



Artist's impression of future autonomous vessels on the Trondheimsfjord

Oct 04, 2016 13:21 BST

Kongsberg Maritime: World's First Official Test Bed for Autonomous Shipping Opens in Norway

- *Autonomous maritime technology trials to take place in designated area of the Trondheimsfjord*
- *KONGSBERG to collaborate with leading government and academic organisations to further develop and test technology for unmanned ships*

Trondheim, Norway, 3rd October 2016 – An extensive area of the

Trondheimsfjord in Northern Norway was designated as an official test bed for autonomous shipping by the Norwegian Coastal Authority (NCA), during a special event in Trondheim, Norway on Friday 30th September 2016. As potentially the first coastal area in the world officially dedicated to the development of technology for autonomous ships, the new test bed is set to become a vital facility for the future of shipping. Norwegian maritime technology company KONGSBERG has been integral to the opening of the test bed and will become a major user in order to continue its development of sensors, software and systems that enable more autonomy for ships.

Announced in March as a follow-up to the Norwegian government's new National Transport Plan, the fjord offshore Trondheim is an ideal location for the development of technology that will make autonomous shipping a reality. The area experiences light vessel traffic, making it a safe place to conduct autonomous vehicle trials. It is also home to high levels of maritime competence through an extensive maritime technology cluster and several major academic and research organisations. The initiative was established by the Norwegian Marine Technology Research Institute (MARINTEK), the Norwegian University of Science and Technology (NTNU), the Trondheim Port Authority, KONGSBERG and Maritime Robotics. Other stakeholders include the Ocean Space Centre, and NTNU's Center for Autonomous Operations and Services (AMOS).

"As far as we know, there are no such test sites of this kind in the world so the Norwegian Coastal Authorities are taking the lead in a changing maritime world," said Gard Ueland, President, Kongsberg Seatex. *"We are seeing how autonomy is coming into vehicles on land. I believe we will see some massive changes in the future leading to smart ships that will make maritime transport safer and more efficient. We will also see technology that has the potential to enable fully autonomous cargo vessels. Much of this will come from Trondheim, thanks to the unmatched maritime expertise here and our autonomous vehicles test bed."*

KONGSBERG has played an important role in the Trondheimsfjord test bed, having already demonstrated the suitability of the area for autonomous technology trials. The company's Trondheim-based subsidiary Kongsberg Seatex tested various new autonomous technology solutions in Trondheimsfjord this June, together with the NTNU and the Norwegian Defense Research Establishment.

Furthermore, the AUTOSEA project with focus on automated situational

awareness will use Trondheimsfjord as a test site when utilising sensor fusion to reduce the risk of collisions between ships and vehicles, when increased level of autonomy is introduced. In order to improve detection capabilities also on small objects and improved coverage of the close-range sector, the AUTOSEA project will, in addition to conventional maritime radar, include sensor types not normally used for such purposes in the maritime sector, such as cameras, infrared and LIDAR.

Ends

Editor's note: A video detailing the Trondheimsfjord official test bed for autonomous shipping can be viewed here: <https://www.youtube.com/watch?v=F32GmiJmMjs>

For further information, please contact:

Gunvor Hatling Midtbø

Kongsberg Maritime

Tel: +47 9921 4209

gunvor.hatling.midtbo@km.kongsberg.com

About Kongsberg Maritime

Kongsberg Maritime is a global marine technology company providing innovative and reliable technology solutions for all marine industry sectors including merchant, offshore, subsea and naval. Headquartered in Kongsberg, Norway, the company has manufacturing, sales and service facilities in 20 countries.

Kongsberg Maritime developed systems for vessels cover all aspects of marine automation, safety, manoeuvring, navigation, and dynamic

positioning. Subsea solutions include single and multibeam echo sounders, sonars, AUV/Underwater Robotics, underwater navigation, communication and camera systems.

Marine and offshore training simulators, LNG solutions, information management, position reference systems and technology for seismic and drilling operations are also part of the company's diverse technology portfolio.

In parallel with its extensive technology portfolio, Kongsberg Maritime provides services within EIT (Electro, Instrument & Telecom) engineering and system integration, on an EPC (Engineering, Procurement & Construction) basis.

Kongsberg Maritime delivers solutions that cover all aspects of technology underwater and on the water, aboard new build and retrofit vessels, and on offshore platforms and rigs, often under a single supplier strategy called The Full Picture.

Kongsberg Maritime is part of Kongsberg Gruppen (KONGSBERG), an international, knowledge-based group that celebrated 200 years in business during 2014. KONGSBERG supplies high-technology systems and solutions to customers in the oil and gas industry, the merchant marine, and the defence and aerospace industries.

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