

# The Vessel Train concept

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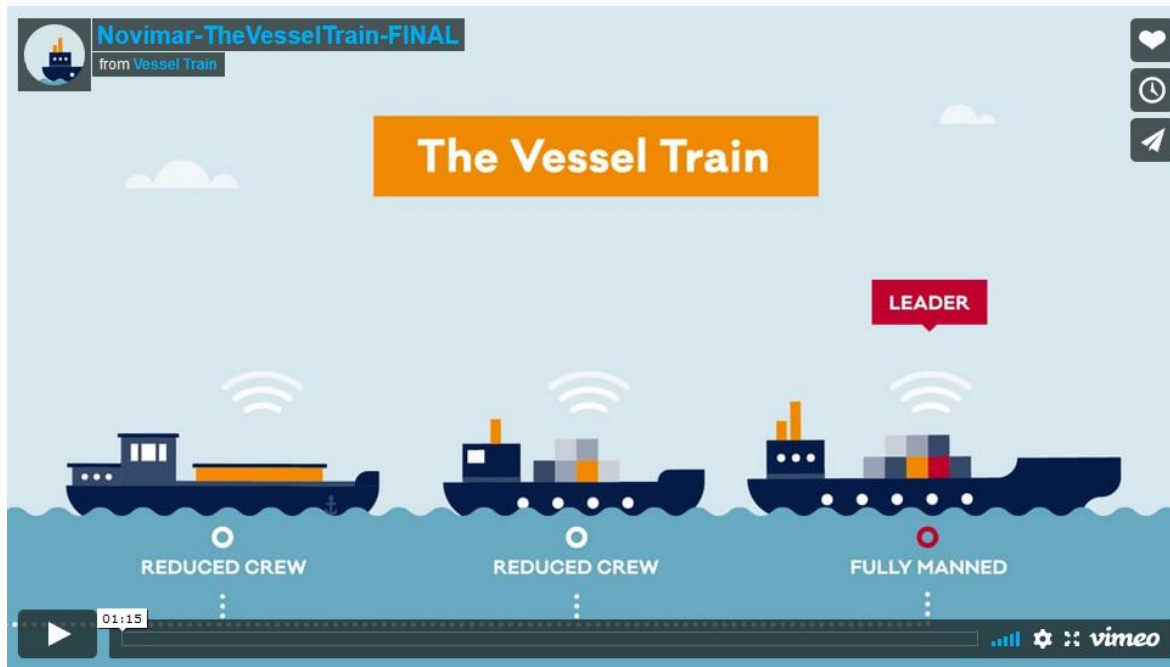
Know-how transfer event, 29<sup>th</sup> of September 2020



The project has received funding from the European's Horizon 2020 research and innovation programme (Contract No.: 723009)

# The one-minute animation of the Vessel Train

<https://novimar.eu/concept>

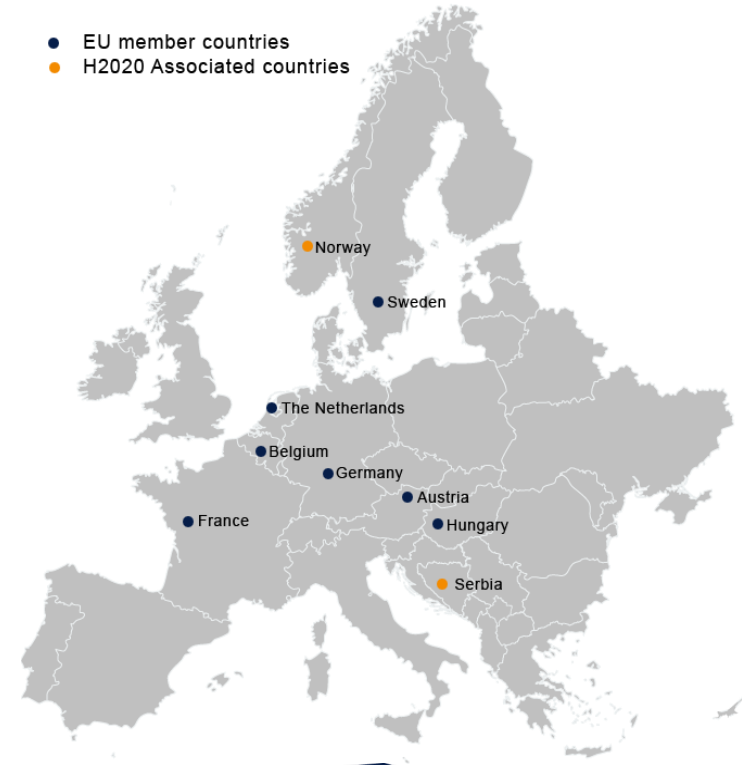
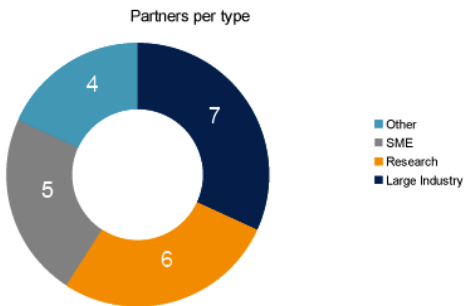


# Abstract

- NOVIMAR addresses specific challenge for waterborne transport call MG2.3: “..to overcome the traditional barriers between transport modes...greening, expansion...optimization of the entire (waterborne) transport chain, including in the urban environment”.
- NOVIMAR aims to adjust waterborne transportation such that it can make optimal use of the waterborne system i.e. waterways, vessels and ports/terminals, hereby deepening the entire waterborne transport chain;
- To achieve this NOVIMAR introduces the waterborne version of “platooning”, the Vessel Train. This is in essence a number of unmanned (or with much reduced crew) Follower Ships with own sailing/maneuvering capabilities being temporarily led by a manned Leader Ship;
- Vessels will be able to join and leave such trains at places adjacent to their points of origin and destination at seaside or inland.

# General project information

- NOVel Iwt and MARitime transport concepts
- 22 partners
- 7 EU, 2 associated countries
- June 2017 – June 2021
- EC contribution: € 7,9 Million
- Coordinator:  
Netherlands Maritime Technology Foundation
- [www.novimar.eu](http://www.novimar.eu)



# NOVIMAR partners









- Argonics
- Autena Marine
- Bureau Veritas Marine & Offshore
- Duisburger Hafen
- Compagnie Fluviale De Transport
- Entwicklungszentrum für Schiffstechnik und Transportsysteme DST
- In-Innovative Navigation
- Marlo
- Netherlands Maritime Technology Foundation
- Plimsoll
- Pro Danube Management
- Scandinaos
- Stichting Bureau Telematica Binnenvaart
- Stichting Deltares
- Stichting Maritiem Research Instituut Nederland
- Stichting Projecten Binnenvaart
- Technische Universiteit Delft
- Touax River Barges
- Universiteit Antwerpen
- University of Belgrade – Faculty of Mechanical Engineering
- Van Moer Group
- viadonau



# The project addresses a wider set of subtopics



# Areas of interest

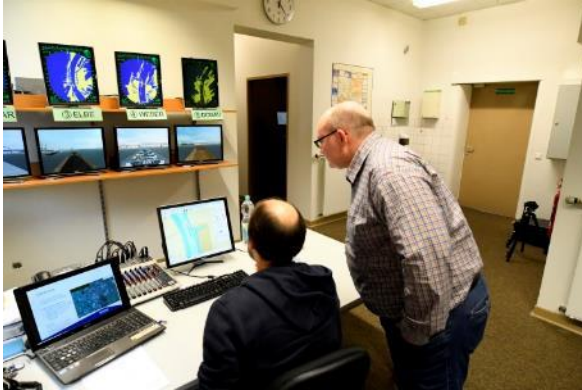
-  Business concept of the vessel train
-  Waterborne transport system
-  Composition & design of the vessel train
-  Navigating and manoeuvring the vessel train
-  Human factor
-  Waterway infrastructure and operations
-  Safety
-  Rules and regulations

# Key intermediate results

- **New waterborne transport system**  
*Yes, there are benefits but applicability still depends strongly on nature of the waterway, cargo flows*
- **Simulation model for transport system**  
*Sheds light into effect of pre sorting cargo, benefits for smaller ships, defining operator(s)*
- **Transport system performance indicators for full social cost-benefit analysis**  
*Direct CO2 reduction potential seems not to be that evident*
- **Input to regulatory developments for vessel train operations**  
*Can innovation stretch the scope of existing rules?*
- **Recommendations for optimised working conditions, human reliability and training**  
*People will still be involved but skills set will be altered*
- **Command and control technology for vessel trains**  
*Development of more robust technology has been initiated (current etc.)*
- **Navigation aid for IWT vessels and vessel trains advising speed and track on the river**
- **New and revised concepts for RORO cargo systems and vessels**  
*Patent has been filed for cargo loading system*
- **Vessel Train handbook**



# Research & simulation are core of the project



# Model scale tests preparing for full scale demo



# The road ahead

- Q4 2020: full scale demonstration (featuring “Studio NOVIMAR”)
- Q1 2021: guidelines for governing bodies
- Q2 2021: vessel train operating handbook
- Q2 2021: end conference



# Questions?



**NOVIMAR**  
VESSELTRAIN