<table>
<thead>
<tr>
<th>Time</th>
<th>Session Name</th>
<th>Paper</th>
<th>Main Author</th>
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<tr>
<td>15:00 - 15:20</td>
<td>TIPS: Preparing SHIPS for automated ship passages by today’s decision support tools by exchanging of future positions</td>
<td>Johannes Hafjorder (RISE Univ, Sweden)</td>
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<tr>
<td>15:50 - 16:15</td>
<td>Autonomous Navigation at 40kn+</td>
<td>Dipl. Ing. Raphael Biancale (BSB AI, Austria)</td>
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<tr>
<td>16:15 - 17:00</td>
<td>Maritime environment recognition technology for MASS</td>
<td>Hanguen Kim (Seadronix, Korea)</td>
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<td>17:00 - 17:30</td>
<td>A framework for autonomous ship systems and operations</td>
<td>Lars Andreas Lien Wiweranberg (SINTEF Ocean, Norway)</td>
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<td>17:30 - 17:55</td>
<td>A taxonomy for autonomy in industrial autonomous mobile robots including autonomous merchant ships</td>
<td>Ørnulf Jan Rødseth (SINTEF Ocean, Norway)</td>
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<td>18:05 - 18:30</td>
<td>The Need for a Public Key Infrastructure for Automated and Autonomous ships</td>
<td>Ørnulf Jan Rødseth (SINTEF Ocean, Norway)</td>
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<td>18:30 - 18:40</td>
<td>It is not all about the COLREGS: a case-based risk study for autonomous coastal ferries.</td>
<td>Daoyi Fu (KMI, Korea)</td>
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<td>18:40 - 19:05</td>
<td>Impact of cyber risk on the safety of the MilliAmpere2 Autonomous Passenger Ship</td>
<td>Ahmed Arno (NTNU, Norway)</td>
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<td>19:05 - 19:20</td>
<td>Considerations on the common regulatory issues</td>
<td>Shinakyo, Megumi (NAPA, Japan)</td>
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<td>19:20 - 19:45</td>
<td>The Need for a Public Key Infrastructure for Automated and Autonomous ships</td>
<td>Ørnulf Jan Rødseth (SINTEF Ocean, Norway)</td>
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<td>19:45 - 20:00</td>
<td>Considerations on the common regulatory issues</td>
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<td>Cyber Risk &amp; Security</td>
<td>Daoyi Fu (KMI, Korea)</td>
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<td>Towards the leading safety indicators in Maritime Autonomous Surface Ships operations</td>
<td>Krzysztof Wintel (Gdynia Maritime University, Poland)</td>
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<tr>
<td></td>
<td>Introduction to SMART-Navigation in Korea</td>
<td>Hanjin Lee (SMART-Navigation, Korea)</td>
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15:30 ~ 15:45

Break

15:45 ~ 16:30

Panel Discussion : New business model

Moderator : Kwangil Lee (KMOU, Korea), Panelist : Antoon Van Coller (Blue Line Logistics), Tom Eyste (Masterly), Hamen van Dorsser (Port of Rotterdam), Anto Hideyuki (MTI), Kyungsoo Ahn (Hyundai Global Service), Capt M Segar (Maritime and Port Authority of Singapore)

16:30 ~ 17:00

Break

17:00 ~ 17:25

Remote Control & Operation

Session Chair : James Fanshawe (UK Marine Alliance, UK)

Integrating accountability in the systems design of autonomous and remote-controlled operations

Bård Myhre (SINTEF Digital, Norway)

Process Map for Collision Avoidance based on Information Exchange for Autonomous Navigation of Vessel

Ho Namgung (MMU, Korea)

Comparison of the Quality Requirements of Navigation Officers and Developers for the Remote Navigation System

Yun-Suk Lee Prof (KMOU, Korea)

A hybrid kinematic controller for resilient obstacle avoidance of autonomous ships

Mathias Marley (NTNU, Norway)

Seakeeping and Ship Management: Remote Supported Shipping

Loic (SeaFar, Belgium)

Lipschitz Constrained Neural Networks for Robust Object Detection at Sea

Jonathan Beakon (Urn. of Denmark, Denmark)

VTS and MASS – Responsibilities and consequences

Pa Meling (Masterly, Norway)

Visual surveillance and monitoring with Sensor fusion for Autonomous Ship

Hyosong Cheol 96 (KMOU, Korea)

Maritime Autonomous Surface Ships and the future on Vessel Traffic Service. A port perspective

Harmen van Dorsser (Port of Rotterdam, Netherlands)

A study on construction of ML data set for safe harbour steering and berthing

Heeyong Lee (GMT, Korea)

17:25 ~ 17:35

Break

17:35 ~ 18:00

Autonomous Operation #2

Session Chair : Seung-Gi Gug (KMOU, Korea)

Additional Test Manoeuvres for Autonomous Inland Vessels

Gerben Peeters (KU Leuven, Belgium)

Digital Twin & Data Modeling

From Sensors to MASS: Digital Representation of the Perceived Environment enabling Ship Navigation

Jonathan Beakon (Urn. of Denmark, Denmark)

Lessons Learned Automating 10 Vessels Over 10 Years

Mohamed Ismail Bin Sadiq (MASALI, USA)

S-100 Demonstrator and information availability

Sven Stjernestrand (Electronic Chart Center, Norway)

Towards Autonomous SuperYacht Navigation

Chris Halla (Cayman Islands Ship Registry, Cayman Islands)

Towards for the smart port - Port of Ulsan Perspective

Sejin Choi (UPA, Korea)

Research on Ontology-based Situation Understanding and Decision-making Approach for Maritime Autonomous Surface Ships

AH Lee-ssan (Dalian Maritime Univ, China)

Technology Development and Navigation Verification of Autonomous Ship on the Love River

S K Chou (SOIC, Taiwan)

Wave forecast quality improvement based on the data assimilation for the autonomous vessel ship routing

Seung Kim (Sejong Univ, Korea)

Machine Learning based automatic berthing system of HCS

Soyeon BAEK (KMOU, Korea)

18:00 ~ 18:10

Break

18:10 ~ 18:35

Smart Shipping

Session Chair : Jukka Mannerlontto (OneSea, Finland)

Simulation & Analysis

Towards an Investigation of a MASS-assisted Anti-Grounding Service through simulated naval Scenarios in a Ship Handling Simulator

Vincent E. Schneider (Frounhofer CML, Germany)

Simulation of European Seaport Development in a Digital Environment

Nils-Otto Rasmussen (CML, Germany)

NYK approach for autonomous ship – current status and way forward

Satoru Kishimura (MTI, Japan)

AEGIS: Advanced, efficient and green intermodal systems

Smull Jan Reddy (SINTEF Ocean, Norway)

Analysis of Maneuvering Characteristics through Sea Trials and Simulations

Seung-Gi Gug (KMOU, Korea)

Smart Shipping on the inland waterways

Kari-Salle Paukkunen (De Marine Wasserweg, Germany)


Sevein P. Berge (SINTEF Ocean, Norway)

18:35 ~ 19:00

Closing

1. Summary of ICMASS 2020 (Prof. Kwangil Lee)
2. ICMASS 2021 Introduction (MPA, Singapore)
3. Closing remarks (Prof. Kwangil Lee)