AUTOSHIP
Autonomous Shipping Initiative for European Waters

The project goes on!
Focus on the control centers

Enjoy reading the 6th AUTOSHIP Newsletter!

Take a look at the issue to discover more about the latest activities related to the development of the Remote Operation Center (ROC) and the ongoing efforts focused on fine tuning the concept including the backbone servers and the Remote Operation Workstation.

In addition, interesting updates on the recent events attended by the consortium to boost the impacts and visibility of the project.

Don't forget to subscribe to the AUTOSHIP newsletter and stay updated on the progresses of the project following its LinkedIn and Twitter accounts!

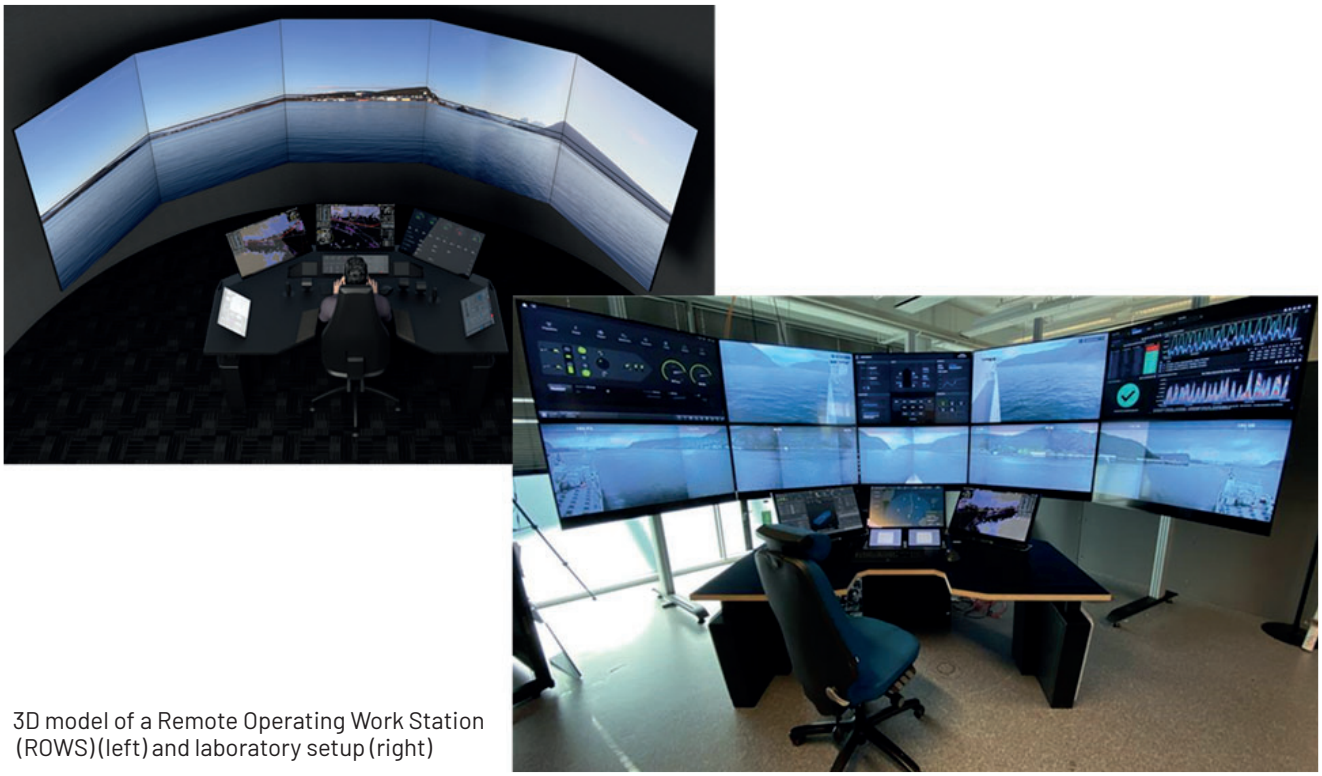
FOCUS ON THE CONTROL CENTERS

The Remote Operation Center (ROC) development is ongoing for WP4 and WP5. Both work package demonstrations will be using the same technology for ROC. The ongoing efforts have focused on fine tuning the concept including the backbone servers and the Remote Operation Workstation. A lab setup is used for development work, verification and user testing. A simulator is providing data feed for the user testing. The Backbone servers is a virtualized server platform for running the different subsystem applications to be presented on the workstation. The Remote Operation Workstation is the display and intervention platform to be used by the operator to monitor and control the vessel operation. We are now in the final stage of defining all the components and initiate purchase of equipment for the actual ROC for both WP4 and WP5.

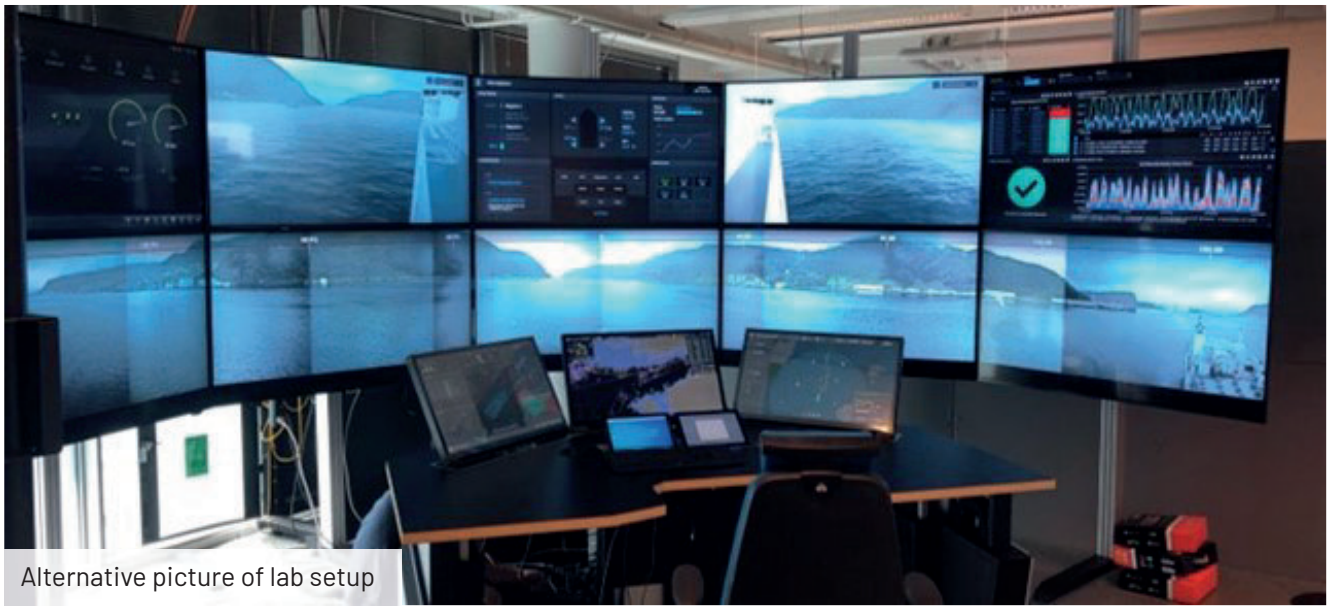
Test data from sensors onboard Eidsvaag Pioneer have been used for testing in the ROC lab. We are currently working on live connections from the sensor data that are being installed onboard the test vessels Eidsvaag Pioneer for WP4 and Zulu 4 for WP5, for streaming to the ROC test lab. For camera sensors, a video stream management system is created on the ROC to receive and display the information to the ROC operator.

For WP4 preparations have started to make the office space in Ålesund ready for the ROC installation later this year. For WP5 decisions have been made for office space in DVW buildings in Wintam to be used for ROC and preparations related to Power supply, cooling and cabling has been planned.

Concept picture of how the ROC in Ålesund may look like



3D model of a Remote Operating Work Station (ROWS) (left) and laboratory setup (right)



Alternative picture of lab setup

WHAT ARE THE CHALLENGES WHEN DESIGNING A CONTROL CENTRE

The testing of the control centre will be an exciting stage in the AUTOSHIP project. There are several challenges that need to be considered:

- The main challenge may be the human-automation interface. With a high degree of automation on the ship, the operator will be left with relatively little to do and it is a fair chance that the operator will lose concentration on the supervision of the ship and perhaps fails to react when needed.
- Ships are, however, easier to control remotely than cars. Ships move relatively slowly and difficult situations can normally be detected some time before action is required by the operator.
- Another interesting issue is how the work in the control centre is organized? One suggestion from the MUNIN project is to have a number of first line operators with more limited responsibilities, that make use of expert teams to handle more complex problems that cannot easily be solved in the first line. In that case, what will the safe configuration of the control centre be?
- It is also interesting to consider the type of human-machine interfaces that are most suitable for the task. Is it a kind of virtual bridge or do we need other tools in addition to video, radar and conventional bridge equipment?

All these questions will be addressed in the future work of AUTOSHIP and we will certainly contribute to answering some of them.

UPDATES ON CONSORTIUM PARTICIPATION IN INTERNATIONAL EVENTS

In the past months, the consortium has kept participating in interesting international events to present the latest achievements of Autoship, with the aim of boosting the dissemination of the project results, increasing its impacts and visibility towards stakeholders and the general public as well.

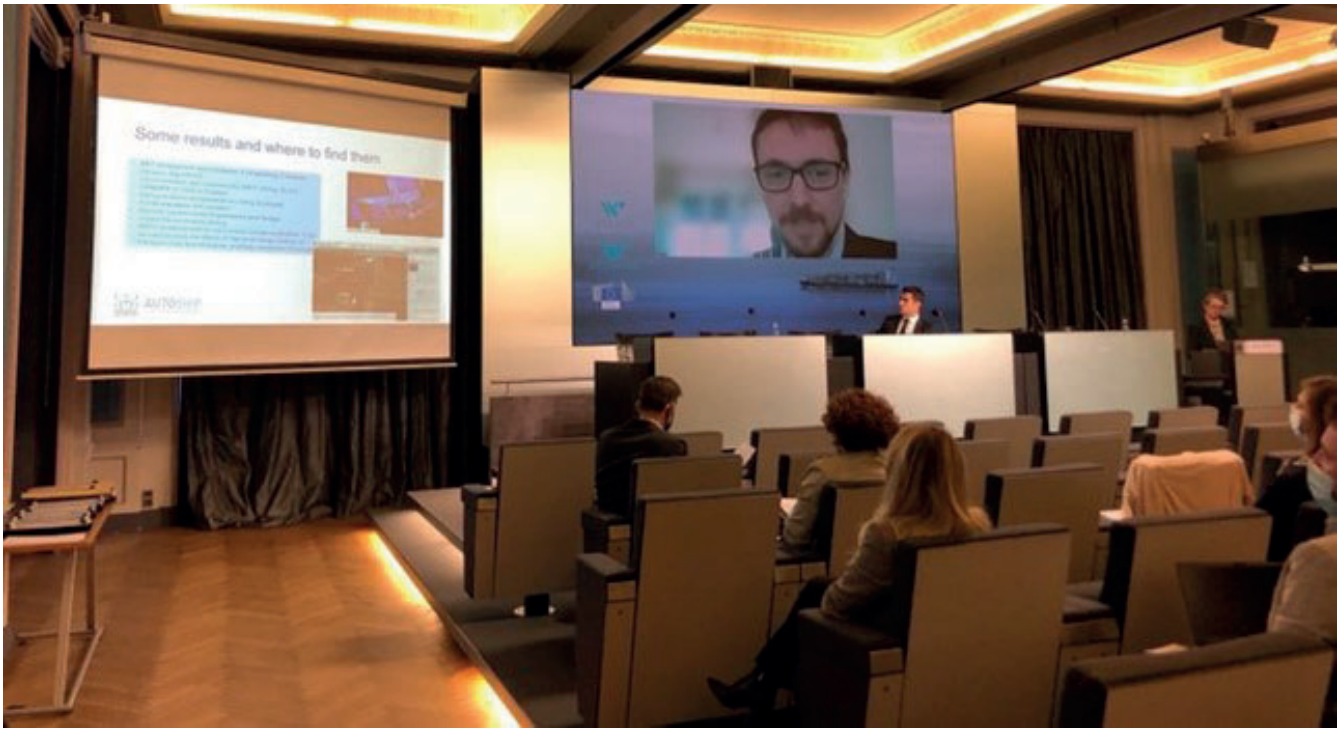
Sintef Ocean participated in the **EMSA workshop on EU projects on MASS**, hosted by the European Maritime Safety Agency on 24th of June 2021. This online workshop was held with the aim of providing updates on the EU funded projects such as AUTOSHIP, MOSES, AEGIS and the EMSA commissioned RBAT study, as well as an update from European Space Agency – ESA on Space based solutions for MASS operations. SINTEF Ocean presented results from the AUTOSHIP research with the presentation is “Towards approval of MASS by their operational envelope”.

In August 2021, Autoship sponsored **Njord – The Autonomous Ship Challenge**, a unique, international student competition aimed to inspire innovation and smart solutions within marine autonomy, as well as creating a platform for personal development and networking. Among all the participating teams, Team Atlantics from the University of Porto won the competition with its strong technical report, and its guidance and navigation system capable of reaching set-points efficiently and avoiding obstacles, demonstrating satisfactory collision avoidance and situational awareness capabilities. To wrap up the day, an Inspirational talk was held together with Kongsberg Maritime, AUTOSHIP, Zeabuz and NTNU. Kongsberg Maritime and Autoship, represented by Morten Skogvold, offered a deeper insight into how the project and its consortium are approaching the challenges of marine autonomy, and how they envision the future of the industry.

Kongsberg Maritime AS attended the **Autonomous & Remote Operated Technology Conference**, held on 14th September 2021. The event aimed at discussing the latest findings related to autonomous ships and Autoship was presented in the frame of the session 'Autonomous & Remote Operated Tech', which brought together leaders from some of the leading businesses to demonstrate the current status of the technologies and discuss crucial issues for the adaptation of the technologies, including connectivity, the environmental impact, the need and the status of international regulation and other topics.

The University of Strathclyde joined **the 31st European Safety and Reliability Conference**, held On September 2021 to exchange experiences and knowledge in the area of risk assessment, risk management and optimization of the performance of socio-technological systems in Europe, and among the most important internationally.

More recently, Autoship has been selected to participate in the workshop "**Horizon 2020 Research and Innovation delivering smart, green, safe and competitive waterborne transport**", an event organized by the STEERER project together with the European Climate, Infrastructure and Environment Executive Agency (CINEA) and the Directorate-General for Research and Innovation (DG RTD). The workshop, held on 7 February 2022, presented the results of seven years of investments in research and innovation towards smart, green and integrated waterborne transport, which took place in the framework of Horizon 2020, gathering more than 300 participants attending the event online and in Brussels.



In this unique scenario, the project manager Marco Molica Colella from CiaoTech (PNO Group) – the coordinator of this initiative – joined the event as an invited speaker in the panel "Competitive, Connected and Automated Waterborne Transport Overview of projects in the portfolio" to illustrate Autoship results in a nutshell and discuss autonomy in the context of a more sustainable and safer shipping system.

CONSORTIUM

ITALY
Ciaotech S.r.l. – PNO Group
www.pnoconsultants.com/it

NORWAY
Kongsberg Maritime AS
www.kongsberg.com

Kongsberg Digital AS
www.kongsberg.com/digital

Kongsberg Norcontrol AS
www.kongsberg.com/en/kds/knc

NORWAY
Sintef Ocean AS
www.sintef.no/en/ocean

SCOTLAND
University of Strathclyde
www.strath.ac.uk

NORWAY
Eidsvaag AS
www.eidsvaag.no

BELGIUM
ZULU Associates
www.zulu-associates.com

FRANCE
Bureau Veritas
group.bureauveritas.com

BELGIUM
DE VLAAMSE WATERWEG NV
www.vlaamsewaterweg.be

KEEP INFORMED

If you want to learn more about the Autoship project or get in touch with one of the Autoship partners, please visit the Autoship website or follow the project on the social channel. If you like our content subscribe to our newsletter and like, follow and share our social media accounts and posts to get the most recent news on events and results.

www.autoship-project.eu

info@autoship.eu

linkedin.com/company/autoship

twitter.com/AutoshipProject

facebook.com/Autoship2020

The project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement N°815012.