Strengthening of the European inland waterway transportation in the Baltic Sea Region: the INTERREG project EMMA

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Port of Hamburg Marketing
Agenda

1. Background of the project application „EMMA”

2. The EMMA project in more detail

3. Pilot activities and benefits
The EMMA Project

...AIMS TO ENHANCE INLAND NAVIGATION IN THE BALTIC SEA REGION

Enhancing freight Mobility and logistics in the BSR by strengthening inland waterway and river sea transport and promoting new international shipping services

- Lead Partner: Port of Hamburg Marketing
- Project Partners: 20 (from DE, FI, LT, PL, SE)
- Associated Partners: 45+
- Funding Programme: Interreg Baltic Sea Region Programme
- Project Budget: 4.42 million €
  Thereof ERDF co-financed: 3.45 million €
- Project duration: 3/2016 – 2/2019
Challenges for Inland Waterway Transportation

- Integration of inland waterway transportation (IWT) in supply chains must be optimised.
- Investment and innovation backlog
- Forced lobbying by creating a strong network in the canal and Elbe area

- Fund requests
- ITS-Strategy IWT
- Initiatives of industry partners

Installation and support of digitalisation and telematics network!
Support of innovation and investment willingness!
The EMMA project

Aims of the project

- Fostering a better integration of inland navigation and river-sea shipping in transport strategies of the BSR & EU
  - Policy Paper “Strengthening IWT in the Baltic Sea Region”
  - Cooperation with IWT Associations
- Strengthening cooperation between interest groups
- Strengthening of inland waterway and river-sea shipping in public perception (image)

- Analysis and suggestion of new services in order to integrate IWT into supply chains, by:
  - Investigation of regional challenges that hinder better integration
  - Identification of potential consignors and investigation of their needs
  - Proof of feasibility and possibilities of IWT by pilot actions
- Tackling administrative and regulatory barriers
The EMMA project

21 project partners from 5 countries

**Sweden**
- RISE Viktoria

**Finland**
- Finnish Transport Administration
- CADEC

**Lithuania**
-KLTC – KSRC
- Port of Klaipeda Science and Technology Park

**Germany**
- Hafen Hamburg Marketing
- ISL

**Poland**
- Port of Hamburg Marketing
The EMMA project

48 associated partners from 8 countries

### National ministries
- Federal Ministry of Transport and Digital Infrastructure (DEU)
- Lithuanian Maritime Safety Administration
- Ministry of Transport and Communication of the Republic of Lithuania
- Swedish Transport Agency
- Finnish Transport Agency

### Chambers of Commerce & regional authorities
- Ministry of Economy, Transport and Innovation of the Free and Hanseatic City of Hamburg
- Chamber of Commerce Mälardalen (FI)
- Flanders’ Institute for Mobility
- Chamber of Industry and Commerce Lüneburg Wolfsburg
- Regional Water Management Authority Gdansk (PL)

### Organisations and associations
- East West Transport Corridor Association
- Elbe Allianz e.V.
- European RiverSeaTransport Union e.V.
- Swedish Shipowners’ Association
- Association for European Inland Navigation and Waterways
- Association for Promotion of the Oder/Havel River Basins
- Weitblick Verkehrsinfrastruktur, Wirtschaft und Logistik e.V.
- European Barge Union (EBU)
- School of Business and Management of Technology of the Belarusian State University
- Association of Polish Regions of Baltic Adriatic Transport Corridor
- Inland Navigation Europe
- Lithuanian Intermodal Transport Technology Platform (LIITTP)
- Süderelbe AG
- ShortSeaShipping Inland Waterway Promotion Center Germany
- Shortsea Promotion Centre (SPC) Finland

### Inland Ports
- Hafenbetriebsgesellschaft Eisenhüttenstadt mbH
- HTAG Häfen und Transport AG
- Ports of Stockholm
- Schwedter Hafen
- Saimaa Ports Joensuu
- Port Authority of Södertälje
- Hamburg Port Authority AöR
- LUTRA Lager Umschlag Transport
- Mittelbrandenburgische Hafengesellschaft mbH

### Shipping companies
- BKS Binnenschiffahrtskontor Sommerfeld GmbH
- Deutsche Binnenreederei AG
- Reederei Ed Line GmbH
- VT Shipping Company
- Walter Lauk Ewerführerei Ltd.
- Zegluga Bydgoska Sp. z.o.o.

### Industry
- PCC Intermodal S.A.
- SIEMENS AG WP ON LOG LS
- Technische Werke Schwedt GmbH
EMMA was approved as flagship in the Policy Area Transport of the EUSBSR. The project’s **flagship status** reflects the importance the European Commission attaches to the further development of inland navigation in the Baltic Sea Region!

Cooperation with the “**Good navigation Status**” initiative of the European Commission DG MOVE by providing input to the: “Study on support measures for the implementation of the TEN-T Core Network related to sea ports, inland ports and inland waterway transport”.

More than **50 Organisations** supporting EMMA to bring this project to success!

**JOIN US!**

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www.project-emma.eu
The EMMA project

Pilot practices and demonstrators

Finland: Saimaa Canal & Lake Area
  Pekka Koskinen
  Vice Chairman of the Board | Finnish Waterway Association

Germany: North German river basin
  Stefan Breitenbach
  Head of Project Department | Port of Hamburg Marketing

Lithuania: The River Neman
  Andrius Sutnikas
  Communication Manager | Klaipeda Science & Technology Park

Poland: The River Vistula
  Rafal Modrzewski
  Head of the ETC Division | Kujawsko Pomorskie Voivodship

Sweden: Lake Mälaren & Lake Vänern
  Johan Lantz
  CEO | AVATAR Logistics AB
Facts about Lake Saimaa and Saimaa Canal

Saimaa deep fairway (Canal and lake)
- Operational time 9 months/a
- 772 km long fairway
- Two locks in the lake area
- Eight locks in the Canal
- Draught 4.35m
- Max height 24.5
- "Saimax" vessel type

Traffic volumes in Saimaa Canal

The Finnish waterways system
- 8300 km of coastal fairways
- 8000 km on inland waterways
- 4000 km of these are used in commercial navigation

All sea transports in Finland: approximately 95 million tons
Finnish Pilot: Saimaa Canal

**Strengthening river transport in the Saimaa region**

- Saimaa Inland waterways in Finland can be reached only by passing through Saimaa canal
  - Operational time 9 months/a
  - 772 km long fairway
  - Two locks in the lake area and eight locks in the Canal

- Lower part of the canal is leased from Russia for the next 50 years in 2012

- Max vessel size - Saimaa max:
  - L/W/H: 82,5m x 12,6m x 24,5m / draft: 4,35m / height: 24,5
  - Modernisation of the lock in the discussion

- Goods mainly from forest-, mining- and chemical industries

- All sea transports in Finland: ca. 95 million tons
Ongoing and planned development projects

Ongoing governmental development
Renewal of the lower locks, 15 meur
Two new bridges, 75 meur
New ice breaking bow, 8 meur
Approximately 100 meur investments

Planned governmental investments 2019 – 2022
12 m longer lock chambers, 60 meur
Two new ice breakers, 5 meur
10 cm higher water level in the Canal, 5 meur
Approximately 70 meur investments
Cost benefit analysis, socio-economic cost

Related to different transport scenarios

Business case
- Joensuu – Düsseldorf
- 200,000 tons of pulp annually
- 40 years time span
- 6 transport scenarios
- Vessel size 2 500 – 3 200 tons
- 11 months traffic

Calculation components

Identified valuable effects
- Transport cost
  - Distance based, fuel costs, other distance based costs such as maintenance etc.
  - Time based, including wages, maintenance, insurance, capital costs
- Loading and unloading costs
- Emissions
- Infrastructure costs (wear and tear)
- Accident costs
- Fairway dues

Source: M4Traffic
Cost benefit analysis, socio-economic cost

Calculation results

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1 Direct Vessel</th>
<th>2 Truck + roro ship + truck</th>
<th>3 Trailer + trailer in roro + trailer</th>
<th>4 Truck + break bulk ship (4,500 ts) + truck, route A</th>
<th>5 Train + break bulk ship (4,500 ts) + train, route A</th>
<th>6 Truck + break bulk ship (4,500 ts) + truck, route B</th>
<th>7 Train + break bulk ship (4,500 ts) + train, route B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance costs</td>
<td>27,3</td>
<td>240,7</td>
<td>711,2</td>
<td>235,7</td>
<td>78,2</td>
<td>242,1</td>
<td>84,3</td>
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<tr>
<td>Time-based cost</td>
<td>60,7</td>
<td>198,8</td>
<td>499,8</td>
<td>205,3</td>
<td>73,8</td>
<td>209,7</td>
<td>77,2</td>
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<tr>
<td>Loading and unloading</td>
<td>138,9</td>
<td>230,1</td>
<td>51,9</td>
<td>234,7</td>
<td>247,8</td>
<td>234,7</td>
<td>247,8</td>
</tr>
<tr>
<td>Emissions</td>
<td>14,9</td>
<td>29,7</td>
<td>71,3</td>
<td>27,0</td>
<td>5,0</td>
<td>27,6</td>
<td>8,6</td>
</tr>
<tr>
<td>Infrastructure costs</td>
<td>-</td>
<td>6,9</td>
<td>21,4</td>
<td>6,9</td>
<td>16,9</td>
<td>7,1</td>
<td>18,3</td>
</tr>
<tr>
<td>Accident costs</td>
<td>-</td>
<td>11,3</td>
<td>35,3</td>
<td>11,3</td>
<td>-</td>
<td>11,6</td>
<td>-</td>
</tr>
<tr>
<td>Fairway dues</td>
<td>43,4</td>
<td>28,6</td>
<td>39,6</td>
<td>28,6</td>
<td>-</td>
<td>28,6</td>
<td>-</td>
</tr>
<tr>
<td>Total cost</td>
<td>285,2</td>
<td>746,1</td>
<td>1430,4</td>
<td>749,4</td>
<td>421,8</td>
<td>761,5</td>
<td>436,2</td>
</tr>
</tbody>
</table>
FUNCTIONALITIES

- Browsable map
- Pan & zoom
- Info on RIS objects
- Geocoded NtS message display
- Link to external details
EMMA co-operates with the RIS COMEX project (CEF Programme) | Project coordinator: viaDonau

- RIS COMEX aims to establish a common European RIS Corridor Management implementation.
  - River Elbe is set as one of the pilot corridors to test RIS application.
    - Equipment with AIS infrastructure
    - AIS and ECDIS testsfield
    - Pilot lead Elbe: Federal Ministry of Transport and Digital Infrastructure
DEVELOPMENT OF IWT

- Analysis of river Neman's IWW potential connecting the hinterland to the Port of Klaipeda
- Special barge design for oversize cargo transportation
- Light ship tonnage to cope with difficult navigable conditions
- Testing container transportation by IWW between Klaipeda and Kaunas (planning coming summer)
IWT in Lithuania

Challenges and Business opportunities

- In Lithuania we have 424.7 km of inland water ways in operation.
- There are 2 cargo ports and 5 marinas for IWT service in Lithuania.
- IWT in Lithuania is challenging due to the allowed droughts (1-1.5 m) and navigation period (is 199 days from 25th of April to 9th of November).

Business opportunities:

- Oversize cargo transport.
- Container service to improve access for Belarusian and Polish markets.
- Bulk cargo and new mining developments of anhydrite near by Kaunas.
LBG/Hybrid barge for Inland Water Transport

Utilizing LNG capacity in Lithuania for clean IWT solutions

- LBG/Hybrid barge solution for the inland water transport
- LBG the sustainable fuel for inland water transport
- Dealing with the emissions in the cities and ports
- Reducing CO2; Sox; NOx and Particle emissions
LBG/Hybrid system

Machinery
LBG/Hybrid system

*LBG tanks on board of the barge*
Promotional, educational and lobby activities supported by the EMMA project

- Boat workshops on the Vistula river in 2016 and 2017
- The Year of the Vistula River 2017
- Organization of meetings and conferences on economic use of rivers
- National contest of inland navigation and waterways for high school students
- Cooperation with local, regional and national bodies responsible for IWT and water management
- Cooperation with other regional authorities situated along E40 and E70 waterways
- Active participation in ministerial working group on IW investments and national board of development
The cruise in a nutshell

- 70 m push convoy loaded with 20 containers, thereof 8 living containers
- Daily distance: 20-80 km (in total 440 km)
- Guests on the barge: 470
- Demonstrative handlings: 2
- Number of locks: 3
- Events in cities: 7
- Workshops on board: 7
- Press conferences: 5
- Research on river and infrastructure
Location study of multimodal port Bydgoszcz – Solec Kujawski

- Multimodal platform based on road, railway and water transport
- Transshipment terminal with river port and logistic centre
- Scope: analysis of market environment, sector analysis, financial and risk analysis, planning concept, functional programme, location variants
- Deadline 11.2018
- Interdisciplinary approach
- Extensive expert group involvement
- Inspirations by best examples from EMMA countries
**Avatar Logistics AB**

- First private company in the BSR program
- Established 2015 – Swedish & Dutch owned
- Inland navigation as business focus
- IWW lobby work as first market actor

- IWT is new transport mode in Sweden
- Decision for two EMMA pilots
- Ice test program for an European standard barge
- Logistics concept based on inland barging
Swedish Pilot: Lake Vänern - First IWT activity in Sweden!

Container Shuttle Port of Gothenburg – Trollhättan

- Regular barge service on Göta älv river a future target
- Modern barge concept might be feasible
- Length limitation 89m due to lock size
- Container crane is needed in Trollhättan
- Positive market response

- A pilot voyage was successfully proven, 7th March 2017
  - Excellent fairway conditions & a lot of free capacity not used today
  - Lock limitation is challenging, especially as the locks are old
  - Replacement of locks are planned
In cooperation with the research institutions KTH (SE) and TUHH (DE)

One of the most commonly referred obstacles for IWT is uncertainties on winter navigation in Sweden.

The ice project aims to answer:
- How does Swedish ice conditions impact an EU barge?
- How can the hull designed be improved?
- How will the hull modification effect the navigation?

Model for calculation ice impact force and energies established
- Test methodology developed
- First test series carried out
- Ice report published Feb 21st
The EMMA project

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Strengthening of the European inland waterway transportation in the Baltic Sea Region: the INTERREG project EMMA

Thank you for your attention.

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