



AISS 22

Autonomous Inland
& Short Sea Shipping

Autonomous Inland and Short Sea Shipping Conference

AISS 2022

19th and 20th September 2022

Conference Program

Supported by
Chambers of Commerce in the Ruhr Region



Venue:

Development Centre for Ship Technology and Transport Systems
Oststraße 77, 47057 Duisburg

UNIVERSITÄT
DUISBURG
ESSEN

Offen im Denken



RWTHAACHEN
UNIVERSITY

Monday, 19th September 2022

13:00 **Welcome and Registration**

14:00 **Opening**

Bettar el Moctar, University of Duisburg-Essen
Jens Neugebauer, University of Duisburg-Essen

14:10 Jan Klonki

Perspective of the Inland Waterway Transport Sector
HGK Shipping GmbH, Duisburg, Germany

14:25 Dhaneswara Al Amien

The Drivers, Barriers, and the Actors of the Autonomous Inland Shipping: A Systematic Review
Nord University Business School, Bodø, Norway

14:55 Joao L. D. Dantas¹, Gerasimos Theotokatos¹

Assessment of the economic feasibility of autonomous ships for the short-sea shipping

¹Maritime Safety Research Centre, Department of Naval Architecture, Ocean and Marine Engineering, University of Strathclyde, Glasgow, UK

15:25 **Coffee break**

15:50 Yaseen Adnan Ahmed¹, Gerasimos Theotokatos¹, Ilia Maslov², Lars Andreas Lien Wennesberg³, Dag Atle Nesheim³

Methodological approach towards amending regulatory, legal and liabilities frameworks for MASS

¹Maritime Safety Research Centre, Department of Naval Architecture, Ocean and Marine Engineering, University of Strathclyde, Glasgow, UK; ²Bureau Veritas Marine & Offshore, Department of Rule Development, Paris, France; ³SINTEF Ocean, Trondheim, Norway

16:20 Claas Rostock

Introduction to the Open Simulation Platform, Open Source Co-Simulation and the DNV Simulation Trust Center

DNV, Group Research & Development, Hamburg, Germany

16:50 **DST Facilities Visit**

19:00 Conference Dinner

Webster-Brauhaus

Dellplatz 14 – 47051 Duisburg

<https://goo.gl/maps/UokYSn5yvbkdTpgJ9>

Tuesday, 20th September 2022

08:00 **Registration**

08:30 **Opening**

08:35 Alina Colling

Ability Marine Pilot Family – ABB Marine’s development toward Autonomous Shipping

ABB AS, Marine Product Family, Automation & Control Solutions, Fornebu, Norway

09:05 Johannes Marx, Robert Damerius, Björn Kolewe, Torsten Jeinsch

A-SWARM Autonomous Electric Shipping on Waterways in Metropolitan Regions

University of Rostock, Institute of Automation, Rostock, Germany

09:35 Ronald Raulefs, Markus Wirsing

Build-up and Analysis of a Terrestrial VDES Test-bed for Inland Waterways

Deutsches Zentrum für Luft- und Raumfahrt, Institut für Kommunikation und Navigation, Wessling, Germany

10:05 Markus Nieradzik¹, Marvin Budde², Verena Staab³, Cyril Alias², Jens Diepenbruck⁴, Magnus Liebherr³, Frédéric Etienne Kracht¹, Tobias Bruckmann¹, Dieter Schramm¹

Automating the Loading Process of Inland Tank Vessels

¹University of Duisburg-Essen, Chair of Mechatronics, Duisburg, Germany; ²DST – Development Centre for Ship Technology and Transport Systems, Department of Logistics and Transportation, Duisburg, Germany; ³University of Duisburg-Essen, Department of General Psychology: Cognition, Duisburg, Germany; ⁴mercatronics GmbH, Bocholt, Germany

10:35 **Coffee break**

11:00 Maximilian Jarofka, Frédéric Etienne Kracht, Dieter Schramm

Drone Photogrammetry Workflow – Key Concept

University of Duisburg-Essen, Chair of Mechatronics, Duisburg, Germany

11:30 Alexander Lutz

Reference Tracks for Automatic Track Control Systems

Argonics GmbH, Stuttgart, Germany

12:00 M. K. Mohd Fadil; Waldemar Boschmann, Dirk Söffker

Localization of inland vessels in a waterway environment: Application of point cloud registration and SLAM approaches

University of Duisburg-Essen, Chair of Dynamics and Control, Duisburg, Germany

12:30 Haoming Zhang, Martin Kosch, Tim Reuscher, Dirk Abel

Towards Robust Navigation Solution and Flexible Sensor Fusion in Challenging Inland Shipping Scenarios

RWTH Aachen University, Institute of Automatic Control, Aachen, Germany

Tuesday, 20th September 2022 (cont.)

13:00 **Lunch break**

14:00 Navreet Singh-Thind, Mark Spiller, Dirk Söffker

Data-Driven Prediction of Inland Vessel Trajectories

University of Duisburg-Essen, Chair of Dynamics and Control, Duisburg, Germany

14:30 Max Kaster, Jens Neugebauer, Bettar el Moctar

A Machine Learning Approach for Power Prediction of a Container Vessel to Improve Route Planning

University of Duisburg-Essen, Institute of Ship Technology, Ocean Engineering and Transport Systems, Duisburg, Germany

15:00 Jan Oberhagemann

The FernBin Project - Developments Towards Remote Controlled and Assisted Navigation

DST – Development Centre for Ship Technology and Transport Systems, Autonomous Navigation Department, Duisburg, Germany

15:30 Dirk Söffker¹, Abderahman Bejaoui¹, Waldemar Boschmann¹, Daniel Adofo Ameyaw¹, Navreet Singh Thind¹, Kathrin Donand^{2,3}

Key Issues for Realizing Safe and Reliable Future Generations of Inland Vessels

¹University of Duisburg-Essen, Chair of Dynamics and Control, Duisburg, Germany;

²University of Duisburg-Essen, Institute of Ship Technology, Ocean Engineering and Transport Systems, Duisburg, Germany; ³German Federal Waterways Engineering and

Research Institute, Karlsruhe, Germany

16:00 **Closing**