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## Making the future together - Automation in European IWT

### GENERAL

Automation is unstoppable but has to be looked at from a workers' perspective and properly accompanied by social dialogue. The European IWT future has to be made together.

Digitalisation and automation pose a challenge to workers in all transport modes and to society in general. An early recognition and definition of these challenges to inland waterways transport are vital to elaborating collective responses.

Change is a process and not just an overnight event, and for European Inland Waterways transport this is a slow-moving and complex process. There are many areas to tackle such as: vessel design, new regulation, waterway management, digital infrastructure, liability shifts, data systems management, huge financial resources needed, a new central regulator,...

On a scale from 1 to 5, European IWT is at level 1 according some specialist analysis, so there is a huge area to cover which will be time and resource consuming.

At the moment the cost-benefit analysis of a fully automated IWT sector is still negative as a lot of questions have not been answered yet. Key point of hesitance is who will have the financial resources and capacity to invest in automation.

Automation will completely reshape the sector, and this not just from an employment perspective, but it will lead to a major consolidation of the sector as many owner operators will not be able to finance the innovation investments needed to remain competitive.

A lot of projects and experiments are being set up, but there is not yet a clear view as to how automation will improve the overall performance of the sector on ecological and socio-economic level. And if performance can be improved at what cost? A main concern raised is that for a lot of these projects tax-payers' money is being used where the final outcome of these projects will be the elimination of the workers on board, those who generate the taxes to finance it in the beginning.



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## SAFETY

Safety benefits of automation in European IWT have not been proven yet as automated and autonomous navigation needs to have a 100% safety level guarantee. Safety for crew, passengers, vessel, cargo and waterway will be a most difficult thing to guarantee especially in the transitional phase where automated/autonomous vessels will interact with manned ones. No one knows at this stage if automation will improve the accident ratio's. Autonomous vessels will have flaws too – algorithms problems – hackers – there will be new accidents and factors that are unknown at present.

Liability in case of an accident where an autonomous vessel is involved will be a major hurdle. Lessons can be learned from other sectors such as aviation where autonomous transport and remote controlled systems are already common place.

In the transitional phase where crewmembers will be systematically replaced by automated or robotised systems and activities it will be extremely difficult to guarantee safety in case of an emergency. One cannot salvage the vessel from the wheelhouse and at the same time rescue a crewmember who has been thrown overboard. Or in the situation of fully automated vessels the international obligation to save people in the water will become an issue.

Many issues need to be tackled simultaneously – technical, regulatory and procedurally – the only way to proceed is a step-by-step approach through social dialogue. Today most flaws and risks are sufficiently assessed and one knows how to react promptly to it, but do the same rules apply to the new technologies and programmes. New safety rules must be defined pro-actively and included in the new IWT reality.

## LIFE LONG LEARNING

For many years ETF has been striving to improve the living and working conditions for all working on board of IWT vessels as there is an important shortage of qualified workforce. Social Partners initiatives have been taken to make the job on board more attractive, to get young people coming to the sector as only quality will motivate enough.

Automated processes and systems need time to be developed and implemented, but they will arrive also in European Inland Waterways. Big question remains how to convince young people to opt for a career in IWT if we cannot guarantee that there will be a future for them waiting. Why would they be willing to fill the gap?

Training and retraining will be more important than ever before. Compulsory periodic training or refreshers courses will have to be inserted as soon as possible through a delegated act in the Directive on Professional Qualifications. The future requirements of a boatmaster and boatman will look completely different as many tasks will be either outsourced or relocated from vessel to shore. Automated processes demand IT and other supervisory and analytical skills. New curricula will have to be developed based on the new requirements if the new generation of crewmembers has to be ready in time.

EDINNA – the European Platform of Training Institutions – should be permanently included in the discussion.

### ONE SIZE FITS ALL?

Fully integrated, secure and reliable data are of the utmost importance. All documents and information should be translated into one single standard and integrated in a central controlling capacity/body.

Transparency and correctness of information can only be guaranteed if controlling and inspection bodies can access directly the centralised compiled data in real time.

The same transparency of information and data will be crucial in order to create and uphold a level playing field, as whomever has an information advantage will at the same time have a competitive edge.

Digital registration of the individual crewmembers' working and resting times or the installation and implementation of the digital/smart tachograph is a first and urgent step in this process. This data has to be made available in real time and in a transparent manner to both employer, crewmember and controlling bodies (authorities).

### WHAT STANDARDS DO WE WANT?

It is obvious that in this changing transport sector we only want the highest possible standards in order to create a robust, safe and secure regulatory framework as we want an 100% safety guarantee in automated/autonomous IWT.

Within CCNR (Central Commission for Navigation on the Rhine) 5 levels of automation have been defined. CESNI QP – the Committee dealing with the professional qualifications will have to elaborate new IT standards for each of these levels.

Key is to have integrated and harmonised standards for the entire European continent so that crewmembers meet the same criteria regardless of where they work, this will guarantee employability in a sector that will gradually phase out its workforce.

### ECOLOGICAL BENEFITS OF AUTOMATION

IWT is still a sustainable transport mode as it has an overall lower energy consumption and lower noise emissions. The benefits of the scale are also to be taken into account. And overall speaking there is a higher degree in safety especially concerning the transport of dangerous goods. IWT can contribute to decongestion and a huge potential is still there when linking up IWT to the overall supply chain.

New technologies will produce even greener engines and even lower emissions. The overall sectors' footprint will be reduced, but the true positive effects of automation will only be generated at the very long term.

Other transport modes are somewhat ahead as their overall turnover cycle is remarkably shorter than an average IWT engine. IWT has a considerable backlog in innovation and

has a relatively old fleet, catching up proves problematic on account of the lacking financial resources.

### **ANTICIPATE & PRO-ACTIVE ACTION**

General awareness on automation is very low. A true need has been identified when it comes to capacity building as to how to handle and guide automation processes.

A monitoring tool should be developed that identifies new projects and pilots at the very early stage so that its socio-economic effects can be pro-actively analysed. Social Partners should start taking stock of good practices and develop guidelines on how to address the technological innovative process.

### **GOOD AUTOMATION EXAMPLES**

Use of simulators has to be stimulated in order to increase the effectiveness of education, assessment and examination.

E-learning should be developed more intensely to ensure that professional skills and competencies are kept at the highest level.

Automated or remotely controlled and operated locks might increase the overall efficiency of the use of the waterway.

Better information exchange between vessel and administration/back office can ensure a better connection of IWT into the overall supply chain.