



August-September 2022

Project outstanding success

Our **OPTIMUM** project is selected for this year's **Exceptional ITEA Award of Excellence for outstanding results in all three categories'** viz., Innovation, Business impact and Standardisation.

Congratulations to Anja Fischer and all at Demagcranes researchers as well as to all partners. This is a cause for big celebrations.

A new Erasmus+ Project

The project is devoted to issues related to the outbreak of an epidemic on the sea-going vessel. In practice, the vessel becomes a moving isolator with a great potential to "release" the disease over a larger area. The COVID-19 outbreak has demonstrated that in many places there are no mechanisms for dealing with disease emergencies. Although many agreements and contracts anticipated "force majeure" risks, no one was aware of the fact that this could be global. COVID19 has shown that very often existing procedures are not adapted to the reality around us. Very often, new ones need to be developed quickly. Sometimes there is even no legal basis to implement and apply such procedures. Different solutions related to the Corona virus threat have been adopted in each country. Some actions turn out to be right, some don't. Unfortunately, in many cases the social factor is also important (opposition to vaccination, lockdowns, etc.). Sometimes, however, we find ourselves in a situation where we cannot wait for new procedures to be developed. COVID-19 has had a negative impact on almost all areas of the economy. It can be said that it is the greatest global threat since the Second World War. The aim of the project is to build an expert system regarding the risk of epidemic threats on a sea-going vessel (not only COVID-19). Every merchant ship, pleasure craft, sailing yacht have to be equipped with appropriate communication equipment associated with her area of movements. It may be radio, satellite station, mobile phone etc. Each of them determines different way to obtain medical assistance (or advice). In addition radio operators on board of the ship must be certified by authorized organization and familiarized with maritime radio communication procedures. There are couple types of radio operator certificates depends on their purpose. For example most common is SRC (Short Range Certificate) used by sailors and GOC (General Operator's Certificate) required by STCW (Standard for Training Certification and Watchkeeping) for deck officers. The motivation of the project is to deliver an expert system which may be helpful to resolve: i) how non-medical personnel can accurately access medical situation?; ii) which medical facility should be contacted with?; iii) what means of communication should be used. So, the aim of the project is to design and develop the decision support system for maritime decision makers in order to give some indications in the case of epidemic outbreak. Example of operation: one crew member fell ill on board the ship; he was given medical attention. Two more people fell ill the next day. The captain begins to suspect an epidemic (infectious disease, food poisoning). Quickly checks the identified symptoms in the system and



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on this basis, the system provides guidance on actions - how to provide medical assistance, what services to inform, what procedures to implement. Epidemic alert!

Partners: AKADEMIA MORSKA W SZCZECINIE AM, SATAKUNNAN AMMATTIKORKEAKOULU OY, SPINAKEER PROIZVODNJA TRGOVINA IN TRZENJE DOO, UNIVERSITAT POLITECNICA DE CATALUNYA, AINTEK SYMVOULOI EPICHEIRISEON EFARMOGES YPSILIS TECHNOLOGIAS EKPAIDEFSI ANONYMI ETAIREIA, CENTRE FOR FACTORIES OF THE FUTURE LIMITED and UCZELNIA MEDYCZNA IM. MARI SKŁODOWSKIEJ-CURIE

New Eureka Project

ENTA - The new Cyber Space project will deliver an encrypted traffic analysis service platform for cyber security. The platform will support a number of basic building blocks necessary for any Machine Learning (ML) and Deep Learning (DL) based traffic analysis. C4FF is pleased to be involved in this interesting and innovative project and disseminate and exploit the project outcomes in its network in UK and across Europe. C4FF has been involved in several EUREKA projects and currently support two ITEA3 projects. The new research project now is called ENTA which will commence shortly. C4FF will use the findings of this project to support its local Cyber Space project to ensure small companies in its locality would also benefit from this outcome of ENTA research work. ENTA has already been approved and Cyber Space is also expected to be approved by the UK Government soon. In support of its efforts in countering cyber espionage and attacks, the Centre for Factories of the Future (C4FF) has developed a full degree programme and various modules have already been tested at associated universities including C4FF's own university, namely, University Centre Garden City (UCGC). Furthermore, C4FF has started a new project named Cyber Space to help mainly very small businesses to cope with complexity of computer systems and networks and become cyber security safe. C4FF is an RTD capacity based in Coventry and Kenilworth (UK). C4FF is the instigator of the Factories of the Future projects in the UK and supported similar developments in the EU. Since the company was founded in 1996, C4FF has gained extensive experience in participating and coordinating EU and UK funded R&TD projects in areas such as: Artificial Intelligence Systems, Cyber Security, Sales Forecasting, Market Intelligence Knowledge Extraction, Innovation Management, Factory Automation and Enterprise Resource Planning. C4FF has several ICT, manufacturing facilities and laboratories worldwide. These laboratories are equipped with most up-to-date facilities. We also have access to several laboratories in several partner institutions. C4FF has an established reputation for developing novel manufacturing systems and software for factory management, including for lean practices. We also have many years of experience in ICT and Manufacturing research and development, as well as cyber security. Cyber Security is of particular interest to C4FF Maritime Division supporting the shipping industry against cyber attacks.

A decision is being made to deliver the ENTA project through C4FF new centre in Sweden.



Partners: Solana Networks (Canada); BEIA GmbH (Austria); Dalhousie University (Canada); Metodos y Tecnologia (Spain); Ruag AG (Switzerland); Centre for Factories of the Future Ltd (United Kingdom)

GreenShip - The final partner meeting and the final Conference of GreenShip project took place in Barcelona, 30th June and 1st July 2022 respectively. The programme for the Conference is as follows:



TOWARDS ZERO SHIP EMISSION-GREENSHIP PROJECT
2019-1-ES01-KA202-065523
FINAL CONFERENCE AGENDA



30th JUNE 2022
FACULTAT DE NÀUTICA DE
BARCELONA - PLA DE PALAU, 18,
08003 BARCELONA
FROM 10:00 h. TO 12:30h.

10:30h: Welcome and project introduction by Germán de Melo and Reza Ziarati Coordinators of the project.

10:40h: Official welcome by Agustín Martín Mallofré - Dean of Barcelona School of Nautical Studies, IMO Ambassador.

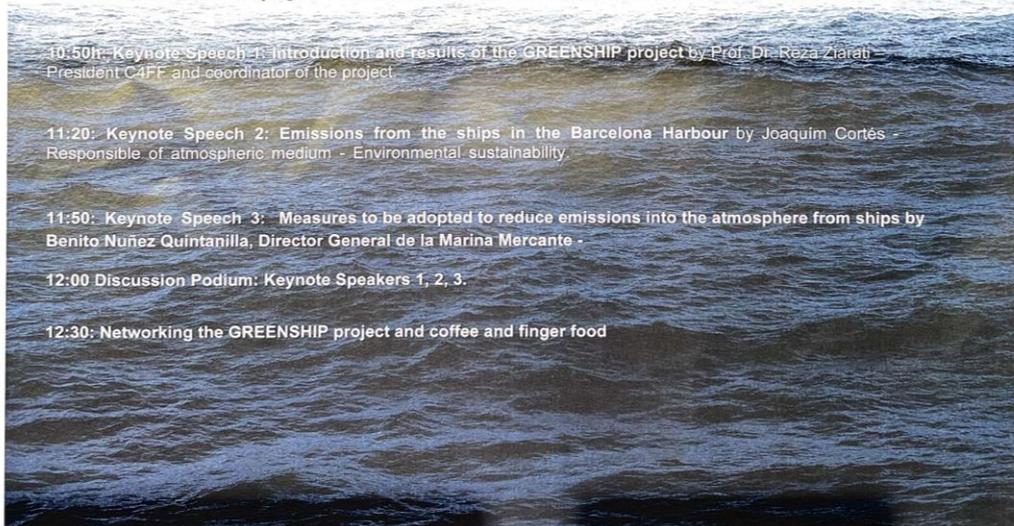
10:50h: Keynote Speech 1: Introduction and results of the GREENSHIP project by Prof. Dr. Reza Ziarati - President C4FF and coordinator of the project

11:20: Keynote Speech 2: Emissions from the ships in the Barcelona Harbour by Joaquim Cortés - Responsible of atmospheric medium - Environmental sustainability.

11:50: Keynote Speech 3: Measures to be adopted to reduce emissions into the atmosphere from ships by Benito Nuñez Quintanilla, Director General de la Marina Mercante -

12:00 Discussion Podium: Keynote Speakers 1, 2, 3.

12:30: Networking the GREENSHIP project and coffee and finger food





Conference was attended by a number of national and international participants. Here are some photos:





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The above photos show the introduction of the Speakers by Professor German de Malo Rodrigues and the keynote speech by Professor Dr Reza Ziarati, Chair, C4FF. The following is the UPC's Maritime Faculty's plaque presented to Professor Ziarati.



The key message from Professor Ziarati was that the shipping industry is responding well to the challenges of climate change. The international legislation and creation of Emission Control Area have encouraged many shipping companies to seriously reduce their fuel consumption and take measures to reduce ship emissions. There are now examples of ships propelled by electric, LNG, Methanol, Hydrogen, Fletther rotors and novel sails. It has been reported that a Greek Company, Avin, has placed an order in China for a ship which is expected to run on Ammonia and Maersk has placed an order for a ship to run on E Methanol. However, all efforts so far have not led to the reduction of CO₂ from shipping. To this end, the GreenShip project is an important project which must continue considering that the industry and the profession have failed to reduce the GHGs emissions from ships and that the projections for 2050 are not promising as the regulating UN



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body for the shipping industry, IMO, has predicted not a fall but a rise of 5 to 30% in CO2e emissions into the atmosphere by 2050.

GreenShip Report from Topmasts¹

By Laureano Carbonell Relat - Overseas Corresponding Member for Spain

Towards Zero Emission GreenShip Project On 30 June 2022, the Barcelona Facultat de Nàutica (School of Nautical Studies), which is affiliated the Technical University of Catalonia (UPC, BarcelonaTech), held the Final Conference of the Towards Zero Emission GreenShip Project, co-funded by Erasmus+Programme of the European Union, aiming to ultimately eliminate harmful emission of gasses to the atmosphere by ships, and reduce or eliminate its effects on climate change. The session began with a welcome given by the co-ordinators of the project, the professor nautical studies, Dr Germán de Melo Rodríguez, and Dr Reza Ziarati, emeritus and visiting professor in several centres and countries, founder and president of the Centre for Factories of the Future. Then Dr Agustín Martín Mallofré, Dean and professor of the School of Nautical Studies and IMO (International Maritime Organization) Ambassador, gave the official welcome to the delegates. The first speech, Introduction and Results of the GreenShip Project, was given by Dr Reza Ziarati, widely illustrated with the projection of many images and schemas, and finished with a list of his most important recommendations. The second was Joaquín Cortés Campa, responsible for the Atmospheric Environment of the Port of Barcelona. He spoke about Emissions from the Ships in the Barcelona Harbour and explained the plan to improve air quality in the port, initiated in 2016, and constantly updated, together with the projection of numerous illustrations, data, and schemas. The third and last speech was given by Benito Núñez Quintanilla, Director General of the Merchant Navy, under the title Measures to be Adopted to Reduce Emissions into the Atmosphere from Ships who detailed and explained the measures currently in force to reduce emissions from shipping. Then was a general discussion between the 60 delegates, about the issues raised by the three speakers. Topmasts no. 43 36 The session, in English, ran from 10:00 to 12:30, with refreshments and an opportunity for further discussion between delegates. Laureano Carbonell Relat Overseas Corresponding Member for Spain

GreenShip Success

As reported in the previously, C4FF's University Centre (Garden City) supported the development of two new courses in Technological Innovations and Research Methods. The courses were submitted to the Institution of Marine Engineering, Science and Technology (IMarEST). Both courses were received recognition as IMarEST CPD courses. C4FF also submitted the GreenShip Course documents for evaluation and we are pleased to announce that the Course received

¹ **Topmasts August 2022 No. 43 The Quarterly Newsletter of The Society for Nautical Research**



recognition from IMarEST. In parallel, a course in improving mental health at sea and eradicating bullying is being developed with several partner organisations in the EU.

GreenShip Certificate

PROMETHEAS Project

The last face-to-face meeting of PROMETHEAS project took place in Szczecin in Poland on 16-17 June 2022. The main objective of the meeting was to review the progress being made with regard to course content and its digital platform and application. A further meeting took place on 25th July to monitor progress and plan future meetings in September 2022.

As reported in the earlier MariFuture News there have been several multiplier events, three taking place in the UK. The first multiplier event in the UK was organised jointly by UK Special Interest Group for seafarers mental wellbeing at sea with support from IMarEST. There were some 75 major organisation which took place in the event from 25 countries. The second multiplier event was to seek the accreditors from a major engineering institution with Royal Charter and recognised internationally (IMarEST) to review the course content and its platform and see if it would be possible to seek recognition for it. The third and final event in the UK was to gain the support of major maritime organisations such as Lloyd's Register, Chamber of Shipping, BIMCO who run similar programmes so that to help future collaborations in the post funding phase of the project.

Photos of UK second and third Multiplier events.

Life Skills VR Project

VR Innovation Project - Life Skills for Employment in COVID-19 Era Through VR Innovation Project - Another revolutionary idea from C4FF

Although this project proposal is about Life skills development helping young and old find worthwhile jobs, VR offers a range of solutions in several other areas.

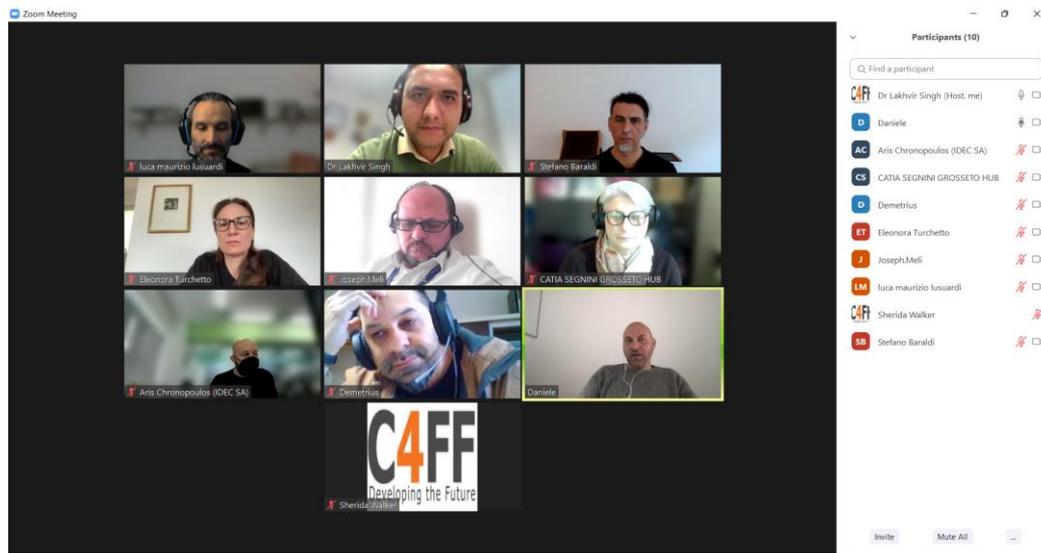
Our proposed project aims to solve the problem of giving youth the necessary skills and knowledge of what their skills and abilities are and in which occupation they can excel in and have a bright future. By approaching the issue at the earliest stage, the aim is to prepare the young and to reduce stress and future dissatisfaction and provide a glance of future opportunities. The users will be able to recognise missing skills and thus focus on the important aspects by themselves and therefore will be able to eliminate skills mismatching and develop key skills. Also, by knowing their strong points, the Generation C will be able to develop themselves to higher levels in seeking and retaining good and well-paid jobs.



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The VR proposed solution will have many more applications providing 3D visualisation of technical or non-technical information for learning new situations, acquiring new skills or simply helping us to navigate a new location or perform our jobs better. It can be used as a ship or boat simulator or navigation system. The proposed system can also capture information for analysis later and so forth. The combination of smart phones and VR technology can revolutionise the way we live and learn. What about using the VR devices for detecting dangers on our path for those with visual impairment or having access to information at meetings?

The project could support some of the work initiated by C4FF to help design new AI software to develop new VR applications. With C4FF's track record of developing novel AI solutions there is an expectation that a number of disruptive products and services will be introduced in the application of computer technology in our daily jobs and lives.



Life Skills VR Project Partner Meeting

The next face-to-face partner meeting will be held in Greece on 22-23 September 2022. For more information, please visit the project website: <https://lifekillsvr.com/>

PoliUniBus

The project is progressing well. Partners are having Monthly online meetings to discuss project progress. The final face-to-face partner meeting will be held in UK on 25th - 26th of August 2022.

The aim of the meeting is to evaluate the entire project implementation and present all deliverables. All partners will attend, the Meeting will take place in the UK.

For more information, please visit the project website: <https://www.poliunibus.org/>