



## AEGIS, AUTOSHIP and MOSES Joint final event at the Europort Exhibition in Rotterdam Ahoy

On November 7<sup>th</sup>, 2023, the maritime future came alive as the **AEGIS**, **AUTOSHIP**, and **MOSES** projects joined forces in Rotterdam for their joint event, '**Navigating the Future of European Waters with Autonomous Innovation**,' right in the heart of **Europort**, the international maritime exhibition and meeting place for innovative technology and complex shipbuilding.



The event brought together leading experts to discuss and share insight on market, technology, and policy developments that enables autonomy to significantly impact the waterborne sector in the EU by fostering a much-needed modal shift and more efficient and greener waterborne transport.



These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 815012, 859992, 861678.



The day commenced with esteemed keynote speakers, Susanne Lanzerstorfer (CINEA) and Alexander Hoffmann (DG MOVE), offering a comprehensive overview of CINEA - European Climate, Infrastructure, and Environment Executive Agency. Their insightful presentation covered the agency's projects in waterborne automation, along with a detailed discussion on the priorities outlined by the European Commission.



Figure 1: Susanne Lanzerstorfer (CINEA) and Alexander Hoffmann (DG MOVE)

Take a look at the pictures from the different sessions and speakers!

## ● Session 1 - How does autonomy enable new business models?

Presented by Ørnulf Jan Rødseth from Norwegian Forum for Autonomous Ships - the session explored business cases, low-hanging fruits, and the unfulfilled potential.



Figure 2: Ørnulf Jan Rødseth

### **Introduction – Why business cases matter.**

Ørnulf Jan Rødseth, Norwegian Forum for Autonomous Ships.

### **The hub-and-spoke redesign proposal with small, autonomous feeder shuttles.**

Kenneth Johanson, North Sea Container Line.

### **Zero-emission logistics with uncrewed inland waterway barges and short sea vessels.**

Antoon Van Coillie, Zulu Associates.

### **Autonomous ecosystems: A paradigm shift for maritime business models.**

Kristoffer Kloch, DFDS.

### **New opportunities for ports with automated terminals and ships - Transferability cases.**

Nacho Benítez Sánchez, Port of Valencia.

### **Panel discussion with all speakers.**

Moderated by Marco Molica Colella, Ciaotech PNO.



Figure 3: from left to right, Kenneth Johanson and Antoon Van Coillie



Figure 4: from left to right, Kristoffer Kloch and Nacho Benítez Sánchez

The Session hosted a dynamic and insightful panel session moderated by Marco Molica Colella, delving into the already achievable potential of digital and autonomous shipping technologies. The discussion was interactive, engaging the audience with real-time questions and insights from the panellists. The attendees actively contributed to discussions surrounding the most important commercial drivers propelling investments in autonomous ships. Moreover, the session addressed the critical barriers impeding the upscaling and widespread commercial adoption of autonomous shipping, providing a comprehensive overview of the challenges and opportunities in this cutting-edge field.

As a bottom line, there is already a business case in shifting cargo from road to water, which can't be but improved by the use of autonomous shipping and automated logistics/cargo operations supporting the outstanding value-chain. Regulation should keep the pace.



Figure 5: Panel discussion, session 1, moderated by Marco Molica Colella

## ● Session 2 – Tech talks – where are we on autonomy?

Our panelists from session 2 – moderated by Ørnulf Jan Rødseth from the Norwegian Forum for Autonomous Ships – discussed the current state of autonomy.

### **Introduction – The most important technical challenges.**

Ørnulf Jan Rødseth, Norwegian Forum for Autonomous Ships.

### **Situation awareness – Object detection and classification.**

Knut Eilif Husa, Kongsberg Maritime.

### **Autonomous navigation on inland waterways and open seas.**

Knut Eilif Husa, Kongsberg Maritime.

### **Autonomous container handling with ship cranes.**

Janne Suominen, Macgregor.

### **Remote support of robotic container handling systems.**

Mirjam Huis in 't Veld, TNO.

### **Navigating the future with automated terminal operations.**

Christopher Saavedra, Kalmar.

### **Panel discussion with all speakers.**

Moderated by Ørnulf Jan Rødseth, Norwegian Forum for Autonomous Ships.



Figure 6: Knut Eilif Husa



Figure 7: from left to right, Janne Suominen Mirjam Huis in 't Veld Christopher Saavedra

Ørnulf Jan Rødseth orchestrated the second panel session. The session explored the fundamental question of whether autonomous systems can be skillfully designed to navigate complex traffic situations and interact smoothly with manned vessels, or if human involvement remains essential. Participants also discussed the critical technical challenge facing ports and terminals in today's environment, especially in light of the fact that Remote Operating Centre (ROC) operators can intervene in a complex situation. Furthermore, the discourse revolved around enhancing transport services, with a spotlight on the primary focus areas crucial for optimizing port and terminal operations. As automation can improve the business case though, there is not a one-fit-all solution.



Figure 8: Panel discussion, session 2, moderated by Ørnulf Jan Rødseth

## Session 3 - Supporting sustainable development of waterborne transport

The third panel session was moderated by Nikolaos P. Ventikos from National Technical University of Athens and explored the sustainability aspects of autonomous shipping for the #waterborne sector.



Figure 9: Ørnulf Jan Rødseth

### Introduction

Ørnulf Jan Rødseth, Norwegian Forum for Autonomous Ships

### Is automation win-win-win? A perspective on sustainable developments goals and societal benefits.

Harilaos Psaraftis, Technical University of Denmark.

### Why is the modal shift important? Zero-emission impact on external transport costs.

Håvard Nordahl, SINTEF Ocean.

### Underlying assumptions affecting design in automatization and technology development.

Nanna Thit Hemmingsen, DFDS.

### New skills and new training – Where will our employees end up?

Gerasimos Theotokatos, University of Strathclyde.

### How safe do we need to be?

Konstantinos Louzis, National Technological University of Athens.

### Successful governance of technical innovations in waterborne transport systems.

Nelson F. Coelho, Aalborg University.

### Panel discussion with all speakers.

Moderated by Nikolaos Ventikos, National Technological University of Athens.



Figure 10: from left to right, Harilaos Psaraftis, Håvard Nordahl, Nanna Thit Hemmingsen



Figure 11: from left to right, Gerasimos Theotokatos, Konstantinos Louzis, Nelson F. Coelho

During the third and final panel session moderated by Nikolaos Ventikos, the panellists led the audience deeper into the societal implications of autonomous ships, debating whether they would yield a net positive or negative effect on society. The session also discussed whether the anticipated positive effects are significant enough to justify society's investment in the infrastructure and development of this technology. Safety and societal concerns took center stage as attendees examined the reliability of autonomous and highly automated vessels. Furthermore, the conversation focused on strategies and measures needed to build public confidence and trust in the reliability and safety of autonomous ships.



Figure 12: Panel discussion, session 3, moderated by Nikolaos Ventikos

Bringing the curtain down on our event, the three project coordinators Marco Molica Colella, Odd Erik Mørkrid, and Nikolaos P. Ventikos fuelled new excitement in the discussion, as they delved into the future outlook for autonomous waterborne transport, introducing also other European funded initiatives active in the same field, such as [ReNew](#) and [SEAMLESS](#).



Figure 13: from left to right, Ørnulf Jan Rødseth, Odd Erik Mørkrid, Nikolaos P. Ventikos and Marco Molica Colella



Figure 14: from left to right: Konstantinos Louzis and Nikolaos Ventikos (NTUA), Manuela Guiducci and Marco Molica Colella (CiaoTech - Gruppo PNO), Susanne Lanzerstorfer (CINEA), Odd Erik Mørkrid and Lars Andreas Lien Wenersberg (SINTEF)