

## SEVENTH FRAMEWORK PROGRAMME THEME 7: Transport (including Aeronautics)

### *D.7.4 TRA 2016 Report*



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#### **Description of the Task:**

Important dissemination actions will also be the regular presentations inside the Waterborne TP meetings of the **MESA** achievements, as well as the participation, with the same scope, to the events organized by other projects and by National and European bodies.

A proper Joint ETPs logistic support to TRA conferences 2014 and 2016 coverage will be provided. Related activities will cover waterborne presence to the TRA conferences ensuring a good level of participation of the maritime stakeholders, waterborne stand at the conferences sites, attendance to **TRA2014** and **TRA2016**, preparatory meetings as well as other dissemination materials that might be needed.

**Task 7.4: TRA 2016 Report**





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## Foreword

As part of the dissemination and support to policy activities DoW foresaw an organised WATERBORNE presence at TRA 2014 and TRA 2016.

TRA Conferences are a joint effort of National (local) sponsors, European Commission and European Surface Transport Platforms.

This document reports on the TRA 2016 activities.

## Introduction

In line with the DoW, MESA participated in the organisation of TRA 2016 with a view to ensuring appropriate support aimed at increasing waterborne presence at the TRA conference and ensuring a high level of participation by maritime stakeholders.

TRA (Transport Research Arena) is probably the major conference on transport in Europe, supported by the European Commission, the Conference of European Road Directors, and the four European Technology Platforms: the European Road Transport Research Advisory Council (ERTRAC), the European Rail Research Advisory Council (ERRAC), the Alliance for Logistics Innovation through Collaboration in Europe (ALICE) and the WATERBORNE TP.

The conference topics address the main challenges in transport and mobility of people and goods, with respect to energy, environment, safety and security and economy issues. TRA are multi-disciplinary and inter-agency events, aimed at exploring the most advanced research works and innovations, the latest technological and industrial developments and implementations, and innovative policies, in Europe and worldwide. As a diverse forum, open to all interested parties, it is a unique occasion to promote and improve European competitiveness and efficiency in transportation. After the successful experiences of the 2006 (Göteborg, Sweden), 2008 (Ljubljana, Slovenia) and 2010 (Brussels, Belgium) when the conference was focussing only on Road Transport, a decision was made to widen the scope to include Rail and Waterborne transport for TRA 2012 (Athens, Greece).

The transport sector plays a strategic and major role in the unique European market and in a fast changing economic and societal frame. Policies, technologies and behaviours must be continually adapted to new constraints, such as climate change, the diminishing supply of fossil energy, the economic crisis, the increased demand for mobility, safety and security, etc. Transport infrastructures, vehicles and vessels, modal share and co-modality, urban planning and energy and environment issues are the subject of extensive studies, research works and industrial innovations, conducted by universities, research institutes, companies, practitioners, and public authorities.

## WATERBORNE Presence in the Governing Bodies

TRA2016 was held at the PGE Narodowy, Warsaw, in Poland, from 18<sup>th</sup> to 21<sup>st</sup> April 2016. TRA Conferences are managed by a joint effort between the National Hosts, the European Commission and Industrial and Research stakeholders; primarily the four surface transport European Technology Platforms. In TRA2016 the hosts were the Polish Road and Bridge Research Institute (IBDiM). The Institute is a member of the Forum of European National Highway Research Laboratories (FEHRL) and the Forum of European Road Safety Research Institutes (FERSI). The Governance of TRA 2016 was as follows:

### Management Committee (TRA2016 MC)

The Management Committee (MC) is the ultimate decision making body of the TRA conference. The TRA2016 MC took all strategic and political decisions and had ultimate responsibility for directing all activities related to the overall preparation of the conference. The Management Committee was made up of chair and vice-chairs and TRA2016 representatives as well as some invited observers.

The TRA MC monitored the following Committees:

- **Programme Committee (PC)**, which is responsible for TRA's programme and its scientific content and quality.
- **Organising Committee (OC)**, which is responsible for all practical and financial arrangements, including the exhibition, sponsorship and communication aspects. Both TRA2016 PC and OC report to MC when appropriate and seek approval for important, strategic decisions.

The Waterborne representatives on all these Committees were Willem Laros and Thomas Witolla.

The Program itself was organised into:

- Plenary Sessions
- Strategic Sessions
- Special Sessions
- Workshops

Procedure for submitting papers was organised into the following steps:

- Abstract Submission
- Abstract Review
- Full Paper Submission
- Paper Review
- Publication in TRA Science Conference - Elsevier

## **WATERBORNE Presence in the Newsletter**

Willem Laros, Chairman of WATERBORNE, had an article published in Newsletter 1, "TRA2016 perfectly matches Waterborne TP goals" (see Appendix I).

## **WATERBORNE Presence in the Conference**

The WATERBORNE community was active in the Plenary, as well as two Panel Sessions, as follows:

### **PLENARY 1: Creating One Europe –The Role of Transport**

- Peter van Terwisga, the Research Director of Damen Shipyards in The Netherlands

### **STA2 - Human Factors, Safety and Acceptability in Automation**

- Hans-Christoph Burmeister, Group Leader 'Sea Traffic and Nautical Solutions' at Fraunhofer Center for Maritime Logistics and Services

### **SWA1 - Low carbon and energy efficient transport systems**

- Dirk Lehmann, Managing Director, Becker Marine Systems

## **WATERBORNE Sessions**

There were two specific WATERBORNE Sessions, with the following papers:

### **TME2 - Maritime 1**

- Evolution of the EU and international maritime shipping: drivers, challenges and scenarios
- A navigating navigator onboard or a monitoring operator ashore? Towards safe, effective, and sustainable maritime transportation: Findings from five recent EU projects
- Sea traffic management – beneficial for all maritime stakeholders
- Cost benefit analysis of dynamic route planning at sea
- Spanish initiative for fully automated stowage on roll-on/roll-off operations
- A new routing optimization tool-influence of wind and waves on fuel consumption of ships with and without wind assisted ship propulsion systems

- Development of models predicting dwell time of import containers in port container terminals - an Artificial Neural Networks application
- Inland water transport in Poland
- Danube+20: more jobs due to better inland water transport?
- e-Maritime for automating legacy shipping practices
- Green maritime logistics: the quest for win-win solutions
- Costs and benefits of speeding up reporting formalities in maritime transport
- Robust control under uncertainty for seaport handling equipment
- Ship and quay wall mooring system capability evaluation

## TTA2 - Maritime 2

- Crew-centred design of ships – the CyClaDes project
- Ships made of light – laser welding from research to economic success
- Installation of road heavy duty (truck) engines on board of small inland self-propelled barges for an environmentally friendly European inland waterway transport of goods
- Adverse weather conditions for ship manoeuvrability
- Can we learn from aviation: safety enhancements in transport by achieving human orientated resilient shipping environment
- Hydrodynamic characterization of USV vessels with innovative SWATH configuration for coastal monitoring and low environmental impact
- Green retrofitting through optimisation of hull-propulsion interaction – GRIP
- Vessels for the future
- Experimental determination of added hydrodynamic resistance caused by marine biofouling on ships
- Assessing the impact of a slow steaming approach on reducing the fuel consumption of a containership advancing in head seas
- A holistic approach for energy flow simulations in early design
- Advanced ship systems condition monitoring for enhanced inspection, maintenance and decision making in ship operations
- University of Strathclyde, United Kingdom
- Exploring the potentials of electrical waterborne transport in Europe: the E-ferry concept
- From HERCULES A-B-C to HERCULES-2: cutting edge R&D in ship engines
- Advanced planning methods for small and medium sized shipyards using simulation

In addition, the WATERBORNE community were involved in other Sessions, as follows:

## TME1 - Infrastructure and Climate Change

- Study of global change impacts on the inland navigation management: application on the Nord-Pas de Calais network

## TTE4 - Transport Infrastructure

- Facilities for bunkering of liquefied natural gas in ports

### **TWM3 - Inland Transport and Sychromodality II**

- An evaluation of current trends in container shipping industry, very large container ships (VLCs), and port capacities to accommodate TTIP increased trade
- Newly computerized system for seamless management of enrolment and access in the port of Taranto

The authors of the above Papers are provided at Appendix III.

### **WATERBORNE Posters**

The WATERBORNE research community provided a total of 27 Posters for TRA 2016. Titles and Authors are provided at Appendix IV

### **WATERBORNE Stand**

WATERBORNE-TP, through the support of MESA project, organised also a large stand in the exhibition area. Photographs are provided in Appendix II

### **Towards TRA2018**

At the end of TRA2016, the four surface transport European Technology Platforms agreed a Joint Declaration - LOOKING FORWARD TO TRA2018. [Appendix V].

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## Appendix I – Newsletters – WATERBORNE articles

1st Newsletter: June 2015

### TRA2016 perfectly matches Waterborne TP goals

The European maritime community represents a diversified set of interests, ranging from shipping, manufacturing (eg shipbuilding, equipment makers, etc) to ports, naval, classification societies, recreational marine, aquaculture, off-shore wind, oil and gas, fisheries, etc.

The Waterborne Technology Platform (TP) is the forum where all stakeholders from the waterborne sector (sea and inland) define and share a common Vision and a Strategic Research Agenda, driving the necessary innovation efforts forward. The three main research areas of focus for the Waterborne research programmes are:

- Sustainability of the waterborne transport
- Exploitation of the off-shore resources (renewable energies, fossil fuels, raw materials, fisheries and aquaculture)
- Blue Seas – minimising the impact on the oceans

Special interest and efforts have been devoted since the Waterborne TP was set up in 2005 to the promotion of Sustainable Transport and, after several years of preparation, led to the formalisation of the Vessels for the Future Research Association in September 2014.

The Association, which today has 59 members including industry organisations (large companies and SMEs), research and academia belonging to 15 different EU nations, defined a long-term R&I roadmap with challenging goals focused on energy efficiency and environmental protection, safer waterborne transport and more competitive maritime industry, with high expectations regarding innovative solutions for tomorrow's mobility. Vessels for the Future promotes the implementation of the Horizon 2020 programmes of the research topics within its roadmap and could be recognised by EU as a contractual Public-Private-Partnership.

In line with its goals of sustainable waterborne transport, the Waterborne TP promotes the cooperation with the other transport-related European Technology Platforms (ETPs). The goal here is to activate the synergies to identify research and technologies developed in other sectors potentially useful for waterborne applications (such as materials, sensors, fuels, etc.) and share common scientific knowledge, methods and models potentially applicable to the sectors (such as risk modeling, noise modeling, analysis of structures, fluid-dynamics modeling, etc.).

Important synergies are expected to be developed by working together with ERRAC, ERTRAC, ALICE and coordinating with ACARE. The Maritime Europe Strategy Action (MESA) – Foster Waterborne is working on this ambition today and will be further supported by the SETRIS project.

TRA2016 perfectly matches these goals and is considered by the Waterborne community as a very interesting and special opportunity to deepen these aspects and join European forces for moving forward towards tomorrow's mobility.

Willem Laros  
Waterborne TP Chairman  
SEA Europe

## 4th Newsletter: April 2016

### Waterborne sailing the last miles before TRA2016

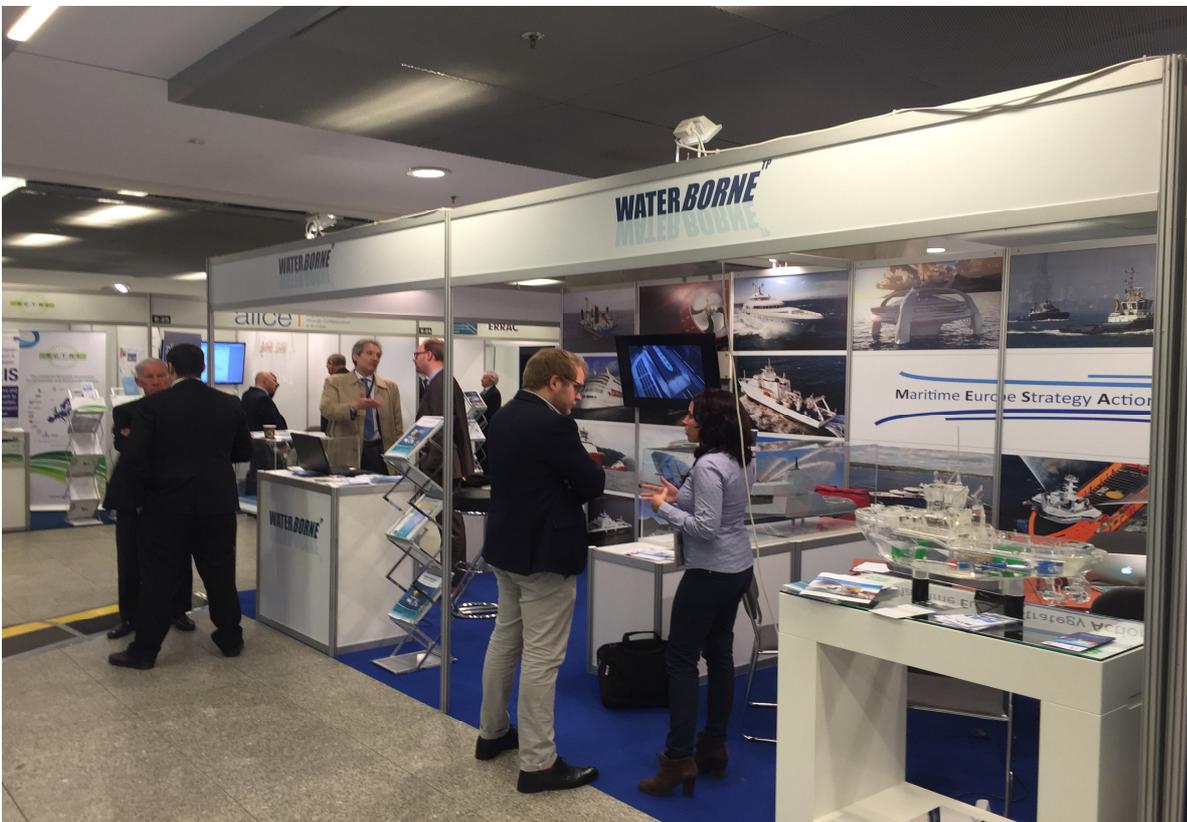
Waterborne, the ETP of the maritime industries, is busy getting everything ready in time for TRA2016 and will be present with a booth presenting the broad area of activities of its stakeholders: shipbuilders, marine equipment manufacturers, shippers, ports and offshore activities.

Waterborne transport is suitable for over 90% of world trade and dominated by intercontinental deep-sea shipping of goods and cruising. As far as intra-European transport is concerned, the focus of the TRA conference, waterborne transport takes care of 40% of the transport of goods in the form of bulk goods and containers over a large network of natural and manmade waterways. Other areas of interest are river-cruising, port operations and near-shore offshore activities such as fishery, dredging and land reclamation and offshore wind-energy.

In this respect and keeping this year's theme of the TRA in mind, the Waterborne ETP is pleased to show a scale model of the latest generation inland-barges, fueled by LNG and provided by air-lubrication. The latter a development kick-started by EU-funded research intended to reduce hydraulic friction by introducing air-filled gaps in the bottom structure. Another novelty is the first generation of hybrid harbor tugs. Given the large difference in required power between harbor movements and the actual towing it uses battery stored electric power during most of the mission time and diesel power only when towing thus saving a significant portion of fossil fuel.

Still some miles to sail before we are ready but the harbour is in sight and we look forward to receiving you at our stand and be in the position to share with you the fascinating world of waterborne transport and its related activities. See you shortly in Warsaw!

Appendix II –WATERBORNE Stand



## Appendix III – WATERBORNE Papers

### Energy efficient safe SHip OPERAtion (SHOPERA)

*Papanikolaou, Apostolos, NTUA - SDL, Greece; Bitner-Gregersen, Elzbieta, DnV GL, Norway; Guedes Soares, Carlos, IST Lisbon, Portugal; El Moctar, Ould, University Duisburg-Essen, Germany; Shigunov, Vladimir, DnV GL, Norway; Sprenger, Florian, MARINTEK, Norway; Devalapalli, Reddy, Lloyds Register, London, United Kingdom; Zaraphonitis, George, NTUA - SDL, Greece*

### Ships made of light – laser welding from research to economic success

*Roland, Frank, CMT e.V., Germany*

### Suppression of underwater noise induced by cavitation: SONIC

*Prins, Henk, Flikkema, Maarten, MARIN, Bosschers, Johan, Koldenhof, Yvonne, MARIN, The Netherlands; de Jong, Christ, TNO, The Netherlands; Pestelli, Carlo, Warstila, Italy; Mumm, Holger, DnV GL, Germany; Bretschneider, Herbert, HSVA, Germany; Humphrey, Victor, University of Southampton, UK; Hyensjo, Marko, Rolls-Royce, Sweden*

### Facilities for bunkering of liquefied natural gas in ports

*Calderon, Marlene, Southampton Solent University; Illing, Diana, IHS Maritime and Trade; Veiga, Jaime, EMSA European Maritime Safety Agency*

### Sea traffic management – beneficial for all maritime stakeholders

*Lind, Mikael; Haraldson, Sandra, Viktoria Swedish ICT; Hägg, Mikael, Chalmers University of Technology, Sweden; Siwe, Ulf, Swedish Maritime Administration*

### Crew-centred design of ships – the CyClaDes project

*van de Merwe, Fenna; Kaehler, Nina; Securius, Peter, DnV GL*

### Installation of road heavy duty (truck) engines on board of small inland self-propelled barges for an environmentally friendly European inland waterway transport of goods

*Hidouche, Smail; Baudry, Didier; Guitteny, Marc-henri, CEREMA, France*

### Cost benefit analysis of dynamic route planning at sea

*Ivehammar, Pernilla; Andersson, Peter, Linköping University, Sweden*

#### Evolution of the EU and international maritime shipping: drivers, challenges and scenarios

*Artuso, Diego, : PricewaterhouseCoopers; Borbon-Galvez, Yari; Sys, Christa; Vanelslander, Thierry, University of Antwerp, Belgium; Ferencz, Janos; Langeveld, Menno, Panteia; Zondag, Barry, Significance*

#### Renewing infrastructure networks: new challenge, new approach?

*Willems, Jannes, Busscher, Tim, University of Groningen, The Netherlands; Hijdra, Arjan; Arts, Jos, Rijkswaterstaat, Ministry of Infrastructure & the Environment, The Netherlands*

#### Adverse weather conditions for ship manoeuvrability

*Bitner-Gregersen, Elzbieta Maria, DnV GL AS, DnV GL Strategic Research and Innovation, Høvik, Norway; Guedes Soares, Carlos, Instituto Superior Tecnico, Universidade de Lisboa, Portugal; Vantorre, Marc, Maritime Technology Division, Ghent University, Ghent, Belgium; Knowledge Centre Manoeuvring in Shallow and Confined Water, Flanders Hydraulics Research, Antwerp, Belgium*

#### Safety culture assessment and implementation framework to enhance maritime safety

*Arslan, Volkan; Kurt, Rafet Emek; Turan, Osman, University of Strathclyde, United Kingdom; De Wolf, Louis, CalMac Ferries Limited, United Kingdom*

#### A navigating navigator onboard or a monitoring operator ashore? Towards safe, effective, and sustainable maritime transportation: Findings from five recent EU projects

*Porathe, Thomas, Norwegian University of Science and Technology, Norway*

#### Can we learn from aviation: safety enhancements in transport by achieving human orientated resilient shipping environment

*Arslan, Volkan; Kurt, Rafet Emek; Turan, Osman, University of Strathclyde, United Kingdom; Silvagni, Sara; Ducci, Marco, Deep Blue Srl, Italy; Liston, Paul, Trinity College, University of Dublin, Ireland; Schraagen, Jan Marten, TNO, The Netherlands; Fang, Ivy, Lloyd's Register, United Kingdom; Papadakis, George, A.P. & A. Ltd. London, United Kingdom*

#### An evaluation of current trends in container shipping industry, very large container ships (VLCSSs), and port capacities to accommodate TTIP increased trade

*Prokopowicz, Adam K., Institute of Global Innovation in Economics and Logistics, United States of America; Berg-Andreassen, Jan, International Infrastructure & Transport Group, LLC*

Study of global change impacts on the inland navigation management: application on the Nord-Pas de Calais network

*Nouasse, Houda, Mines Douai, France; Horvath, Klaudia, Deltares - TU Delft; Rajaoarisoa, Lala, Mines Douai, France; Doniec, Arnaud, Mines Douai, France; Duviella, Eric, Mines Douai, France; Chuquet, Karine, Voies Navigables de France*

Facilities for bunkering of liquefied natural gas in ports

*Calderon, Marlene, Southampton Solent University; Illing, Diana, IHS Maritime and Trade; Veiga, Jaime, EMSA European Maritime Safety Agency*

Newly computerized system for seamless management of enrolment and access in the port of Taranto

*Lucietti, Luca, FIT Consulting srl, Italy; Chierico, Alessandro, ALMAVIVA The Italian Innovation Company*

## Appendix IV –WATERBORNE Posters

### Ship and quay wall mooring system capability evaluation

*Paulauskas, Vytautas, Klaipeda University, Lithuania*

### Study of global change impacts on the inland navigation management: application on the Nord-Pas de Calais network

*Nouasse, Houda; Rajaoarisoa, Lala; Doniec, Arnaud; Duviella, Eric, Mines Douai, IA, France; Horvath, Klaudia, Deltares - TU Delft, Faculty of Civil Engineering and Geosciences, Department of Water management; Chuquet, Karine, Voies Navigables de France*

### Green maritime logistics: the quest for win-win solutions

*Psaraftis, Harilaos N.; Kontovas, Christos, Technical University of Denmark, Denmark*

### Hydrodynamic characterization of USV vessels with innovative SWATH configuration for coastal monitoring and low environmental impact

*Zaghi, Stefano; Dubbioso, Giuglio; Broglio, Riccardo; Muscari, Roberto, CNR, Italy*

### e-Maritime for automating legacy shipping practices

*Morrall, Anthony; Rainbird, Jenny, BMT Group Limited, UK; Katsoulakos, Takis; Ioannis, Koliouisis, Inlecom Systems, UK; Takis, Varelas, Danaos Shipping Company Ltd*

### Exploring the potentials of electrical waterborne transport in Europe: the E-ferry concept

*Gagatsi, Eliza; Halatsis, Aristos, Centre For Research And Technology Hellas-Hellenic Institute Of Transport, Greece; Estrup, Thomas, Committee on Sustainable Energy, Municipality of Aeroe*

### From HERCULES A-B-C to HERCULES-2: cutting edge R&D in ship engines

*Kyrtatos, Nikolaos, National Technical University of Athens, Greece*

### Green retrofitting through optimisation of hull-propulsion interaction – GRIP

*Flikkema, Maarten; Prins, Henk; Schuiling, Bart; Hasselaar, Thijs, MARIN, The Netherlands; Xing-Kaeding, Yan, HSVa, Germany; Voermans, Anton, Wartsila Propulsion, The Netherlands; Muller, Michael, IMAWIS, Germany; Coache, Sophie, VICUS DT, Spain; Paboeuf, Stephane, Bureau Veritas, France*

A new routing optimization tool-influence of wind and waves on fuel consumption of ships with and without wind assisted ship propulsion systems

*Bentin, Marcus; Zastrau, David; Elsner, Reinhard; Kotzur, Stephan; Schlaak, Michael; Freye, Diethardt, University of Applied Sciences Emden/Leer, Germany*

A holistic approach for energy flow simulations in early design

*Nagel, Rolf, Flensburger Schiffbau-Gesellschaft mbH & CO. KG, Germany*

Danube+20: more jobs due to better inland water transport?

*de Swart, Linette; Gille, Johan, Ecorys, Netherlands; Streicher, Gerhard; Schönfelder, Stefan, WIFO, Austria; Trosky, Frank, Planco, Germany*

Robust control under uncertainty for seaport handling equipments

*Mhalla, Anis; Dutilleul, Simon Collart, National Engineering School of Tunis (ENIT), Tunisia*

Advanced planning methods for small and medium sized shipyards using simulation

*Narayanan, Deepak; Hübler, Michael; Roland, Dr.Frank, Center of Maritime Technologies e.V., Germany*

Vessels for the future

*Witolla, Thomas; Sames, Pierre; Greig, Alistair*

Analysis of passenger and vehicle flows with microscopic simulations as a result of security checks at ferry terminals

*Popa, Andrei; Strer, Julia, DLR - German Aerospace Center, Germany*

A simple synchro – modal decision support tool for the Piraeus container terminal

*Kapetanis, George N. National Technical University of Athens, Greece; Psaraftis, Harilaos N., National Technical University of Athens, Greece; Spyrou, Dimitrios, Piraeus Port Authority, Piraeus, Greece*

Costs and benefits of speeding up reporting formalities in maritime transport

*Vaghi, Carlo; Lucietti, Luca, FIT Consulting srl, Italy*

Changing training needs of port workers due to future trends

*Hinkka, Ville; Eckhardt, Jenni; Permala, Antti; Mantsinen, Heikki, VTT Technical Research Centre of Finland Ltd, Finland*

Inland water transport in Poland

*Golebiowski, Cezary, ECORYS Poland*

Experimental determination of added hydrodynamic resistance caused by marine biofouling on ships

*Turan, Osman; Demirel, Yigit Kemal; Day, Sandy; Tezdogan, Tahsin, University of Strathclyde, United Kingdom*

Development of models predicting dwell time of import containers in port container terminals - an Artificial Neural Networks application

*Kourouniotti, Ioanna; Polydoropoulou, Amalia; Tsiklidis, Xristos, University of the Aegean, Department of Shipping, Trade and Transport*

Assessing the impact of a slow steaming approach on reducing the fuel consumption of a containership advancing in head seas

*Tezdogan, Tahsin; Incecik, Atilla; Turan, Osman; Kellett, Paula, University of Strathclyde, United Kingdom*

Advanced ship systems condition monitoring for enhanced inspection, maintenance and decision making in ship operations

*Lazakis, Iraklis; Dikis, Konstantinos; Theotokatos, Gerasimos; Michala, Anna Lito, University of Strathclyde, United Kingdom*

Robust control under uncertainty for seaport handling equipments

*Mhalla, Anis, National Engineering School of Tunis (ENIT), Tunisia; Collart Dutilleul, Simon, French institute of science and technology for transport, development and networks*

Communication and negotiation processes in navigational decision support systems at sea

*Pietrzykowski, Zbigniew; Banaś, Paweł; Wójcik, Anna; Hatłas, Paulina, Maritime University of Szczecin, Faculty of Navigation, Poland*

Towards the greening of the EU coastal transport: a new fully electrified ferry solution

*Gagatsi, Eliza; Halatsis, Aristos, Centre For Research And Technology Hellas-Hellenic Institute Of Transport, Greece*

A combined multi-criteria approach for facilitating the evaluation of maritime transport policies

*Gagatsi, Eliza, Centre For Research And Technology Hellas-Hellenic Institute Of Transport*

## Appendix V – Joint Declaration

### DECLARATION AT END OF TRA2016 – LOOKING FORWARD TO TRA2018



**Warsaw, 21st April 2016** The participants in TRA2016 themed “*Moving Forward – Innovative Solutions for Tomorrow’s Mobility*” recognise that transport research and innovation, especially when geared towards application, play a critical role in addressing major societal challenges, in achieving key European policy goals, in enhancing the effectiveness and efficiency of the

European transport system and in boosting the competitiveness of its economic players. They see this event as a milestone in a continuous process of growing collaboration among the key stakeholders, aimed at generating greater impetus in pursuing those objectives.

Over a period of 10 years and through its six editions TRA has been ‘*Moving Forward*’ and has contributed in driving research towards innovation and market uptake. It has showcased technology developments, new transport paradigms and innovative business models for mobility and logistics that are paving the way towards a better future transport system for Europe.

Throughout the four main sessions of the TRA event it emerged that Transport R&I contributes substantially to enhancing European social and economic integration, delivering energy efficiency and other policy objectives, seizing the opportunities stemming from automation and other new developments, more generally bringing about a more efficient and greener transport system for the future.

The TRA2016 participants also consider that trans-national cooperation across Europe and beyond is important. Such cooperation is needed. It is important to expand the knowledge base, share the risks, achieve critical mass and to tackle more effectively the common challenges through the implementation of innovative solutions. They believe that TRA is the ideal arena where the necessary cross-fertilisation occurs between and across the transport modes and the different players. They believe that TRA is the forum to reap the results of the collaboration between research, policy, industry and users, with a view to making the most of public and private investments for the sake of the common good.

The biennial Transport Research Arena is the common platform for the surface transport stakeholders, the place where all the relevant organisations meet, discuss and develop cooperation. This convergence is a prerequisite to achieving a modern transport system that is fully integrated and apt to respond to today’s and tomorrow’s challenges.

Transport is a key pillar of European competitiveness and job creation. It needs to address the present and future societal challenges in the areas of energy, emissions and congestion while meeting the users’ expectations for the affordable and safe mobility of people and goods. In order to achieve efficiency and sustainability, transport sector has to rely on smart, clean and safe means of transport, infrastructure and services, as well as on the research based programs that would help transport users to adjust their behaviour appropriately to changing technologies and environment. Meeting these challenges requires a renewed commitment to join efforts and resources to bring research results to deployment, with an integrated and holistic end-to-end approach across the sector and the stakeholders.

**“A Digital Era for Transport – New Solutions for Society, Economy and Environment”** will be the theme of the next TRA2018 that will be held in Vienna, Austria. The prospect is to explore the new promising

opportunities that digitalisation opens up for transport. The commitment of all the TRA stakeholders is to join forces during the coming two years, share experiences and achievements in order to make the next TRA most substantial and relevant.

#### Background to TRA

The five previous TRAs are Paris, France (2014), Athens, Greece (2012), Brussels, Belgium (2010), Ljubljana, Slovenia (2008) and Göteborg, Sweden (2006).

For more information, see the TRA website (<http://www.traconference.eu>), TRA Linked In group (<https://www.linkedin.com/groups/3896268>), TRA Facebook page (<https://www.facebook.com/traconference>), TRA Twitter feed ([https://twitter.com/TRA\\_Conference](https://twitter.com/TRA_Conference)) or TRA Google+ (<https://plus.google.com/+TraconferenceEu>).

#### TRA Member Organisations



#### TRA Co-organisers



#### Contact

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