar Lauritzen*.

Ultan O'Raghallaigh, Director of Business Development and Sales at NanoNord, says, "We believe combining our innovative Lab-on-a-ship technology with Lloyd's Register's FOBAS software and consultancy support will meet the needs of the ship operating community. Knowing immediately what the core quality attributes of a fuel are throughout the bunkering process and as the fuel enters the engine and being able to act immediately upon this information represents a significant advance in effective vessel management."

Timothy Wilson, FOBAS Product Manager, says, "Lloyd's Register is responding to the call from ship owners and operators for a more immediate verification of fuel quality during bunkering and in-line monitoring to reduce the operational risks associated with poor quality fuels and ineffective treatment systems. We believe the future of effective machinery operation and environmental compliance lies with in-line monitoring, and we would expect shore-based analysis to reduce significantly by up to 90% within five to 10 years, eliminating the need for routine analysis as we know it.

"FOBAS Onboard puts our fuel-testing and engineering advisory services onboard the ship, providing real-time advice which ship's crew can immediately act on. FOBAS Onboard will be unique to the industry and complements the Lab-on-a-ship hardware with intelligent software which provides users with an easy-to-use technology which will help to ensure that machinery remains within operational limits."

Wilson also points out that the service is supported by a 24/7 helpline and that the hardware practically runs itself with little need for interference from the crew.

Poor quality marine fuel continues to present a significant risk to the industry by way of engine damage and exposure to the risk of non-compliance with environmental legislation. By monitoring the quality of fuel on a virtually continuous basis, the system alerts the crew to quality parameters that exceed normal safe operational limits and gives advisory information based on the prevailing situation, allowing conditions to be brought back under control. In this way, it will assist in attaining maximum fuel efficiency, protecting the engine from abrasives, assessing separator/purifier efficiency, monitoring fuel energy values and exact sulphur content for the optimum cylinder oil feed rate and base number content.

"Knowing the sulphur content of the fuel being used is extremely important, especially now that the shipping industry finds itself in the position of having to carry up to seven different grades of fuel onboard, with the requisite change-over procedures, in order to comply with international environmental regulations. Having the sort of information that FOBAS Onboard can provide can enable crews to reduce the risk of inadvertently exceeding prescribed sulphur limits and to optimise cylinder oil consumption," says Wilson.

According to figures provided by one major engine manufacturer, cylinder oil consumption can be reduced by up to 20% by using a service such as FOBAS Onboard.

Lab-on-a-ship is being taken through a rigorous type approval process with Lloyd's Register and also through a test correlation programme in accordance with ASTM 6708 supervised by the Energy Institute. This will provide shipowners with assurance that the system will work and be robust and consistent in its output.

Ends.

NOTES TO EDITORS

1. Lloyd's Register's Fuel Oil and Bunker Analysis Service (FOBAS) provides independent verification of fuel quality against international standards and environmental legislation. Our global engineering consultancy service helps ensure the safe and efficient use of fuel on board our clients' vessels.
2. Lloyd's Register is an independent risk management organisation. The Lloyd's Register Group works to help improve its clients' quality, safety, environmental and business performance throughout the world, because life matters. Its expertise and activities cover shipping, railways, other land-based industries and oil and gas. The Group comprises charities and non-charitable companies, with the latter supporting the charities in their main public benefit goal.
3. Lab-on-a-ship is capable of analysing fuel during bunkering to the ship and also provides real-time analysis of the cleansed/treated fuel when it is pumped from the day tank. The results can be monitored in the engine control room and can also be logged to provide retrievable historical data on the ship and allow current online monitoring of the fuel being consumed by the ship's engine. It is a complete system of advanced functions that focus on the real time analysis of elements such as sulphur, vanadium and CATFINES (silicon and aluminium), as well as gas content. The system is capable of analysing fuel density and viscosity, which together calculate the CCAI (Calculated Carbon Aromatic Index). In addition, the Net Specific Energy is calculated through measurements of the contents of sulphur, water and ash-forming elements. These data are available while fuel is being pumped through bunkering and consumption pipes. The data is planned to be made accessible on-line on a central server through a secure GSM connection allowing fleet management access to all relevant quality and consumption data concerning fuel, thereby providing an opportunity to relate such data to the bunker fuel investment/purchase made and optimise future purchasing strategies.
4. NanoNord A/S is a Danish, privately owned company with unique and strong bonds to the world of science and university research. NanoNord specialises in the development of real time, online oil analysis systems for the shipping industry. The development takes place in close co-operation with the nanoscience department of Aarhus University.

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