



Rolls-Royce is leading a project to develop preliminary designs for unmanned vessels. This is a concept image of a remotely-controlled vessel.

(Image: Rolls-Royce)

Unmanned Transport

Researchers Explore the Future



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With an increasing interest in the possibility of autonomous sailing ships, several initiatives are underway. MARIN is carrying out unmanned ship simulations with the help of the Automatic Identification System (AIS).

Today it is common to use the cruise control of your car when driving along the highway and there are even cars that can park themselves. In the aviation industry the introduction and further development of drones has made unmanned flying possible. But what about the shipping industry? Over the last few years there have been a number of initiatives concerning autonomous or unmanned ships. Those of Rolls-Royce, the Mayflower Autonomous Research Ship, Autonomous Work Boat and the

Unmanned Surface Vessel are just a few examples.

Combined Roadmap

And because there are many common factors involved in autonomous driving, flying and sailing regarding the technology, regulations, acceptance, human factors and certification, a project was launched in early 2015 to explore these similarities. The project is funded by the Dutch government and is designed to stimulate cooperation and knowledge sharing between three leading research institutes: MARIN, the National Aerospace Laboratory (NLR) and the Netherlands Organisation for Applied Scientific Research (TNO). This cooperation will lead to a combined roadmap of autonomous transport, including an overview

of expertise and developments for the different modalities.

Unmanned Ship Simulation

As well as this, MARIN is currently carrying out research simulating an unmanned ship sailing in an AIS-based traffic situation. In order to do this, MARIN will use its existing real-time, DOLPHIN simulation technology and implement a new tool to read AIS data, simulate this large number of ships and develop an auto-captain. The real-time dynamic risk index, which has been developed by MARIN and will soon be part of DOLPHIN, monitors the nautical safety of all ships with a focus on the unmanned ship. The simulated, unmanned ship will navigate according to the International Regulations for Preventing

Collisions at Sea (COLREGS). In more complex situations the auto-captain may use a dedicated decision support tool to find a more efficient solution to pass safely. This approach will be analysed and improved using the real-time dynamic risk index.

The Author

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