THE CONFERENCE PROGRAMME

Version 3.0

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Gdynia Maritime University

and

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The 7th International Symposium on Marine Navigation and Safety of Sea Transportation

TransNav 2007

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 20 - 22 June 2007

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The 8th International Symposium on Marine Navigation and Safety of Sea Transportation

TransNav 2009

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 17 - 19 June 2009

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The 9th International Symposium on Marine Navigation and Safety of Sea Transportation

TransNav 2011

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 15 - 17 June 2011

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The 10th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2013

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 19 - 21 June 2013

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The 11th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2015

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 17 - 19 June 2015

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The 12th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2017

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 21 - 23 June 2017

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The 13th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2019

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 12 - 14 June 2019

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The 14th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2021

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 16 - 18 June 2021

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The 15th International Conference on Marine Navigation and Safety of Sea Transportation

TransNav 2023

jointly organized by the Faculty of Navigation of the Gdynia Maritime University and The Nautical Institute
Gdynia, 21 - 23 June 2023

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Hevelius Award winners:

2019	Prof. Mirosław Jurdziński	Poland
2021	Prof. Vidal Ashkenazi	United Kingdom
2023	Prof. Tomasz Neumann	Poland

Ulysses Award winners:

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Chairman of the Conference
Rector of the Gdynia Maritime University
Head of the Poland Branch of The Nautical Institute

Opening Address for TransNav 2025
Message from Conference Chairman
President of the Gdynia Maritime University

Ladies and Gentlemen, Distinguished Guests, Dear Participants of TransNav 2025,

It is my pleasure and honour to welcome you to TransNav 2025, the 16th International Conference on Marine Navigation and Safety of Sea Transportation jointly organized by the Faculty of Navigation, Gdynia Maritime University and The Nautical Institute. Welcome to Gdynia. Welcome to Poland – the homeland of Nicolaus Copernicus, Jan Hevelius, Frédéric Chopin, Maria Curie-Skłodowska, Joseph Conrad Korzeniowski, Pope John Paul II, Lech Wałęsa, Roman Polański, Andrzej Wajda and Robert Lewandowski. I am glad to see such a wide range of stakeholders today ready to debate and exchange views. Thank you all for coming

There are 83 nationalities involved in the Conference TransNav 2025. Scientific Committee members, authors of submitted papers, reviewers, session chairmen and presenters and attendees, sponsors and our partners represent the following countries around the world: Albania, Algeria, Angola, Australia, Austria, Azerbaijan, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cuba, Cyprus, Czechia, Denmark, Ecuador, Egypt, Estonia, Ethiopia, Finland, France, Georgia, Germany, Ghana, Greece, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Jordan, Korea, Latvia, Lebanon, Lithuania, Macao, Macedonia, Malaysia, Malta, Montenegro, Morocco, Myanmar, Netherlands, Nigeria, Norway, Oman, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Romania, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, 5weden, Switzerland, Syria, Taiwan, Thailand, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States, Venezuela and Vietnam.

Among us there are presidents and rectors of the maritime universities and academies, deans of faculties, directors of institutes, heads of departments, scientists, researchers, professors, lecturers and students, master mariners, skippers and yachtsmen, representatives of international organizations, maritime institutions in higher education, universities and academies, maritime administration, institutes of navigation, professional and scientific societies, space and maritime safety agencies, hydrographic, meteorological and oceanographic offices, ports, transport and logistics companies, shipping industry, shipowners, navy, shipyards, coastguards, classification societies, and marine manning agencies.

This time our special guest is David Patraiko, Director of Research and Projects at The Nautical Institute, the official representative of The Nautical Institute President, Capt. Trevor Bailay. We welcome Prof. Hercules Haralambides and Prof. Knud Benedict, our keynote speakers, as well as the chairmen of The Nautical Institute branches from the Philippines, Ukraine and Poland, presidents of national navigation institutes and many other distinguished guests who joined our conference, especially members of the Scientific Program Committee and TransNav Fellows.

To conclude, I believe that the **16th TransNav 2025** International Conference will serve as a good discussion platform for safety at sea, maritime security and protection of the maritime environment. I wish you an enjoyable and productive visit to Gdynia. I wish all participants fruitful discussions! Special thanks to our partners, sponsors, volunteers and members of the Organising Committee for their hard work, especially Prof. Tomasz Neumann, Executive Chair of TransNav Conference, Dean of the Faculty of Navigation.

With kindest regards,

*Prof. Dr. **Adam Weintrit**, Master Mariner, FRIN, FNI*
Chairman of the Conference

Opening Address of the President of The Nautical Institute

Good morning and a warm welcome to everyone.

I am Captain Trevor Bailey and as an active seafarer and the President of The Nautical Institute, it is my honor and pleasure to welcome you all to the 16th International Conference on Marine, Navigation and Sea Transportation, TransNav 2025.

The Nautical Institute has had a long association with TransNav throughout its history and I am very sorry that I am not able to join you in person, due to a prior engagement that will see me in South Africa.

However, my good friend and colleague David Patraiko, Director of Research and Projects at The Nautical Institute, is with you and will be speaking to you shortly.

I have had a long and varied career, having first gone to sea directly from school, aged 18, as a Deck Cadet with BP Tankers. I very quickly realized that this was going to be a job for life; I thoroughly enjoyed almost all aspects of my newfound surroundings and the associated workloads.

With a desire to expand my horizons, I moved from tankers to container ships, to roll-on, roll-off ships and ferries, to high-speed craft and, latterly, to the cruise sector. I also spent a number of years as a self-employed marine consultant covering a wide variety of all aspects of the maritime industry. I am still an active seafarer and I have recently returned home after serving as Master of a five-masted, motor sailing cruise ship, transiting the north Atlantic from the Caribbean to Spain.

Throughout my career, I have witnessed many developments in navigation practices and systems and I am sure that many of you here at the conference will have had some small part to play in those developments.

On my first ship, for example, we had one radar, which was only turned on when we thought that we were close to land, or in restricted visibility. Plotting of targets was strictly manual, the reflection plotter would soon arrive and, within a few years, the concept of ARPA was well advanced but it still took a long time for the equipment to be readily available, to be user-friendly and to be mandated for carriage.

Similarly, the ship was not fitted with an autopilot and frequent reference to the standard compass was normal practice.

Now, my last ship was fitted with a track-keeping autopilot system that was capable of keeping us within the cross-track corridor determined by the ECDIS.

And there's another innovation during my career. Paper charts may soon be museum pieces and our future navigators will look at them with a sense of wonder and, perhaps, amusement… How did they ever get across the oceans with such limited equipment?

When I first moved ashore into consultancy, one of my first assignments was to manage the end-user review of the use of raster charts, on behalf of the United Kingdom Hydrographic Office (UKHO) in advance of the adoption of vector charts at the IMO NAV44.

One of my abiding memories of that review was the end-users' desire to see a standardized display, regardless of the system manufacturer: The Nautical Institute has played a pivotal role in the development of the 'S'-mode concept, but we are still some way away from seeing its adoption.

The basic principles of navigation have not significantly changed for many years and it is interesting to consider the importance of those principles as we look at the wider review of the STCW Code and Convention. Amongst other matters for review there is the thorny question of 'do we still need to teach astro-navigation'? This is an area of very strong views, some of which, not surprisingly, are diametrically opposed to each other. In an increasingly uncertain and unstable geo-political world, can the navigators of today rely solely on the use of GPS? It can be argued, and probably will be argued, that in the event that GPS is unavailable, we shall have far greater worries than just knowing where the ship is …

On my early trips to sea, transit satellite navigation was still in its infancy and GPS had yet to be fully developed and deployed. Even so, ships managed to trade world-wide, sometimes on ocean passages without sight of the sun or stars for many days, but still successfully arrive at their intended destination. During my recent trans-Atlantic crossing, I took advantage of the good weather to train our cadets in the use of the sextant, astro-nav is still in the syllabus and may yet become useful once again.

I have no doubt that the programme for the next days of this conference will be packed with many learning papers and presentations and the real work of the conference will take place on the margins at coffee breaks and meals… and maybe in the bars late into the evening.

Once again, I am sorry that I cannot be with you, but I wish you every enjoyment and success in your deliberations and discussions.

Thank you

Capt. Trevor Bailay MNM CMMar FNI
President of The Nautical Institute

Opening Address
Message from Dean of the Faculty of Navigation, GMU

Distinguished Guests, Ladies and Gentlemen,

It is my pleasure to welcome panelists, moderators, chairmen, speakers and all other participants to the 16th Jubilee International Conference on Marine Navigation and Safety of Sea Transportation.

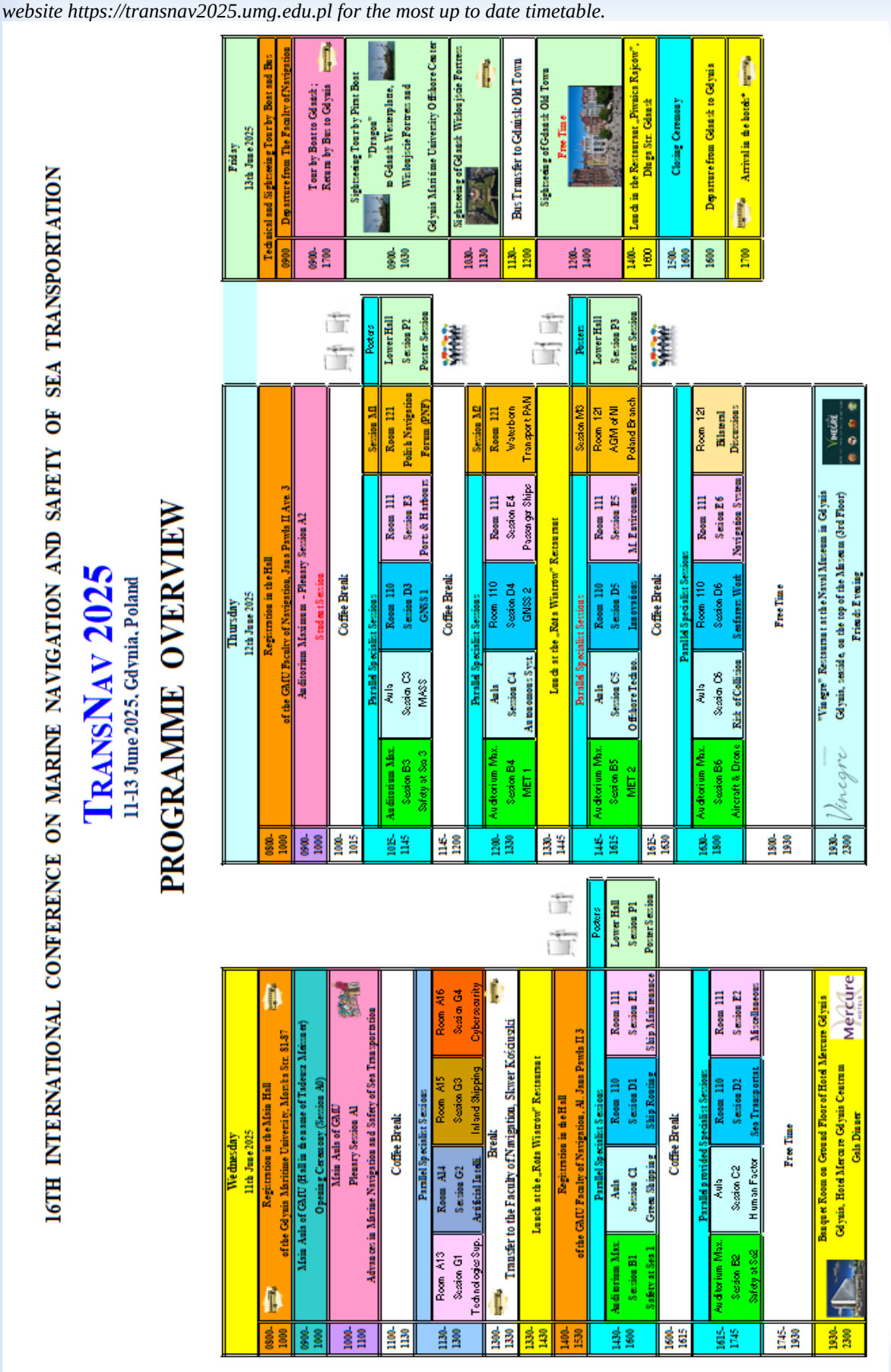
All submitted papers approved by the Scientific Committee will be published in the TransNav Journal (http://www.transnav.eu). Some of them have already been published, you can find them on the journal's website. I would like to take this opportunity to invite you to publish in our journal. It is worth noting that the papers are indexed in such databases as Web of Science and Scopus.

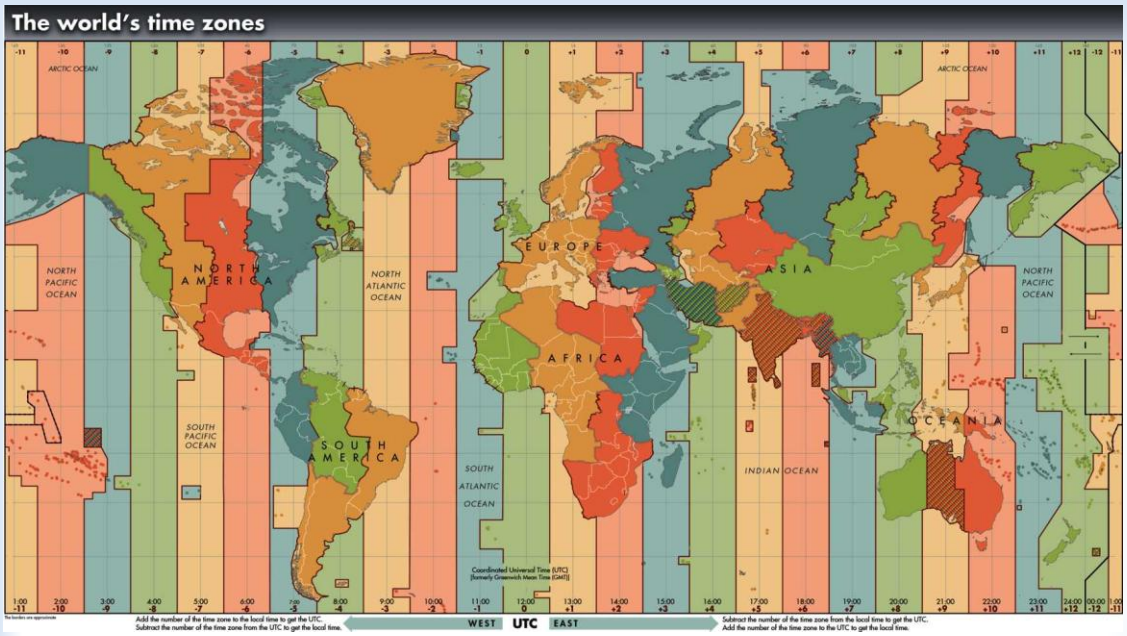
As the Dean of the Faculty of Navigation of the Gdynia Maritime University, and on behalf of the Organizing Committee I would like to thank you for your participation. I hope that the broad spectrum of presented papers will allow the participation to obtain a wider view on the problems of marine navigation and safety of sea transportation and will provoke fruitful discussions on new trends.

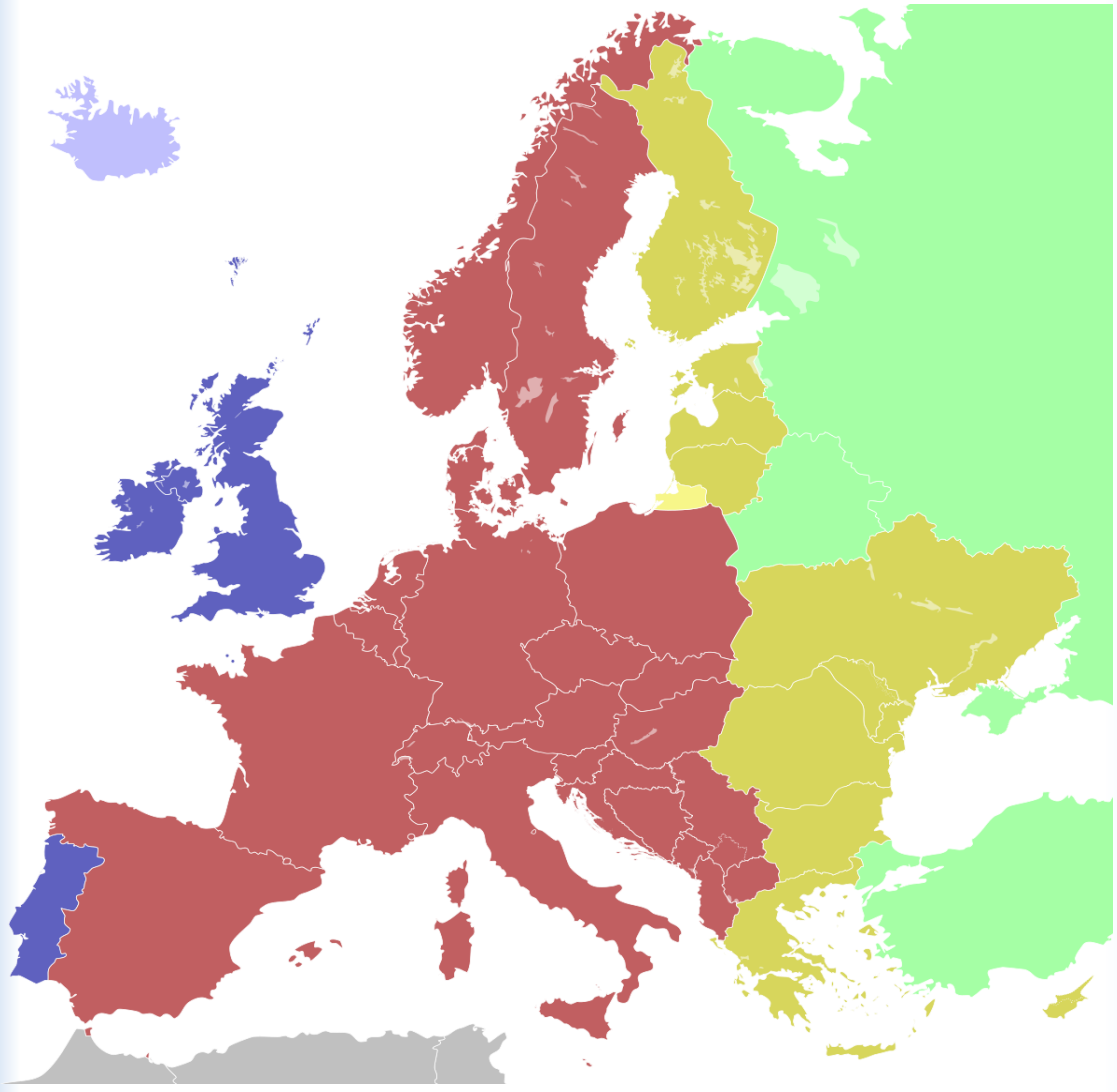
I sincerely hope that during the next edition of the TransNav conference, we will be able to meet again in June 2027 in Gdynia.

Prof. ***Tomasz Neumann***
Dean of the Faculty of Navigation of the Gdynia Maritime University
Executive Chair of the TransNav Conference

Note: All timing and papers are subject to change - please consult the "News" and "Programme" pages of our website https://transnav2025.umg.edu.pl for the most up to date timetable.

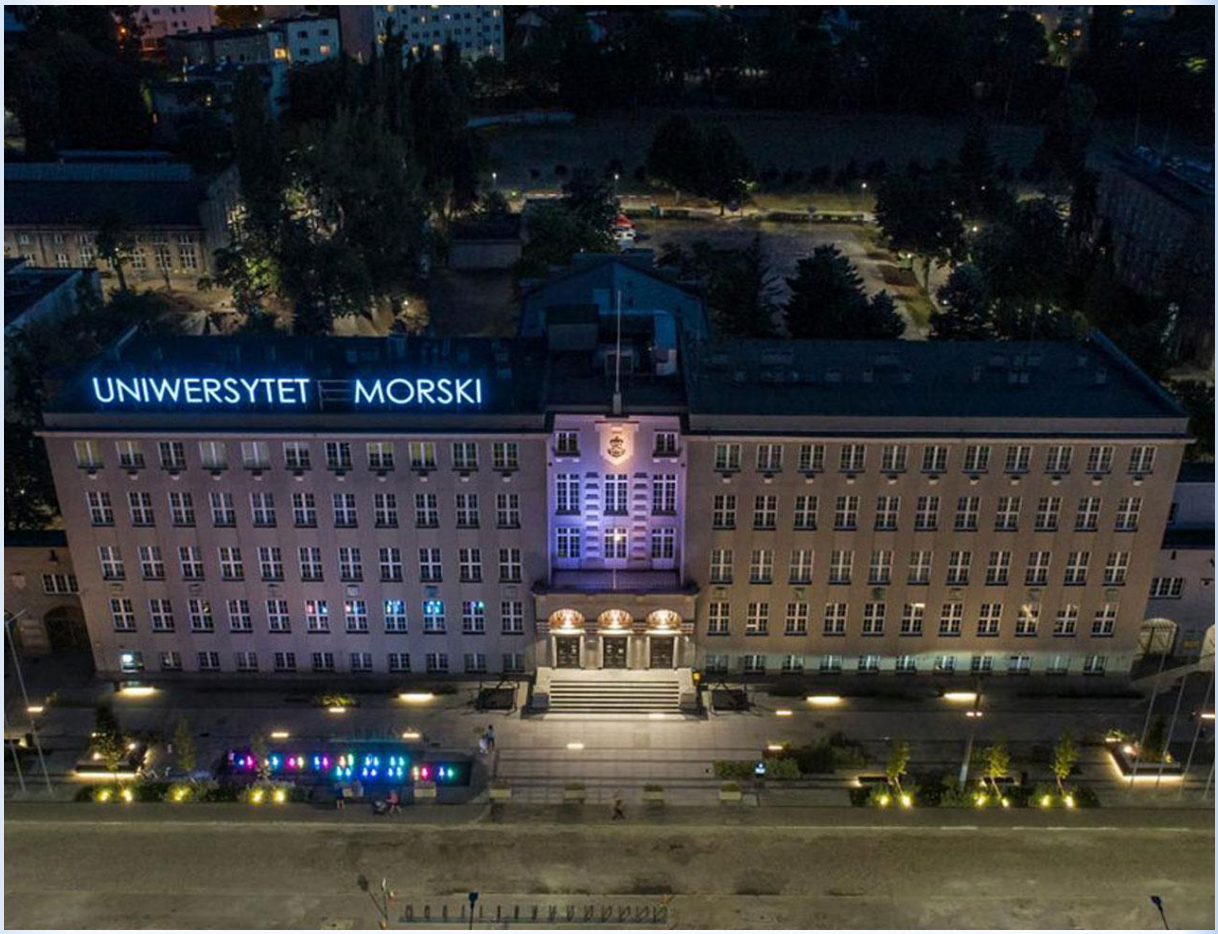






All times used in the Conference Programme are set at Central European Summer Time.
Central European Summer Time = Polish Local Time = UTC + 2 Hrs

Gdynia Maritime University, Gdynia, Morska Str. 81



Wednesday 11th June 2025

0800 - 1000 Registration in the Main Hall of the Gdynia Maritime University, Morska Str. 81

Plenary Session A0 - Opening Ceremony

0900 - 0945 **Place:** Main Lecture Hall (Aula) of the Gdynia Maritime University, Morska Str. 81
Chairmen: ***David Patraiko*** *(The Nautical Institute),* ***Adam Weintrit*** *(Poland)*

Welcome Address
Adam ***Weintrit****, Chairman of the Conference, Rector of Gdynia Maritime University*

Opening Address for TransNav 2025
Trevor ***Bailey****, President of The Nautical Institute*

Opening Address for TransNav 2025
Arkadiusz ***Marchewka,*** *Secretary of State, Ministry of Infrastructure, Poland*

Opening Address, containing the words of the official opening of the Conference
Adam ***Weintrit****, President of Gdynia Maritime University*

Overview of the 16th International Conference on Marine Navigation and Safety of Sea Transportation TransNav 2025
Adam ***Weintrit****, Chairman of the Conference*

The Ulysses and Hevelius Awards and presentation of their winners
Adam ***Weintrit****, Chairman of the Conference*

0945 - 1000 Short Performance of Gdynia Maritime University's Choir under the direction of *Karol* ***Hilla***

Plenary Session A1 – Advances in Marine Navigation and Safety of Sea Transportation

1000 - 1100 **Place:** Main Lecture Hall (Aula) of the Gdynia Maritime University, Morska Str. 81
Chairmen: ***Tor Einar Berg*** *(Norway),* ***Krzysztof Czaplewski*** *(Poland)*

Professional Development in a Technological Age
David ***Patraiko*** *(United Kingdom)*

Chokepoints along maritime corridors
Hercules ***Haralambides*** *(The Netherland)*

Manoeuvring Prediction for safe and efficient Ship Handling in Training & Ship Operation – Status Quo and Outlook
Knud ***Benedict*** *(Germany), Michael* ***Baldauf*** *(Germany), Matthias* ***Kirchhoff*** *(Germany)*

1100 - 1130 Coffee Break

1100 - 1105 Official family photo in front of the main building of the University
Photographer: Jacek ***Koślicki***

PARALLEL SPECIALIST SESSIONS

Session G1 – Technologies Supporting Safety at Sea

1130 - 1300 **Place:** Lecture Hall A13, Basement of Mechanical Faculty, Gdynia Maritime University
Chairmen: ***David Patraiko*** *(United Kingdom),* ***Przemysław Dmowski*** *(Poland)*

Experimental Validation of Rudder Representation in Reduced-scale Physical Model Tests
Roberto ***de Oliveira Bezerra*** *(Brazil), José Carlos de Melo* ***Bernardino*** *(Brazil)*

Onboard Competence for Optimal Application of WAPS Systems
Gunnar ***Lamvik*** *(Norway), Tor Einar* ***Berg*** *(Norway), Artur* ***Sylwestrzak*** *(Poland), Agathe* ***Rialland*** *(Norway)*

Multi-ship Encounter Identification Using Community Detection of Complex Network
Yuejin ***Li*** *(China), Fengkai* ***Yang*** *(China), Pengfei* ***Chen*** *(China), Linying* ***Chen*** *(China), Junmin* ***Mou*** *(China)*

Spectrum Monitoring Efficiency Using Data Fusion Algorithms Versus Number of Radio Sensors
Maciej ***Mazuro*** *(Poland), Paweł* ***Skokowski*** *(Poland), Jan* ***Kelner*** *(Poland)*

Appropriate Operational Energy efficiency Indicator Based on the Significance of the Evaluation for Vessels in Regular Service
Toshiyuki ***Kano*** *(Japan), Ryuki* ***Ishizawa*** *(Japan), Takumi* ***Kuitani*** *(Japan)*

1300 - 1330 **Break:** Transfer by Bus to Skwer Kościuszki, Gdynia

1330 - 1430 **Lunch** at the "Róża Wiatrów" Restaurant

Session G2 – Artificial Inteligence AI

1130 - 1300 **Place:** Lecture Hall A14, Basement of Mechanical Faculty, Gdynia Maritime University
Chairmen: ***Oliver Michler*** *(Germany),* ***Tadeusz Kaczorek*** *(Poland)*

Artificial Intelligence (AI) Applications and the Shipping Industry
Dimitrios ***Dalaklis*** *(Greece)*

Use of Artificial Intelligent Robot as a Doctor on Board Ships
Homayoun ***Yousefi*** *(Iran)*

Applications of Generative AI applications in Maritime Transportation
Magne-Petter ***Sollid*** *(Norway)*

LEAS: An AI-based demonstrator as decision support tool for traffic monitoring at VTS centers
Thomas ***Stach*** *(Germany), Paul* ***Koch*** *(Germany)*

Pilot Research of AI-Generated Scenarios in Nautical Simulator Training Using ChatGPT Plus
Ivan ***Mraković*** *(Montenegro), Igor* ***Stanovčić*** *(Montenegro), Igor* ***Petrović*** *(Montenegro), Vera* ***Kapetanović*** *(Montenegro), Dejana* ***Pudar*** *(Montenegro)*

1300 - 1330 **Break:** Transfer by Bus to Skwer Kościuszki, Gdynia

1330 - 1430 **Lunch** at the "Róża Wiatrów" Restaurant

Session G3 – Inland Shipping

1130 - 1300 **Place:** Lecture Hall A15, Basement of Mechanical Faculty, Gdynia Maritime University
Chairmen: ***Špiro Ivošević*** *(Montenegro),* ***Lucjan Gucma*** *(Poland)*

The Advanced Radio Communication Technologies for Inland Navigation
Janusz ***Uriasz*** *(Poland), Andrzej* ***Lisaj*** *(Poland)*

Reduction of a Push Convoy Manoeuvring Space in Inland Navigation by Drift Angle Control Using Bow Active Rudder
Teresa ***Abramowicz-Gerigk*** *(Poland), Zbigniew* ***Burciu*** *(Poland), Andrzej* ***Hejmlich*** *(Poland)*

The Maturity of Inland Waterway Transport Systems in Europe
Emilia ***Skupień*** *(Poland)*

Analysis of Squat Effect in Shallow River for Inland Ferry
Jacek ***Jachowski*** *(Poland), Marta* ***Schoeneich*** *(Poland)*

Automatic Detection of Navigational Signs on Inland Waterways Using YOLO Neural Networks
Jacek ***Łubczonek*** *(Poland), Paweł* ***Adamski*** *(Poland)*

1300 - 1330 **Break:** Transfer by Bus to Skwer Kościuszki, Gdynia

1330 - 1430 **Lunch** at the "Róża Wiatrów" Restaurant

Session G4 – Cybersecurity

1130 - 1300 **Place:** Lecture Hall A16, Basement of Mechanical Faculty, Gdynia Maritime University
Chairmen: ***Knud Benedict*** *(Germany),* ***Ireneusz Czarnowski*** *(Poland)*

Cybersecurity of Wind Farms in the Baltic Sea
Marcin ***Krysiński*** *(Poland)*

Cybersecurity in Maritime Transport Systems: Threats, Trends, and Countermeasures in the Last Decade
Rafał ***Cichocki*** *(Poland), Przemysław* ***Wójcik*** *(Poland)*

Cybersecurity Threats to Coastal Critical Infrastructure
Marcin ***Krysiński*** *(Poland)*

Metasystem for Maritime Cybersecurity Management During Digital Transformation at Sea
Alicja ***Mrozowska*** *(Poland)*

Artificial Intelligence in Maritime Cybersecurity: Dual-Use Applications for Defense and Offense in the Age of Digital Seas
Rafał ***Cichocki*** *(Poland)*

1300 - 1330 **Break:** Transfer by Bus to Skwer Kościuszki, Gdynia

1330 - 1430 **Lunch** at the "Róża Wiatrów" Restaurant

1400 - 1530 **Registration in the Main Hall of Faculty of Navigation, GMU, Jana Pawła II Ave. 3**

Restaurant “Róża Wiatrów”, Gdynia

Gdynia Maritime University, Faculty of Navigation, John Paul II Ave 3

PARALLEL SPECIALIST SESSIONS

Session B1 – Safety at Sea - Part 1

1430 - 1600 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Huanxin Wang*** *(China),* ***Włodzimierz Filipowicz*** *(Poland)*

Analyzing Risk Influencing Factors For the Navigational Safety of Hazardous Cargo Vessels using Bayesian Networks
Chengpeng ***Wan*** *(China), Junze* ***Qi*** *(China), Zhisen* ***Yang*** *(China), Yiwen* ***Lin*** *(China), Bing* ***Wu*** *(China), Desheng* ***Cao*** *(China), Xinping* ***Yan*** *(China)*

Project OPTIMISM: Novel Means of Finding Root Causes of Accidents and Incidence at Sea and Port, as Well as Identifying Key Factors for Improved Safety from Ship Audit and Inspection
Reza ***Ziarati*** *(United Kingdom), German* ***de Melo Rodriguez*** *(Spain), Heikki* ***Koivisto*** *(Finland), Janusz* ***Uriasz*** *(Poland), Lakhvir* ***Singh*** *(United Kingdom), Amirehsan* ***Barzegarsedigh*** *(United Kingdom), Amir* ***Lazempour*** *(Sweden), Vanessa* ***Makar*** *(Sweden), Aris* ***Chronopoulos*** *(Greece)*

Limitations of Navigation by the FSCIR Ice Class A1 Ship in Polar Waters
Tadeusz ***Pastusiak*** *(Poland)*

Time Budget for Merchant Ship Control Takeover - Preliminary Results
Kamil ***Formela*** *(Poland), Krzysztof* ***Wróbel*** *(Poland), Paweł* ***Kołakowski*** *(Poland), Mateusz* ***Gil*** *(Poland)*

Dependence of the Maximum-permissible Distance of Ships' Convergence on the Shape of the Ship's Safe Domain
Igor ***Burmaka*** *(Ukraine), Olga* ***Monastyrska*** *(Ukraine), Dmytro* ***Zhukov*** *(Ukraine)*

1600 - 1615 Coffee Break – Room 114 & Outside Terrace

Session C1 – Green Shipping

1430 - 1600 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Arnaud Serry*** *(France),* ***Adam Przybyłowski*** *(Poland)*

Remarks on Autonomous Systems in Marine Industry – the Challenges and Threats of Safe Transport by Sea
Jerzy ***Herdzik*** *(Poland)*

The Role of IoT-based Systems in Early Fire Detection for Container Ships and Terminals
Olga ***Gotalay*** *(Italy), Rafael* ***Company*** *(Spain), Roberto* ***Arzo Martí*** *(Spain), Stefano* ***Ricci*** *(Italy)*

Green Voyage Planning: Exploring the Role of Sustainable Technologies and Strategies in Maritime Operations
Riccardo ***Fava*** *(Italy), Giovanni* ***Satta*** *(Italy)*

A Theoretical Framework for Assessing the Progress of Green Port Implementation
Elena ***Valionienė*** *(Lithuania), Audronė* ***Žukauskaitė*** *(Lithuania), Gintvilė* ***Šimkonienė*** *(Lithuania)*

Sustainable Transportation Corridors: Integrating Ports, Railways, and Green Logistics in the Horn of Africa
Wasihun ***Keno*** *(Ethiopia), Janusz* ***Szpytko*** *(Poland)*

1600 - 1615 Coffee Break – Room 114 & Outside Terrace

Session D1 – Ship Routing

1430 - 1600 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No. 110
Chairmen: ***David Brčić*** *(Croatia),* ***Paweł Zalewski*** *(Poland)*

Towards Improved Ship Weather Routing Through Multi-Objective Optimization with High Performance Computing Support
Mohammed ***Abdalsalam*** *(Sudan), Joanna* ***Szłapczyńska*** *(Poland)*

A Ship Weather Routing Optimization Method incorporating Ship Seakeeping Model
Zhepeng ***Han*** *(China), Yan* ***Zhou*** *(China), Jinfen* ***Zhang*** *(China), Da* ***Wu*** *(China)*

Determination of the Optimal Path in a Defined Environment for a Vessel
Natalia ***Popowniak*** *(Poland)*

Energy-Efficient Routing and Power Management in FANETs: A Comparative Analysis
Tomasz ***Jóźwik*** *(Poland), Krzysztof* ***Maślanka*** *(Poland), Jan* ***Kelner*** *(Poland)*

Benchmarking the Maritime Inventory Routing Problem on a Quantum Annealing-Hybrid System
Oliver ***Szal*** *(Germany), Sebastian* ***Rubbert*** *(Germany), Anisa* ***Rizvanolli*** *(Germany)*

1600 - 1615 Coffee Break – Room 114 & Outside Terrace

Session E1 – Ship Maintenance

1430 - 1600 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 111
Chairmen: ***Massimo Figari*** *(Italy),* ***Przemysław Wilczyński*** *(Poland)*

Lifetime Corrosion Loss of Bulk Carriers
Nikola ***Momčilović*** *(Serbia), Nataša* ***Kovač*** *(Montenegro), Špiro* ***Ivošević*** *(Montenegro)*

CFD Analysis of Cobalt-Based Ceramic Coatings for Energy Optimization in the Fishing Naval Industry
David S. ***Sanz*** *(Spain), Sergio* ***García*** *(Spain), Javier* ***García*** *(Spain), David* ***Boullosa-Falces*** *(Spain), Alfredo* ***Trueba*** *(Spain)*

From Science to Sense: A Philosophical Critique of Maritime Safety Management
Helle Asgjerd ***Oltedal*** *(Norway), Hilde* ***Sandhåland*** *(Norway)*

Modern Methods of Hull Cleaning Using Remote Operated Vehicles
Andrzej ***Stateczny*** *(Poland), Dominika* ***Śliwińska*** *(Poland), Paweł* ***Wierzbicki*** *(Poland)*

Analysis of the Possibilities of Processing Nodules Using Pyrometallurgical and Hydrometallurgical Methods
Wiktor ***Filipek*** *(Poland), Krzysztof* ***Broda*** *(Poland), Stanisław* ***Pietrzyk*** *(Poland), Barbara* ***Tora*** *(Poland)*

1600 - 1615 Coffee Break – Room 114 & Outside Terrace

POSTER SESSION

Session P1 - Miscellaneous Problems of Marine Navigation and Sea Transportation

1430 - 1600 **Place:** Gdynia Maritime University, Faculty of Navigation, Lower Hall under Planetarium
Chairmen: ***Juan Ignacio Alcaide*** *(Spain),* ***Joanna Soszyńska-Budny*** *(Poland)*

1P1 - The Impact Analysis of the Vessels Traffic Density on the Safety of the Underwater Infrastructure in the South Baltic Sea Area
Remigiusz ***Dzikowski*** *(Poland), Agnieszka* ***Nowy*** *(Poland)*

1P2 - Determining Port Wind Limiting Conditions for Safe Maneuvering and Berthing
Mate ***Barić*** *(Croatia), Ivan* ***Toman*** *(Croatia), Nina* ***Kostović*** *(Croatia), Luka* ***Grbić*** *(Croatia)*

1P3 - Dead Reckoning Method for an Unmanned Aerial Vehicle in Conditions of Limited GPS Signal
Bartłomiej ***Szykuła*** *(Poland), Janusz* ***Furtak*** *(Poland)*

1P4 - Comparison of the Operational Performance of Different Cargo Offshore Loading Systems, in Particular the Bow Loading System (BLS), the Stern Discharge System (SDS), Submerged Turret Loading (STL) and the Conventional Midship Cargo Manifold (MCM) Used on Flex Shuttle Tanker
Grzegorz ***Rutkowski*** *(Poland), Paweł* ***Nowak*** *(Poland)*

1P5 - Toward Optimizing In-port Tugboats Trajectories
Leila ***Niyazi*** *(Iran), Marc* ***Vigo*** *(Spain), Anna* ***Mujal-Colilles*** *(Spain), Marcel·la* ***Castells-Sanabra*** *(Spain), Clara* ***Borén*** *(Spain)*

1P6 - Search and Rescue on Frozen Rivers
Svetislav ***Soskić*** *(Serbia), Serif* ***Bajrami*** *(Serbia), Milan* ***Kresojević*** *(Serbia), Nikolina* ***Popović Paunić*** *(Serbia)*

1P7 - Training and Certification of Marine Radio Operators in Poland
Karol ***Korcz*** *(Poland), Karol* ***Olszewski*** *(Poland)*

1P8 - Technologies in Smart Ports: Market Analysis for 2022–2032
Adrianna ***Karaś*** *(Poland)*

1P9 - Use of Open Source for Bottom Model Interpolation - Single Beam Use Case in SONARMUS Software
Patryk ***Biernacik*** *(Poland), Witold* ***Kazimierski*** *(Poland), Marta* ***Włodarczyk-Sielicka*** *(Poland)*

1P10 - The Transition of the Maritime and Port Industry Toward Automation: A Focus on Maritime Autonomous Surface Ships (MASS)
Andrzej ***Bąk*** *(Poland)*

1P11 - Mooring Analysis of Unevenly Loaded Container Vessels Under Extreme Wind
Marko ***Perkovič*** *(Slovenia), Maciej* ***Gucma*** *(Poland), Peter* ***Vidmar*** *(Slovenia), Milan* ***Batista*** *(Slovenia), Blaž* ***Luin*** *(Slovenia)*

1P12 - Professional Seamanship Learned Through Roleplay
Mari ***Starup*** *(Norway), Charlott* ***Sellberg*** *(Sweden), Astrid Camilla* ***Wiig*** *(Norway)*

1P13 - Analysis of Marine Accidents within the Jurisdiction of the Harbourmaster's Office Zadar: Identifying the High-Risk Areas
Tomislav ***Mavra*** *(Croatia), Astrid* ***Zekić*** *(Croatia), Ana* ***Gundić*** *(Croatia), Luka* ***Grbić*** *(Croatia)*

1P14 - Analysis of Investments in Technology with Special Emphasis on the Future Development of the Green Fleet of Ships - Case Study of Jadrolinija d.d. Rijeka, Croatia
Šime ***Vučetić*** *(Croatia), Ljiljana* ***Peričin*** *(Croatia), Nina* ***Kostović*** *(Croatia), Ivan* ***Mišlov*** *(Croatia)*

1P15 - Marine Pollution Caused by Accidents: A Bibliometric Analysis and Mapping of Literature

*Coşkan **Sevgili** (Turkey)*

1P16 - System Dynamics Approach to Global Shipping Emissions
*Marin **Hero** (Slovenia), Peter **Vidmar** (Slovenia)*

1P17 - Tourist Safety on the Polish Baltic Coast: An Analysis of Risks and Preventive Strategies
*Magdalena **Bogalecka** (Poland), Aleksandra **Grobelna** (Poland)*

1P18 - Study of Parameters Influencing the Accuracy of the SDF Method Localization
*Kacper **Bednarz** (Poland), Cezary **Ziółkowski** (Poland), Jarosław **Wojtuń** (Poland)*

1P19 - Determinants of the Development of Logistics Concepts of Closed Supply Chains
*Sławomir **Skiba** (Poland)*

1P20 - Overview of QoS Metrics and Mechanisms Using in Mobile Networks
*Wiktoria **Bonowicz** (Poland), Dawid **Wawok** (Poland), Piotr **Zdankowski** (Poland), Jan **Kelner** (Poland)*

1P21 - Microplastics in Sea Water: Contamination and Environmental Risk
*Marzenna **Popek** (Poland)*

1P22 - Reverse Engineering Analysis of the Bayesian Sailing Yacht Sinking: Stability and Weather Related Factors
*Jure **Srše** (Slovenia), Marko **Perkovič** (Slovenia)*

1P23 - Spare Parts Setup in Different CMMS
*Antonija **Mišura** (Croatia), Tatjana **Stanivuk** (Croatia), Igor **Pavlović** (Croatia), Ladislav **Stazić** (Croatia)*

1P24 - Digital Twin Technology in Maritime: A MAAP Innovation Strategy
*Angelica **Baylon** (Philippines), Eduardo Ma-R **Santos** (Philippines)*

1600 - 1615 Coffee Break – Room 114 & Outside Terrace

Session B2 – Safety at Sea - Part 2

1615 - 1745 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Germán de Melo Rodríguez** (Spain), **Arkadiusz Tomczak** (Poland)*

A Study on a Situation Awareness Model for Navigators in Congested Waters
*Tawatchai **Endoo** (Thailand), Chihiro **Nishizaki** (Japan), Tadatsugi **Okazaki** (Japan)*

Safeguarding Navigation in Automated Shipping Through 3D Modeling and Reconstruction of Maritime Objects Using Segmented LiDAR Point Clouds
*Diala **Yacoub** (Syria/Germany), Christopher **Petersen** (Germany), Matthias **Steidel** (German)*

Assessing the Potential of Small Modular Reactors for Marine Applications in the Northern Baltic Sea
*Kristine **Carjova** (Estonia), Samuli **Hanninen** (Finland), Roomet **Leiger** (Estonia), Pentti **Kujala** (Finland), Ulla Pirita **Tapaninen** (Finland)*

Echolocation as an Acoustic Form of Relative Positioning
*Piotr **Targowski** (Poland), Janusz **Furtak** (Poland)*

Modern Navigation Challenges – Case Study Based on Students Practices on r/v Horyzont II in the Gulf of Gdańsk
*Agnieszka **Kerbrat** (Poland), Jacek **Pietraszkiewicz** (Poland)*

1745 - 1930 Free Time

Session C2 – Human Factor

1615 - 1745 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Senka Šekularac-Ivošević*** *(Montenegro),* ***Janusz Furtak*** *(Poland)*

Time Prediction of Human Evacuation from Passenger Ships Based on Anylogic Simulations
Xinjian ***Wang*** *(China), Zirui* ***Zhou*** *(China), Yiquan* ***Yuan*** *(China), Huanxin* ***Wang*** *(China), Shengke* ***Ni*** *(China), ZhengJiang* ***Liu*** *(China)*

A Decade of Research on Human Error in Maritime Safety: A Systematic Review
Salman ***Nazir*** *(Norway), Waddah S. Ghanem* ***Al Hashmi*** *(United Arab Emirates), Per* ***Haavardtun*** *(Norway)*

Mixed Reality Testing for Maritime Vessels: Integrating Simulation and Physical Vessels for System Verification
Janusz Andrzej ***Piotrowski*** *(Germany), Arne* ***Bokern*** *(Germany), Matthias* ***Steidel*** *(Germany)*

Towards a Hybrid Analysis of Human Factors in Maritime Autonomy Based on HFACS, CREAM, and FTA
Krzysztof ***Wróbel*** *(Poland)*

Human Factor in MASS Shipping
Teresa ***Abramowicz-Gerigk*** *(Poland), Zbigniew* ***Burciu*** *(Poland), Andrzej* ***Smacki*** *(Poland)*

1745 - 1930 Free Time

Session D2 – Sea Transportation

1615 - 1745 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No. 110
Chairmen: ***Thomas Pawlik*** *(Germany),* ***Agnieszka Blokus-Dziula*** *(Poland)*

Reliability and Availability Analysis of Transport System Composed of Dependent Subsystems
Przemysław ***Dziula*** *(Poland)*

Information Technology Synergies for Driver Assistance Systems Between Road and Inland Waterway Modes of Transport
Oliver ***Michler*** *(Germany), Matthias* ***Richter*** *(Germany)*

The Impact of Climate Change on Maritime Transport: A Review of the Situation in the Kymenlaakso Region
Elias ***Altarriba*** *(Finland)*

Passive Coherent Location Techniques for Modern Transport Monitoring — Concise Overview
Mateusz ***Wróbel*** *(Poland), Jan* ***Kelner*** *(Poland)*

Monitoring and Evaluating Sustainable Mobility Initiatives: Evidence from Research
Agnieszka ***Jankowska*** *(Poland), Adam* ***Przybyłowski*** *(Poland), Oskar* ***Gach*** *(Poland), Andrzej* ***Lachowicz*** *(Poland)*

1745 - 1930 Free Time

Session E2 – Miscellaneous

1615 - 1745 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 111
Chairmen: ***José Carlos de Melo Bernardino*** *(Brazil),* ***Andrzej Stateczny*** *(Poland)*

Cold Climate Maritime Engineering, Development of Modules for a One-year Course
Magne-Petter ***Sollid*** *(Norway), Ove Tobias* ***Gudmestad*** *(Norway), Kåre* ***Johansen*** *(Norway)*

Calculation of Laytime and Demurrage under Voyage Charterparties
Marija ***Pijaca*** *(Croatia), Božena* ***Bulum*** *(Croatia), Željka* ***Primorac*** *(Croatia)*

Global Stability of Fractional Feedback Systems with Positive Linear Parts
Tadeusz ***Kaczorek*** *(Poland)*

Hybrid Method for Cloud Detection Using Sentinel-2 Imagery and Spectral Indices
Oktawia ***Specht*** *(Poland)*

Global Stability of Different Fractional Orders Mimo Nonlinear Feedback Systems with Interval Matrices of Positive Linear Parts
Tadeusz ***Kaczorek*** *(Poland), Lukasz* ***Sajewski*** *(Poland)*

1745 - 1930 Free Time

1930 - 2300 ***Gala Dinner*** *– Banquet Room on Ground Floor of Hotel Mercure Gdynia Centrum,*
Address: Armii Krajowej Str. 22, Gdynia

(Evening dress)

Mercure

During Gala Dinner, nominations for **Honorary Fellowship of TransNav** will be announced.

Gdynia is a city in the Pomeranian Voivodeship of Poland and an important seaport of the Gulf of Gdańsk on the south coast of the Baltic Sea. Located in Kashubia in Eastern Pomerania, Gdynia is part of a conurbation with the spa town of Sopot, the city of Gdańsk and suburban communities, which together form a metropolitan area called the Tricity (*Trójmiasto*), with a population of over a million people. Gdynia is a relatively modern city. Its architecture includes the 13th century St. Michael the Archangel's Church in Oksywie, the oldest building in Gdynia, and the 17th century neo-Gothic manor house located on Folwarczna Street in Orłowo. The city also holds many examples of early 20th century architecture, especially monumentalism and early functionalism, and modernism. A good example of modernism is PLO (Polish Ocean Lines) building situated at 10 Lutego Street. The surrounding hills and the coastline attract many nature lovers. A leisure pier and a cliff-like coastline in Kępa Redłowska, as well as the surrounding Reservation Park, are also popular locations. In the harbour, there are two anchored museum ships, the *ORP Blyskawica* destroyer and the *Dar Pomorza* tall ship frigate. A 1.5 kilometre long promenade leads from the marina in the city centre, to the beach in Redłowo. Most of Gdynia can be seen from Kamienna Góra (54 metres above sea level). The decision to build a major seaport at the Gdynia village was made by the Polish government in 1920. Construction of Gdynia seaport was started in 1921. Till the end of 1930 docks, piers, breakwaters and many auxiliary and industrial installations were constructed or started. In 1938 Gdynia was the largest and most modern seaport on the Baltic Sea, as well as the tenth biggest in Europe. The city was constructed later than the seaport. In 1925 a special committee was inaugurated to build the city; city expansion plans were designed and city rights were granted in 1926. The city started to grow significantly after 1928.

Gdynia today is poised at an interesting stage in its development, riding on the crest of Poland's economic reforms. With a population of over 250,000 and one of the most buoyant economies in the whole of Poland, Gdynia is certainly going places, and it can no longer be dismissed as the grey counterpart of neighbouring Gdansk and Sopot. Certainly, it has none of the flamboyant sweep of its neighbours. Gdynia has plenty of tricks up its sleeve. And belying its reputation as a business hub, Gdynia is certainly no pauper when it comes to cultural attractions. The city can boast one of the country's top film festivals (often dubbed the 'Polish Cannes').

Hotel Mercure Gdynia Centrum offers views of the sea, Kościuszko Square and Dar Pomorza and ORP Błyskawica Museum Ships. They are all within a 5-minute walk, as well as a sandy beach and a large beach playground.

Mercure Gdynia Centrum is situated in a quiet area, 300 m from the Batory shopping centre and 150 m from Świętojańska Street with several coffee houses, restaurants and shops. The Gdynia Oceanarium is 500 m away. Lech Walesa Airport in Gdańsk is within 20 km and it is 3 km to Railway Station Gdynia Główna. The hotel has a large, fenced car park.

The City center is a great choice for travellers interested in food, restaurants and harbours. This is our guests' favourite part of Gdynia, according to independent reviews.

Thursday 12th June 2025

0800 - 1000 Registration in the Main Hall of Faculty of Navigation, GMU, Jana Pawła II Ave. 3

PLENARY SESSION

Plenary Session A2 – Student Sesion

0900 - 1000 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Paolo Alfredini*** *(Brazil),* ***Sambor Guze*** *(Poland)*

Multicriteria Approach to the Development of Passenger Shipping - Case Study of Small Polish Seaports
Agnieszka ***Figlon*** *(Poland)*

Use of an ROV with Modulated Lighting for Visualization and Diagnostic of the Technical Condition of Underwater Parts of Port's Wharfs
Adam ***Kaizer*** *(Poland), Barbara* ***Lednicka*** *(Poland), Agnieszka* ***Tessmer*** *(Poland), Włodzimierz* ***Freda*** *(Poland), Joanna* ***Soszyńska-Budny*** *(Poland)*

Risk Indicator for Ice Navigation in the Northern Baltic Sea
Mateusz ***Gutkowski*** *(Poland), Tomasz* ***Grabowicz*** *(Poland), Fabian* ***Gajgał*** *(Poland), Marcin* ***Życzkowski*** *(Poland), Filip* ***Zarzycki*** *(Poland), Jakub* ***Montewka*** *(Poland)*

A Seaports' Perspective on Resilience and Preparedness for Challenges of the Evolving World
Paulina ***Wolska*** *(Poland), Jan* ***Nasur*** *(Poland)*

Innovative SAFL Seabed Anchor System: Design, Prototype Development, and Initial Field Testing in Soft Seabed Environments
Olga ***Jaskulska*** *(Poland), Grzegorz* ***Rutkowski*** *(Poland)*

1000 - 1015 Coffee Break – Room 114 & Outside Terrace

PARALLEL SPECIALIST SESSIONS

Session B3 – Safety at Sea - Part 3

1015 - 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Marcel·la Castells Sanabra*** *(Spain),* ***Maciej Gucma****(Poland)*

Nautical Knowledge Extraction and Decision Making
Włodzimierz ***Filipowicz*** *(Poland)*

Hindcasting of Extreme Wave Storms in the Fairway of Port of Santos (Brazil) Over the Last Eighty Years
Paolo ***Alfredini*** *(Brazil), Emilia* ***Arasaki*** *(Brazil), Helder Luiz* ***Puia*** *(Brazil)*

New emergency towing arrangements for ships without IMO requirement for emergency towing systems (ETS)
Ørjan ***Selvik*** *(Norway), Tor Einar* ***Berg*** *(Norway)*

An Analysis and Comprehensive Assessment of Usage Autonomous Tugboats in Case of Dynamic Port Scheduling
Anastasiia ***Nikitiuk*** *(Ukraine)*

Maritime Security Operations Center (MSOC): Systemic Literature Review, Research Gaps and Future Areas to Investigate
*Ahmed Nagi **Nasr** (Egypt), Inga **Zaitseva-Pärnaste** (Estonia), Pentti **Kujala** (Finland)*

1145 - 1200 Coffee Break – Room 114 & Outside Terrace

Session C3 – Maritime Autonomous Surface Ships (MASS)

1015 - 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Michael Baldauf*** *(Germany),* ***Andrzej Bąk*** *(Poland)*

Methodology for Validation of MASS Vector State
*Paweł **Zalewski** (Poland)*

Error Propagation and Correction in MASS Team Tasks: A Task Interdependence Analysis Based on the SIR Model
*Jun Cheng **Tao** (China), ZhengJiang **Liu** (China)*

Incorporating Probabilistic Mutual Interactions in Simulation-Based Safety Evaluation of Maritime Autonomous Surface Ships
*Mikihisa **Ishii** (Japan), Hitoi **Tamaru** (Japan)*

Technology, Capabilities, and the Use and Future Goals of Robotic, Autonomous and Unmanned Surface and Underwater Vehicles
*Karol **Nowak** (Poland)*

A Study on the Implications of Maritime Autonomous Surface Ships on Maritime Education and Training
*Taisuke **Kondo** (Japan), Shoji **Fujimoto** (Japan), Mattew **Rooks** (United States), Tsukasa **Konishi** (Japan), Noritaka **Yasuta** (Japan)*

1145 – 1200 Coffee Break – Room 114 & Outside Terrace

Session D3 – Global Navigation Satellite System (GNSS) – Part 1

1015 – 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No 110
Chairmen: ***Wu Chen*** *(Hong Kong),* ***Andrzej Felski*** *(Poland)*

An Assessment of Long-term Spatial Agnosticity of GNSS Positioning Degradation Risks Due to Ionospheric Conditions
*Nenad **Filjar** (Croatia), Ivan **Hedji** (Croatia), Marko **Mikša** (Croatia), David **Brčić** (Croatia), Enes **Ciriković** (Croatia), Renato **Filjar** (Croatia)*

Detecting, Characterizing, and Localizing the Source of GNSS Interference in the Baltic Sea using Time Difference of Arrival (TDOA)
*Benon **Gattis** (United States), Dennis **Akos** (United States), Jaroslaw **Cydejko** (Poland), Ashton **Unzicker** (United States)*

A Maritime GNSS Based Integrity Concept for Port Approaches
*Christoph **Lass** (Germany), Hakan **Uyanik** (Turkey), Andriy **Konovaltsev** (Ukraine), Francesca **Magnabosco** (Italy), Giacomo **Farinati** (Italy), Chiara **Brighenti** (Italy)*

Fusion of Optical Flow and Dead Reckoning Algorithms for UAV Navigation Without GPS
*Jakub **Walczak** (Poland), Bartłomiej **Szykuła** (Poland), Piotr **Targowski** (Poland), Tomasz **Pałys** (Poland)*

Protection against GNSS threats — A Concise Overview
*Dariusz **Zmyslowski** (Poland), Jan **Kelner** (Poland)*

1145 - 1200 Coffee Break – Room 114 & Outside Terrace

Session E3 – Port and Harbours

1015 - 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 111
Chairmen: ***Mariana Panaitescu*** *(Romania),* ***Joanna Kizielewicz*** *(Poland)*

Lekki Deep Seaport: Examination of Stakeholders Perceived Operational and Environmental Sustainability Components
Adeyinka ***Ajayi*** *(Nigeria), John Paul* ***Meranda*** *(Nigeria), Adeniyi* ***Oluwakoya*** *(Nigeria)*

Stepwise Automation of Small Ports
Marianne ***Hagaseth*** *(Norway)*

A PRISMA Guided Systematic Review of Smart Ports: Trends and Future Research Directions
Eliise ***Toomeoja*** *(Estonia), Seçil* ***Gülmez*** *(Turkey), Ulla Pirita* ***Tapaninen*** *(Finland)*

Romanian Maritime Ports in the Digital Transformation Era: The Shift from Fourth-Generation to Smart Ports and the Impact on the Global Logistics Ecosystem
Alev ***Burmambet*** *(Romania)*

From Crisis to Resilience: The Port of Klaipeda and the Reshaping of Baltic Trade Flows (2014-2023)
Arnaud ***Serry*** *(France)*

1145 - 1200 Coffee Break – Room 114 & Outside Terrace

Panel Session M1 – Annual General Meeting of the Polish Navigation Forum (PNF)

1015 - 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 121 (Faculty Board)
Chairmen: ***Janusz Uriasz*** *(Poland),* ***Adam Weintrit*** *(Poland)*

This is a close meeting. Program distributed to members of the Polish Navigation Forum (PNF) by the chairman Prof. Janusz **Uriasz**.

1145 - 1200 Coffee Break – Room 114 & Outside Terrace

POSTER SESSION

Session P2 - Miscellaneous Problems of Marine Navigation and Sea Transportation

1015 - 1145 **Place:** Gdynia Maritime University, Faculty of Navigation, Lower Hall under Planetarium
Chairmen: ***Shiqi Fan*** *(China),* ***Magdalena Bogalecka*** *(Poland)*

2P1 - Description of the Sampling Operator and What Follows from Its Properties – Part 1
Andrzej ***Borys*** *(Poland)*

2P2 - Use of Flexible Floating Pipelines During Tandem Operation of Vessels
Oleksiy ***Malakhov*** *(Ukraine), Oleksiy* ***Kiris*** *(Ukraine), Andrii* ***Bondarenko*** *(Ukraine), Igor* ***Kozyryev*** *(Ukraine), Oleksandr* ***Palagin*** *(Ukraine), Andrii* ***Naydyonov*** *(Ukraine)*

2P3 - Collision Risk Analysis in the Southern Baltic Sea Using AIS Data
Maciej ***Kościelecki*** *(Poland), Diana* ***Kotkowska*** *(Poland), Krzysztof* ***Marcjan*** *(Poland)*

2P4 - A Technical, Environmental and Economical Comparison Among Traditional and Unconventional Marine Fuels
*Maria **Acanfora** (Italy), Marco **Altosole** (Italy), Flavio **Balsamo** (Italy), Ugo **Campora** (Italy), Luigia **Mocerino** (Italy), Filippo **Scamardella** (Italy)*

2P5 - Enhancing Ship Energy Efficiency and Preventing Pollution through Effective Biofouling Control Measures as a Future Direction for a Sustainable Shipping
*Mateusz **Kawa** (Poland)*

2P6 - Assessment of AIS-Derived Positioning Accuracy in Port Environment: Case Study of the Port of Copenhagen
*David **Brčić** (Croatia), Davor **Šakan** (Croatia), Srđan **Žuškin** (Croatia), Serđo **Kos** (Croatia)*

2P7 - Survey of Machine Learning Methods for QoS Evaluation in Heterogeneous Networks
*Piotr **Zdankowski** (Poland), Dawid **Wawok** (Poland), Wiktoria **Bonowicz** (Poland), Jan **Kelner** (Poland)*

2P8 - Autonomous Navigation Safety in the Light of the Limitations of Necessary AI-based Predictions
*Lech **Murawski** (Poland)*

2P9 - Innovative Approaches to Transport Challenges in Port Cities Based on Literature Review
*Agnieszka **Jankowska** (Poland)*

2P10 - Power Quality Assessment of a Modern Ship Power System with Batteries and Diesel Generators – Case Study
*Janusz **Mindykowski** (Poland), Mariusz **Gorniak** (Poland), Andrzej **Pilat** (Poland), Łukasz **Wierzbicki** (Poland)*

2P11 - Decision Support System Using Modern Methods of Collision Avoidance in Collision Situations at Sea
*Mostefa **Mohamed-Seghir** (Poland)*

2P12 - Application of Wireless Networks for Communication in a Formation of Autonomous Port Tugboats
*Wojciech **Koznowski** (Poland), Andrzej **Łebkowski** (Poland)*

2P13 - Attractiveness of the Maritime Profession – Student's Perception
*Ana **Gundić** (Croatia), Dino **Županović** (Croatia), Dalibor **Ivanisević** (Croatia), Nina **Kostović** (Croatia)*

2P14 - Infectious Disease Prediction Algorithms Using Medical Knowledge Base for the Decision Support System Regarding the Risk of Epidemic Threats on Sea-going Vessels – DESSEV
*Natalia **Wawrzyniak** (Poland), Tomaz **Gregorič** (Slovenia), Natasza **Blek** (Poland), Izabela **Bodus-Olkowska** (Poland), Ilona **Garczyńska-Cyprysiak** (Poland), Aris **Chronopoulos** (Greece), Vanessa **Makar** (Sweden), Janne **Lahtinen** (Finland), German **de Melo Rodriguez** (Spain)*

2P15 - Methods of Ensuring the Resilience of Transport Networks to Undesirable Events
*Adriana **Strzelczyk** (Poland), Sambor **Guze** (Poland)*

2P16 - Analysis of the Aerodynamic Drag of Selected Pneumatic Life Rafts
*Edyta **Książkiewicz** (Poland), Jacek **Jachowski** (Poland)*

2P17 - On Visualization of Folding and Aliasing in Spectrum of a Sampled Signal Calculated with the Use of FFT Algorithm
*Andrzej **Borys** (Poland)*

2P18 - Comparative Analysis of Emissions and Fuel Consumption in Multimodal Container Transport Systems: Maritime, Road, and Rail Perspectives
*Grzegorz **Rutkowski** (Poland), Jarosław **Korzeb** (Poland), Piotr **Pryciński** (Poland)*

2P19 - Corrosion-Induced Concrete Damage in Marine Engineering Structures: Advanced Case Study and Implemented Repair Methods
*Aleksandra **Wawrzyńska** (Poland), Tomasz **Mioduszewski** (Poland), Aleksandra **Maliszewska** (Poland)*

2P20 - On Safety of Maritime Navigation Through New MEEThods: ECDIS Research from EHO to CODE and Beyond
*David **Brčić** (Croatia), Srđan **Žuškin** (Croatia), Maro **Car** (Croatia), Nermin **Hasanspahić** (Croatia)*

2P21 - Waterway Capacity Enhancement through Traffic Flow Simulation: A Case Study of the Policki Canal Passing Lane
*Lucjan **Gucma** (Poland), Rafał **Gralak** (Poland), Burak **Kundakci** (Turkey)*

2P22 - Analysis of the Surface Protection of a Maritime Object, Case Study
*Mate **Jurjević** (Croatia), Antun **Anić** (Croatia), Branko **Lalić** (Croatia), Ladislav **Stazić** (Croatia)*

2P23 - Behavior of Formula for Spectrum of Sampled Signal when Sampling Period Tends to Zero
*Andrzej **Borys** (Poland)*

2P24 - Spatial Development on Water Resources for Modern Port City, Sustainable Growth with a Multifunctional Organization
*Mateusz **Gerigk** (Poland)*

2P25 - Filtration Posibilities of Modified Cilindrical Antenna Array
*Jarosław **Stępień** (Poland), Leszek **Kachel** (Poland)*

1145 - 1200 Coffee Break – Room 114 & Outside Terrace

PARALLEL SPECIALIST SESSIONS

Session B4 – Maritime Education and Training (MET) - Part 1

1200 - 1330 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Vladimir Torskiy** (Ukraine), **Karol Korcz** (Poland)*

Maritime Education and Training: A Simulation-Based Approach to Enhancing Ship Electric Load Management Competency Through Emergency Scenario Familiarization
*Reza **Karimpour** (Iran), Massimo **Figari** (Italy)*

Analysis of Maritime Pilots' Education in the Republic of Croatia
*Astrid **Zekić** (Croatia), Zaloa **Sánchez-Varela** (Spain), Ivica **Skoko** (Croatia), Renato **Ivče** (Croatia)*

Preparing for the Era of Maritime Autonomy: A New Educational Approach for METIs
*Cristina **Campos** (Spain), Clara **Borén** (Spain), Ana **Gundić** (Croatia), Marko **Valčić** (Croatia), Klaas **De Hert** (Belgium), Marcel·la **Castells-Sanabra** (Spain)*

Charting the Digital Course: Readiness and Competence Needs in Norwegian Maritime Education
*Magne-Petter **Sollid** (Norway), Maria **Hammer** (Norway), Kåre **Johansen** (Norway)*

The Future of European Maritime AI-assisted Cybersecurity Education and Training
*Vanessa **Roberts** (Estonia), Marie **Haugli-Sandvik** (Norway), Tiia **Sõmer** (Estonia), Pablo **Martínez Ramil** (Spain)*

1330 - 1445 **Lunch** at the "Róża Wiatrów" Restaurant

Session C4 – Autonomous Systems in Marine Industry

1200 - 1330 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Salman Nazir*** *(Norway),* ***Andrzej Łebkowski*** *(Poland)*

Analysis of the Implications of the Introducing Autonomous Ships to Navigation for the Provisions of Ship Repair Contracts
Małgorzata ***Daniszewska*** *(Poland)*

From Accuracy to Uncertainty - 3D Vessel Position Representation in Sensor-Based Electronic Navigation for Autonomous Maritime Operations
Arkadiusz ***Tomczak*** *(Poland)*

Switching of a Multi-Controller Structure in a Motion Control System of an Autonomous Ship
Andrzej ***Rak*** *(Poland), Łukasz* ***Alfuth*** *(Poland)*

Rules of the Road at Sea: Is 1972 Colregs Ready for Autonomous Vessels?
Barbara ***Stępień*** *(Poland)*

Enabling the Future of Autonomous Shipping: Regulatory Challenges, Infrastructure Modernization and Pathways to Integration
Pietro ***Corsi*** *(Italy), Sergej* ***Jakovlev*** *(Lithuania), Massimo* ***Figari*** *(Italy), Edvinas* ***Pocevicius*** *(Lithuania)*

1330 - 1445 **Lunch** at the "Róża Wiatrów" Restaurant

Session D4 – Global Navigation Satellite System (GNSS) - Part 2

1200 - 1330 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No 110
Chairmen: ***Dennis Akos*** *(United States),* ***Andrzej Fellner*** *(Poland)*

GNSS jamming and spoofing situational awareness maps
Dariusz ***Zmyslowski*** *(Poland), Jan* ***Kelner*** *(Poland)*

Evolution of GNSS/INS techniques including EGNOS and Galileo applied to Maritime/Aerial/Terrestrial Navigation
Raffaela ***Cefalo*** *(Italy), Roberto* ***Roberti*** *(Italy), Tatiana* ***Sluga*** *(Italy)*

A Novel Network RTK Technique for Mobile Platforms: Extending High-Precision Positioning to Offshore Environments
Wu ***Chen*** *(Hong Kong), Junsheng* ***Ding*** *(China), Yuyan* ***Wang*** *(China), Xiaolong* ***Mi*** *(China), Tong* ***Liu*** *(China)*

Is It Permissible to Use GPS Data to Avoid Collisions?
Andrzej ***Felski*** *(Poland), Krzysztof* ***Jaskólski*** *(Poland)*

Maritime Tests of the Galileo High Accuracy Service (HAS) Performance at Its Initial Phase of Operation
Jaroslaw ***Cydejko*** *(Poland)*

1330 - 1445 **Lunch** at the "Róża Wiatrów" Restaurant

Session E4 – Small Boats, Cruise and Passenger Ships

1200 - 1330 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 111
Chairmen: ***Aykut Arslan*** *(Turkey),* ***Jacek Łubczonek*** *(Poland)*

Market Trends in the Luxury Small Cruise Ship Sector: Dynamics of Demand and Supply
Joanna ***Kizielewicz*** *(Poland)*

Development of a new generation High-Speed Marine Vessel (HSMV) for passenger traffic in Norwegian waters
Tor Einar ***Berg*** *(Norway), Anders* ***Alterskjær*** *(Norway), Nere* ***Skomedal*** *(Norway)*

"Voices from the Deck": Evacuation Effectiveness on Cruise and Passenger Ships through Seafarers' Perspectives and Literature Analysis
Antonios ***Andreadakis*** *(Greece), Dimitrios* ***Dalaklis*** *(Greece)*

Analysis of Small Boat's Operator Action Using Gaze-data
Nahoko ***Yoshida*** *(Japan), Yasuyuki* ***Imai*** *(Japan), Kiyokazu* ***Minami*** *(Japan), Hiroaki* ***Seta*** *(Japan)*

Fishing Ships Motion Monitoring and Analysis: Preliminary Results
Oriol ***Carrasco-Serra*** *(Spain), Antoni Ignaci* ***Llull Marroig*** *(Spain), Rene* ***Swift*** *(United Kingdom), Anna* ***Mujal-Colilles*** *(Spain), Mark* ***James*** *(United Kingdom), Marcel·la* ***Castells-Sanabra*** *(Spain)*

1330 - 1445 **Lunch** at the "Róża Wiatrów" Restaurant

Panel Session M2 – Meeting of the Waterborne Transport Section of the Committee of Transport, Polish Academy of Sciences (STW KT PAN)

1200 - 1330 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 121 (Faculty Board)
Chairman: ***Adam Weintrit*** *(Poland),* ***Tomasz Neumann*** *(Poland)*

This is closed meeting (in Polish). Program distributed to STW KT PAN members.

Zebranie Sekcji Transportu Morskiego Komitetu Transportu Polskiej Akademii Nauk

1330 - 1445 **Lunch** at the "Róża Wiatrów" Restaurant

Session B5 – Maritime Education and Training (MET) - Part 2

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Raffaela Cefalo*** *(Italy),* ***Janusz Uriasz*** *(Poland)*

MICROMET Project: Standardizing Maritime Education through Micro-credentials
Ana ***Gundić*** *(Croatia), Piotr* ***Kopacz*** *(Poland), Zaloa* ***Sánchez-Varela*** *(Croatia), F. Xavier* ***Martínez de Osés*** *(Spain)*

LLM-based Maritime Training Feedback System: Implementing RAG-Enhanced Assessment Analysis with STCW Compliance
Simon ***Baradziej*** *(Norway)*

Dynamic Positioning Training and Certification Scheme: Overview and Prospects
Zaloa ***Sánchez-Varela*** *(Spain), David* ***Boullosa-Falces*** *(Spain), Nikola* ***Mandić*** *(Croatia)*

The Use of Simulators for the Emergency Response Training of Dynamic Positioning Operators of Class A Vessels
Hiroaki ***Katakura*** *(Japan), Manabu* ***Saito*** *(Japan), Takahiro* ***Takemoto*** *(Japan)*

MAAP Students Sustainability Standpoints: Implications to their Evolution as Future Global Maritime Professionals
*Angelica **Baylon** (Philippines), Eduardo Ma-R **Santos** (Philippines), Janice **Vergara** (Philippines)*

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Session C5 – Offshore Technologies

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Chihiro Nishizaki** (Japan), **Zbigniew Burciu** (Poland)*

Maintenance Activities Coordination for Offshore Wind Farms integrating Multivariate Stochastic Models
*Yorlandys **Salgado Duarte** (Poland), Janusz **Szpytko** (Poland)*

Impact of Towing and Jacking History on Jack-up Structure Reliability
*Agnieszka **Blokus-Dziula** (Poland), Dawid **Dobrzański** (Poland)*

Enhancing Island–Mainland Connectivity in Estonia: Challenges and Sustainable Development Strategies
*Maarius **Utso** (Finland), Inga **Zaitseva-Pärnaste** (Estonia), Kevin Ellis **Parnell** (Australia)*

Shipping Traffic Analysis in Estonia for Planned Offshore Wind Farms
*Inga **Zaitseva-Pärnaste** (Estonia), Kirill **Šustov** (Estonia), Pärtel **Keskküla** (Estonia), Kert **Süsmalainen** (Estonia)*

An Analysis of the Risks during Personnel Transfer via Shipboard Crane and Personnel Transfer Basket (PTB) during Ship to Ship (STS) Operation Offshore
*Grzegorz **Rutkowski** (Poland), Łukasz **Lewkowicz** (Poland)*

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Session D5 – Innovations in Maritime Transport

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No. 110
Chairmen: ***Michele Fiorini** (Italy), **Lech Murawski** (Poland)*

Simultaneous Operations During LNG Bunkering at LNG-Powered Vessels
*Ihor **Surinov** (Ukraine), Volodymyr **Shemonayev** (Ukraine), Vladimir **Torskiy** (Ukraine)*

Optimisation of Non-linear Mathematical Model Coefficients for LNG Carrier with Podded Propulsion
*Anna **Miller** (Poland)*

Towards Green Ferry Corridors in the Adriatic Sea – Integrating Monte Carlo Simulations Into Life Cycle Costing Scheme for Alternative Fuels
*Marija **Koričan** (Croatia), Momir **Sjerić** (Croatia), Danilo **Nikolić** (Montenegro), Ailong **Fan** (China), Nikola **Vladimir** (Croatia)*

Genetic Algorithm for Ship Robbery Emergency Reporting System
*Tsai-Hsin **Chang** (Taiwan), Sheng-Long **Kao** (Taiwan), Chien-Chang **Chou** (Taiwan)*

The Use of Social Media as a Marketing Communication Channel by the Largest Ports of the Baltic Sea Region
*Anna **Kamińska** (Poland), Przemysław **Dmowski** (Poland)*

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Session E5 – Marine Environment

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No 111
Chairmen: ***Vincent Ezikornwor Weli*** *(Nigeria),* ***Marzena Popek*** *(Poland)*

Review of Advantages and Disadvantages of Magnetometer Types and Measuring Techniques to be Used for GNSS-free PNT in the Maritime Environment
Valeria ***Bartsch*** *(Germany), Chhandosee* ***Bhattacharya*** *(India), Ole* ***John*** *(Germany), Olaf* ***Rendel*** *(Germany), Anisa* ***Rizvanolli*** *(Germany), Oliver* ***Szal*** *(Germany)*

An Innovative Approach to the Problem of Transporting Spoil from Great Depths in Deep-sea Mining
Wiktor ***Filipek*** *(Poland), Krzysztof* ***Broda*** *(Poland), Barbara* ***Tora*** *(Poland)*

Implementation and Assessment of the Innovative Technical Solutions to Reduce Negative Impact to the Marine Environment During Installation of Offshore Wind Oarks
Mihails ***Pavlovs*** *(Latvia), Aleksandrs* ***Korjakins*** *(Latvia)*

Optimizing the Path of a Mobile Agent in an Environment with Static Obstacles using Reinforcement Learning
Adrian ***Sawicki*** *(Poland), Mirosław* ***Tomera*** *(Poland)*

Study of North Finding System with Low-cost MEMS Gyro Sensor and 3-axis Small Turntable Under Non-horizontal and Magnetically Disturbed Environments for UUVs
Taisei ***Hayashi*** *(Japan), Daisuke* ***Terada*** *(Japan)*

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Panel Session M3 – Annual General Meeting of the Poland Branch of The Nautical Institute

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 121 (Faculty Board)
Chairmen: ***David Patraiko*** *(United Kingdom),* ***Adam Weintrit*** *(Poland)*

This is an open meeting. Program distributed to members of the Poland Branch of the Nautical Institute.

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Session P3 - Miscellaneous Problems of Navigation

1445 - 1615 **Place:** Gdynia Maritime University, Faculty of Navigation, Lower Hall under Planetarium
Chairmen: ***Homayoun Yousefi*** *(Iran),* ***Andrzej Borys*** *(Poland)*

3P1 - Innovative Road Management: Analysis of Poland's National Traffic Management System and the Role of Intelligent Transport Systems
Monika ***Ziemska-Osuch*** *(Poland)*

3P2 - Energy Production and Economic Impact in the Black Sea Blue Economy
Fanel Viorel ***Panaitescu*** *(Romania), Mariana* ***Panaitescu*** *(Romania), Ionut* ***Voicu*** *(Romania), Sabina* ***Nedkova*** *(Bulgaria), Florentina-Aurelia* ***Vasilica*** *(Romania)*

3P3 - Meteorology and Maritime Navigation: Understanding the Impacts of Weather Conditions on Shipping Operations in Nigeria Waters
*Mutiat **Sholademi** (Nigeria), Ajibola **Zannu** (Nigeria), Benson **Levi** (Nigeria)*

3P4 - Development of Maritime Cybersecurity Protocols – Enhancing Awareness on Cyberthreats in Maritime Transport
*German **de Melo Rodriguez** (Spain), Aris **Chronopoulos** (Greece), Tomaz **Gregorič** (Slovenia), Izabela **Bodus-Olkowska** (Poland), Lakhvir **Singh** (United Kingdom), Mariusz **Dramski** (Poland), Konstantinos **Karampidis** (Greece), Andrei **Bautu** (Romania), Natalia **Wawrzyniak** (Poland), Ilona **Garczyńska-Cyprysiak** (Poland)*

3P5 - Conditions of the Desired HF Channel Quality for Diverse Receiver Location Environments
*Bogdan **Uljasz** (Poland), Cezary **Ziółkowski** (Poland)*

3P6 - Explainable AI for Human Collaboration in Safety-Critical Maritime Machinery Systems
*Veli-Joel **Paananen** (Finland)*

3P7 - Modelling the Combustion Process of Marine Diesel Engines to Reduce Pollutant Emissions and Influence Vibrations at the Propeller Shaft for a Bulk Carrier Vessel
*Liviu-Constantin **Stan** (Romania)*

3P8 - Stability Analysis of a Bulk Carrier under Damage Scenarios during the Loading of Polymetallic Nodules in the Clarion–Clipperton Zone
*Paweł **Kacprzak** (Poland)*

3P9 - Predicting Maritime Piracy Risk: AI and Data Analysis Approaches for Real-Time Forecasting
*Sonia **Rozbiewska** (Poland)*

3P10 - Overview of Mutual Localization Techniques Between Unmanned Aerial Vehicles in Swarm
*Bartosz **Czaja** (Poland), Krzysztof **Maślanka** (Poland), Paweł **Skokowski** (Poland), Jan **Kelner** (Poland)*

3P11 - Physical Object-based Simulator of Ship's Electrical Power Plant and Its Application in MET Processes
*Bolesław **Dudojć** (Poland), Janusz **Mindykowski** (Poland)*

3P12 - Building 3D Situational Awareness in Electromagnetic Spectrum for UAVs Using Radio Environment Maps
*Michał **Kryk** (Poland), Krzysztof **Malon** (Poland), Jan **Kelner** (Poland)*

3P13 - Consideration of Ship Reducing Speed as Collision Avoidance Action
*Mate **Barić** (Croatia), Vinko **Pavić** (Croatia), Luka **Grbić** (Croatia), Ivan **Mišlov** (Croatia)*

3P14 - From Enrollment to Embarkation: Tackling Dropout Challenges in Maritime Higher Education
*Senka **Šekularac-Ivošević** (Montenegro), Špiro **Ivošević** (Montenegro)*

3P15 - The Review of the Global Seafarers Market
*Zvonimir **Lušić** (Croatia), Stipe **Galić** (Croatia)*

3P16 - Experimental Research for Metocean Data and Risks in the Vicinity of Platforms in the Black Sea
*Mariana **Panaitescu** (Romania), Fanel Viorel **Panaitescu** (Romania), Florentina Aurelia **Vasilica** (Romania), Ionut **Voicu** (Romania)*

3P17 - Revision of LNG Port Design Methods
*Maciej **Gucma** (Poland), Przemysław **Jabłoński** (Poland), Maciej **Gogaliński** (Poland)*

3P18 - The Recovery of Sunken Object from a Lake - Study Case
*Serif **Bajrami** (Serbia), Svetislav **Śoškić** (Serbia), Milan **Kresojević** (Serbia), Ivan **Petrović** (Serbia)*

3P19 - The Concept of Fuzzy Logic Ship Motion Control Along a Predefined Route at an Anchorage
*Jakub **Wnorowski** (Poland), Andrzej **Łebkowski** (Poland)*

3P20- Enhancing Maritime Education through Student-Produced Podcasts: A Case Study
*Leif Ole **Dreyer** (Norway), Ria **Bruenig** (Norway), Torkel **Bjarte-Larsson** (Norway)*

3P21- Harnessing the Wind: The Rise of Wind-Assisted Ship Propulsion (WASP) in the Transformation of Maritime Transport
*Katarzyna **Gaul** (Poland), Grzegorz **Rutkowski** (Poland)*

3P22 - The Influence of Environmental Noise Power on the Probability of Receiving GMDSS Alarm Signals
*Bogdan **Uljasz** (Poland)*

3P23 - Navigating the Arctic with Digital Twins: A Case Study on Enhancing Port Management in Longyearbyen, Svalbard
*Jakub **Kwasnik** (Poland), Nataly **Marchenko** (Norway)*

1615 - 1630 Coffee Break – Room 114 & Outside Terrace

Session B6 – Aircrafts and Flying Drones

1630 - 1730 **Place:** Gdynia Maritime University, Faculty of Navigation, Auditorium Maximum
Chairmen: ***Viorel Panaitescu** (Romania), **Janusz Szpytko** (Poland)*

Selected Operational Problems and Challenges for the Unmanned Aircraft Systems
*Andrzej **Fellner** (Poland), Radosław **Fellner** (Poland)*

Wing-in-ground Crafts in Europe – from History to Contemporary Developments
*Kristin **Kerem** (Estonia), Kristine **Carjova** (Estonia), Ulla Pirita **Tapaninen** (Finland)*

A Drone-based Fire Prevention System on Container Terminals - A Theoretical Study
*Przemysław **Wójcik** (Poland), Paweł **Wierzbicki** (Poland)*

Instructor Autonomy and Training Structures in Simulator-Based Education: A Study of Maritime and Aviation Training Approaches
*Johan-Fredrik **Røds** (Norway), Ove Tobias **Gudmestad** (Norway)*

Intentional Interference of Radio Links Between Unmanned Aerial Vehicle and Ground Control Station
*Jan **Dułowicz** (Poland), Paweł **Skokowski** (Poland), Jan **Kelner** (Poland)*

1730 - 1930 Free Time

Session C6 – Risk of Collision

1630 - 1730 **Place:** Gdynia Maritime University, Faculty of Navigation, Lecture Hall (Aula)
Chairmen: ***Mate Barić** (Croatia), **Grzegorz Rutkowski** (Poland)*

A Support System for Collision Avoidance by Simulating Ship Motion and Rolling
*Yurie **Hirai** (Japan), Tadatsugi **Okazaki** (Japan)*

Towards Harmonized Assessment of Risk of Collision - Addressing Different Perspectives of Encounter Situations at Sea
*Michael **Baldauf** (Germany), Sandro **Fischer** (Germany), Michael **Gluch** (Germany)*

Simulation of the Unintentional Unberthing of Vessels (Ship Drift) in a Physical Hydraulic Model
*Rafael **Esferra** (Brazil), Caio Cesar **Fernandes de Jesus** (Brazil), Roberto **de Oliveira Bezerra** (Brazil), José Carlos de Melo **Bernardino** (Brazil)*

Clarification of Potential Risks in the Evacuation Process of Ships to Reduce the Risk of Maritime - NATECH
*Akihiro **Tokuyama** (Japan), Galang **Kusuma** (Indonesia), Nima **Mohammadi** (Iran), Shoji **Fujimoto** (Japan), Hidenari **Makino** (Japan)*

Support System for Situation Awareness of Navigators in the Approach to Yokohama Traffic Route
*Chihiro **Nishizaki** (Japan), Yurie **Hirai** (Japan), Hirotaka **Miura** (Japan)*

1730 - 1930 Free Time

Session D6 – Seafarers and Work Load

1630 - 1730 **Place:** Gdynia Maritime University, Faculty of Navigation, Room No. 110
Chairmen: ***Luigia Mocerino** (Italy), **Teresa Abramowicz-Gerigk** (Poland)*

From Paper to Digital: The Impact and Hidden Challenges of Mandatory ECDIS on Maritime Safety and Seafarer Practice
*Nermin **Hasanspahić** (Croatia), David **Brčić** (Croatia), Maro **Car** (Croatia), Srđan **Žuškin** (Croatia)*

Seafarer Mental Workload Assessment Using a Hybrid Deep Learning Model
*Ruonan **Jiang** (China), Shiqi **Fan** (China)*

Crew Involvement in Professional Development and Work Efficiency in the Light of the Implemented KPI System: A Case Study of a Shipmanagement Company
*Tomasz **Łączyński** (Poland), Piotr **Przybyłowski** (Poland)*

The Necessity of Establishing a National Organization to Monitor and Enhance Women's Employability in the Water Transportation Sector
*Anna **Karadencheva** (Bulgaria), Christiana **Atanasova** (Bulgaria), German **de Melo Rodriguez** (Spain)*

Developing a New Instrument To Measure Seafarer Psychology
*Aykut **Arslan** (Turkey), Hasan Bora **Usluer** (Turkey), Abdulkadir **Akturan** (Turkey), Başak Ersin **Efiloğlu** (Turkey)*

1730 - 1930 Free Time

Session E6 – Navigation Tools and Systems

1630 - 1730 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 111
Chairmen: ***Dimitrios Dalaklis** (Greece), **Tadeusz Pastusiak** (Poland)*

Optimizing AIS Data Format Based on HELCOM Datasets
*Kirill **Sustov** (Estonia), Inga **Zaitseva-Pärnaste** (Estonia)*

Analysis of Vessel Overtaking Maneuvers in Narrow Waterways Using AIS Data
*Burak **Kundakci** (Turkey), Selcuk **Nas** (Turkey), Lucjan **Gucma** (Poland)*

Leveraging Radar and VTS for Enhanced Oil Spill Detection
*Michele **Fiorini** (Italy), Roberto **Trevisani** (Italy)*

Autonomous Safety of Maritime Units: A Novel Concept of Using FMCW Radars for Critical Data Transmission
*Mateusz **Wróbel** (Poland)*

Processing of Heading Data with Machine Learning for MBES Survey
*Witold **Kazimierski** (Poland), Marta **Włodarczyk-Sielicka** (Poland)*

1730 - 1930 Free Time

Bilateral Discussions

1630 - 1730 **Place:** Gdynia Maritime University, Faculty of Navigation, Room 121 (Faculty Board)

The organizers provide a place to conduct bilateral discussions and meetings of conference participants regarding conducted and future joint research projects

1730 - 1930 Free Time

1930 - 2300 **Friends Evening in "Vinegre" Restaurant** at the Naval Museum in Gdynia
Gdynia, seaside, on the top of Museum (3rd Floor)
(casual clothes)

„Vinegre" Restaurant, Gdynia

Thursday 12th June 2025

PRELIMINARY
ACCOMPANYING PERSONS' PROGRAMME

0800 - 0900 Registration in the Main Hall of Faculty of Navigation, GMU, Jana Pawła II Ave. 3

Touristic Trip - Sightseeing

0900 - 1700 **Bus Trip** to the Wdzydze Kiszewskie Museum – The Teodora and Izydor Gulgowski Kashubian Ethnographic Park
Responsible Person: ***Maria Łozińska*** *(Poland)*

0900 Meeting Point – Faculty of Navigation

0930 - 1030 Bus trip from Gdynia to Wdzydze Kiszewskie

1030 - 1200 Visiting the **Kashubian Ethnographic Park** in Wdzydze

The beginnings of the Museum in Wdzydze go back to the year 1906. Its founders, Teodora and Izydor Gulgowski were the first who established an open air museum on Polish land. The XVIIIth century cottage of a rich peasant bought from a local farmer Michał Hinc housed the collection. The collection consisted of typical of those times household and farm objects, precious headdresses decorated with golden embroidery, glass paintings and pottery.

Vast activities of the Museum's founders resulted in development of local handcraft and discovered the beauty of Kashubian folk art hidden in fine root plaitings and colourful embroidery from Wdzydze.

Nowadays, already over centennial Museum stretches upon 22 ha of area located at the bank of the Gołuń lake built up with objects of regional architecture. Cottages, manors, a school, smithy, windmills, churches, farm buildings and craftsmen's workshops – 52 objects from Kashubia and Kociewie testify the richnesss and variety of rural art of building from XVIIth till XXth century. Faithfully reconstructed interiors furnished authentically, temporarily operated farm and industrial machines and finally its picturesque location make this place magical.

1200 - 1430 Visit to **Chmielno**

Chmielno village is called "the little pearl of Kaszuby" – it lies between lakes and forests and draws many tourists that are looking for unspoiled nature and kind hosts.

The workshop of Kashubian ceramics by the Necels. The workshop of the Necel family is situated in the middle of Chmielno. Two-story building consists of the pottery museum on the top level, the workshop on the middle one and the huge pottery furnace on the ground level. There is also a small shop, where the Necel unique pottery is sold. The workshop produce many different kinds of clay vessels: jugs, jars, flower pots, pots with lids, bowls of all sizes and shapes, plates, twin-vessels and many more. All of these can be created for special order and shipped all over the world.

1430 - 1600 Lunch in Restaurant in Chmielno

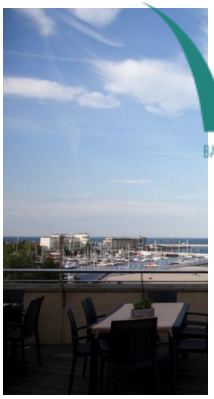
1600 - 1700 Return to hotels

(In case of bad weather alternative attractions will be proposed)

1930 - 2300 **Friends Evening in the "Vinegre" Restaurant** at the Naval Museum in Gdynia
Gdynia, seaside, on the top of Museum (3rd Floor)
(casual clothes)

"Vinegre" Restaurant

One of the most attractive venues opened in Gdynia. Located on the top floor of the Naval Museum, enter via the museum entrance even if it looks closed during the evening and take the lift up to the third floor where the doors open onto some of the best views of the bay available in the city. This is an extremely attractive modern space with a large terrace, but despite its size it still feels like a perfect spot for an intimate dinner. The menu is heavily influenced by the Mediterranean region and you'll find a mouth-watering menu of tapas, salads, pastas, seafood and meat dishes. Professional and friendly service add extra points and this looks set to become one of our favourite places for entertaining visiting guests.

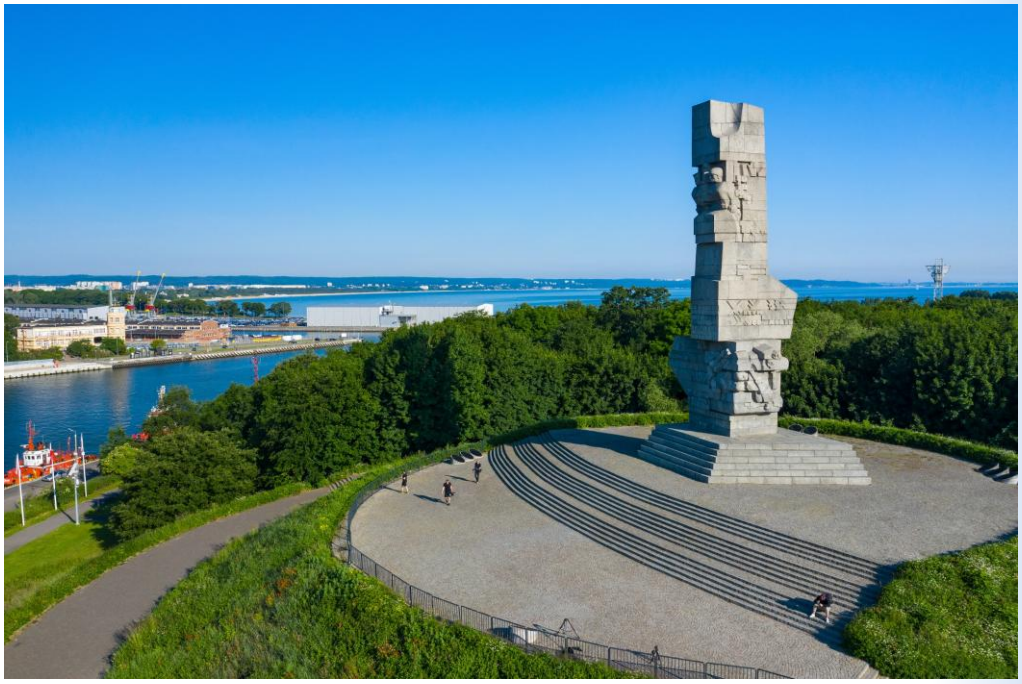


VINEGRE
BANQUET BUFFET COCKTAIL EVENT FINGER FOOD PARTY WEDDING

"Vinegre" Restaurant in Gdynia

Friday 13th June 2025

0900 - 1700	Technical and Sightseeing Tour to the thousand-year-old Hanseatic town **Gdańsk**
0845 - 0900	Meeting point – Car Park in front of the Faculty of Navigation, Address: Jana Pawła II Ave. 3
0900	Departure from the Faculty of Navigation
0900 - 1030	Sightseeing Tour by Pirat Boat "Dragon" from Gdynia to Gdańsk Westerplatte, Wisłoujscie Fortress and Gdynia Maritime University Offshore Center



Gdańsk Westerplatte

Westerplatte is a peninsula in Gdańsk, located on the Baltic Sea coast mouth of the Dead Vistula (one of the Vistula delta), in the Gdańsk harbour channel. From 1926 to 1939, it was the location of a Polish Military Transit Depot (WST), sanctioned within the territory of the Free City of Danzig (now Gdańsk). It is famous for the Battle of Westerplatte, which was the first clash between Polish and German forces during the invasion of Poland and thus the beginning and the first battle of World War II.

On 1 September 1939, only minutes after the German Luftwaffe (air force) had begun the invasion of Poland by dropping bombs in a series of raids on the city of Wieluń by Junkers Ju 87 Stukas, at 04:48 local time, the battleship Schleswig-Holstein, then on a courtesy visit to the Free City of Danzig, without warning opened fire on the Polish garrison. Soon after crossing the artillery-breached brick wall, the attackers were ambushed by the Polish defenders, with small arms, mortar and machine-gun fire from concealed and well-positioned firing points that caught them in a crossfire. Another two assaults that day were repelled as well, with the Germans suffering unexpectedly high losses. Over the coming days, the Germans repeatedly bombarded Westerplatte with naval artillery and heavy field artillery along with dive-bombing raids by Stukas. Repeated attacks by 570 German soldiers were repelled by the 180 Polish soldiers for seven days. Major Henryk Sucharski had been informed that no help from the Polish Army would come. Cut off, with no reinforcements or chance of resupply, he continued his defence, keeping the main German force stalled at Westerplatte and so preventing further attacks along the Polish coast. On 7 September, the Major decided to surrender, due to lack of ammunition and supplies. As a sign of honour for the soldiers of Westerplatte, the German commander, Gen. Eberhardt, allowed Major Sucharski to keep his sword while being taken prisoner. The ruins of the defenders' barracks and guardhouses are still there. After the war, one of the guardhouses (#1) was converted into a museum. Two 280 mm shells from the Schleswig-Holstein prop up its entrance. A Monument of the Coast Defenders (Pomnik Obrońców Wybrzeża) was unveiled in 1966. Westerplatte Museum dedicated to the 1939 battle was created in 2015.

Gdynia Maritime University Offshore Center in Gdańsk, Wisłoujście

On 29 February 2024, the Grand Opening of the Gdynia Maritime University Offshore Centre took place in Gdańsk. With modern research laboratories, access to 500 m of the dock, and 200 workstations, the Centre is a highly significant investment project with a mission to create an 'Offshore Valley' in Poland. The official opening of the impressive research and education facility was therefore an important occasion for the University, but also for the country's entire offshore sector. It is headquarter of GMU Maritime Institute and Offshore Wind Energy Centre.

1030 – 1130 Sightseeing of the Gdańsk Wisłoujście Fortress

The Gdańsk Wisłoujście Fortress

The Wisłoujście Fortress is the oldest coastal fortress of the Polish seacoast. In the modern times, it is often called the Gate to the Republic of Poland. The impressive fortification protected ships on their way to the port of Gdańsk. It also played the function of a lighthouse, the berthing site of the Polish fleet, and a prison.

1130 - 1200 Bus Transfer to Gdańsk Old Town

1200 - 1400 Sightseeing of Gdańsk Old Town – Free Time

1400 – 1600 A farewell dinner in the Restaurant „Piwnica Rajców", Długa Str., Gdansk

Plenary Session K1 – Closing Ceremony

1500 - 1700 **Place:** Hotel Radisson Restaurant" in Gdańsk,
Chairmen: ***Adam Weintrit*** *(Poland),* ***Tomasz Neumann*** *(Poland)*

1500 - 1160 Closing Speach
Adam Weintrit, Chairman of the Conference

Best Paper Award
Best Presentation Award
Best Poster Award

1600 - 1700 Return to the hotels in Gdynia* (Final bus stop in front of the Faculty of Navigation)

1700 Arrival at the hotels

* possible going out into the city in Gdańsk or Sopot for night sightseeing

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Statement of Scientific Committee

Qualified and approved papers not included in the Conference Programme for various reasons, which will not be presented at the Conference, but will be published in the TransNav Journal:

An Individual-Ship Behavior Recognition Model Based on Trajectory Segment Encoding and PSO-XGBoost
*Zhengchuan **Qin** (China), Xiangxing **Zhou** (China), Qing **Yu** (China)*

Advancements in Maritime Simulator Training and Virtual Reality Applications
*Salman **Nazir** (Norway)*

Optimization of Operating Costs in Complex, Multi-State, Aging Technical Systems
*Beata **Magryta-Mut** (Poland)*

Performance Evaluation of the LRIT System 15 Years After Its Launch
Ryszard **Wawruch** (Poland)

Transportation and Logistics Policy: Empirical Evidence of Stakeholder Collaboration in Indonesia
*Salahudin **Rafi** (Indonesia), Prasadja **Ricardianto** (Indonesia), Willy **Arafah** (Indonesia), Bagus **Sumargo** (Indonesia)*

Optimization of Bulk Carrier Hull Design through CAD Modelling and FEM Structural Analysis – a Case Study
*Alexandru **Pintilie** (Romania), Mihaela-Greti **Manea** (Romania), Ovidiu **Cristea** (Romania), Paul **Burlacu** (Romania), Daniel **Marasescu** (Romania), Catalin-Paul **Clinci** (Romania)*

Analysis of Performance Shaping Factors Impact on Naval Crew Efficiency in ESM Operations
*Waqas **Ahmed** (Pakistan), Shengyuan **Yan** (China), Xin **Liu** (China), Hanan Ahmed **Saeed** (Pakistan)*

New Mathematical Models for Coefficients of Hydrodynamic Resistance to Rotation and Friction of Sliding Bearings of Ship Propulsion System for non-Newtonian Lubricants
*Oleksandr **Kryvyi** (Ukraine), Mykhaylo **Miyusov** (Ukraine), Mark **Kryvyi** (Ukraine)*

Innovative and Sustainable Approaches to Urban Waterborne Transport: Insights from Gdynia Port City
*Aleksandra **Wawrzyńska** (Poland), Adam **Przybyłowski** (Poland), Maciej **Baziuk** (Poland)*

Approaches to Assessing Autonomy in the Theory of Complex Technical Systems Control
*Nataliia Borysivna **Tiron-Vorobiova** (Ukraine), Anna Viktorivna **Fedorenko** (Ukraine), Valentyn Ivanovych **Chymshyr** (Ukraine), Olha Romanivna **Romanovska** (Ukraine), Anatoliy Hryhorovych **Danylyan** (Ukraine)*

GPS Jamming and Spoofing – Countermeasures for Safety and Security
*Mikc **Okochi** (Japan), Maria **Haberfeld** (United States)*

Ship Hull Construction Analysis to the Ultimate Strength Considering Damages
*Muhammad Zubair **Muis Alie** (Indonesia), A **Ardianti** (Indonesia), Juswan **Juswan** (Indonesia), Taufiqur **Rachman** (Indonesia), Alamsyah **Alamsyah** (Indonesia), Nur **Indah** (Indonesia), Nur Salsabila **Aulia** (Indonesia)*

Integrating Sustainability, Green Technologies, and Industry Collaboration in Enhancing Maritime Education for Future Seafarers
*Marudut Bernadtua **Simanjuntak** (Indonesia), Tri **Cahyadi** (Indonesia), Winarno **Winarno** (Indonesia), Larsen **Barasa** (Indonesia), Marihot **Simanjuntak** (Indonesia)*

Management of Human Resources in Enhancing Maritime Cadets' Health and Sports Programmes: A Qualitative Perspective
*Marudut Bernadtua **Simanjuntak** (Indonesia), Tri **Cahyadi** (Indonesia), Winarno **Winarno** (Indonesia), Larsen **Barasa** (Indonesia), April Gunawan **Malau** (Indonesia)*

The Impact of Sports-Based Interventions on Health and Resilience in Maritime Cadet Training
*Tri **Cahyadi** (Indonesia), Winarno **Winarno** (Indonesia), Larsen **Barasa** (Indonesia), Marudut Bernadtua **Simanjuntak** (Indonesia), Pargaulan Dwikora **Simanjuntak** (Indonesia)*

Integrating Physical-Sports Activities into Maritime Education: Enhancing Resilience and Professional Readiness
*Larsen **Barasa** (Indonesia), Tri **Cahyad** (Indonesia)i, Winarno **Winarno** (Indonesia), Marudut Bernadtua **Simanjuntak** (Indonesia), Marihot **Simanjuntak** (Indonesia), April Gunawan **Malau** Indonesia)*

*Ivan **Dimitrov** (Bulgaria), Iliyan **Iliev** (Bulgaria), Daniel **Hristov** (Bulgaria), Dinko **Dinkov** (Bulgaria), Tsetoslav **Mavrodiev** (Bulgaria)*

Design and Implement an Automatic Smart Buoy System for a Bulgarian Safe Beach Areas – Part 2
*Ivan **Dimitrov** (Bulgaria), Iliyan **Iliev** (Bulgaria), Daniel **Hristov** (Bulgaria), Dinko Dinkov (Bulgaria), Tsetoslav **Mavrodiev** (Bulgaria)*

Navigational Safety Assessment in Benoa Channel Based on Course over Ground and Trajectory
*I Putu Sindhu **Asmara** (Indonesia), Gusma Hamdana **Putra** (Indonesia), Afif Zuhri **Arfianto** (Indonesia), Ketut Buda **Artana** (Indonesia), Dhimas Widhi **Handani** (Indonesia)*

Big Data Analytics for Weather Prediction Integrating Regression and ARIMA Models to Assess the Impact of Climate Variability on Fishermen Safety and Maritime Operations
*Ariyono **Setiawan** (Indonesia), Abdul **Razak Bin Abdul Hadi** (Malaysia), Ni Made **Ika Marini** (Indonesia)*

Edge-Guided Multi-Scale Fusion and Importance-Aware Learning for Real-Time Semantic Segmentation in Waterborne Navigation
*Lijia **Chen** (China), Jiamin **Zou** (China), Yao **Huang** (China), Yang **Zhou** (China), Guozhu **Hao** (China), Yi **Zhang** (China)*

Reference Routes for Sea Navigation – "To follow, or not to follow?"
*Magne **Jacobsen** (Norway), Magne V. **Aarset** (Norway), Odd Sveinung **Hareide** (Norway)*

Features of Determining the Expansion Forces of Bulk Cargo Acting on the Wagon Body Walls when Transported by a Railway Ferry
*Ján **Dižo** (Slovakia), Juraj **Gerlici** (Slovakia), Alyona **Lovska** (Ukraine), Miroslav **Blatnický** (Slovakia), Martin **Bučko** (Slovakia)*

Determination of the Loading on a Hopper Container Transported by Sea
*Alyona **Lovska** (Ukraine),*

The Use of Artificial Intelligence in Enhancing Navigation Safety in Case of GNSS Signal Fading or Interference
*Marcin **Chrzan** (Poland)*

Optimizing Work Schedule Assignments for Straddle Carrier Drivers at Container Terminals: A Collaborative Filtering Recommender System Approach
*Khaled **Mili** (Saudi Arabia), Khaled **Abdelaziz** (Saudi Arabia)*

Enhancing Maritime Educational Technology for Dry Bulk Cargo Management in Port Operations (Study Case in Marunda - North Jakarta)
*Antoni Arif **Priadi** (Indonesia), Tri **Cahyadi** (Indonesia), Winarno **Winarno** (Indonesia), Larsen **Barasa** (Indonesia), Natanael **Suranta** (Indonesia), Marudut Bernadtua **Simanjuntak** (Indonesia)*

Free and Forced Lateral Vibrations of Shaft line Using the Vectors of Solution Coefficients
*Ahmed **Hamiani** (Algeria), Kadda **Boumediene** (Algeria), Chahreddine **Kandouci** (Algeria)*

System-level Simulation for Sustainable Winter Navigation
*Aleksandr **Kondratenko** (Bulgaria), Ketki **Kulkarni** (Finland), Liangliang **Lu** (China), Casper **Winberg** (Finland), Fang **Li** (China), Pentti **Kujala** (Finland), Konstantin **Kamberov** (Bulgaria), Roomet **Leiger** (Estonia)*

Application of Humanoid Robots in the Ship Control Process
*Andrzej **Łebkowski** (Poland)*

The Increasing Importance of Ro-Ro (Roll-On/Roll-Off) Transportation in the Mediterranean
*Ugur **Demir** (Turkey)*

Marine Circuit Breaker Resilience: Structural Optimization for Shock Load Resistance
*Tao **Sun** (China), Tianxi **Lu** (China), Qingrui **Yu** (China), Changsheng **Chen** (China), Tengfei **Gu** (China), Yuanjiang **Geng** (China)*

Cybersecurity Breaches in Connected and Autonomous Vehicles: Rethinking Liability and Insurance Frameworks
*Ahmed Hany Mohamed **Abuelenin** (Saudi Arabia)*

Pa'lopian: The Mastery of Tanjung Bira Seafarers in Navigating the Nusantara with Phinisi Vessels in Indonesia
*Eymal B **Demmalino** (Indonesia), Munsi **Lampe** (Indonesia), Ahmad **Ismail** (Indonesia)*

Main Areas of the TransNav Conference Interests:

- Nautical Science; Marine Navigation; Current Practical Applications, Developments and Deployments of Positioning, Navigation and Timing (PNT) Systems
- Safety and Security of Maritime Shipping; Safety at Sea; Role and Importance of Safety in Maritime Transportation; Global Cooperative Interoperability
- Sea Transport and Transportation Technology; Technological Advances in Maritime Transportation; Advanced Application and Future Developments
- Growing Sustainability Challenges in the World's Oceans; Ocean Research and Governance; Technology Development in Maritime and Ocean Engineering
- Safety and Environment Protection at Sea; Health, Safety and Environment Protection Policy; Ocean Sustainability, Governance and Management; Green Production
- Global Shipping Industry; Recent Trends and Future Perspectives for Maritime Shipping; Emerging Technologies; Civil Protection and Disaster Management
- Geodetic, Hydrographic and Navigational Support of Human Activity at Sea; Human Impacts on the Ocean; Safety of Life at Sea; Human Element in Shipping
- Essential Geodesic based Trajectories in Navigation: Loxodrome (Rhumb Line), Orthodrome (Great Circle), Great Ellipse and Geodesic Line; Oblate Spheroid
- Geometry of Navigation; Computational Geometry in Navigation and Path Planning; Surface Navigation; Meridian Convergence; Direct and Inverse Problems
- Geodesy; Geodetic Systems; World Geodetic System WGS-84; Land Surveying; Geodetic Surveying and the Adjustment of Observations; Plane Survey
- Hydrography; Sea Surveying; Hydrographic Service; Hydrographic Survey Methods and Equipment; Sounding; Processing and Sharing of Geospatial Data
- Marine Cartography; Chart Projections; Chart Datum; Coastal and Ocean Mapping; Hydrographic Survey Map; Simultaneous Localization and Mapping (SLAM)
- Geospatial Sciences; Geographic Information Systems (GIS); GIS Technology; Geoinformatics; Geomatics and GIS in Maritime Applications; GIS Software
- Spatial Data Analysis; General Bathymetric Chart of the Oceans (GEBCO); Mobile Mapping Technologies (MMT); Virtual, Artificial and Augmented Reality
- Geovisualization; Animated and Dynamic Cartography; Generalization and Multi-Scale Representation; Marine Data Presentation, Plotting, Charting, Mapping
- Earth Observation; Application of Integrated Interactive Media to Mapping and Visualizing Geographical Information; Global Ocean Observing System (GOOS)
- Spatial Planning of Maritime Areas; Maritime Spatial Planning Directive; Marine Protected Areas (MPA); Earth and Marine Sciences (EMAS); Marine Spatial
- Remote Sensing Applications in Marine Science and Technology; Global Monitoring for Environment and Security (GMES); Monitoring the Oceans from Space
- Earth Information Science; Geophysics; Geodynamics; Geoscience; Environmental Science and Geography; Virtual Geographic Environments (VGE);
- Marine Digital Terrain Model; Marine Digital Elevation Model; Numerical Maps; Marine Geospatial Data; Terrain Models of the Seabed; 3D Mapping
- Electronic Chart Display and Information System (ECDIS); Electronic Chart System (ECS); Electronic Navigational Charts; Chartplotters; Digital Mapping
- Nautical Charts and Publications; Navigational Charts: SNC, ENC, RNC, DNC, 3DNC; Nautical Charts Production; Admiralty Maritime Products and Services
- Inland, Sea-River, River and Pilot Navigation Systems; Inland Shipping; Canals and Inland Waterways; River Information Services (RIS); Inland ECDIS
- Maritime Safety Information; Presentation of Navigation-Related Information; User Interface; Navigational System Receiver; Multi-Functional Display (MFD)
- Phases of Navigation; Routeing of Ships and Associated Protected Measures; Ship Reporting; Traffic Separation Schemes (TSS); Waterways Design;
- Route Planning and Route Monitoring; Voyage (Passage) Planning; Ship's Routeing; Ocean Routes; Optimization of Navigation Trajectory; Shipping Lane

- Integrated Navigational Systems INS; Integrated Bridge Systems IBS; Integrated PNT Technology; Electronic Navigation; Portable Pilot Unit (PPU)
- Multisensor Integration; NMEA Standards; NMEA Protocol; NMEA Interface; Communication Between Marine Electronics; Radio Communication
- Inertial Navigation; Multi-Sensor Navigation; Indoor Wayfinding; Urban Navigation; Pedestrian Navigation; Personal Navigation; Underground Mine Navigation
- Orienteering; Inertial Systems for Positioning & Orientation; Sensor Based Navigation: Optical Processing, Sensor Fusion, Multiconstellation GNSS
- Remotely Operated Vehicle (ROV); Autonomous Vehicles (Car, Boat, UAV, USV, UMV, ASV, AGV); Maritime Drones: Flying, Swimming and Diving
- e-Navigation Concept; Strategy for the Development and Implementation of e-Navigation; Maritime Service Portfolios (MSPs); Data Communication
- Global Satellite Navigation Systems GNSS (GPS, GLONASS, Galileo, BeiDou, QZSS, IRNSS); GNSS Vulnerabilities; Embracing the Multi-GNSS Era
- Satellite Geodesy; Active Geodetic Networks; GNSS Ground Based Augmentation Systems (GBAS); Space Based Augmentation Systems (SBAS); MSAS
- Emerging Application Areas for GNSS; GNSS Interference, Jamming and Spoofing; Cyber Attacks; Next Generation GNSS; GNSS Receiver Development
- GNSS Training, Awareness and Promotion; Multi-GNSS Receivers and Emerging Navigation Satellite Systems; DGNSS, GNSS Hardware Technology; eGNSS
- GNSS Meteorology; Space Weather and Atmospheric Effects on GNSS; GNSS Environmental Sensing; GNSS Earth Observation; Robust GNSS Services
- Integration of Satellite Navigation, Geospatial Information Management and Wireless Communication Systems; Wireless and Optical Communications
- PNT (Positioning, Navigation, and Timing); Time and Navigation; Clocks Technology and Timing Applications; Resilient PNT; Time and Frequency Transfer
- Astronomy; Planetary Science; Astro Navigation; Nautical Almanac; Celestial Navigation: Formulas and Calculations; Planetarium and Space Observatory
- Nautical Equipment, Appliances, Tools, Instruments and Accessories; Marine Converters and Calculators; Instrumentation; Vintage Navigation Tools
- Earth Magnetism; Magnetic Compass; Gyroscope; Mechanical, Fiber Optic and Ring Laser Gyro Compasses; Vintage Marine Compasses; Pelorus; ePelorus
- Radio Frequency Technology; Radio Based Navigational Systems; Radio Navigation; Long-Range Navigation System (LRNS); Enhanced Loran - eLoran
- Deep Space Navigation; Target-Relative Navigation; Radiometric Tracking Technique; Navigating in Deep Space; Deep-Space Positioning System (DPS)
- Determining the Ship's Position; Position Fixing; Accuracy and Precision; Accuracy Standards for Navigation; Application of Kalman Filter to Estimate Position
- Terrestrial Navigation; Pilotage & Dead Reckoning (DR); Navigational Infrastructure; AtoN; Virtual Aids to Navigation; AIS AtoN (Real, Synthetic and Virtual)
- Precise Point Positioning (PPP); Real-Time Kinematic (RTK) Positioning; Location-Based Services (LBS); Positioning Infrastructure; Alternatives to GNSS
- Vision, Lidar, and Inertial Technologies for GNSS-Denied Navigation; Augmented Reality and Navigation; Electronic Position Fixing System (EPFS)
- Real-Time Locating System (RTLS); Ranging and Angulating; Multilateration (MLAT); European Geostationary Navigation Overlay Service (EGNOS), EGNSS
- Dynamic Carrier Allocation Techniques; Mobile Positioning and Tracking; Localization Techniques; Satellite and Terrestrial Radio Positioning Techniques
- Vision Based Localization; Next Generation 3D Network Localization, Tracking, and Navigation; Mobile Data Management for Location-Based Services
- Automation Aspects in Transport and Navigation; Informatics in Control, Automation and Robotics; Optimization Methods; Wayfinding; Path Finding
- Techniques, Algorithms and Methods in Navigation; Deep Space, Aviation, Marine, Offshore, Underwater, Land, Urban and Inland Water Applications

- Maritime Casualties; Ship Safety; Maritime Risk; Safety Culture; Maritime Safety Culture in Digitalization; Design for Safety; Eye Tracking Glasses
- Safety of Ships and Port Operations; Facilities & Cargo Handling; Marine Cranes; Port Management; Warehouses & Cargo Storage; Ship-to-Ship Cargo Transfer
- Status and Role of Sea Ports in Transport Corridors; Marinas, Ports and Harbours Development; Seafront Wharf Structures; Green Port and Shipping; Port Competitiveness
- Cargo Work: Loading, Discharging and Stowing Cargo; Stowage Plan; Cargo Surveying; Draught Survey; Carriage of Cargoes; Transport of Commodities
- Commodity Science; Dangerous and Hazardous Goods; IMDG Code; Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
- Containerization; Container Shipping, Vessels and Terminals; TEU & FEU; Container Tracking; Safe Transport of Containers by Sea; Container Lashing
- Liquefied Natural Gas (LNG): Fuel, Stock, Market, Storage, Process, Transport, Vessels, Terminals, Containers, Stations, Companies, Stakeholders, Procedures
- Hydrotechnics; Hydrotechnical Infrastructure; Hydrotechnical Structures and Constructions: Power Plants, Waterways, Bridges, Locks, Dams, Turbine Houses
- Inland, Ocean, Marine, Coast and Offshore Infrastructure and Engineering; Analysis and Design of Deepwater and Coastal Structures, Civil Engineering
- Marine Industry; Ocean, Coast, Offshore and Ship Technology; Offshore Surveying; Offshore Support Vessels (OSV); Ocean, Offshore and Arctic Engineering
- Offshore Energy, Gas & Oil; Renewable Ocean Energy; Green Energy Logistics; Offshore Wind Power; Ocean Wave Energy Resource; Smart Energy Systems
- Automation, Robotics, Underwater Technology and Offshore Constructions; Fundamentals of Marine and Offshore Systems Design and Construction
- Innovations and New Marine Technology, Vehicles, Constructions, Structures, Facilitates, Equipment and Related Matters; Wing in Ground (WIG) Crafts; Hydrocrafts
- Maritime Traffic Engineering; Traffic Analysis; Traffic Planning, Control and Mamagement; Traffic Flow Theory and Simulation; Marine Traffic Data
- Organization and Management of Vessel Traffic; Piloting; Vessel Navigation and Traffic Services for Safe and Efficient Ports and Waterways; Case Studies
- Systems of Control, Guidance and Monitoring of Traffic; Vessel Traffic Service VTS, VTMS, VTMIS; Monitoring, Control and Surveillance (MCS); Congestion
- Ship Manoeuvring in Shallow and Confined Water; Ship to Ship Interaction; Ship Squat; Bank Effect; Side-Wall Effects; Under Keel Clearance; Ship Grounding
- Naval Hydrodynamics and Manoeuvrability of Ships; Ship Behaviour in Shallow and Confined Water; Manoeuvring in Waves, Wind, Current and Swell
- Modelling of the Ship Dynamics; Numerical Simulation of Ship Motion; Steering of the Ship Motion; Steering Control Systems; Autopilot Systems; Steering Gear, Rudders;
- Ship Stability and Buoyancy; Analysis of Stability; Ship Stability, Dynamics and Safety; Floodability, Insubmergibility, Unsinkability of a Ship; Trim & Strength
- Ship Motion; Degrees of Freedom; Numerical Modelling of Propulsion, Control and Ship Motions in 6 Degrees of Freedom; Manoeuvring and Control of Craft
- Ship Stability and Seakeeping; Static and Dynamic Stability Criteria; Ship Displacement; Buoyancy; Floodability; Watertight Compartments; Heeling Moment; Free Surface Effect
- Sea Wave Theory; Ocean Wave Modelling; Computational Fluid Dynamics (CFD); Fluid Mechanics; Vibrations; Ocean Dynamics; Mastery of the Seas
- Hydraulic Phenomena: Flow in Channels, Maritime Flows, Tides and Waves; Sedimentology in Rivers, Estuaries and Coastal Waters; Water Supply Systems
- Global Ocean Ecosystem Dynamics; Coastal Ecosystems; Marine Ecosystem Monitoring; Deep-Sea Exploration; Mining and Exploitation of the Seabed; Water Quality
- Deploying Positioning, Sensor and Navigation Systems in Sectors such as Autonomy, Smart Infrastructure, Medical Care, Disabilities, Indoor Tracking, Agritech
- Water Resources, Hydrology and Hydraulic Engineering; Limnology; Physical, Chemical, Biological, Geological and Technical Oceanology; Ocean Monitoring

- Mechanical Engineering; Main Engine & Auxiliary Machinery; Engine Room Simulator; Machinery Construction & Operation; Ship Propulsion; Pitch Propeller; Wind Assisted Propulsion System (WAPS)
- Ship Generator and Power Supply; Applied Mechanics and Mechanical Automation; Diagnostics; Thermodynamics; Oils and Lubricants; Ship Electric Power Systems
- Fuel Bunkering; Vessel Efficiency & Fuel Management; Fuel Consumption; Energy Monitoring; Energy Efficiency Measures for Marine Shipping; Future Fuel for Marine Industry
- Ship Maintenance and Repair; Anti-Corrosion for Maritime Industries; Smart Coatings for Materials Protection; Marine Paints, Coatings, Adhesives & Sealants; Coating Thickness
- Health Monitoring of Maritime Structures; Stress & Fatigue Analysis; Structural Dynamics; Forces & Moments Acting on Ships; Advance Materials Research; Nanotechnology
- Structural Life Extension for Offshore Installations and Marine Vessels Masterclass; Condition Monitoring and Fault Diagnosis; Cathodic Protection
- Submarine Cables and Pipelines; Cable and Pipe Transits for Marine Industries; Laying Undersea Cables and Pipelines; Cables for Offshore Wind Turbines
- Navy; Marine Defense; Warship Technology; Defense, Security & Military News; Military Challenge; Safety of Transport and Disposal for Explosive Ordnance
- Shipbuilding Industry; Shipyards; Ship Repair Yards; Recycling of Ships; Industrial Restructuring; Ship Repair & Conversion; Marine Construction and Welding
- Naval Architecture; Ship Design; Human Factor in Design; Ship Production; Ship Construction: Plate Machining, Assembly of Hull Units and Block Erection; Floating Dry Docks
- Naval Weapon; Naval Warfare; Naval Forces and Military Technology; Undersea Maritime Threats, Swarming Technology and Anti-Submarine Warfare; Cyber Warfare
- Naval Construction and Engineering; Mathematics and Computers in Naval Engineering; Naval Research; Naval Technology; Naval Operations; Convoys
- Tactical Navigation for Military Vehicles; Warship ECDIS (WECDIS) and Tactical Awareness Solutions; ECDIS-Navy; Digital Nautical Charts (DNC)
- Leadership, Management, Command and Control; The Responsibility of Leadership in Command; Leadership and Teamworking Skills; Command of the Ship
- Maritime English; Standard Marine Communication Phrases (SMCP); Communications in Multinational Shipping Industry; International Code of Signals (ICS)
- International Standardization of Navigation Terminology; Glosary of Nautical Terms; Standard Marine Navigational Vocabulary; Maritime Terms & Definitions
- Radiolocation; Ground-based, Ship-borne and Airborne Radars; Automotive Radar; Radar Image Matching; Radar Overlay; Radar Applications; 3D Radars
- Marine Radar; Radar Equipment; FMCW, SAR/RAR, ARPA, EPA, ATA; Radar Theory and Techniques; Radar Transponders; Radar Technology & Navigation
- Rules of the Road; Collision Regulations (Colregs) and Anti-Collision; Preventing Collisions at Sea; Collision Avoidance; Marine Accident Analysis and Reconstruction
- Ship Domain - A Criterion of Navigational Safety Assessment; Concept and Empirical Model of Ship Domain for Navigation in Restricted Waters; 3D Domain
- Ship Handling and Manoeuvring; Manoeuvring Characteristics and Interaction; Seamanship; Safety, Freedom of Manoeuvre, and Decision-Making Advantage
- Intelligence, Surveillance and Reconnaissance (ISR); Tracking Systems; Mobile Vehicle Tracking and Monitoring; Navigation for Safety-Critical Applications
- Automatic Identification System (AIS); Long Range Identification and Tracking (LRIT); Satellite AIS (SAT-AIS); AIS-Based Initiatives; Maritime ISR
- Electronic Log Book; Voyage Data Recorder (VDR), Simplified-VDR (S-VDR); Black Box; Data Recording; Voyage Reports and Documentation
- Safety, Security and Emergency in Transportation; Cyber Security Vulnerabilities; Risks to Infrastructure and Industries; Maritime Cyber Security; e-Security
- Marine Salvage; Maritime Search and Rescue (SAR); Towing Operations; Search and Rescue Satellite Aided Tracking (SARSAT) System; Escape

- Maritime Tragedies; Disasters at Sea and Their Impact on Shipping Regulation; Survival in Maritime Disasters; Survival Data Analysis; First Aid to Survivors
- Piracy and Armed Robbery; Maritime Terrorism; Refugees and Stowaways; Smuggling; Armed Security on Board; Coast Guards, Border Protection
- Life-Saving Service; Life-Saving Appliances (LSA); Immersion Suits; Shipboard Firefighting; Fire Protection Engineering; Safety Signs; Evacuation Procedures
- Bridge Team Management (BTM); Bridge Resource Management (BRM); Bridge Team Training; Teamwork; Crew Manning; Sea-Based Maritime Careers
- Duties and Liabilities of the Ship's Captain; Master's Responsibility and Authority; Emergency Procedures; Pilot-Master Relationship; Elite Maritime Selection
- Ballast Water Management; Ballast Water Treatment (BWT) Solutions; Water Purification (Filtration, Sedimentation, Distillation, Flocculation and Chlorination)
- Human Factor; Ergonomics; Human Errors and Marine Accidents; Human-Computer Interaction; Human and Machine Relationship; Situation Awareness
- Oil and Chemical Spills; Sea Pollution and Environmental Protection; Protection of Water Resource; Marine Conservation; Water and Wastewater Treatment; Environmental Monitoring
- Marine Environmental Science; Marine and Environmental Biology and Zoology; Biodiversity; Chemical Science; Aquatic, Fishery and Marine Biology
- Crew Resource Management; Safe Manning; Stress and Fatigue; Human Resources in Transport; Behavioural Techniques for Seafarers to Reduce Stress at Sea
- Maritime Employment and Competitiveness; Seafarers Work, Family Life; Organizational and Health Behavior at Sea; Maritime Occupational Health Service; Well-being and Mental Health
- Maritime Psychology; Women Seafarers in Shipping; Gender; Maritime Sociology; Dangerous Diseases & Disorders of Seafarers; Medical Care for Seafarers
- Marine Resource Assessment; Natural Resource Management; Operation in Hostile Environments; Marine Ecology; Marine Debris; Garbage and Waste; Wastewater Treatment
- Modelling and Simulation of Marine Systems; Advanced Numerical Algorithms; Mathematical Modelling; Computational Modeling, Simulation and Applied Mathematics
- Full Mission Bridge Simulators; Navigational Simulators; Ship Handling Simulators; Ship Manoeuvring Simulators; Virtual Reality Training Simulators
- Ships Surveys, Audits, Visitations, Inspections and Certifications; Port State Control (PSC); Flag State Control (FSC); Implementation of IMO Instruments
- Maritime Education and Training (MET); IMO Model Courses Validation; STCW Implementation; Computer Based Assessments in Seafaring Training; MET Initiatives
- Frontiers in Educational Methods; Computer Based Training (CBT); e-Learning and Virtual Innovations; Pedagogy and Didactics; Distance Learning; LLL & CE
- Web Technologies for Open Access to Maritime Learning and Education; Smart and Virtual Learning; Digital Education, Innovation & Knowledge Management
- History of Marine Cartography and Historical Cartography; Historical Nautical Charts; Sea Charts; Mappa Mundi; Portolan Charts; Mercator Projection
- History of Navigation; Marine Navigation in Ancient Times; Historical Navigation Instruments & Accessories; Ocean Mythology, Mysteries, Gods & Monsters
- Maritime Civilizations; The History of Maritime Technology; Historic Maritime Vessels; Naval Battles; Wrecks; Maritime Tradition, Customs and Ceremonial
- Marine Archaeology; Underwater Research; Underwater Exploration; Deepwater Archaeology; Historic Shipwrecks; Loss, Salvage and Demolition
- Marine and Coastal Geography; Land and Marine GIS; Ocean Informatics; Data Visualization Technologies in Earth and Marine Sciences; Numerical Weather Prediction
- Tides and Tidal Currents; Tides and Tide Prediction; Ocean Surface Currents; Warm and Cool Surface Flows; Ocean Salinity and the Global Water Cycle
- Nautical Meteorology and Oceanography; Limnology and Aquatic Sciences; Green Navigation; Marine Weather Phenomena; Monsoons; Trade Winds; El Niño
- Weather Routing; Marine Weather Forecast; Ice Patrol; Weather Radar; Heavy Weather; Tropical Cyclones and Impact of Extreme Storms; Ocean Passages for the World

- Ocean Disaster Assessment and Prevention; Emergency Networks for Public Protection and Disaster Relief; Extraordinary, Amazing Ocean Phenomena
- Atmospheric and Oceanic Sciences; Climatology; Climate Change; Global Warming; Coastal Risks and Sea Level Rise; Protection of Global Climate; Decarbonization
- GNSS-based Machine Guidance and Control Methods for use in Agriculture, Construction, Surveying and Mining; GNSS Algorithms and Techniques
- Geotechnical Engineering; Geohazards (Volcano Eruptions, Landslides, Floods, Earthquakes, Seismicity, Tsunami Waves); Disaster Prevention and Mitigation
- Polar Research; Safe and Sustainable Traffic in Ice/Winter Conditions; Arctic Navigation; Ice Navigation; Arctic Marine Shipping Assessment (AMSA)
- Integrated Coastal Zone Management (ICZM); Environmental Management; Coastline Marine Service; Dredging; Maritime Spatial Planning (MSP) Platform
- Marine & Coastal Protected Areas; Particularly Sensitive Sea Area (PSSA); Ships Routeing Measures to Protect PSSAs; Greenhouse Gas Emissions in Shipping
- Marine Biotechnology; Biology, Ecology, Behaviour of Marine Animals; Biological, Animal, Human, Cognitive Navigation, and Quantum Technologies
- Fisheries and Aquaculture; Fish Farming; Fishing Industry; Ecosystem Approach to Fisheries and Aquaculture; Fishery Oceanography; Fishing Boats & Supplies
- Cruise Shipping; Passenger Ferries; High Speed Crafts (HSC); Ocean Travel; Passenger Terminals; Crisis Management & Human Behaviour on Passenger Ships
- Nautical Tourism and Yachting; Sailing Vessels; Yachting; Small and Pleasure Crafts; Marine Leisure Industry; Water-Based Tourism, Sport, Leisure and Recreation; e-Tourism
- UNCLOS; Delimitation of Maritime Boundaries; Maritime Zones; Exclusive Economic Zone (EEZ); Territorial Waters; Contiguous Zone; Jurisdiction at Sea
- Advanced Maritime Policy and Governance; Maritime Administration (MARAD); Global Maritime Situational Awareness; Maritime Domain Awareness
- Maritime Law, Insurance and Arbitration; Law at the Sea; International Maritime Conventions, Protocols and Codes (SOLAS, MARPOL, STCW, FAL, etc)
- Communication, Electrical, Electronic and Control Engineering; Technology of Antennas; Microwave Theory and Technique; Optics and Photonics
- Information and Communication Technology; Information Technology and Applications in Maritime Sector; Information Technology Management
- Computer Engineering; Digital System Design; Computer Applications in Maritime Engineering; Design of Maritime Information Systems; Computer Networks
- Computer Science; Information Processing and Engineering; Computer Aspects of Technological Change; Computer Vision; Computer Graphics; Computer Animation; Internet
- Security and Information Assurance; Information and Coding Theory; Cryptography and Information Security; Malicious and Unwanted Software; Spyware
- Maritime Clouds; Digital Data Exchange; Cloud Computing; Secure Cloud Computing and Big Data; Data Integrity; Multi-Sensor and Data Fusion; Data Science; Blockchain
- Multimedia, Network & Communication Technology & Application; Communications Services & Multimedia Applications; Satellite & Space Communications
- Marine Telecommunications; Global Maritime Distress & Safety System (GMDSS); Emergency Position-Indicating Radiobeacon (EPIRB); Connectivity at Sea
- Domain Awareness and Decision Advantage, from the Seabed to Space; Hybrid System of Satellite Communications Technology; Interactivity via Satellite
- Wireless Maritime Services & Mobile Technology; 5G Wireless Networks; Network Management, Privacy & Security; e-Technology; Constraint Solving
- Signal & Image Processing; Data Transmission, Processing and Analysis; Radio Propagation; Multi-function Antennas; Radio Frequency Identification (RFID)
- Expert Systems and Marine Applications in Navigation, Safety at Sea, Shipping and Maritime Transportation; Research and Development in Expert Systems
- Fuzzy Logic; Artificial Intelligence Technologies; IT Solutions; Artificial Neural Network ANN; Fuzzy Inference Systems; Fuzzy Inference in Artificial Intelligence; Neuroscience

- Decision Support Systems and Artificial Intelligence Methods in Maritime Transport; Shipping Operation Intelligent Decision Support System; Decision Tree; Machine Learning
- Neuroevolution; Artificial Immune System; Reinforcement Learning; Genetic Algorithms; Numerical Optimization; Evolutionary Computation; Neural Networks
- Telematics in Maritime Transportation; State-of-the-Art Telematics Systems; Applications to Automated, Semi-Autonomous, and Full-Autonomous Systems
- Intelligent Transportation System (ITS); Maritime Intelligent Transportation Systems; Global Intelligent Transport Systems Market; Transport System Telematics
- Autonomy in Transport Systems; Modelling of Autonomous Vehicle Operation in Intelligent Transportation Systems; Autonomous Maritime Ecosystem
- Smart Vehicles: Connectivity Technologies and ITS Applications; Location Technologies for Intelligent Transportation Systems; Mobility and Transport
- Maritime Knowledge; Knowledge-Based Intelligent Information and Engineering Systems; Knowledge and Innovation; Innovation and Technology Transfer
- Ships Dynamic Positioning (DP); DP Intelligent Control System; DP Technology; Position Reference Systems; Georeferencing; SIMOPS (Simultaneous Operations)
- Autonomous Vehicles: Modelling, Control Design, and Simulation; Autonomous Navigation Technology; Maritime Autonomous Surface Ships; MASS Operations
- Acoustic Remote Sensing; Hydroacoustics; Sonars; Multibeam Echo Sounders (MBES); Acoustic Doppler Current Profiler (ADCP); Sea-Floor Mapping
- Underwater Acoustic Measurements: Technologies, Methods and Systems; Sound Transmission in Water; Underwater Acoustics Communication (UWAC)
- Maritime Sensors, Technology and Infrastructure in Waterside Security; Waterborne Transportation Infrastructure; Vessel Anchoring, Berthing and Mooring
- Modelling and Numeric Methods in Maritime Industry; Marine Engineering Mathematics; Operational Research (Management Science, Decision Science)
- Marine Applications in Systemics, Cybernetics, Informatics, Electronics, Robotics, Automation and Mechatronics; Autonomous Marine Operations and Systems
- Transport Statistics; Mathematical Methods of Statistics; Probability; Bayesian Statistics, Markov Processes; Stochastic Modelling; Weibull Distribution
- Severity, Probability and Risk of Accidents during Maritime Transport; Maritime Accident Statistics; Marine Accidents, Casualties, Mishaps, Disasters
- Mathematical Model Applications in the Operation of Vessel and Port Machinery; Applied Science in Engineering; Theoretical Physics; MATLAB and Simulink
- Mathematical Fundamentals of Safety and Dependability, Maintainability of Maritime Objects; Safety and Security of Complex Systems; Probabilistic Approach
- Quality, Reliability, Risk, Resilience, Maintenance & Safety Engineering; Sustainability; Maintenance Scheduling of Distribution System with Optimal Economy and Reliability
- System Availability, Software and Structural Reliability; Improving Safety Critical Systems with a Reliability Validation; Critical Infrastructure Protection; Safety Learning
- Maritime Safety, Security and Risk Management; Risk and Safety Analysis, Assessment and Prediction; Quantitative Risk Assessment (QRA); Risk Factors; Risk and Human Reliability
- Crisis, Emergency, Natural Hazard and Disaster Management; Disaster and Emergency Planning for Preparedness, Response & Recovery; Marine First Aid Kit
- International Safety Management Code (ISM Code); International Ship and Port Facility Security Code (ISPS Code), IMO Instrument Implementation (III Code)
- Reliability and Safety Methods: HAZOP, HAZID, HRA, FMEA, FTA, ETA; Formal Safety Assessment (FSA); Marine Risk Assessment; Hazard Identification
- Quality Management; Quality Assurance; Quality Control; Quality Maritime Training; Quality Maritime Service; Standards Implementation in Maritime Sector
- Transport Systems: Operation, Management, Control and Maintenance; Shipping Management; Transport and Maritime Management; Strategic Management
- Main Maritime Shipping Routes; Transportation Planning and Management; Economic, Legal and Social Aspects; Transport Policy; e-Government; Sustainable Development

- Management Information System; Fleet Management System; Maritime Fleet Management Information System; Modern Ship Management; Shipping Companies
- Marine Ship Economy; Marine Finance and Insurance; Management and Business Strategy; Customs Duties, Taxes, Freights, Insurance Rates; Freight Handling and Transport
- Maritime and International Trade; International Commercial Terms (Incoterms); Maritime Port and Shipping Marketing; Foreign Trade; Trade Routes; Entrepreneurship; e-Commerce; e-Marketing
- Impact of Economic Recession on Maritime Transport; Financial Planning; Shipping Financial Management; Financial Modelling; Economic Risk; e-Business
- Sea Freight and Forwarding; Modes of Shipment; Chartering; Charter Party; Bill of Loading; Cargo Claims and Recoveries; Measuring and Weighting Units
- Transportation and Modes of Transport; Intermodal, Multimodal and Combined Transport; Water, Air, Rail and Road Transport; Sustainable Transportation;
- Maritime Transport and Logistics Systems; Maritime Economics and Logistics (MEL); Logistics and Supply Chain Management; Integrated Logistics; Blue Economy
- Geography of Transport Systems; Modelling of Transport Systems; Design of Intermodal Transport Networks; Transportation Policy and Governance
- Smart City and Port; Technological, Ecological and Social Challenges; Mobility and Public Spaces in Smart Cities; Waterfront Infrastructure; Coastal & Marine Tourism, Globalization
- Multi-Agent System (MAS); Multi-Agent Control for Maritime Transport Networks; Autonomous Marine Multi-Agent Systems; Modelling and Design of MAS
- Ship Classification Societies; Application and Evaluation Studies; Technological Standards, Certification, Analysis and Control; Marine Technical Innovations
- Development of Methods and Criteria for International Regulations, Codes, Standards and Specifications; Legislation; Standardization; Classification Rules
- IMO, IHO, IALA, IEC, ISO, IAIN, ILO, IMLA, IMSF, IMSO, IAME, IAMU, EMSA, ITU, IEEE, RTCM, NMEA, PIANC, EUGIN, PNF, RIN and NI Activities

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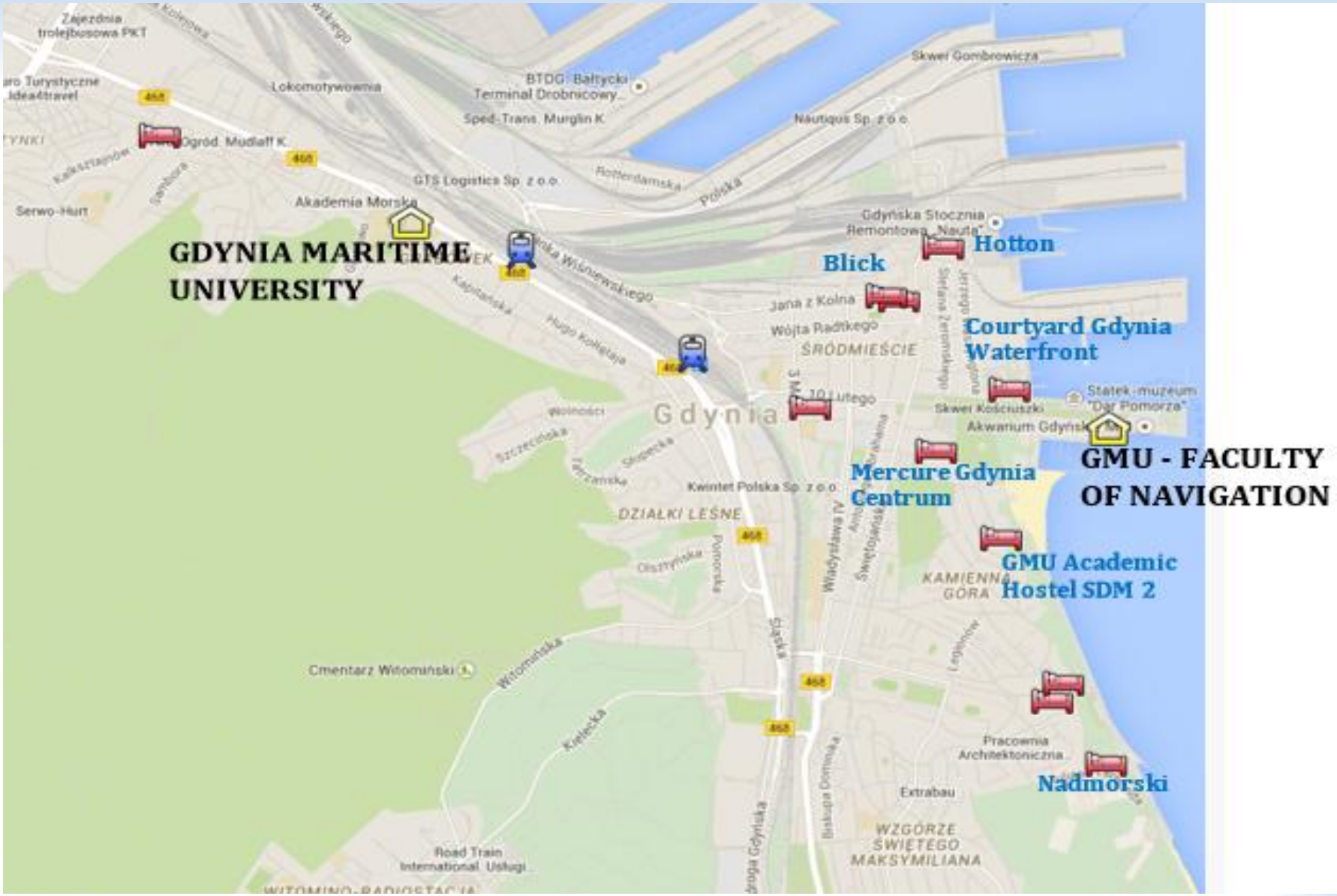

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Nationalities involved in the Conference TransNav 2025

(83)

Nationalities of Scientific Committee members

(77)

Nationalities of authors of submitted papers, chairmen and presenters

(47)

List of Session Chairmen

Wednesday 11th June 2025

Slot 0			
Time	**Plenary Session**		**Name**
Wednesday 11th June 2025 0900 - 1000	A0	**Openning Ceremony**	**Adam Weintrit** **David Patraiko**

Slot 1			
Time	**Plenary Session**		**Name**
Wednesday 11th June 2025 1000 - 1100	**A1**	**Advances in Marine Navigation and Safety of Sea Transportation**	**Krzysztof Czaplewski** **Tor Einar Berg**

Slot 2			
Time	**Specialist Sessions**		**Name**
Wednesday 11th June 2025 1130 - 1300	**G1**	**Technologies Supporting Safety at Sea**	**Przemysław Dmowski** **David Patraiko**
	G2	**Artificial Intelligence**	**Tadeusz Kaczorek** **Oliver Michler**
	G3	**Inland Shipping**	**Lucjan Gucma** **Špiro Ivošević**
	G4	**Cybersecurity**	**Ireneusz Czarnowski** **Knud Benedict**

Slot 3			
Time	**Specialist Sessions**		**Name**
Wednesday 11th June 2025 1430 - 1600	**B1**	**Safety at Sea - Part 1**	**Włodzimierz Filipowicz** **Huanxin Wang**
	C1	**Green Shipping**	**Adam Przybyłowski** **Arnaud Serry**
	D1	**Ship Routing**	**Paweł Zalewski** **David Brčić**
	E1	**Ship Maintenance**	**Przemysław Wilczyński** **Massimo Figari**
Time	**Poster Sessions**		**Name**
Wednesday 11th June 2025 1430 - 1600	**P1**	**Miscellaneous Problems of Mar. Navigation and Sea Transport.**	**Joanna Soszynska-Budny** **Juan Ignacio Alcaide**

Slot 4			
Time	**Specialist Sessions**		**Name**
Wednesday 11th June 2025 1615 - 1745	**B2**	**Safety at Sea - Part 2**	**Arkadiusz Tomczak** **German de Melo Rodriguez**
	C2	**Human Factor**	**Jan Kelner** **Senka Šekularac-Ivošević**
	D2	**Sea Transportation**	**Agnieszka Blokus-Dziula** **Thomas Pawlik**
	E2	**Miscellaneous**	**Andrzej Stateczny** **José Carlos Bernardino**

Thursday 12th June 2025

Slot 5			
Time	**Plenary Session**		**Name**
Thursday 12th June 2025 0900 - 1030	**A2**	**Student Sesion**	**Sambor Guze** **Paolo Alfredini**

Slot 6			
Time	**Specialist Sessions**		**Name**
Thursday 12th June 2025 1015 - 1145	**B3**	**Safety at Sea - Part 3**	**Maciej Gucma**
			Marcel·la Castells Sanabra
	C3	**Maritime Autonomous Surface Ships (MASS)**	**Andrzej Bąk**
			Michael Baldauf
	D3	**Global Navigation Satellite System (GNSS) - Part 1**	**Andrzej Felski**
			Wu Chen
	E3	**Port and Harbours**	**Joanna Kizielewicz**
			Mariana Panaitescu
Time	**Expert Panel Session (Meeting in Polish)**		**Name**
Thursday 12th June 2025 1015 - 1145	**M1**	**Annual General Meeting of the Polish Navigation Forum (PNF)**	**Janusz Uriasz**
			Adam Weintrit
Time	**Poster Sessions**		**Name**
Thursday 12th June 2025 1015 - 1145	**P2**	**Miscellaneous Problems of Mar. Navigation and Sea Transport.**	**Magdalena Bogalecka**
			Shiqi Fan

Slot 7			
Time	**Specialist Sessions**		**Name**
Thursday 12th June 2025 1200 - 1330	**B4**	**Maritime Education and Training (MET) - Part 1**	**Karol Korcz**
			Vladimir Torskiy
	C4	**Autonomous Systems in Marine Industry**	**Andrzej Łebkowski**
			Salman Nazir
	D4	**Global Navigation Satellite System (GNSS) - Part 2**	**Andrzej Fellner**
			Dennis Akos
	E4	**Small Boats, Cruise and Passenger Ships**	**Jacek Łubczonek**
			Aykut Arslan
Time	**Expert Panel Session (Meeting in Polish)**		**Name**
Thursday 12th June 2025 1200 - 1330	**M2**	**Meeting of the Waterborne Transport Section of the Committee of Transport, Polish Academy of Sciences (STW KT PAN)**	**Adam Weintrit**
			Tomasz Neumann

Slot 8			
Time	**Specialist Sessions**		**Name**
Thursday 12th June 2025 1445 - 1615	**B5**	**Maritime Education and Training (MET) - Part 2**	**Janusz Uriasz**
			Raffaela Cefalo
	C5	**Offshore Technologies**	**Zbigniew Burciu**
			Chihiro Nishizaki
	D5	**Innovations in Maritime Transport**	**Lech Murawski**
			Michele Fiorini
	E5	**Marine Environment**	**Marzena Popek**
			Vincent Ezikornwor Weli
Time	**Expert Panel Session (Meeting in Polish/English)**		**Name**
Thursday 12th June 2025 1445 - 1615	**M3**	**Annual General Meeting of the Poland Branch of the Nautical Institute**	**Adam Weintrit**
			David Patraiko
Time	**Poster Sessions**		**Name**
Thursday 12th June 2025 1445 - 1615	**P3**	**Miscellaneous Problems of Navigation**	**Andrzej Borys**
			Homayoun Yousefi

Slot 9			
Time	**Specialist Sessions**		**Name**
Thursday 12th June 2025 1630 - 1800	**B6**	**Aircrafts and Flying Drones**	**Janusz Szpytko**
			Viorel Panaitescu
	C6	**Risk of Collision**	**Grzegorz Rutkowski**
			Mate Barić
	D6	**Seafarers and Work Load**	**Teresa Abramowicz-Gerigk**
			Luigia Mocerino
	E6	**Navigation Tools and Systems**	**Tadeusz Pastusiak**
			Dimitrios Dalaklis

Friday 13th June 2025

Slot 10			
Time	**Technical and Sightseeing Tour by Boat to Gdańsk**		**Name**
Friday 13th June 2025 0900 - 1700			
1500 - 1600	**K1**	**Closing Ceremony**	**Adam Weintrit**
			Tomasz Neumann