

Workshops and scientific events Follow up report

Final Version of 31/12/2021

Deliverable Number D.2.2.1.

Project Acronym	METRO
Project ID Number	10044221
Project Title	Maritime Environment-friendly TRanspOrt systems
Priority Axis	4
Specific objective	4.1
Work Package Number	WP2
Work Package Title	Communication activities
Activity Number	2.2.
Activity Title	Project events
Partner in Charge	University of Trieste, Dept. of Engineering and Architecture; Port Network Authority of the Eastern Adriatic Sea; Istrian Development Agency – IDA Ltd; University of Rijeka – Faculty of Maritime Studies
Partners involved	Wärtsilä Italia Spa, Tehnomont Shipyard Pula Ltd, University of Rijeka – Faculty of Engineering
Status	Final
Distribution	Public

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Description of the events

During METRO project many workshop and scientific events were organized, both in presence and online. The main events were the following ones:

- presentation of METRO within stakeholder and technical meeting of DEEPBLUE project by TPA 23/09/2019 (RP2);
- presentation of METRO by IDA at 11th Session of the Coordination of County Youth Councils of the Republic of Croatia, Porec 19/09/2020 (RP4);
- webinar "Progetto METRO: sistemi di trasporto marittimo per un ambiente sostenibile" organised by UNITS and WIT on 10/12/2020;
- webinar "Seminario AEIT sulle frontiere della e-mobility: guida autonoma, sistemi manned-unmanned" organised by UNITS on 15/12/2020);
- webinar "Designing sustainable maritime transport systems" organised by UNITS, WIT, Tehnomont on 17/03/2021;
- presentation of METRO by TPA at an event organised by ANCHOR and RUMBLE projects at Leghorn, 15/06/2021;
- presentation of METRO by PFRI at a scientific conference in Rijeka on 17/06/2021;
- presentation of METRO by TPA at a project meeting of SMOOTHPORTS project in Monfalcone on 23/09/2021;
- joint online event "Improving the sustainability of maritime transport in the Adriatic Sea" in collaboration with Interreg ITA-HR projects Echain and GUTTA on 19/10/2021.

For more details about the events, please refer to the specific follow up reports attached.

Typology of the audience

People from all the target groups foreseen by the Programme attended the events. For details please refer to the specific follow up reports attached.



Speakers' presentations

See follow up reports for each event attached

Conclusions

See follow up reports for each event attached

Photos/screenshots

See follow up reports for each event attached

WP2 Communication activities / Act. 2.2 Project events

Presentation of METRO within a stakeholder and technical meeting of Deepblue project

Trieste, September 23rd, 2019

Follow up report

Partner in charge:

Port Network Authority of the Eastern Adriatic Sea

Partners involved: PP2

DESCRIPTION OF THE EVENT

The Port Network Authority of the Eastern Adriatic Sea presented the most relevant features of the “METRO” project at the international training seminar titled ‘DEEPBLUE “Developing Education and Employment Partnerships for a Sustainable Blue Growth in the Western Mediterranean Region”’.

The meeting was held on September the 23rd, 2019, at the headquarters of the Friuli Venezia Giulia Autonomous Region under the coordination of the National Institute of Oceanography and Applied Geophysics (OGS).

The scope of the meeting was to promote the project’s objectives and activities to a heterogeneous plateau and collect their preliminary feedbacks.

TPOLOGY OF THE AUDIENCE

More than 15 participants attended the meeting, among them representatives from research institutions, SMEs, industrial and institutional stakeholders exchanged ideas, prospective, approaches and strategies to support sustainable growth in the marine and maritime sectors as a whole.

5 participants were representatives of enterprises, transport operators including operators of multimodal logistic hubs and infrastructure providers, 7 were representatives of local, regional and national public authorities and 6 were representatives of Education and training organisations as well as universities and research institutes

SPEAKERS’ PRESENTATIONS

The Port Network Authority of the Eastern Adriatic Sea presented its vision and objectives related to the energy efficiency and environmental protection; illustrated the main

characteristics of the METRO project and explained the Port's efforts and activities in strengthening environmentally friendly solutions for the maritime industry of Trieste.

CONCLUSIONS

After attending the presentation, all the stakeholders expressed their interest in the project activities and expected outputs.

PHOTOS / SCREENSHOTS



METRO – INTERREG IT-HR  

METRO Project aims at:
 - Improving the quality and environmental sustainability of coastal tourism transport services in the Programme Area.

In the framework of METRO Project, the Port of Trieste will prepare a feasibility and preliminary design study for an OPS to be applied to the passenger terminal.

Partners

Italy:

- University of Trieste, Department of Engineering and Architecture and Department of Economics, Business, Mathematics and Statistics – DEAMS
- Wartsila Italia Spa
- Port Network Authority of the Eastern Adriatic Sea

Croatia:

- IDA - Istrian Development Agency
- Ujjanik d.d.
- University of Rijeka, Faculty of Engineering
- University of Rijeka, Faculty of Maritime Studies

Duration: 30 months - end date 30-06-2021
Budget: € 2.959.605,20

Autonoma Istrska Regija
 Agencija za regionalni razvoj
 Port of Trieste - Trieste Harbour

WP2 Communication activities / Act. 2.2 Project events

11th Session of the Coordination of County Youth Councils of the Republic of Croatia

19th September 2020, Poreč

Follow up report

Partner in charge:

Istrian development agency – IDA Ltd

DESCRIPTION OF THE EVENT

On Saturday, September 19th 2020, IDA employees participated in the **11th Session of the Coordination of County Youth Councils of the Republic of Croatia**, which was held at the Istrian Parliament in Poreč. Representatives of the Istrian Development Agency held a presentation on "Economy and Youth in Istria County" and presented the results of 20 years of work of the Istrian Development Agency with emphasis on development programs and projects, which IDA implements with the financial support of EU funds.

TYOLOGY OF THE AUDIENCE

Nr. of participants: 22 (22 members of Youth council of the Republic of Croatia).

SPEAKERS' PRESENTATIONS

Time	TOPICS
10:00 AM	Economy and youth; EU projects; Presentation of METRO project Andi Kalčić and Filip Šetić, IDA

CONCLUSIONS

Through the presentation, current projects implemented by IDA were presented with special emphasis on METRO project. IDA's employees presented pilot activities which will be done in Region of Istria within METRO project – installation of interactive totems (screens) on 3 locations in istrian harbours.

PHOTOS / SCREENSHOTS







WP2 Communication activities / Act. 2.2 Project events

Progetto METRO - Sistemi di trasporto marittimo per un ambiente sostenibile

Webinar 10/12/2020

Follow up report

Partner in charge:

University of Trieste

Partners involved: Wärtsilä

DESCRIPTION OF THE EVENT

The METRO project (Maritime Environment-friendly TRanspOrt systems) unites 7 partners in a close collaboration to improve the environmental sustainability of maritime transport, with particular regard to the tourist connections of the north-Adriatic area, through the networking of universities, companies, and public authorities for maritime transport and territorial development. The objective is pursued both from a technical point of view (development and use of hybrid propulsion systems, storage systems, and ground power systems), and from a logistics point of view (adaptation of port energy infrastructures, integration of energy sources renewable energy), for naval units dedicated to the transport of passengers and goods in the North Adriatic area. The University of Trieste is the Lead Partner of the project, leading the partnership made up of Wärtsilä Italia spa, the Port System Authority of the Eastern Adriatic Sea, the Tehnomont shipyard in Pola, the Development Agency of Istria and the faculties of Maritime Studies and Engineering of the University of Rijeka.

The webinar was aimed at illustrating part of the activities carried out in the project, with particular reference to the development of new hybrid propulsion ships through an innovative design approach, capable of making the most of state-of-the-art data collection and processing capabilities. The webinar was focused on providing a formative experience for students at university level, but was open for being attended from other public also. The main goal of the webinar was to disseminate among the future ship designers the importance of applying new tools and methodologies for designing sustainable and environmental-friendly ships.

TYOLOGY OF THE AUDIENCE

The webinar was attended by 23 students of Universities (Trieste, Messina, Sapienza Rome, Cagliari), 2 people from industries (Finaval, Fincantieri), 1 International public authority (RINA), and 5 people from the PPs (Wartsila and ADSPMAO), in addition to the presenters.

All the participants were able to ask questions during the webinar.

SPEAKERS' PRESENTATIONS

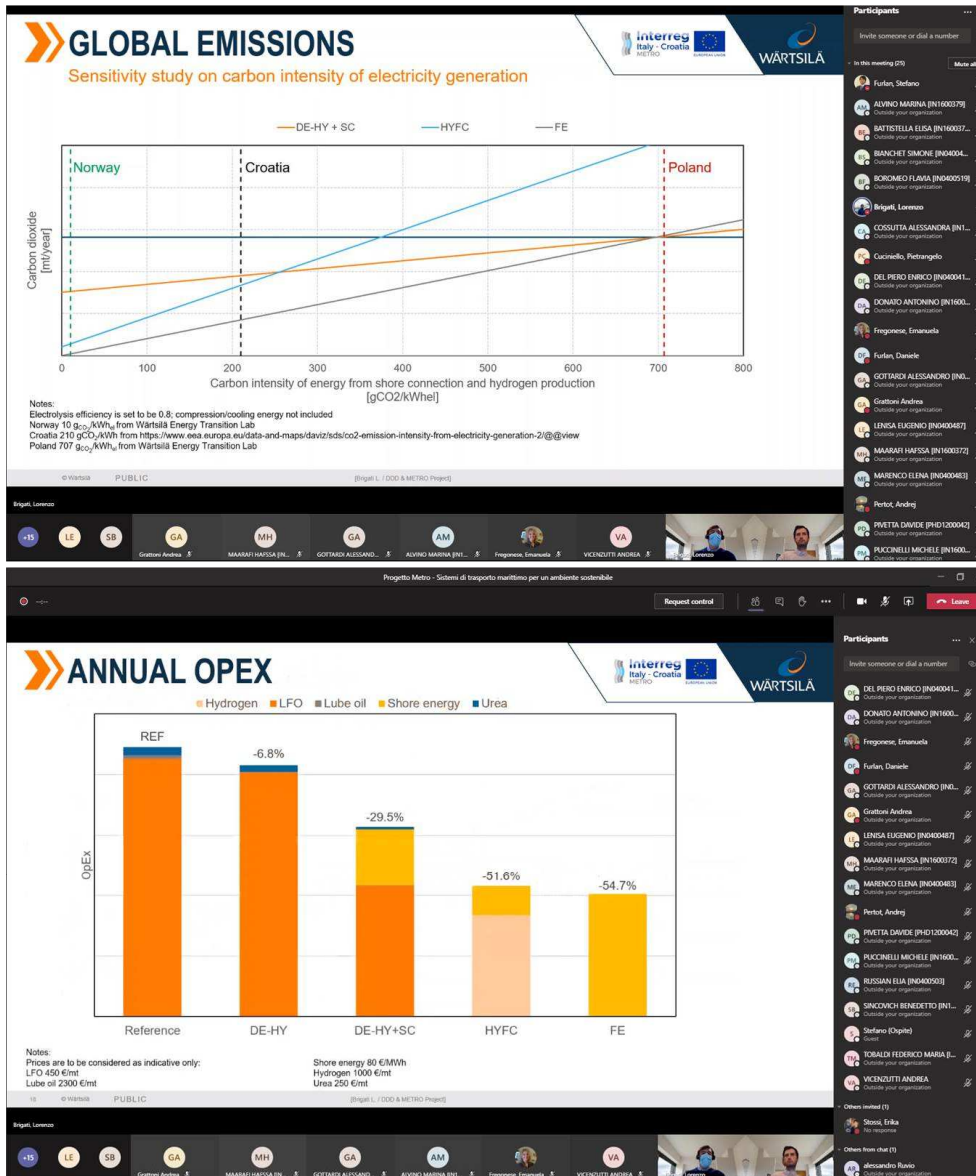
The webinar started with a short introduction about the METRO Project by Andrea Vicenzutti, Project Manager of the Lead Partner, aimed at presenting the project as a whole, its aims, its targets, and specifically WP3 objectives. Then Stefano Furlan, GM Quality Cost & Documentation of Wartsila, presented the hybrid solutions and integrated design approach for propulsion systems, developed in Wartsila specifically for the METRO project. After that, Lorenzo Brigati, Expert System Simulation, explained the application of Data Driven Design to the Design of RO-RO Pax and Ferries, highlighting the innovative aspects of the work done in the context of the METRO Project. Finally, Andrea Vicenzutti provided some remarks about the project state and the lessons learned up until that point.

CONCLUSIONS

The event had mainly a formative aim in regards to the university level students, but was also open for being attended from other public (which happened). The discussion mostly consisted in students asking clarifications and more information on the tools and methodologies presented during the webinar. A general conclusion was provided at the end of the event, by Andrea Vicenzutti, containing a summa of the lessons learned during the project. A short summary is provided: A naval proof-of-concept is required, because there are several hybrid technologies and components (batteries) that have been demonstrated alone or in other applications, but it is important to highlight how these impact the entire ship to make them attractive; An integrated approach that includes not only the ship, but also all the required logistic supporting the ships is required; New technologies (big-data, machine learning, optimization algorithms, etc ..) can be of great help in optimizing systems and helping in the design of new ships, as well as improving the use of the existing fleet; For ships shuttling between two states, cooperation between states is essential (this is the reason for the existence of INTERREG IT-HR); To meet the Paris Agreement goals and IMO greenhouse gas reduction targets for 2030 and 2050, the right way is not to make the ship efficient, but the entire chain in which the ship is inserted.

PHOTOS / SCREENSHOTS

In the following, two screenshots of the webinar, taken during the two presentations by Wartsila, are shown. From the screenshots it is possible to see the presenters, as well as a partial list of the participants.



GLOBAL EMISSIONS
Sensitivity study on carbon intensity of electricity generation

Carbon dioxide [m/year]

Carbon intensity of energy from shore connection and hydrogen production [gCO₂/kWhel]

DE-HY + SC HYFC FE

Notes:
Electrolysis efficiency is set to be 0.8; compression/cooling energy not included
Norway 10 g_{CO₂}/kWh_{el} from Wartsila Energy Transition Lab
Croatia 210 g_{CO₂}/kWh from <https://www.eea.europa.eu/data-and-maps/daviz/sds/co2-emission-intensity-from-electricity-generation-2/@/view>
Poland 707 g_{CO₂}/kWh from Wartsila Energy Transition Lab

ANNUAL OPEX

Hydrogen LFO Lube oil Shore energy Urea

Reference DE-HY DE-HY+SC HYFC FE

Notes:
Prices are to be considered as indicative only:
LFO 450 €/mt
Lube oil 2300 €/mt
Shore energy 80 €/MWh
Hydrogen 1000 €/mt
Urea 250 €/mt

WP2 Communication activities / Act. 2.2 Project events

SEMINARIO AEIT SULLE FRONTIERE DELLA E-MOBILITY: GUIDA AUTONOMA, SISTEMI MANNED-UNMANNED

Online 15/12/2020

Follow up report

Partner in charge:

University of Trieste

Partners involved: none

DESCRIPTION OF THE EVENT

The industrial developments of numerous and important companies together with academic research at the international level stand investing significant resources on self-driving systems in the land, sea (surface and submarines), airplanes, with multiple purposes. Likewise, alongside the guidance systems we are witnessing progressive digitization of the management and control systems of the "platform" of the means of transport, and the progressive affirmation of the architectures "Drive-by-wire", "more electric" and even "all electric". In the media, therefore, new elements are able to open scenarios and interesting development contexts such as servomechanisms, smart sensors, advanced data management, intelligence artificial. Finally, all this is accompanied by intelligent systems for the generation and control of electricity and its distribution to on-board loads, designed to increase power density, reduce size of machinery, implement the use of storage systems, maximize "payloads".

The AEIT Seminar therefore was aimed to frame the state from a technological, industrial and regulatory perspective of new technologies and new design approaches of self-driving means of transport (manned or unmanned) thanks to the qualified interventions of experts, managers, exponents of the world of research, industry, innovation and of professions.

The agenda was as follows:

9:40 **Indirizzi di saluto**

Prof. R. Di Lenarda, Magnifico Rettore dell'Università degli studi di Trieste
Ing. S. Fabbro, Past-President AEIT Sezione FVG
Ing. P. Frandoli, Presidente ATENA Sezione FVG
Ing. S. Longhi, Ordine degli Ingegneri della provincia di Trieste
Ing. D. Bravar, Delegato Ricerca & Innovazione Confindustria Friuli Venezia Giulia

10:00 **Sistemi di trasporto a guida autonoma: maturità tecnologica, pianificazione, quadro regolatorio**

Proff. Ingg. G. Sulligoi, G. Longo, V. Bucci – Università degli studi di Trieste

10:20 **Remoted piloted Air Systems (RPAS) in Leonardo SpA Electronics Division**

Ing. J. Colado, Head of Design Office Unmanned air systems and Training simulators, Leonardo S.p.A.

10:40 **Exploring the challenges for vehicle automation, the L3Pilot European project**

Dott.ssa L. Andreone, FCA PD Advanced Tech. and Pre-Development Programs, Collaboration & Network, Collaboration Projects

11:00 Fault Operational Propulsion Architectures for Autonomous Electric Vehicles

Ing. V. Ravello, FCA PD Advanced Tech. and Pre-Development Programs, Collaboration & Network, Collaboration Projects

11:20 The Importance of UHDmaps for ADAS/AD simulation and validation

Dr. H. Mayer, Director DIGITAL, JOANNEUM RESEARCH

11:40 Computer embedded ad altissime prestazioni per velocizzare la ricerca nella guida autonoma

Dott. R. Siagri, Amministratore Delegato, Eurotech S.p.A.

12:00 BREAK

13:00 Sistemi *unmanned*: l'esperienza della Marina Militare Italiana - Sommergibili e *Mine Warfare*

Capp. di Corvetta, Ing. S. La Riviera e Dott. F. Maiorana, Marina Militare Italiana

13:20 SAND – Surface Advanced Naval Drone – Unmanned Vehicle in Marine Field

Ing. S. Reggente, President and CEO of Meccano Engineering S.r.l.

13:40 Saipem Hydron platform the new generation of subsea robots

Ing. A. Serena, Hydron Platform Project Manager, Saipem – Solution

14:00 Sistemi unmanned navali

Ing. A. Concialini, Amministratore Delegato, Seastema S.p.A.

14:20 Marine Simulators as preliminary step toward autonomous vessels: training and testing unique advantages

Ing. F. Menegato, Sales Manager, Wartsila Voyage Mediterranean

14:40 La navigazione autonoma da un punto di vista del corpo normativo internazionale

Ing. P. Scialla, Principal Specialist del Lloyd's Register EMEA

15:00 Dallo scoping exercise dell'IMO alle iniziative del CMI. Spunti di riflessione e criticità

Avv. A. Pasino, Avvocato del Foro di Trieste, Socio Studio Zunarelli e responsabile della sede triestina

15:20 Tavola Rotonda

16.00 Chiusura del seminario

Dott. F. Sbroiavacca, Presidente AEIT Sezione FVG

TYPOLOGY OF THE AUDIENCE

The event was attended by a public of 213 people. Specifically, at least 30 students and 102 between engineers and professionals from several different industrial and public authorities, while the rest has not been identified and thus may be considered general public.

All the participants were able to ask questions during the event.

SPEAKERS' PRESENTATIONS

The webinar was a one-day long event, where several different interventions were made on topics concerning the autonomous transport systems, remote operated vehicles, challenges for vehicle automation, propulsion systems for electric vehicles, experiences from Italian Navy and industrial partnerships in unmanned marine vehicles.

The METRO project was presented by Prof. Giorgio Sulligoi in the context of the topic “Sistemi di trasporto a guida autonoma: maturità tecnologica, pianificazione, quadro regolatorio”, co-presented by him and other two representatives from the University of Trieste. Specifically, the project and some of its results (in particular, the data driven design of the Ferry for the short route) was taken as examples for demonstrating the need of an interdisciplinary approach for addressing the complexity of modern systems, requiring large partnerships made up from different partners each providing specific competences, in a collaborative framework.

CONCLUSIONS

The event had a broad goal, which was not specifically focused on the METRO project topics. However, given the speakers name and affiliation and the amount of public, it was deemed useful to mention the METRO project and briefly present some of its results, to disseminate such information with an audience that may have been interested in such topics.

PHOTOS / SCREENSHOTS

During the event no screenshots were made, due to the refusal of the authorization by the speakers. In the following an extract from the presentation where the METRO project was disseminated is shown.

SEMINARIO AEIT SULLE FRONTIERE DELLA E-MOBILITY: GUIDA AUTONOMA, SISTEMI MANNED-UNMANNED

MARTEDÌ, 15 DICEMBRE 2020

Sistemi di trasporto a guida autonoma: maturità tecnologica, pianificazione, quadro regolatorio

Giorgio Sulligoi

Head – Digital Energy Transformation & Electrification Facility
Dept. of Engineering and Architecture
University of Trieste, Italy
gsulligoi@units.it

INTERREG IT-HR Project METRO



interreg
Italy - Croatia
METRO

METRO
Maritime Environment-friendly
TRanspOrt systems

METRO PROJECT:
Sustainable development and eco-innovative
transport solutions

PROJECT DURATION
30 MONTHS

ERDF
2.515.664,42

TOTAL BUDGET
2.900.800,00

DESCRIPTION
METRO project aims to improve the quality, safety and environmental sustainability in maritime transport by promoting multimodality and eco-innovative solutions for maritime and coastal transport in the program area of Italy and Croatia.

PROJECT PARTNERS

CONTACT
University of Trieste - Dept. of
Engineering and Architecture (DIA)
segreteria@dia.units.it
Tel. +39 040 558 73000

European Regional Development Fund

www.italy-croatia.eu/interreg

The paper is based upon research supported by the 2014-2020 Interreg V-A, Italy-Croatia CBC Programme, 2017 Standard Call research projects, Priority Axis: Maritime transport

WP2 Communication activities / Act. 2.2 Project events

METRO Project Webinars - Designing sustainable maritime transport systems

Webinar 17/03/2021

Follow up report

Partner in charge:

University of Trieste

Partners involved: Wärtsilä, Tehnomont Shipyard

DESCRIPTION OF THE EVENT

Can the environmental sustainability of tourist maritime transport in the North Adriatic be improved? This is the goal of METRO (Maritime Environment-friendly TRanspOrt systems), a research project funded by the European Union. The project addresses some specific challenges of our area: more integrated, efficient and sustainable maritime connections between Italy and Croatia; reduction of traffic congestion caused by seasonal tourist flows; improvement in the competitiveness of local stakeholders. The project has a strong multidisciplinary approach, coupling the best technologies in the field of electrical shipboard power systems with a modern approach to the ship design. Moreover, the integration of the ships with the ground services is also addressed. The Department of Engineering and Architecture - University of Trieste is developing this project together with the University of Rijeka, IDA (Istrian Agency for Development), Port System Authority of the Eastern Adriatic Sea, Tehnomont Shipyard and Wärtsilä Italy.

In this webinar, the two ships designed during the project have been presented. Each ship is endowed with a specific power and propulsion system configuration, capable of improving the sustainability of the ship by means of the smart coupling of diesel engines, electric propulsion, energy storage system, and shore connection. In addition to that, the modern data driven design approach, used to define the best onboard propulsion configuration, have been also presented.

The webinar was aimed at illustrating part of the activities carried out in the project, with particular reference to the development of new hybrid propulsion ships through an innovative design approach, capable of making the most of state-of-the-art data collection and processing capabilities. The webinar was focused on providing a formative experience for students at university level, but was open for being attended from other public also. The main goal of the webinar was to disseminate among the future ship designers the importance of applying new tools and methodologies for designing sustainable and environmental-friendly ships.

TPOLOGY OF THE AUDIENCE

The webinar was attended by 51 students of Universities (Trieste, Genova, Padova, Rijeka, Udine), 8 people from industries (EPIC, Ferretti Group, Finaval, Goro Tours, IACE, Nil, Phase motion control, Tsakos Columbia Shipmanagement), 3 people from the PPs (Wartsila Riteh), and 6 classified as general public, in addition to the presenters.

All the participants were able to ask questions during the webinar.

SPEAKERS' PRESENTATIONS

The webinar started with a short introduction about the METRO Project by Andrea Vicenzutti, Project Manager of the Lead Partner, aimed at presenting the project as a whole, its aims, its targets, and specifically WP3 objectives. Then Mitja Koštomaj, Tehnomont Shipyard Sales Project Leader, briefly presented Tehnomont shipyard. After him, Obrad Kuzmanovic, FLOW ship design Senior Designer, presented at first who Flow ship design is, and then shifted towards the more technical content with its presentation about the design of the innovative RoPax vessel made during the project. Then Vito Radolovic, another Senior Designer from FLOW ship design, presented similar content in regards to the Ferry vessel designed during the METRO project. The ship design presentations showed a high amount of technical information about the ships, providing an overview of the data contained in WP3 project deliverables. Finally, Lorenzo Brigati, Wärtsilä Italy Manager System Simulation, briefly presented Wartsila Italy and then discussed in depth about the Data Driven Design approach applied to the selection of the best propulsion system configuration of the two ships. Finally, a Q&A session was managed by Andrea Vicenzutti.

CONCLUSIONS

The event had mainly a formative aim in regards to the university level students, but was also open for being attended from other public (which happened). The discussion mostly consisted in students asking clarifications and more information on the tools and methodologies presented during the webinar, but some industry representatives also asked more information

about the project aims and the design choices made during the ships design. In general, it has been found that the environmental sustainability of the maritime transport is a hot topic, which is stirring interest in both students (the designers of the future), and in present industry. The presents were also significantly interested in the designed ships and in the methodologies followed for choosing their configuration, and have been directed towards the project website for finding all the detailed documentation.

PHOTOS / SCREENSHOTS



In the following, some screenshots of the webinar, taken during the presentations by Wartsila, TSP, and Flow Ship Design are shown. From the screenshots it is possible to see the presenters, as well as a partial list of the participants.

METRO Project Webinars - Designing sustainable maritime transport systems

47:53

Request control

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HYBRID RO-PAX VESSEL

METRO | FLOW ship design ltd. | Obrad Kuzmanovic

METRO Webinar | 17th March 2021

Obrad Kuzmanovic

European Regional Development Fund

+35 VR CS MK VA Obrad Kuzmanovic

Furlan, Stefano | Mija Koštomaj (Guest) | VICENZUTTI ANDREA


METRO Project Webinars - Designing sustainable maritime transport systems

01:15:25

Request control

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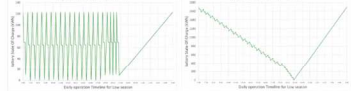
POWERING



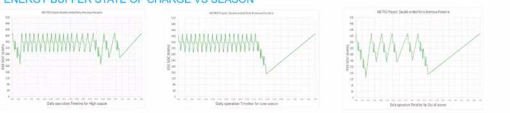
BATTERY CAPACITY

- Operational profile
- Available charging time
- Shore connection facilities (on shore)









ENERGY BUFFER STATE OF CHARGE WITH DIFFERENT EL. SHORE CONNECTION



ENERGY BUFFER STATE OF CHARGE VS SEASON



Vito Radolovic (FLOW)

+32 CS MK VA Vito Radolovic (FLOW) OK Obrad Kuzmanovic Furlan, Stefano

VICENZUTTI ANDREA

METRO Project Webinars - Designing sustainable maritime transport systems

01:35:27

Request control

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Sc price sensitivity analysis Ferry



Compared to the best solution without shore connection it is possible to obtain savings under the 100 €/MWh

Savings up to 100 €/MWh

Brigati, Lorenzo

Logos: Interreg Italy - Croatia METRO, UNIVERSITÀ DEGLI STUDI DI TRIESTE, WARTSILA, lehnoment, idca

+28 MK OK VR VA Brigati, Lorenzo

METRO Project Webinars - Designing sustainable maritime transport systems

01:36:33

Request control

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Conclusion

- The **HY** brid solution with **Wärtsilä 34DF** engines and **shaft generators** showed good economical (-37% OpEx) and environmental performance (-30% CO₂)
- Solutions with also the shore connection is quite **challenged by the price of shore connection**
- The **HY** brid solution with **Wärtsilä 14** genset and **shore connection** good economical (-30% OpEx) and environmental performance (-35% CO₂), with low footprint and weight
- Future promising solution for this typology of vessel seems to be the expansion of battery capacity towards **full electric solution**

Brigati, Lorenzo

Logos: Interreg Italy - Croatia METRO, UNIVERSITÀ DEGLI STUDI DI TRIESTE, WARTSILA, lehnoment, idca


+28 MK OK VR VA Brigati, Lorenzo

METRO Project Webinars - Designing sustainable maritime transport systems

01:37:31

Request control

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Interreg Italy - Croatia METRO
EUROPEAN UNION
WÄRTSILÄ
Thank you!
Brigati Lorenzo, Manager System Simulation, Wärtsilä Italia
2021-03-17
European Regional Development Fund
Applications of Data Driven Design - Brigati Lorenzo

Brigati, Lorenzo

+28 MK OK Furlan, Stefano Vito Radolovic (FLOW) VICENZUTTI ANDREA Brigati, Lorenzo

WP2 Communication activities / Act. 2.2 Project events

Presentation of METRO within an event organised by Anchor and Rumble EU projects

Livorno, June 15th, 2021

Follow up report

Partner in charge:

Port Network Authority of the Eastern Adriatic Sea

Partners involved: PP2

DESCRIPTION OF THE EVENT

The METRO project was presented at an online webinar organised on June the 15th, 2021 by the Port of Leghorn in the framework of the ANCHOR (www.anchorlife.eu) and RUMBLE (www.interreg-maritime.eu/web/rumble) EU projects, co-funded by the LIFE and Interreg Italy-France Maritime Programmes.

The Port of Trieste was invited to present its initiatives for improving the port's environmental sustainability and energy efficiency.

TYOLOGY OF THE AUDIENCE

The webinar was attended by more than 30 experts in the field of on the topic of noise pollution in port cities, including the Port Authority of Leghorn, local municipalities and their associations, the Tuscany environmental agency and the port's Harbour Master's Office.

As it was an online webinar it's not possible to provide further details on the typology of the audience.

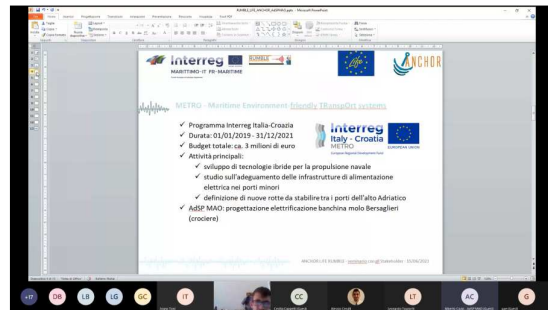
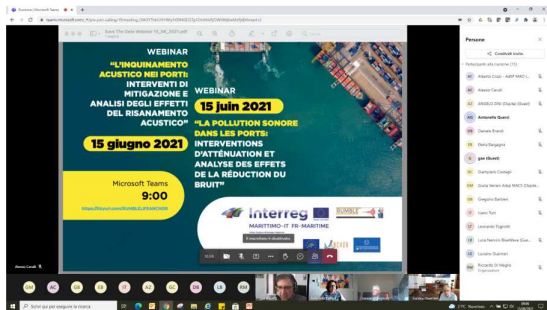
SPEAKERS' PRESENTATIONS

The Port Network Authority of the Eastern Adriatic Sea presented its vision and objectives related to the port's environmental sustainability and energy efficiency; illustrated the main characteristics of the METRO project and highlighted the impact of cold ironing in reducing the noise pollution of port activities.

CONCLUSIONS

After attending the presentation, the organizers expressed their interest in the project outcomes, with a particular reference to the impact of onshore power supply in the reduction of noise pollution.

PHOTOS / SCREENSHOTS



WP2 Communication activities / Act. 2.2 Project events

Scientific conference

Jadrolinija Rijeka, 17/06/2021

Follow up report

Partner in charge:

University of Rijeka, Faculty of Maritime studies

(PFRI)

Partners involved:

DESCRIPTION OF THE EVENT

On June 17, 2021, a scientific conference was held at the headquarters of Jadrolinija d.o.o. in Rijeka. The aim of this event was to familiarize interested parties with the issues related to the introduction of hybrid and electric ferries and RoPax vessels on the coastlines of the Republic of Croatia. The focus was on the scientific part of the research that is being conducted within the project METRO.

TPOLOGY OF THE AUDIENCE

There were 13 participants in the meeting. The leading Croatian ferry operator Jadrolinija had 6 representatives consisting of board members, technical superintendents and chief naval architect. One representative was from Jatro d.o.o., company whose main activities are consulting and design of marine electrical equipment. Marine and Offshore engineering company AITAC d.o.o has one representative. Finally, the University of Rijeka had four representatives, two from the Faculty of Engineering and two representatives from the Faculty of Maritime Studies, which was also the organizer of this meeting.

SPEAKERS' PRESENTATIONS

The keynote speaker at the scientific conference was Associate Professor Aleksandar Cuculić, PhD. from the Faculty of Maritime Studies (PFRI). At the conference, the results of the research conducted so far within the project METRO were presented, which relate to the possibility of using the proposed types of hybrid vessels in the Republic of Croatia. Special attention is paid to the land infrastructure required to accommodate such vessels. An overview of the available technologies for charging battery energy storage systems and the existing regulations for shore connections in the low-voltage and medium-voltage range will be presented. The advantages and disadvantages of implementing shore charging stations in existing ferry ports and the technical challenges related to the current state of the energy grid on the islands were also analyzed. The developed methodology for estimating the electricity demand and the design of shore charging stations were also presented using the ports of Brestova and Porozina as examples.

CONCLUSIONS

After the presentation, the stakeholders showed great interest in the topics presented. Jadrolinija d.o.o. is planning to introduce several hybrid ferries on its lines in the foreseeable future, and its representatives recognized the results of the research conducted within the METRO project as very interesting and applicable. The first part of the question was related to technical issues and it was discussed which of the hybrid propulsion solutions for ferries on the coastlines of the Republic of Croatia presented within the project would be the most cost-effective in the long term. The main focus of most participants was on the vessel itself and the associated propulsion systems, but after the presentation the issue of land infrastructure implementation was identified as a key issue for the implementation of such ferries on lines connecting the mainland and smaller islands. Participants were very interested in the existing technology of battery charging systems and the rules and regulations related to shore connection systems required for hybrid and electric ferries. After the discussion, the participants commented on the offered solutions, which they considered very suitable for reducing pollutant emissions and improving the efficiency of ferry transport in the Republic of Croatia. It can be stated that the conference was very successful and useful for both sides. The contributions received from the representatives significantly contributed to the quality of further work and research on the project.

PHOTOS / SCREENSHOTS





WP2 Communication activities / Act. 2.2 Project events

Presentation of METRO at a partner
meeting of SMOOTHPORTS project
Monfalcone, September 23rd, 2021

Follow up report

Partner in charge:

Port Network Authority of the Eastern Adriatic Sea

Partners involved: PP2

DESCRIPTION OF THE EVENT

The SMOOTH PORTS project is led by the City of Hamburg and its partners are the Port Network Authority of the Northern Tyrrhenian Sea, the City of Monfalcone, the Port of Nantes Saint-Nazaire Authority and the Regional Administration Varna.

Given the similar scope – port environmental sustainability - the Port Network Authority of the Eastern Adriatic Sea was invited to present its initiatives for improving the port's environmental sustainability and energy efficiency in the Smooth Ports' partners meeting held in Monfalcone on the September 23rd, 2021.

TYOLOGY OF THE AUDIENCE

The Smooth Ports' partners meeting was attended by more than 20 participant including representatives from the Friuli Venezia Giulia Region, the Municipality of Monfalcone, the Port Authorities of Hamburg and Nantes S. Nazaire, the Hamburg Ministry of Economics and other experts.

2 general public and 5 Local, regional and national public authorities were reached thanks to the presentation made by PP2 at the project meeting of the SMOOTH PORTS project held in Monfalcone.

SPEAKERS' PRESENTATIONS

The Port Network Authority of the Eastern Adriatic Sea presented its vision and objectives related to the port's environmental sustainability and energy efficiency; illustrated the main characteristics of the METRO project and highlighted the impact of cold ironing in reducing the pollution of port activities.

CONCLUSIONS

After attending the presentation, the participant expressed their interest in the project outcomes with a particular focus on the capacity of the cold ironing technology to reduce the port's activities Co2 emission, resulting in a fruitful exchange of experiences and cross-fertilisation between EU-funded projects.

PHOTOS / SCREENSHOTS



WP2 Communication activities / Act. 2.2 Project events

Joint event “Improving the sustainability of maritime transport in the Adriatic Sea”

Online 19/10/2021

Follow up report

Partner in charge:

University of Trieste

Partners involved: none

DESCRIPTION OF THE EVENT

How can the environmental sustainability of maritime transport in the Adriatic region be improved? This is one of the goals of the Priority Axis 4 of the Italy-Croatia Cooperation Programme (i.e., INTERREG IT-HR), financed by the European Regional Development Fund.

In a compact online event, three research projects of the IT-HR Programme have dialogued to address this question. Representatives from the E-CHAIN (enhanced connectivity and harmonization of data for the Adriatic intermodal network), GUTTA (saving fuel and emissions from maritime transport in the Adriatic region), and METRO (maritime environment-friendly transport systems) described the outcomes of the project activities and the experiences learned during the projects. Furthermore, thanks to the participation of speakers from regulatory agencies, policymaking, industry, etc, insights about the present and the future of maritime transport regarding sustainability actions have been provided. Interactive polls with the public have also been made during the event, and their results were discussed in a dedicated final panel with all the speakers.

TYOLOGY OF THE AUDIENCE

The event was attended by 53 people (presenters excluded): 22 from Research and Academia, 4 from NGOs & Associations, 10 from industry/business, 7 from Policy and Public Institutions, and 10 not specified (qualified as general public).

SPEAKERS' PRESENTATIONS

After a welcome from the moderator and some institutional greetings from Dr. Paolo Rtoni, from the Interreg VA IT-HR Joint Secretariat, the speakers started their interventions.

Dr. Emanuele Giglio, GMT SpA CEO, made a presentation about mobility with low environmental impact, describing the aims, the methods, and the results obtained in the E-CHAIN project.

Gianandrea Mannarini, CMCC Foundation Senior Scientist, was the following speaker. Its presentation was focused on operational least-CO2 ferry routes based on metocean forecasting products, which was the goal of the GUTTA project.

After him, Andrea Vicenzutti, Project Manager for the Lead Partner of the METRO Project, presented the METRO project scope, its organization, and some significant results to the audience. The presentation started with some context in regards of the policies for maritime sector environmental sustainability, followed by a discussion on how to possibly meet with the actual and future requirements. The complexity in designing a new sustainable maritime transport systems was also depicted, presenting the METRO Project as a possible step towards such direction. After the project details, some information about the work done in the project was conveyed to the audience. The intervention was concluded remarking that: electrification improves environmental sustainability of maritime transport; the achievable results depend on input data and parameters; different ship architectures arise, depending on type and route; the port infrastructure may add constraints that affect the ship, making it perform very differently from the expected; the ports infrastructure needs to be upgraded to correctly support the new green ships; and finally, designing a more sustainable transportation system requires an integrated approach, which considers both the sea and the land sides as a one thing.

A first round of interactive polls was made, to collect opinions from the public in regards to environmental sustainability of the maritime transport.

Then Sergio Alda and Mercedes Garcia Horrillo, from EMSA, presented the sustainability and technical assistance department of EMSA. The goal was to present their actual work, and offer to the audience their expertise and technical assistance in the field of environmental protection, helping the European Commission and Member States to address a wide variety of ship-sourced pollution and emission-related issues, including carbon dioxide, nitrogen and sulphur emissions, alternative sources of power, port reception facilities, ship recycling, ballast water management, underwater noise and zero-pollution ambitions.

Alessandro Boveri and Erica Firenze, from CETENA S.p.A., made a presentation about airborne emissions and underwater noise, highlighting how the latter is a significant issue from the environmental point of view, although it is less considered than the former.

The last speaker was Alberto Cozzi, Project Manager from thePort Network Authority of the Eastern Adriatic Sea – Ports of Trieste and Monfalcone, which presented the integrated strategy for reducing GHG emissions in the Ports of Trieste and Monfalcone. A key point of such strategy is the integrated and wide approach applied, which is not focused on a single critical point (i.e., the ship), but includes all the pollutant emitting sources that are involved in the port operations.

A second round of interactive polls was made, to collect opinions from the public in regards to environmental sustainability of the maritime transport.

Finally, the speakers discussed the polls results and responded to public questions, and the moderator concluded the event.

CONCLUSIONS

By means of the interactive polls, the speakers were capable of having an overview on the point of view of the public in regards to the environmental sustainability of the maritime transport. The polls results were discussed by the speakers, providing their opinion on what emerged, as well as answering some additional questions made by the public.

In general, the need of taking actions towards improving the environmental sustainability of the maritime transport is known by everyone. This is true today, thanks to the significant policy making made by Europe and International actors, but just some years ago it surely was an obscure topic known to only the insiders. This is also demonstrated by the public availability in choosing the lower emission trip between two equal ones, if clear information is provided. The most impacting issue is felt to be the greenhouse gases emissions which should be reduced mainly using low carbon fuels. Although such solution is surely the main one for the long term, it is yet to be practicable in the short term. Meanwhile, other technical solutions can help in improving efficiency and reducing pollution. Green hydrogen (and hydrogen in general) is also seen as a solution already for the short term, with the ports having a key role in local production in the future (in long term for many, but someone also thinks that they could have such role already today). A critical point was highlighted in regards to policies, which are considered as being only partially effective and a cause of an increase in costs for the entire maritime sector.

However, as demonstrated in the presentations during the event, an environmentally-friendly ship can also provide significant saving in terms of operative costs in respect to conventionally propelled ships, thus making the costs increase, but lesser than expected. The policies are also considered not sufficiently coordinated between them, with different makers providing rules on different sectors and areas, thus obliging the maritime transport designers, the ship owners, and the transport operators to put together different rules coming from different places to obtain the list of minimum requirements they need to comply with. This is also because the policies tend to not consider the specificity of the maritime sector, sometimes trying to push in such sector practices coming from different ones (like land transportation). However, the public agreed that the priority of the policies should be on reducing the greenhouse emissions from ships, followed by imposing fines on anyone who pollutes the environment and consequently tighten controls over pollutant emissions from ships.

PHOTOS / SCREENSHOTS

The registration of the event is available to all the public on Youtube (link <https://youtu.be/EfH8Y4nNiBw>).

In the following some photos taken from the event are shown.

Online event

Improving the sustainability of maritime transport in the Adriatic Sea

October 19, 2021 - h 10:00 am - 1.00 pm CEST

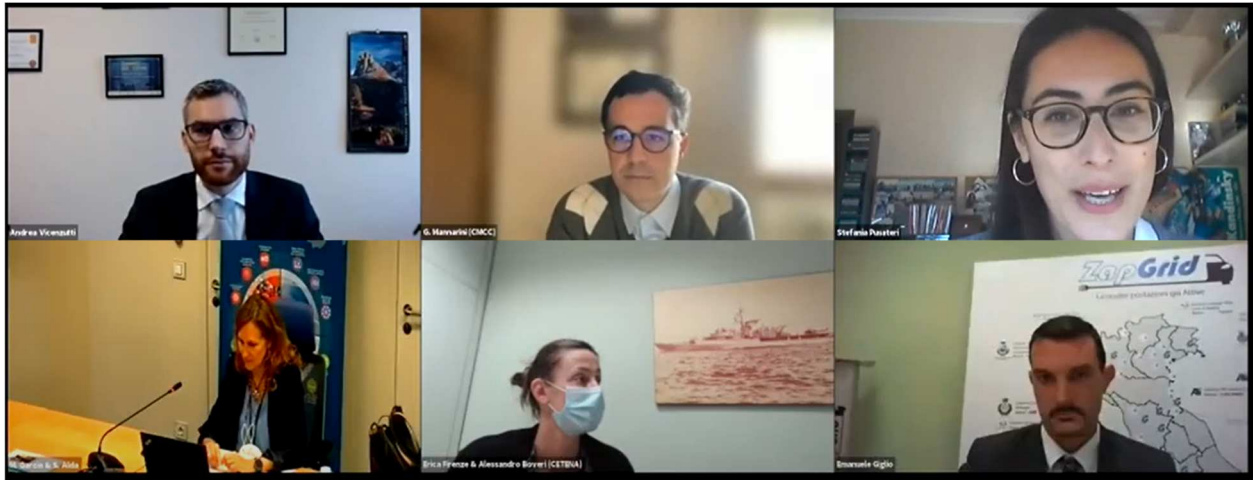
To attend the event, register at: <https://bit.ly/Web191021>

www.cmcc.it









Improving the sustainability of maritime transport in the Adriatic Sea

MOBILITY WITH LOW ENVIRONMENTAL IMPACT

E-CHAIN | Dott. Emanuele Giglio | GMT SpA

Online Event | 19 October 2021





European Regional Development Fund

Improving the sustainability of maritime transport in the Adriatic Sea

PowerPoint Slide Show - [Mannarini_20211019_11-116_GUTTA]

Oct. 19, 2021





Operational least-CO₂ ferry routes based on metocean forecasting products

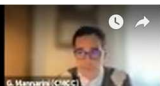
Gianandrea Mannarini | CMCC

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European Regional Development Fund



Improving the sustainability of maritime transport in the Adriatic Sea

 **Interreg**
Italy - Croatia
METRO


EUROPEAN UNION

METRO - Maritime Environment-friendly TRAnsPOrt systems

Designing sustainable maritime transport systems

Giorgio Sulligoi – Scientific Manager
Andrea Vicenzutti – Project Manager
University of Trieste – DIA

Online event | 19 Oct. 2021



European Regional Development Fund