Autonomous Inland Vessels

Ann-Sofie Pauwelyn
RIS Project Manager Smart Shipping

Genève – 14/02/2018
Table of Content

1. De Vlaamse Waterweg nv
2. Our Approach - Regulation
3. Other Challenges
1. De Vlaamse Waterweg nv
De Vlaamse Waterweg nv.

Flanders situated in the TEN-T network
De Vlaamse Waterweg nv in numbers

- 1076
- 1264
- 800
- 131
- 120,000
- 80%
De Vlaamse Waterweg nv

Duties of the authorities concerning autonomous vessels

1. Certification and regulatory framework
   - General regulation
     - Setting up the regulatory framework for the operations
     - Setting up the regulatory framework for the vessels

2. Infrastructure
   - Waterway technology
     - Automation of the infrastructure
     - Remote control of locks and bridges

3. Sharing information and providing service
   - River Information Services
     - Defining the framework for the interaction between the vessel and the administration

4. Guiding innovation
   - International representation
     - Participating in international fora
     - Setting up private/public initiatives/discussion groups
2. Our approach - Regulation
Our Approach - Regulation

After identifying the benefits, the path towards operating an autonomous vessel on the inland waterways of Flanders has been defined.

1. Identified Benefits
The benefits identified for the people, the organizations and the planet illustrate that the step towards autonomous vessels is something that the authorities should work on.

2. Law and regulation - Gaps
It has been identified that the current law and regulations are not adjusted to make autonomous vessel operations possible.

3. Test areas
Test areas in which autonomous vessels can operate have been approved. It is however still up to the authorities to decide whether it is allowed to test or not.

4. Adjustment law and regulation
After the test cases the best practices and missing gaps in the law and regulation will be filled.

5. Autonomous vessels in legal framework
The autonomous vessels will be able to operate on the Flemish inland waterways within a well defined regulatory framework.
1. Benefits - People

The impact of autonomous vessels on people

1. Increasing safety by reducing human errors

2. Functions and duties of the crew members will shift to the shore

3. Recruitment and redeployment of higher skilled workers

4. Crew members and operators will have to acquire new skills

5. Change in workload for the personnel

6. Reduction of crew members can compensate for the shortage of personnel.
1. Benefits - Profit

The impact of autonomous shipping on economical and social profit

Economic advantages

- More efficient and reliable planning
- Navigating in a fluent motion leads to a reduction in energy consumption (eg. fuel)
- Facilities for the personnel will no longer be necessary (living space, heating, ....)
- Smart solutions can help making the smaller vessels more competitive and making smaller waterways more profitable and thus create more waterfront locations for industry
- Possibility to restructure the entire logistic chain
- Support for new business models
1. Benefits - Planet

The impact of autonomous vessels on the planet

Lower environmental damage by reduced human errors

- Strengthening and securing modal shift from road to water
- Less emissions due to the optimized planning
- Reduced waste on board of the ship
2. Law and Regulations Gaps

The current law and regulation framework has been assessed in 2016

**2016 Overview current Law**

**Identified GAPS**

- **Crew member regulation**
  - It is under no circumstance allowed for any type of vessel to sail without any crewmember

- **Traffic regulation**
  - The general traffic regulation including the General Police regulation for vessels on Inland Waterways contain several rules from which cannot be deviated

- **Dangerous goods**
  - The transportation of dangerous goods on water has to comply with several strict rules
3. Test areas

The steps taken to open test areas

Westhoek
The autonomous vessel project ‘Shipping Westhoek’ was identified in May 2017

Cooperation
In December 2017 the cooperation with the Netherlands was agreed

Regulation & Procedures
In February we will start with investigating procedures concerning information sharing, codes of conduct.

Opening Test Area
In May the Test Area’s will be opened so possible test cases can be done.

Note
In September the vision statement on smart shipping was updated

Defined test area
The test area was defined and set to the entire territory of 1076 km
Our Approach - Regulation

Where are we today?

THE PAST

1. Identified Benefits
2. Law and regulation - Gaps

THE FUTURE

3. Test areas
4. Adjustment law and regulation
5. Autonomous vessels in legal framework
3. Other challenges
The Challenges

Which other challenges concerning Autonomous Vessels does De Vlaamse Waterweg nv encounter

1 Law and regulations
- Applicable technical and safety requirements and the legislative base
- Time needed to put together a legal framework can be considerable

2 Technical
- Inland shipping infrastructure
- Inland vessel traffic services

3 Social acceptance
- Qualification, training and certification for new jobs
- Possible social impact: could this imply actual job losses in the sector
- Communication to the public.

4 Safety
- Cybersecurity
- Interaction between autonomous and manned vessels and between autonomous vessels