



METRO PROJECT

2nd NEWSLETTER – May 2020

PRESENTATION OF METRO PROJECT TO THE STAKEHOLDERS IN TRIESTE

The Port Network Authority of the Eastern Adriatic Sea, Ports of Trieste and Monfalcone (PNAEAS), presented the most relevant features of METRO during a stakeholders meeting held at the premises of its headquarters on 9th September 2019.

The event was successfully organized by the Technical Directorate and the Special Project Unit of the Port following the publication of the national “DEASP” (Guidelines for the drafting of Energy-Environmental Planning Documents of Port Systems – DEASP”) implementing the provisions of Article 4-bis of Law No. 84/94.

These Guidelines were firstly introduced by the Italian Legislative Decree No. 169/16 and then published, (30th December 2018) by the Italian Ministry of Transport and Infrastructure (MIT) and the Ministry of Environment and for the Protection of Land and Sea (MATTM).

The objective of the event was primarily to illustrate the national Guidelines and their requirements pertaining to the competencies of the Italian Port Authorities to the most relevant stakeholders in order to ensure stakeholders commitment in the phase of the implementation of the related activities.



In particular, as specified in the national Guidelines, the Port illustrated the survey on the CO2 emissions in 2018 developed by the Technical Directorate and highlighted the necessity to fulfill it in close cooperation with all the stakeholders currently undertaking activities within the Port areas, where each stakeholder should provide consumption data related to their respective activities in conformity with the Guidelines standards and requirements. More than 15 participants attended the meeting, among them representatives from SMEs, industrial and institutional stakeholders. The meeting emerged as an important opportunity for all to exchange prospective in support of the Guidelines’ measures for the sustainable development of Trieste maritime domain as well as an opportunity to know more about METRO project and Commission’ role to boost sustainable and low carbon growth for EU ports.



ROUND TABLE HELD IN ISTRIAN DEVELOPMENT AGENCY

On February 27th 2020, a round table discussion was held at Istrian Development Agency within METRO project, gathered by about 30 interested participants from the private and public sector in the field of shipbuilding, tourism and maritime transport.

The meeting was attended by representatives of project partners Tehnomont Shipyard Pula, Faculty of Engineering and Faculty of Maritime Studies from Rijeka, then private company Tema Ltd. from Pula, representatives of Port Authorities of Pula, Rovinj, Poreč and Rabac, Harbour Master's office Pula, tourist agencies, representatives of Istrian Development Tourist Agency, Region of Istria and Croatian Chamber of Economy.

Participants have discussed about current situation in the field of maritime transport and potentials that Istria county have for development of this sector.



They also discussed about development of port infrastructure in the Istria County, in terms of designing ports infrastructure for RO-RO ferries and other hybrid-powered ships with associated charging stations, existing and potentially new transboundary maritime routes in the North Adriatic as well as many other topics.

Director of Istrian Development Agency, Boris Sabatti, Ph.D. pointed out that the main objective within METRO project, is to encourage the process of introducing new technologies in the field of maritime transport between Italy and Croatia, and to increase awareness for environmental sustainability of the North Adriatic sea.





METRO PROJECT PRESENTED AT THE 8TH INTERNATIONAL CONFERENCE ON MARINE TECHNOLOGY, IN MEMORIAM ACADEMICIAN ZLATKO WINKLER

The Faculty of Engineering, University of Rijeka as organizer together with co-organizers - the Faculty of Maritime Studies, University of Rijeka and the Association for Research and Development of Maritime Industries, the Faculty of Maritime Studies and Transport, University of Ljubljana has organized the 8th International Conference on Marine Technology, in memoriam of the academician Zlatko Winkler. The Conference was held at the Faculty of Engineering on November 15-16, 2019. With an enhanced international scientific committee and a considerable number of papers by foreign authors, the conference had an international character. The Conference is traditionally held under the auspice of the Croatian Academy of Sciences and Arts - The Department of Technical Sciences.

The 35 complete papers were submitted, with 95 authors and co-authors. In addition, three plenary lectures were held in the field of: Regulations for the design, construction and use of marine technology facilities, Luxury yachts and Air pollution from ships. The conference was attended by more than 100 participants, authors, co-authors, organizers, co-organizers, sponsors, professors, students, businessmen and guests.

The complete papers, after the review process will be published in the special issue of the Journal of Maritime & Transportation Sciences. The paper titled "An Analysis of Basic Parameters of Ro-Pax Ships and Double-ended Ferries as Basis for New Hybrid Ferries Designs" was presented on the Conference. The authors are L. Novak, D. Majnarić, R. Dejhalla and A. Zamarin, all from the Faculty of Engineering in Rijeka. The study was made within a framework of the METRO project. Within the study, two separate databases were formed, one for each ferry type (Ro-Pax and double-ended ferries). Data were gathered for ferries that operate in the European seas: Baltic Sea, North Sea, Mediterranean Sea, Adriatic Sea, Celtic Sea and English Channel.

Considering the quantity of gathered data, databases provide good guidelines for the selection of basic parameters of new hybrid ferry designs. This represents the first step in the process of development of new hybrid Ro-Pax and double-ended ferries within METRO project.





2ND METRO PROJECT MEETING WAS HELD IN RIJEKA

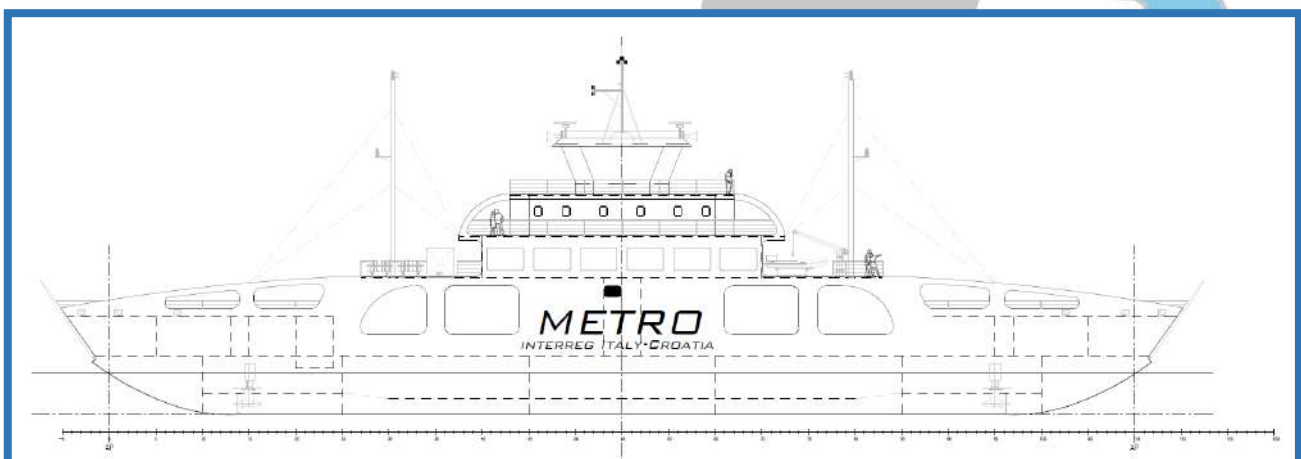
On 3rd of December, Faculty of Engineering - University of Rijeka (RITEH) organized in Rijeka (at RITEH premises) the second Project Bi-Annual Meeting of METRO project. The meeting was attended by all Partners, namely by University of Trieste - UNITS, University of Rijeka, Faculty of Engineering - RITEH, University of Rijeka, Faculty of Maritime Studies - PFRI, Wartsila Italia - WIT, Tehnomont Shipyard Pula - TSP, Trieste Port Authority - TPA and Istrian Development Agency - IDA. The second meeting was more focused on management aspects of the first and next project periods and all partners discussed about obligations on project activities further steps.

Basic data of hybrid vessels

During dedicated working sessions, project partners (TSP, RITEH, WIT, UNITS) together with external expert, company FlowShip discussed about ships basic data in order to define a set of starting inputs to allow proceeding with the ship design.

Partners agreed in principle to move forward by framing main ship basic data, in order to allow Tehnomont Shipyard Pula to initiate the basic design activities of the two vessels, meant for the two agreed routes: Double-end ferry (Brestova-Porozina) and RoPax (Ancona-Split).

Next project meeting will be held in Trieste in June 2020.



Hull design by Tehnomont Shipyard Pula





MAIN PARTICULARS:

Type:

- ✚ Passenger ship (catamaran type)

Capacity:

- ✚ 3 crew members
- ✚ 150 passengers

Propulsion:

- ✚ Diesel electric propulsion

Specifics:

- ✚ 10 wheelchair accessible

NEW CONTRACT FOR PASSENGER SHIP – Tehnomont Shipyard Pula

On 19th December 2019 new contract for the design and construction of a passenger ship was signed between Tehnomont Shipyard Pula and Public Institution Brijuni National Park. The contract for the design and construction of the passenger ship was signed by the Director of the Brijuni National Park Marno Milotić and the President of the Management Board of Tehnomont Shipyard Pula, Tomislav Smirčić.

The passenger ship will be catamaran type, with a capacity of 3 crew members, 150 passengers (in an enclosed passenger space with 100 seats, of which 10 are wheelchair accessible, and in an open / covered passenger compartment with a capacity of 50 seats), installed diesel electric propulsion, and will carry Tehnomont hull number Gr. 116. Public Institution Brijuni National Park is planning to design and build the passenger ship with required characteristics that will respond to the increased touristic offer on Brijuni islands and to the enhanced visitor traffic at the sea. This activity within the project named “New attire of Brijuni islands” is co-funded by the European Regional Development Fund.





COMPANY NEWS - ENVIROMENT & INDUSTRY SUSTAINABILITY
a cura di A. MANZONI & C. SpA

Progetto Metro: industria e università fanno squadra per l'ambiente

L'esperienza WÄRTSILÄ al servizio dell'integrazione del sistema logistico tra innovazione, tecnologia e basso impatto ambientale

Il progetto interregionale **Metro** (Maritime Environment-friendly TRanspOrt System) scaturisce dalla necessità di creare un sistema di trasporto marittimo maggiormente integrato, efficiente e sostenibile, in linea con la risoluzione **MEPC.304(72)**, approvata dall'**IMO** nell'aprile del 2018 per la riduzione delle emissioni di gas serra da parte dell'industria dello shipping.

Il progetto è iniziato a gennaio 2019, con lo scopo di migliorare la qualità, sicurezza e sostenibilità ambientale del trasporto marittimo e costiero con un'attenzione specifica sui collegamenti turistici nell'area del nord dell'Adriatico, tra Italia e Croazia. L'intenzione è quella di contribuire a ridurre la congestione e di traffico automobilistico nella zona, causata anche dall'intenso flusso stagionale di turismo.

L'obiettivo è perseguito sia a livello tecnologico che logistico. Inizia con la definizione delle tendenze di traffico e dei nodi cruciali, passando attraverso l'infrastruttura di fornitura dell'energia elettrica nelle zone portuali individuate, in modo da identificare una nuova generazione di traghetti ibridi per un sistema regionale dei trasporti più sostenibile. Un considerevole margine di miglioramento è rappresentato dalla riduzione degli agenti inquinanti dentro i porti e, in genere, nelle aree costiere, dove le navi, specialmente durante la manovra, non operano in condizioni ottimali di rendimento dei motori. In questi casi, l'esperienza di **Wärtsilä** nello studiare i più innovativi sistemi ibridi di elevata qualità viene presa come riferimento per queste tipologie di sviluppo.

Il progetto **Metro** può contare sul partenariato tra l'**Università di Trieste**, Dipartimento di ingegneria e architettura, Dipartimento per gli studi economici, **Università di Rijeka** (Facoltà di studi marittimi e Facoltà di ingegneria), **IDA** (Agenzia per lo Sviluppo Istriano), **Rete delle Autorità Portuali dell'Adriatico Orientale**, cantiere **Tehnomont di Pula** e **Wärtsilä Italia**.

Inoltre, valutando il comportamento delle navi attuali attraverso l'analisi di dati reali, che vengono incrociati con le stime dei futuri trasporti di merci passeggeri, il progetto prevede di concepire il più realistico ed efficiente sistema di propulsione e di progetto nave, che rappresenta un precedente unico di partenza per i futuri traghetti della regione. #

Website ufficiale:
<https://www.italy-croatia.eu/web/metro>

Metro project: when industries and universities team up for the environment

In line with the **MEPC.304(72)** resolution, approved by **IMO** in April 2018 for reducing GHG from the shipping industry, **Metro inter-regional project** (Maritime Environment-friendly TRanspOrt systems) starts from the need of a more integrated, efficient and sustainable maritime transportation system.

The project started in January 2019 aiming to improve the quality, safety and environmental sustainability of the marine and coastal transportation with a specific focus on the touristic connections in the North Adriatic area, between Italy and Croatia, willing to

contribute to lower the automotive traffic congestion, also caused by seasonal tourism flows in the region. The target is pursued both on a technological and logistic level. It starts by defining the traffic trends and the challenging knots passing through the electrical power supply infrastructure adaptation in the identified regional harbours, to consequently get the hybrid ferries concept design for a more sustainable regional transportation system. A large margin of improvement is related to pollutants reduction inside harbour (and in general coastal areas), where vessels, especially during the manoeuvring phase, are not

operating at an optimal engine working point. In these frames the experience of Wärtsilä in studying the most innovative and adaptable high quality hybrid systems is taken as a benchmark for these development typology.

Metro project can rely on a high valuable partnership between the University of Trieste (Department of engineering and architecture, Department of Economic studies), University of Rijeka (Faculty of Maritime Studies and Faculty of Engineering), IDA (Istrian Development Agency), Port Network Authority of the Eastern Adriatic Sea, Tehnomont yard in Pula and Wärtsilä Italia.

Further, by assessing the present behaviour of present vessels through the analysis of real data, which are then crosswed with the future passengers and goods transportation estimation, the project is expecting to enable the most realistic and efficient hybrid vessel propulsion system and ship design, representing an unprecedented path starting point for the future ferries of the region.

Official website:
<https://www.italy-croatia.eu/web/metro>



Reference ship of the project, M/V Bol, berthed at Porozina Port



PROJECT PARTNERS

 UNIVERSITÀ
DEGLI STUDI DI TRIESTE

 **dia** dipartimento
di ingegneria
e architettura


WÄRTSILÄ

 **tehnomont**
Brodogradilište PULA

 Sveučilište u Rijeci
TEHNIČKI FAKULTET

 Autorità di Sistema Portuale
del Mare Adriatico Orientale
Porti di Trieste e Monfalcone

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