



News!

April 2014

MoVeIT! - Moving IWT to the future!

Dear reader,

This newsletter is the first of six MoVeIT! newsletters. In these newsletters we will inform you on the results of the European research project MoVeIT!, a collaborative project that develops a suite of options for the cost-effective modernisation of inland vessels. Focussing on the existing fleet, 23 project members from 9 different European countries work together to improve inland waterway transportation to the standards of tomorrow.

This first newsletter provides you with a short introduction in all the activities we perform within the MoVeIT! project, amongst others optimising the hydrodynamics of the vessels, looking to

In order to improve inland waterway transport to the standards of tomorrow, inland shipping needs to MoVe IT!

new power system configurations, the energy efficient operation of vessels, alternative structures and new scales and services.

In our upcoming newsletters we'll discuss for the above mentioned topics the different possibilities.

In the meantime you can visit our website for more information: www.moveit-fp7.eu.

Best regards,

Meeuwis van Wirdum, Project coordinator MoVeIT!

Project manager IWT, MARIN

What's MoVeIT!?



MoVeIT! is a European research project, in which a set of options is developed for the modernisation of inland ships that meet the challenges of the over-aging of the fleet, climate change and greater environmental objectives. One of the final results is a decision support regarding the application of these options.

One of the main focal points of MoVeIT! is the modernisation of the ship's drive and power system in a way that is matched to the conditions it will face throughout its life. This will result in significantly better performance compared to the ships old systems that are designed to fulfil a single design condition.

Working together with the market



The aim of MoVeIT! is not only to perform theoretical research, but also to show the applicability of all this research in the real-life situations.

Involving ship-owners

For this there are four ship-owning companies partner within the MoVeIT! project:

- CFT (France)
- He-Logistics (Austria)
- Plimsoll (Hungary)
- ThyssenKrupp-Veerhaven (Netherlands)

Research on existing ships

The following ships have been measured and used within the MoVeIT! project:

- Inflexible (pusher)
- Dunaföldvár (pusher)
- Herso-1 (motor vessel)
- Veerhaven-X (pusher)
- Carpe Diem (motor vessel)

Demonstrating the research performed

From theoretical research to real-life demonstrations

The research performed in MoVeIT! takes several steps to come to real-life demonstrations: First, the conditions the ship will encounter are established through full-scale measurements. Using the operational profiles resulting from these measurements, the ship's power systems and hydrodynamics are reviewed and optimal, integrated solutions are developed which minimise investments and ecological impact while maximizing efficiency.

Wide array of research topics

Research topics include new power system configurations, alternative fuels, retrofitting techniques for existing engines, improved hull and propulsion and assistance to the captain for more efficient sailing. Furthermore, crucial modernisation measures are to increase the vessels main dimensions, in order to achieve economic and ecological scale advantages, and to upgrade old tankers to meet new ADN requirements.

Within MoVeIT! a wide array of possible improvements have been researched

Research leading to solutions tested under the actual conditions

Based on the research and their business cases, solutions are proposed to the participating ship-owners. This results in a couple of demonstrations to show the applicability of the proposed solutions.

Already performed demonstrations comprise amongst others:

- a movie of model tests performed for different rudder configurations, showing a significant effect on reduction of fuel consumption;
- simulator demonstrations for a pushed convoy, showing the benefits of removing the flanking rudders of the pusher and installing a bow thruster;
- simulator demonstrations of a motor cargo vessel, showing the benefits of lengthening the vessel on fuel consumption and preservation of sufficient manoeuvrability.

Improving performance of your ship

Several possibilities for improved performance

The research done within MoVeIT! using ships of MoVeIT! partners shows possibilities and challenges for a better performance of the ship. In this topic the focus is on powering with a save on fuel as one of the results.

Alternative power configurations

Ten alternative power configurations have been proposed. The alternative configurations have been selected according to the vessel's operational profile and include: diesel direct, diesel electric, gas electric, and hybrid power propulsion.

Another power configuration can result in improved performance

Research showed that the performance of one of the ships could be improved for 20-40% just by selecting another engine and gearbox.

Research showed potential performance improvement of 20-40% of one of the test ships

On the other hand, the performance of another ship is in line with its operational profile and within the current exhaust limitations. However, even that ship might have a problem to meet the future emission requirements and some of the alternative configurations might be a solution for this problem.

Future of inland shipping

It is to be expected that radical changes in the power configuration and/or implementation of exhaust after treatment devices will be necessary if the proposed emission limitations become effective. It is foreseeable that in the future new build vessels will be more constructed with the gas power configurations while the current vessels will have to install after treatment devices to meet the future requirements.

CFD Analysis

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Within MoVeIT! we started our challenge by performing CFD analysis for the five demonstration vessels. CFD is the abbreviation of Computational fluid dynamics.

First step towards fuel savings

With CFD analysis the hydrodynamic performance of a vessel can be shown. The results of these measurements can be used to make adjustments which can result in fuel savings.

This CFD analysis is a logical first step in improving the hydrodynamics of your vessel. If you are interested in a CFD analysis for your own vessel, you can get more information at our project partners:

MARIN (NL): www.marin.nl

DST (DE): www.dst-org.de

Next issue



The next issue will be released in May 2014.

In the meantime you can visit our website for news, downloads of reports and more information on the MoVeIT! project.

For more information, it's also possible to contact our dissemination team.

Economy planner

Towards more efficient navigation

The economy planner is specially designed for inland ships, helping to reduce fuel consumption by energy efficient ship operation.

The EC Planner integrates both static and dynamic information about both current and upcoming situation in order to provide the best possible voyage information and planning in terms of economy, environment, efficiency and logistics.

Collaborative water depth measurements

The first step of a developed EC Planner within MoVeIT! is able to generate an actual electronic chart, in terms of real actual local water depth. This happens with collaborative data of the actual water depth provided by the participating vessels. At the moment 12 vessels have been equipped with the hardware to do so and this year this will increase to 40 vessels.

And going further in the future

This will lead to a product that can be used by the skipper as a tool to determine the optimal track based, the maximum allowable loading condition for the journey, generate accurate ETAs, voyage plan.

Feel free to contact us:

MoVeIT! Dissemination team

C/o EICB

PO Box 23133

3001 KC Rotterdam

The Netherlands

☎ +31 10 798 98 30

@ office@eicb.eu

www.MoVeIT-FP7.eu