

# THE EUROPEAN GREEN DEAL:

## Setting the Course for Sustainable Maritime Industry



13 November 2020, 09.30 - 13.00 (CET)



Online

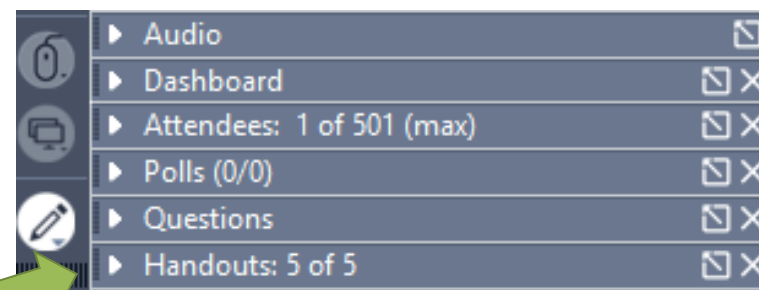


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# Welcome to the webinar!

- Questions and comments from the audience are welcome! Please use the **Questions** section in your GoToWebinar toolbar to type in your questions or comments.
- We've added some materials for you to download and read. Please check the **Handouts** section in your GoToWebinar toolbar to access the materials:
  - **Policy briefs:** Digital Performance Monitoring, Optimising Cargo Stowage Processes & Optimising Shipyard Processes
  - **Reports:** Maritime in the 21<sup>st</sup> Century & Road to Shipyard 4.0



# Today's Agenda

Time	Subject / Speaker
09.30 - 09.40	Welcome to the webinar <b>Milla Harju</b> , ECOPRODIGI project manager, Pan-European Institute at the University of Turku
09.40 - 10.00	Opening keynote: Setting the Course for Sustainable Maritime Industry <b>Jutta Paulus</b> , MEP, European Parliament
10.00 - 10.20	Industry keynote: <b>Christophe Tytgat</b> , Secretary General, SEA Europe
10.20 - 10.30	Break for stretching and refreshments
10.30 - 11.30	Using digital solutions to improve eco-efficiency – Findings from ECOPRODIGI's industry cases: <b>Niels Gorm Malý Rytter</b> , University of Southern Denmark, Aalborg University; <b>Mads Bentzen Billesø</b> , DFDS; <b>Maarit Lappalainen</b> , Carinafour
11.30 - 11.45	Digital tools and training programmes for shipping companies and ports: <b>Mariia Dushenko</b> , University of South-Eastern Norway
11.45 - 11.55	Break for stretching and refreshments
11.55 - 12.35	Digitalisation roadmap for maritime industry and policy briefings: <b>Valdemar Ehlers</b> , Danish Maritime; <b>Tapio Karvonen</b> , University of Turku
12.35 - 12.55	Concluding keynote <b>Peter Crawley</b> , Research Policy Officer, Waterborne Transport, DG RTD, European Commission
12.55 - 13.00	Closing remarks

# European Green Deal: Setting the Course for Sustainable Maritime Industry



## ECOPRODIGI

### - Setting the Scene

13.11.2020

Project Manager  
**Milla Harju**



# ECOPRODIGI: Why?

## Threats and Challenges imposed on BSR Maritime Industry

- **State of the Environment / Environmental degradation of marine life**

-> Growing amount of regulation (IMO, EU, national)

= Need for economically sound and technologically outstanding solutions, quick!

- **Growing tech competition from East**
- **Average age of fleet sailing in the Baltic Sea**  
-> Cannot wait for newbuilds



# ECOPRODIGI: Facts

## Main Objective:

*To increase eco-efficiency in the Baltic Sea Region maritime industry through digitalisation*

*To increase the institutional capacity of shipping companies, shipyards, suppliers and ports to improve the eco-efficiency of their current operations as well as to create and implement new digital solutions in the future*

**Project duration:** Oct 2017 – Dec 2020

**Project budget:** € 4,2M



# ECOPRODIGI: Partners

- **21 Project Partners** from Finland, Sweden, Denmark, Norway and Lithuania

- **Also 6 Associated Partners** from Poland, Russia, Estonia, and Sweden



# How?

## ECOPRODIGI's Cases

### Case 1 Digital Performance Monitoring



Introduced today by **Niels Gorm Maly Rytter**, Associate Professor/Head of Section Aalborg University / University of Southern Denmark

### Case 2 Optimising Cargo Stowage



Introduced today by **Mads Bentzen Billeso**, Senior Project Manger, DFDS

### Case 3 Optimising Shipyard Processes



Introduced today by **Maarit Lappalainen**, Vice President, Carinafour



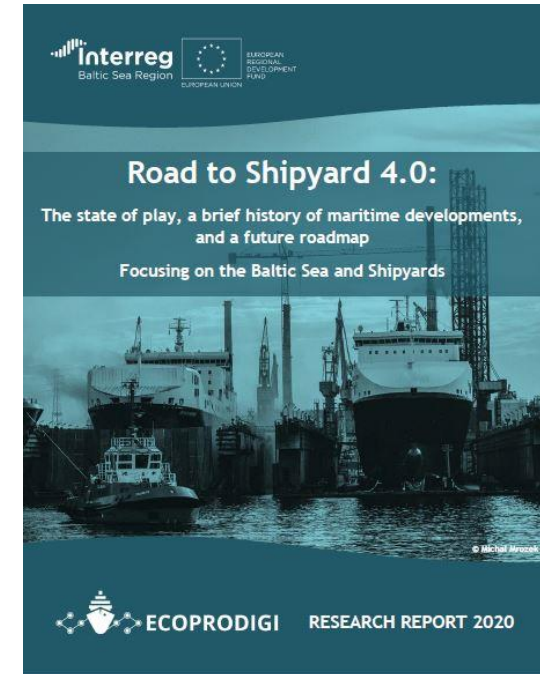
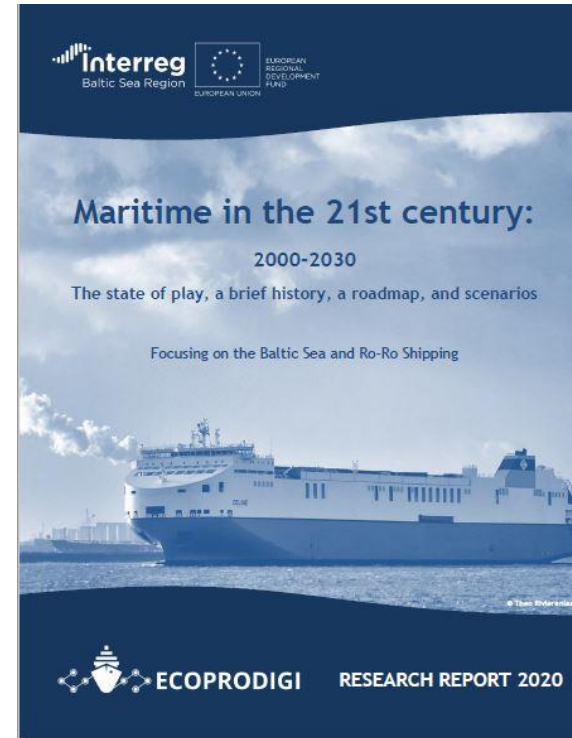
# How?

## ECOPRODIGI Capacity Building

### WORK PACKAGE 4: Improving seedbed for eco-efficient digital solutions

- Development of a digitalisation and eco-efficiency implementation roadmap
- Creating and piloting a training programme for end-users based on best practices regarding eco-efficiency through digitalisation

Introduced today by **Valdemar Ehlers**, Technical Director, Danish Maritime



# How? ECOPRODIGI Capacity Building

## WORK PACKAGE 5: Strengthening public support for maritime industry digitalisation

- Arrange policy workshops and seminars to discuss the outlook of digitalisation
- Produce policy briefings and recommendations to support digitalisation and eco-efficiency in the Baltic Sea Region

Introduced today by **Tapio Karvonen**, Senior Researcher, Centre for Maritime Studies, University of Turku



### Digital Performance Monitoring of Vessels Enables a Dramatic Increase in Eco-efficiency in Shipping

#### Improving eco-efficiency on existing fleet in focus

Enhancing eco-efficiency in shipping is commonly connected to building new, more economic and more eco-friendly ships. However, this takes time and money and thus is out of reach in many sub-sectors of shipping. With monitoring digital performance, it is possible to make existing older vessels eco-efficient saving both environment and money. With relatively simple and inexpensive digital solutions, shipowners can reach significant results quickly, even in cases where there is no need or economic possibility to replace old vessels with new ones.

#### Key findings

Many factors can affect a vessel's operational efficiency. Monitoring vessel performance in real time makes it easier to identify potential inefficiencies. With the help of digital technologies, solutions and models, it is possible to capture and analyse real-time operational data from vessels.

- The data gained from digital performance monitoring enables the personnel to make informed decisions and adjust operations and activities accordingly.
- Digital performance monitoring can help to reduce a vessel's fuel consumption and emissions by up to 20%, prevent breakdowns and reduce repair and maintenance costs.
- Digital performance monitoring system can be installed on existing, even old vessels and provides significant and quick potential for promoting eco-efficiency in the shipping business by reducing vessels' fuel consumption and emissions.
- Investments in research and development of suitable technology and solutions is needed on both national and EU levels.
- Technology is not enough; it is equally important to focus on training crews and onshore personnel to use the systems properly to fully utilize system's potential.
- Cooperation between shipowners, researchers and system providers is crucial.

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### Optimising Cargo Stowage Processes Increases Effective Use of Ships

#### Keep cargo moving and ships sailing

The primary role of ships is to transport cargo and, in some cases, passengers efficiently. Cargo loading and discharging times should be as short as possible and all waiting times in anchor and in ports should be avoided. This would benefit both the shipowners and the environment. Existing vessels can be operated more efficiently and fewer ships may transport the same amount of cargo. Speed of ships can be optimised, and thus the emissions can be minimised - no more purposeless waiting.

#### Key findings

Maritime transports are most effective when vessels are sailing as fully loaded as possible using optimised speed to reach the next port just in time. Entering the port without waiting and then unloading and loading the cargo immediately will minimise the time spend in port. Digital technologies can contribute to reaching this goal.

- Effective cargo stowage processes will benefit shipowners who get better returns on their vessel investments; clients who get their goods faster and on accurate timeable; port operators, who can use their equipment more efficiently; and last but not least the environment, which benefits from less fuel consumption and emissions. These can potentially be decreased by 2-10% per route and ship
- In Ro-Ro shipping, improving the stability calculations of cargo unit data and reducing ballast water are important. Knowing the real weight of each cargo unit has high priority which the International Maritime Organization (IMO) should promote.
- However, many impacts are also true for other ship types. Shortening port stays and enabling optimal sailing schedules to minimise fuel consumption benefit all.
- Sharing of data between different actors is crucial in the cargo stowage optimisation process. We need accurate real-time data from various locations and systems.
- Integration of data is a technical issue, but readiness to share more data is a human one. Actors must be encouraged and sometimes obliged to share more data with each other.
- Technical research and innovation on the digital solutions for the optimisation process is needed on all levels, but special emphasis should be placed on continuously reliable satellite connections to and from ships.

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### Optimisation of Shipyard Processes Improves Productivity and Eco-efficiency

#### Smoothen the process, the better the eco-efficiency

Efficiency in shipping is often focused on ship operations perspective to cover shipbuilding and ship repair. Recycling have direct positive effects on eco-efficiency of production processes: less transfers of items, damages and need for adjusting of

#### Key findings

- Optimisation of processes is relevant for shipyards where vessel production is needed, so doing so can increase productivity and eco-efficiency.
- At shipyards, inefficiencies are often most prominent in supply chain management.
- One challenge is that the shipbuilding process includes a large network of different-sized companies, and the new solutions and procedures should be applied across the whole supply chain.
- Optimisation of processes, restructuring of work, and capitalisation of new digital technologies can improve productivity and efficiency in shipyards.
- Digital technologies, such as 3D scanning, virtual reality (VR) and augmented reality (AR) solutions, can be utilised to improve, for example, block manufacturing, dry docking and repair operations. Workhours can be saved, the quality of work and product can be improved and waste and emissions can be reduced.
- Technology needs further development and innovation, but the biggest challenge may lie on the human side: how to get personnel to adopt new digital solutions, to share more information within and between companies in the supply network and to fully utilise the opportunities that digitalisation provides.
- Training and education are key factors in making the shipyard processes more productive and eco-efficient with the help of digitalisation.

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# Let's begin!



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