

SMART SHIPPING

**SMART
VESSELS**

**SMART
DATA**

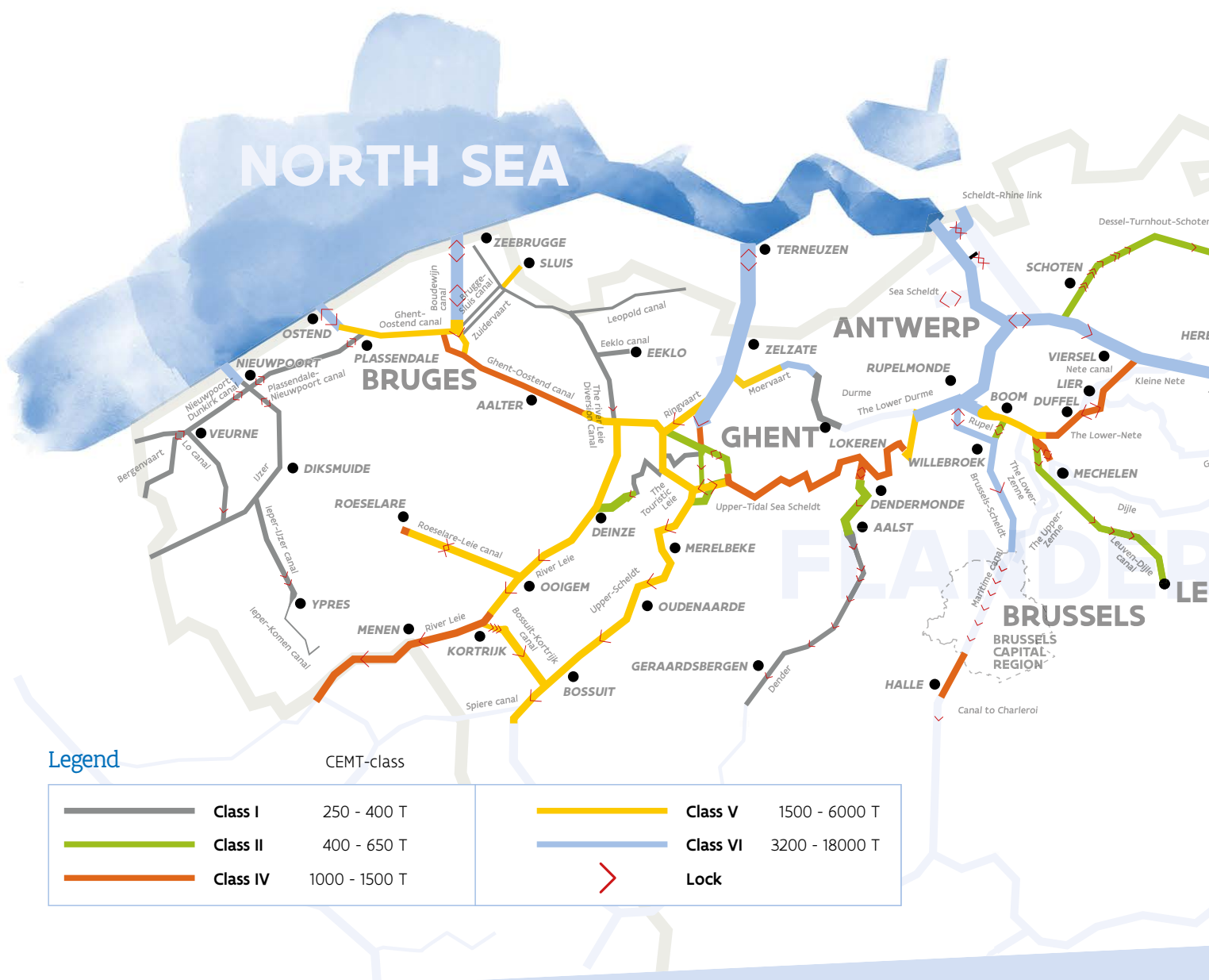
**SMART
REGULATION**

**SMART
INFRASTRUCTURE**



VLAAMSEWATERWEG.BE



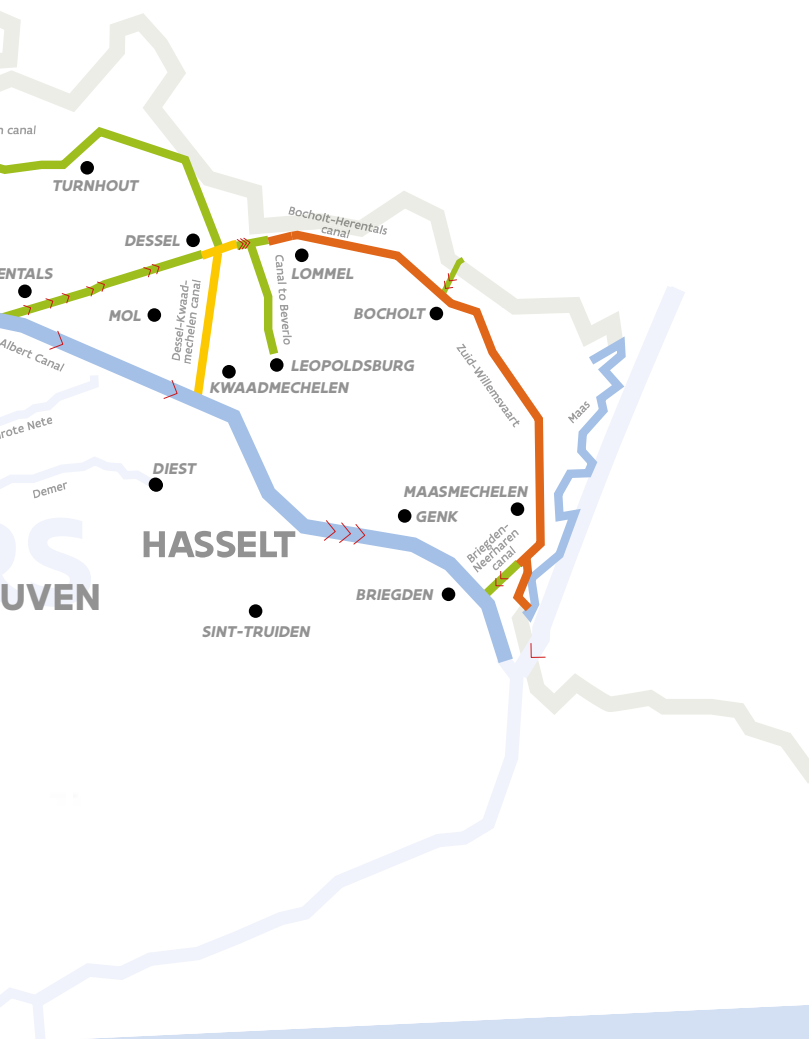


SMART SHIPPING IN A NUTSHELL

De Vlaamse Waterweg nv manages and operates the region's waterways as a vibrant network, contributing to the economy, prosperity and quality of life in Flanders. A well-functioning economy needs a mobility network that runs well. Transport on inland waterways can play an important role in this.

De Vlaamse Waterweg nv believes that innovations in the field of automation and digitization can help the sector forward, and that is why we initiated the Smart Shipping programme. Smart Shipping is one of the three pillars of "River Information Services (RIS)" – the synchromodal inland shipping link.

A reliable, efficient and safe waterways network needs continuous innovation stimulation, in terms of both waterways and vessel construction. This is why RIS focuses on a range of innovation projects. We strive for inclusive cooperation between all parties and active participation in regional, national and international sector initiatives. In addition, we are studying new developments and evolutions in other sectors in order to discover whether they can add value to inland shipping.

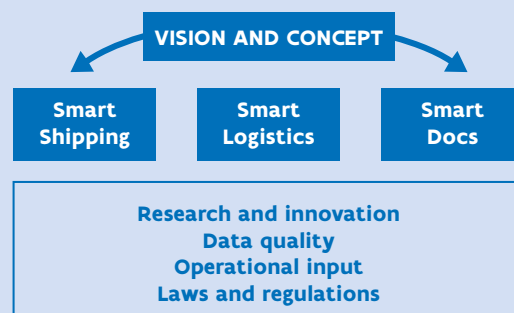


River Information Services (RIS):

THE SYNCHROMODAL
INLAND SHIPPING LINK



RIS does all this in collaboration with other departments within De Vlaamse Waterweg nv. The combination of these initiatives and innovation projects supports the three pillars that form the framework for future developments and projects within RIS. Each pillar contributes in its own way to the realization of our vision and contains concrete projects that help achieve the overall innovation objectives.

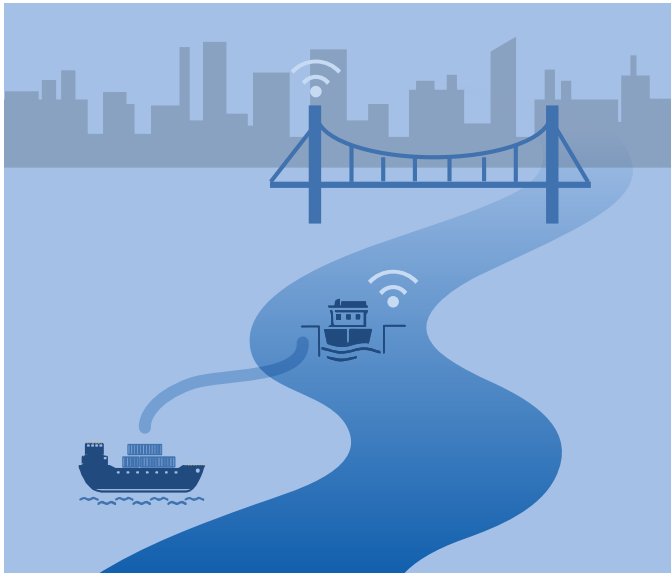


RIVER INFORMATION SERVICES (RIS)

Smart Shipping

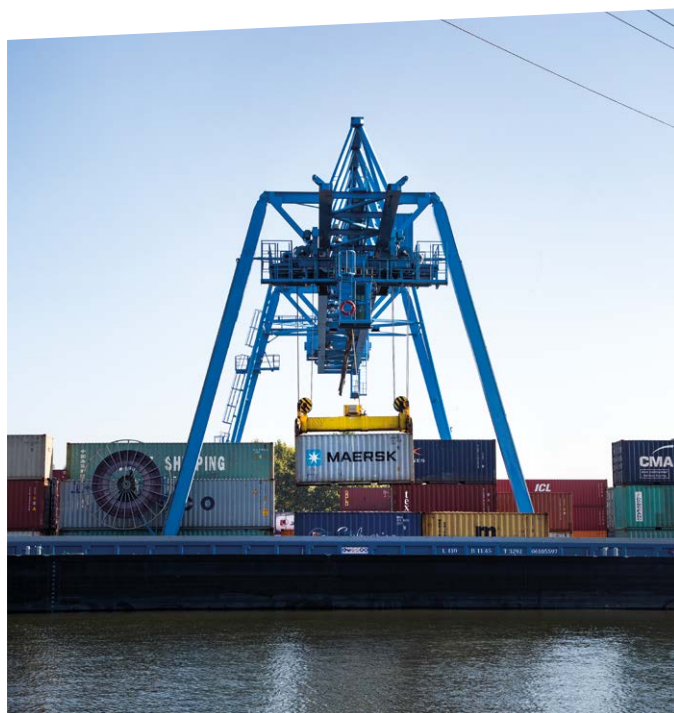
Smart Logistics

Smart Docs



As early as 2016, De Vlaamse Waterweg nv started exploring the possibilities of Smart Shipping. It became clear that this is an important means of supporting the inland shipping sector:

- The use of small automated vessels will revive the smaller waterways – new business cases and new flows of goods will emerge on the inland waterways. This promotes the modal shift from crowded and busy roads to the waterways.
- Automation and making things greener go hand in hand. Smaller ships need smaller engines. That is why automated vessels are often being designed with battery power or greener energy sources. Software can also assist the skipper or shore operator to sail more economically.



- The sector is facing a shortage of workers. Automation allows crews to work at more regular working hours and closer to home: in the shore control centre – the “wheelhouse on the wharf”. This makes the profession more attractive to younger people.

The **Smart Shipping** programme’s goal is to ensure that as many positive aspects of automation and digitization as possible will benefit the inland shipping sector.

There is a focus on four pillars to reach this objective:

1. **SMART VESSELS:** The term “smart vessel” is used to refer to a vessel that has at least a minimal form of on-board automation. The degree of automation is not important here. Each automated vessel must ensure the same minimum safety standards as a regular vessel.
2. **SMART INFRASTRUCTURE:** This is waterways infrastructure that is highly automated and remotely controlled. Interaction between infrastructure and ships is handled digitally, to guide traffic in the safest way possible.
3. **SMART DATA:** This is a data sharing process that aims to be a smart, smooth and flexible system, in which all communication between the government and waterways users is digitized, and conducted according to internationally standardized procedures.
4. **SMART REGULATION:** This is legislation that supports innovations and forward-looking initiatives, while doing so with a constant eye on safety.

Regulations fit for purpose

Today, there is little room for innovation in the legislation and regulations. De Vlaamse Waterweg nv is working on a legal framework which will allow more room for innovation, to ensure that Smart Shipping – and all future innovations – can be tested and developed smoothly and safely in Flanders.

The first result was to adapt the legislative framework in such a way that testing the technological evolution of Smart Shipping is no longer restricted. This result was achieved in June 2019, and this is unique in Europe. So, De Vlaamse Waterweg nv has actually exceeded its ambition to create a framework to allow Smart Shipping in Flanders by 2020.

The next step is to create a stable legislative framework that facilitates innovation for commercial use. That, however, is an international issue – as a matter of fact Flemish regulations are based on international regulations. De Vlaamse Waterweg nv wants to share its knowledge with international organizations, to support them in the research on the impact of Smart Shipping on international legislation and regulations, and therefore it started a scoping exercise within the CCNR and UNECE.

DE VLAAMSE WATERWEG NV WAS THE FIRST EUROPEAN WATERWAYS MANAGER TO CREATE A FRAMEWORK THAT ALLOWS SMART SHIPPING.

• TEST AREA

De Vlaamse Waterweg nv wants to support organizations in testing new technologies related to Smart Shipping. As of June 2019, we have opened our entire network as a test area for automated vessels. This makes it possible, subject to permission from De Vlaamse Waterweg nv, to temporarily test vessels with no crew on board. We will guide you through the procedure for obtaining this permission, in which the emphasis is on maintaining safety. The application form is available on our website. Results of these tests are used by De Vlaamse Waterweg nv in its research on safety standards for automated ships. In this way, innovation can be supported without compromising the safety of the waterways.

• NATIONAL COOPERATION

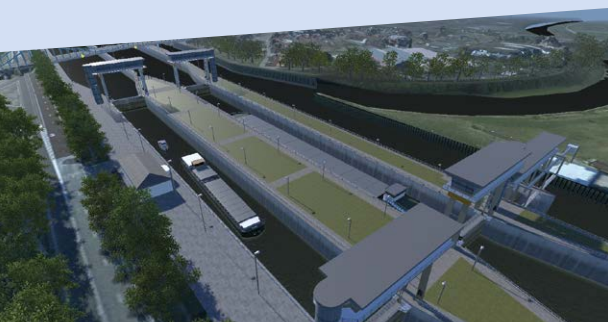
At De Vlaamse Waterweg nv we find it very important to know what is happening in Flemish businesses and research institutions and we strive for good communication and exchange of knowledge with them. However, our waterways do not stop at the borders of Flanders, and this is why it is important to work closely with the other waterways managers and involved authorities in Belgium.

• INTERNATIONAL COOPERATION

We are gradually reaching international consensus on the effects of automated shipping. However, there are still a number of matters that are not clear yet. By sharing experiences with other countries, we can strengthen each other and solve issues together. Working with the Netherlands, De Vlaamse Waterweg nv is drawing up an international PIANC working group, within which the effects of the use of smart ships on the inland waterway infrastructure is mapped out. The CCNR is also looking at how member states can help each other to provide a stable framework that enables Smart Shipping. In addition, De Vlaamse Waterweg nv is also actively involved in the Horizon 2020 research project AUTOSHIP, in which several European countries will collaborate to make an impact analysis of the use of automated vessels in inland shipping.

FOR MORE INFORMATION

You will find all the necessary information about the Flemish Smart Shipping objectives, and on applying for a test by going to www.vlaamsewaterweg.be/smart-shipping. You can also contact Krista Maes, operational director (krista.maes@vlaamsewaterweg.be) and Ann-Sofie Pauwelyn, RIS Smart Shipping project manager (smartshipping@vlaamsewaterweg.be).



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