ECOPRODIGI

UPDATE 10.11.2020
PA SHIP

Steering Committee Meeting

Project Manager
Milla Harju
milla.e.harju@utu.fi

EU STRATEGY FOR THE BALTIC SEA REGION
FLAGSHIP

Interreg
Baltic Sea Region

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

ECOPRODIGI at Nov 2020

1. Recent results and publications

2. Concrete policy advise as the result of our Flagship

3. Challenges

4. Any assistance needed from the PACs and the Steering Committee?

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. ECOPRODIGI: Recent results and publications

Increasing eco-efficiency in the Baltic Sea Region maritime industry through digitalisation

Case 1: Digital Performance Monitoring

Case 2: Optimising Cargo Stowage

Case 3: Optimising Shipyard Processes

ECOPRODIGI

Interreg Baltic Sea Region

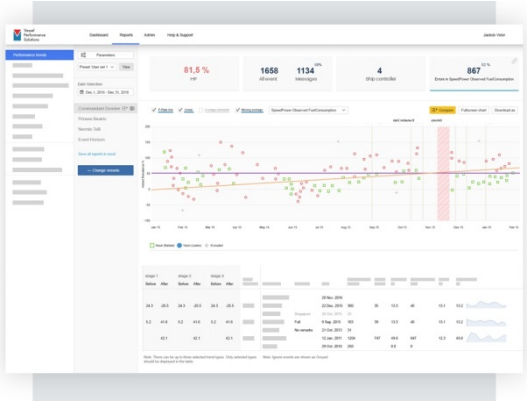
EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Case 1a: Digital Performance Monitoring / Island Ferries

Solutions being implemented/ Results expected

- Reduction in fuel consumption and emissions from vessels by 10-20% across ferry routes compared with the 2017/2018 baseline due to improved models for vessel operations and hull, propeller and engine performance, as well as excess fuel consumption. - VALIDATED



- Prevention of rare but business- and safety-critical and expensive engine breakdowns, seriously impacting service levels for islanders and generating additional costs for replacement ferries (+2,000 EUR/day). - VALIDATED

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Case 1b: Digital Performance Monitoring / J.Lauritzen

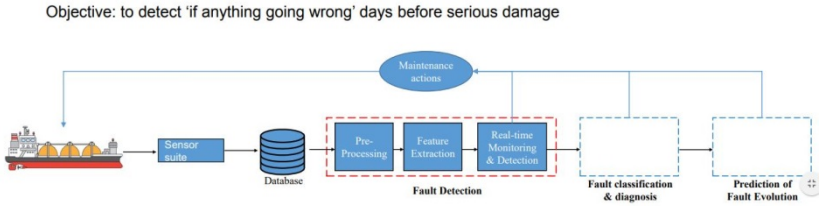
Solutions being implemented / Results expected

- Reduction in fuel consumption and emissions from vessels of 2-4% compared with the 2017/2018 baseline due to improved models for hull and propeller performance. - VALIDATED

- Improvement of SFOC for ME/AUX engines and emission reductions of 1-3% due to improved diagnosis of poor engine performance and fault detection and proactive and/or timely maintenance. - VALIDATED

- Reduction of maintenance and repair costs by 4-6% by switching from service based on running hours (recommended service intervals) to conditions based and preventive maintenance - VALIDATED

- Prevention of rare but business- and safety-wise critical engine breakdowns (ship off hire costs can be 10-15,000 USD per day). – Estimation stll stands



ECOPRODIGI

Interreg Baltic Sea Region

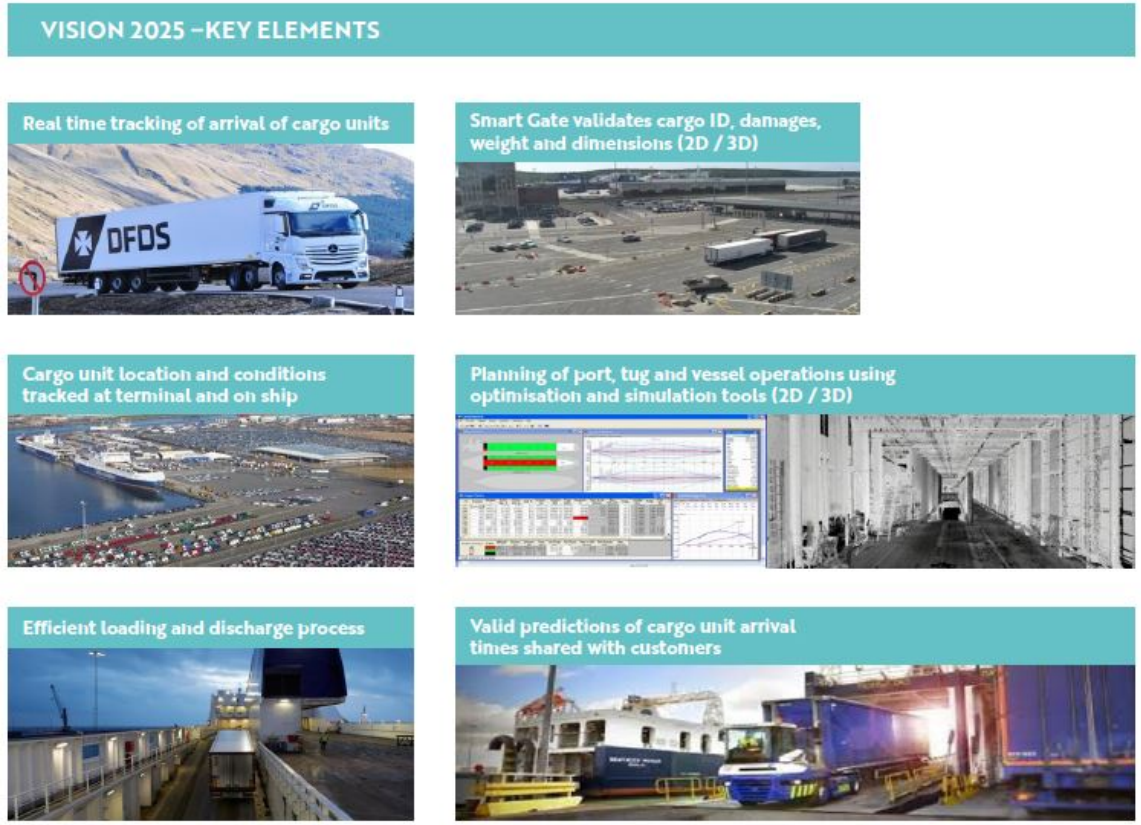
EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Case 2: Optimising Cargo Stowage

Solutions being implemented / Results expected

- Potential ballast water saving might be up to around ~2% fuel saving per route. - Estimation stands
- A potential for reducing fuel consumption and emissions from 2-10% across sample routes and ferries in the near future by sailing slower on the sea leg, enabled by more efficient processes at the port – VALIDATED
- 15 minutes saving acquired from quicker stowaging operation saving 1 000L of fuel - VALIDATED



ECOPRODIGI
Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Case 3: Optimising Shipyard Processes

Solutions being implemented / Results expected

- The potential of digital technologies and new concepts in solving eco-inefficiency bottlenecks is multifaceted and requires several solutions, e.g digital management systems + workflow optimisation – VALIDATED

- Optimised and digitalised operations and processes, restructuring of work and capitalisation of new technologies (AR and VR applications, 3D and digital twins as well as other digital solutions), are expected to contribute to improved productivity and more eco-efficient processes - VALIDATED

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications

- All documented results (including our infographs) can be downloaded at: https://ecoprodigi.eu/publications

- **There will be a storymap presenting all results by December!**

1. Recent results and publications

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

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

WORK PACKAGE 5:
Strengthening public support for maritime industry digitalisation

1. Arranging policy workshops and seminars to discuss the outlook of digitalisation
2. Producing policy briefings and recommendations to support digitalisation and eco-efficiency in the Baltic Sea Region

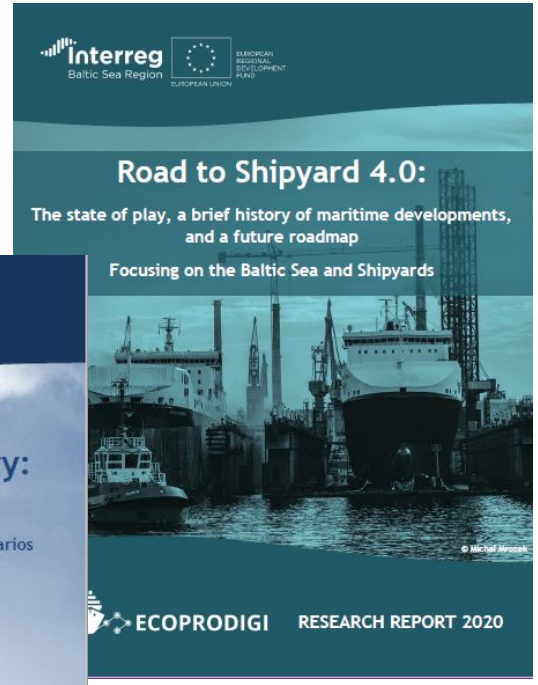
ECOPRODIGI
Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

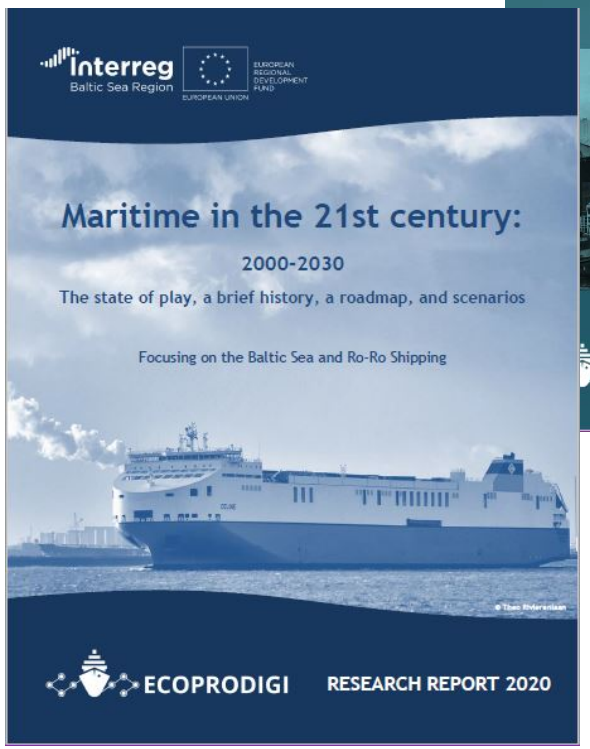
1. Recent results and publications
Work Package 4

- Digitalisation Roadmaps finalised:

”Maritime in the 21st century: 2000 – 2030 The State of play, a brief history, a roadmap and scenarios focusing on the Baltic Sea and Ro-Ro Shipping”

”Road to Shipyard 4.0: The state of play, a brief history of maritme developments, and a future roadmap focusing on the Baltic Sea and Shipyards”





Both available from
https://ecoprodigi.eu/publications

1. Recent results and publications Work Package 4

- Development of educational content related to vessel performance, stowage operations and shipyard process has taken place in Norway, Denmark and Finland

- Finalised training packages/ all shareable educational content will be available from our website by December

ECOPRODIGI
Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Work Package 5

- Final Policy seminar **this Friday:**
  - The event will be presenting the Digitalisation Roadmaps together with three Policy Briefings based on the results gained in our project
  - Speakers:
    - Feel warmly welcome to join: bit.ly/2HjWY94

1. Recent results and publications
Work Package 5

WP5 / Activity Group 5.2 Output includes three Policy Briefs and a Policy Agenda

Policy Briefs concentrate on each of the three cases, tilted:

1. ”Digital Performance Monitoring of Vessels Enables a Dramatic Increase of Eco-efficiency in Shipping”

2. ”Optimising Cargo Stowage Processes Increases Effective Use of Ships”

3. ”Optimisation of Shipyard Processes Boosts Productivity and Eco-efficiency”

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

1. Recent results and publications
Work Package 5

- Also Policy Briefing *" Increasing Eco-efficiency via Digitalisation in Maritime Industry in The Baltic Sea Region: Policy Support through Carrots or Sticks?"*
  published in Baltic Sea Region Policy Briefing series: https://www.centrumbalticum.org/uutishuone/tietopankki/tietopankki/bsr_policy_briefing_2_2020.6274.news

BSR Policy Briefing series 2/2020

Increasing Eco-efficiency via Digitalisation in Maritime Industry in The Baltic Sea Region: Policy Support through Carrots or Sticks?

By Milla Harju

CENTRUM BALTICUM

Centrum Balticum Foundation reserves all the rights of this publication.

ISSN: 2342-3153

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

2. Concrete Policy Advise as the Result

1. ”Digital Performance Monitoring of Vessels Enables a Dramatic Increase of Eco-efficiency in Shipping”

- More emphasis should be placed on **transforming the existing vessels** to be more eco-efficient using different digital performance monitoring solutions. This need policymakers’ decisions to **invest in financing of research and development of needed technology and soft-ware** on both national and EU levels

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

2. Concrete Policy Advise as the Result

2. ”Optimising Cargo Stowage Processes Increases Effective Use of Ships”

- The **real weight of each Ro-Ro cargo unit should be available** before the loading plan is made. **An international IMO-based framework covering Ro-Ro cargo units is needed** and it would benefit the industry from a safety and a fuel consumption and eco-efficiency perspective.

- **Better satellite connections** for transmitting data from ships sailing on oceans **are concrete requirements for reliable functioning of the optimised system**.

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

2. Concrete Policy Advise as the Result

3. ”Optimisation of Shipyard Processes Boosts Productivity and Eco-efficiency”

- **Education rises to a top priority** in promoting the digitalisation of shipyard processes. Special emphasis should be placed on **enhancing digital capabilities and knowledge of small and medium-sized companies**. This could be partly financed by EU and national programmes, and it would also benefit many sectors other than shipbuilding.

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

3. Challenges

- COVID-19:
  - Schedules & Budgets
  - Budget Change Request submitted to JS/MA -> accepted

- One Partner had to withdraw after WP2 due to personnel changes

- Different expectations from academic & business partners (particularly relating to publications!)

ECOPRODIGI

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

4. Any assistance from the PACs and the Steering Committee?

We would love you to attend our seminars & help us disseminate our policy briefings and other results!

- They will be available at: https://ecoprodigi.eu/publications

Finally: THANK YOU

ECOPRODIGI has been a proud EUSBSR Flagship and member of PA Ship – family

We hope the cooperation to continue under our extension project: EXOPRODIGI (Jan 2021 – Dec 2021)!

Special thanks to Ditte, Cilia, Rikke, Josefine and Rasmus

Any questions?

Project Manager
Milla Harju
milla.e.harju@utu.fi

+358 50 505 8625
Linkedin.com/in/millaeharju

http://ecoprodigi.eu
@ECOPRODIGI_BSR