

NextGen Link

Upgrade of the maritime link with the port
interconnections in the ScanMed Corridor

2016-EU-TM-0092-W



Co-financed by the European Union
Connecting Europe Facility

Action information

- Implementation time 07/02/2017-31/12/2020
- Budget approx. 39 M€
- Maximum amount of EU co-funding 11 778 630 €
- Member states involved: Finland and Sweden
- Project partners:

VIKING LINE

PORT OF **TURKU**
FINLAND



Ports of Stockholm

MARIEHAMNS
HAMN



- Coordinator: Port of Turku

7/12/2017

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Objectives

- The existing maritime link between two core ports and one comprehensive port along the Scandinavian-Mediterranean Corridor will be upgraded. The upgrade of the maritime link is two-fold and it includes:
 - 1. Environmental upgrade with additional environmental efforts of a new ro-pax vessel**
 - Green shipping and the use of alternative fuels will be promoted
 - A sustainable maritime transport route will be developed by introducing an LNG-powered ro-pax vessel with auxiliary wind propulsion
 - 2. Infrastructure development in three ports**
 - Port connectivity will be improved
 - The peripheral region of the Åland Islands will be better connected to the main maritime transport route

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Activities

1. **Environmental upgrade of the maritime link, Viking Line:** procurement of additional environmental efforts of a new ro-pax vessel for the maritime link Turku-Mariehamn-Stockholm
2. **Infrastructure development at the Port of Turku:** new logistics arrangements, a vehicle measurement system and automated mooring
3. **Infrastructure development at Stadsgården, Ports of Stockholm:** new port logistics area and Intelligent Transport System (ITS)
4. **Infrastructure development at the Port of Mariehamn:** adapting the loading/unloading of freight and passengers and automated mooring
5. **Dissemination, communication and project management**

Activity 1: Environmental upgrade of the maritime link, Viking Line: new ro-pax vessel for the route Turku-Mariehamn-Stockholm

- Environmental efforts of a ro-pax vessel to be delivered by the end of 2020
- 20% lower fuel consumption per cargo unit than Viking Grace, the previous state-of-the-art LNG-powered ro-pax delivered in 2013

DIMENSIONS	M/S Viking Grace	M/S Amorella	new ro-pax vessel replacing Amorella
Built in year	2013	1988	2020
Length overall	218 m	169.4 m	218.55 m
Length between pp	200.1 m	153.57 m	200.0 m
Breadth	31.8 m	27.6 m	35.0 m
Draught design	6.8 m	6.35 m	6.8 m
Draught scantling	7.8 m	6.368 m	7.0 m
Depth	9.75 m	8.5 m	9.75 m
GT/NT	57 565 / 38 039	34 384 / 19 689	63 100 / 39 300
Lane metres	1 275 m	900 m	1 500 m
Cars	100	80	130
Passengers	2 800	2 480	2 800
Crew	200	160	200
Speed	22.1 kn	20.5 kn	22.1 kn
Ice class FSIC	IA Super	IA Super	IA Super
Engine power	30 400 kW	23 769 kW	30 800 kW
Fuel	LNG (DF)	MGO	LNG (DF)
Auxiliary engine	N/A	8 180 kW	N/A
Propulsion power	21 000 kW	23 769 kW	20 000 kW

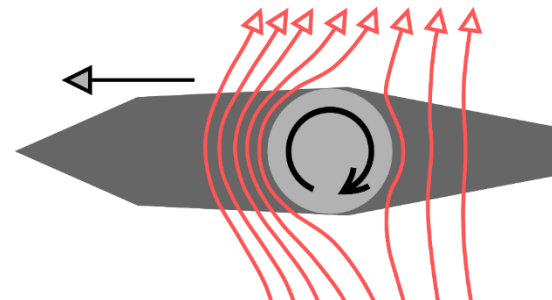


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Activity 1: Environmental upgrade of the maritime link, Viking Line: new ro-pax vessel for the route Turku-Mariehamn-Stockholm

- **Sub-activity 1.1:** Procurement of LNG system
 - dual-fuel four-stroke engines, gas valve units, dual fuelled steam boilers
 - vacuum insulated C-type LNG tanks
- **Sub-activity 1.2:** Procurement of auxiliary wind propulsion
 - two auxiliary wind propulsion systems will be installed, the rotor sail has a height of 24 metres and a diameter of 4 metres



The rotor sail solution is based on the Flettner rotor – a spinning cylinder that uses the Magnus effect to harness wind power to propel a ship. The auxiliary wind propulsion system has potential for an additional fuel saving up to 5%.

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Activity 2: Infrastructure development at the Port of Turku

- The new ro-pax vessel will have 67% more lane metres for cars, trucks and trailers and 13% more passengers than the vessel it will be replacing.
- **Sub-activity 2.1:** Traffic arrangements in passenger harbour area
 - Removing bottlenecks due to the already existing congestion of car traffic in the passenger terminal area. The traffic arrangements will be reorganized in the passenger harbour area to reduce congestion, increase efficiency, safety and a use of public transport.
- **Sub-activity 2.2:** Vehicle measurement system
 - Digitalisation and automation will be increased with the measurement system for vehicles to get exact information of the loaded weight for a vessel (Viking Line area).
 - The system will use a number plate recognition (to only let in vehicles with a booking), a measurement scanner (for length, width and height) and weight-in-a-motion scale to measure weight.
 - Cameras will be used for damage detection.
- **Sub-activity 2.3:** Procurement of automated mooring system
 - Safety and operational efficiency will be improved by the automated mooring system (Viking Line area).
 - Enables time savings for the shipping company.

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Activity 2: Infrastructure development at the Port of Turku



Activity 3: Infrastructure development at Stadsgården, Port of Stockholm

- The new ro-pax vessel will have larger freight capacity compared to the vessel currently operating the evening route. There is a clear bottleneck in the port area of Stadsgården/Masthamnen with a limited area for line-up of trucks and trailers to be loaded into and unloaded from the vessels.
- **Sub-activity 3.1:** New port logistics area at Stadsgården, Ports of Stockholm
 - A new port area of approximately 1 600 m² will be created on the site in the already existing port area.
 - A new cargo check-in will be built.
- **Sub-activity 3.2:** Intelligent Transport System (ITS) at Stadsgården, Ports of Stockholm
 - ITS will optimise the use of the port logistics area.
 - The system includes digital registration, weighting, measuring and damage control of vehicles (trucks and trailers).
 - Traffic management will control access and guide vehicles to the correct parking spaces and into the vessel when loading.

Activity 3: Infrastructure development at Stadsgården, Port of Stockholm

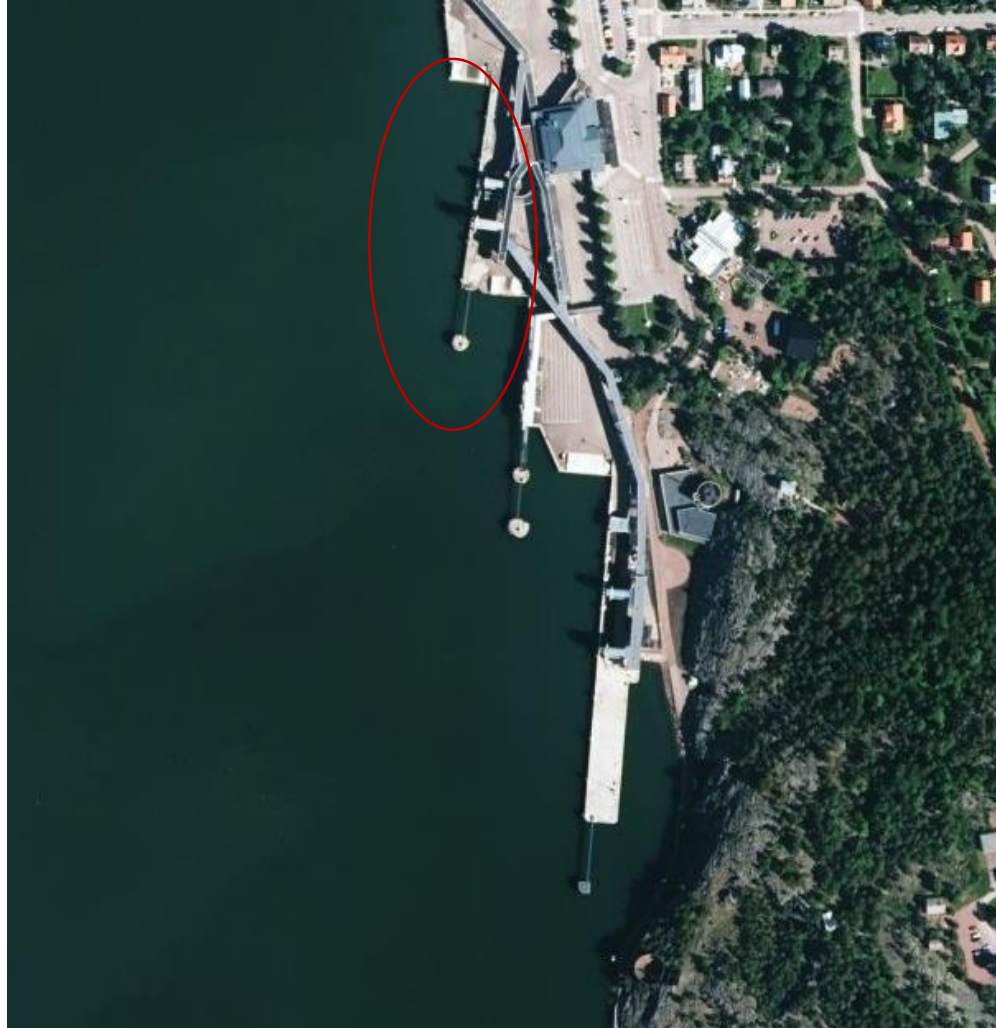


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Activity 4: Infrastructure development at the Port of Mariehamn

- Currently, the port is not able to accommodate the new larger vessel in the quay without port infrastructure development. The improvements will enable the new vessel to call Mariehamn at the same time as another vessel, and they will increase operational efficiency and safety at the port.
- **Sub-activity 4.1:** Improvement of car ramp
 - The car ramp will be widened and adapted to meet today's weight requirements.
- **Sub-activity 4.2:** Procurement of new combi ramp for loading/unloading cars
 - The combi ramp will be built and adapted for larger vehicles.
- **Sub-activity 4.3:** Procurement of new double gangway
 - The new gangways will be built.
- **Sub-activity 4.4:** Procurement of automated mooring system
 - Remote controlled vacuum-based automated mooring along the quay area.

Activity 4: Infrastructure development at the Port of Mariehamn



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Thank You!



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