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**FLAGSHIP TCI improves engine performance monitoring, lowers fuel consumption and reduces emissions**

FLAGSHIP, the pan-European maritime transport project part funded by the EU, has developed a monitoring system that applies the Technical Condition Indexing scheme (TCI) to help a ship's crew monitor and improve the technical condition of the engines. The deployment of the FLAGSHIP-TCI system can help a ship's crew to enhance voyage safety, lower fuel consumption and reduce the emission of air pollutants.

Based on a robust methodology for measuring the technical condition and performance of a vessel's main engines, auxiliary engines and thrusters, FLAGSHIP's use of TCI can promote proper engine conditioning while reducing maintenance and off-hire costs. Integrated with an analysis package based onshore, the on-board system generates a set of performance indicators based on reference values, historical performance and benchmarks. The ship's superintendent and crew receive a report in which problems are detected and highlighted via a high level traffic light showing green, yellow or red depending on the severity of the issue. The user can also access an on-line version of the report to investigate the precise data that caused the warning.

FLAGSHIP's application of the TCI concept utilises developments in satellite communication and the Internet which allows data to be rapidly collated, processed and distributed to both ship and shore-based personnel. The system adds value by analysing robust data and presenting it in a format that is easily digested and acted upon by either by a shore-based superintendant or a ship's crew at sea.

Ornulf Jan Rodseth, Research Director at FLAGSHIP partner MARINTEK, commented: "FLAGSHIP's application of the TCI concept on critical ship systems is an excellent example of information and communication technology being harnessed to aid early detection of problems, efficient diagnosis and timely repair.



We have seen fuel savings of up to 5% as a direct result of the use of the TCI-system, which underlines the importance of R&D projects such as FLAGSHIP in making ship transport even more environmentally friendly. ”

Mr Herman de Meester, Coordinator of FLAGSHIP commented: “The vision of FLAGSHIP is to create the mechanism by which the expertise of all the required actors can be brought together in real time, independently of their location, and given to the right people, in the right format, at the right time and incorporating the highest level of knowledge, so that they can better manage all the questions which confront a ship operator.”

The FLAGSHIP–TCI project was led by MARINTEK in Norway and was supported, delivered and trialled in conjunction with NTNU in Norway, Teekay Shipping, and Rolls Royce in the UK; Danaos Shipping Co Ltd and ASME of Greece; Containerships in Finland and RINA in Italy.

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### **Notes to Editors**

#### **FLAGSHIP**

FLAGSHIP is a consortium of more than 40 European maritime organisations taking part in a part EU-funded project the focus of which is on improving safety, environmental friendliness and competitiveness of European maritime transport. The project was designed to further increase the capacity and reliability of freight and passenger services and to further reduce the impact from accidents and emissions.

The emphasis of the project is on on-board systems and procedures, ship management systems on shore, impact of new technology on present ship-, owner- and operator organisations, effective and efficient communication interfaces and impact of standards and regulations.

Website: <http://www.flagship.be/>



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