



Economic and Social Council

Distr.: General
28 August 2019

Original: English

Economic Commission for Europe

Inland Transport Committee

Working Party on Inland Water Transport

Sixty-third session

Geneva, 6–8 November 2019

Item 3 (a) of the provisional agenda

Current situation and trends in inland water transport: Revision of the White Paper on efficient and sustainable inland water transport in Europe

Regulatory framework, developments and challenges in inland water transport

Note by the secretariat

Mandate

1. This document is submitted in line with cluster 5: Inland Waterway Transport, paragraph 5.1 of the programme of work 2018-2019 (ECE/TRANS/2018/21/Add.1) adopted by the Inland Transport Committee at its eightieth session (20–23 February 2018) (ECE/TRANS/274, para. 123).
2. At its fifty-fifth session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) was informed about the ongoing revision of the White Paper on Efficient and Sustainable Inland Water Transport in Europe (the White Paper) and asked the secretariat to send the draft, when it is finalized, to member States, river commissions and other stakeholders for comments, and submit the updated document to the sixty-third session of SC.3 for consideration and adoption (ECE/TRANS/SC.3/WP.3/110, paras. 77–78).
3. The annex to this document contains an overview of the evolution in the institutional and regulatory framework since 2011, examples of major developments and projects and identified challenges in inland water transport in Europe.¹

¹ Details and clarifications concerning the consolidated version of the White Paper can be found in Informal document SC.3 No. 4 (2019).

Annex

Institutional and regulatory framework for inland navigation in Europe, developments and challenges in inland water transport

I. Institutional and regulatory framework for inland navigation in Europe

1. Institutional framework for inland navigation: evolution since 2011

As in 2011, inland navigation in the European part of the ECE region continues to be regulated by a variety of intergovernmental institutions and bodies, including river commissions, the United Nations Economic Commission for Europe (UNECE), the European Union, the four River Commissions: the Central Commission for the Navigation on the Rhine (CCNR), the Danube Commission (DC), the Mosel Commission (MC) and the International Sava River Basin Commission (Sava Commission). Furthermore, in 2015, a new institution in the inland water transport (IWT) sector was established jointly by the European Commission and CCNR: the European committee for drawing up standards in the field of inland navigation (CESNI).

UNECE addresses the pan-European inland navigation issues both at technical and policy levels. A recognized centre for international land transport agreements, UNECE maintains 58 international transport conventions which provide a legal framework and technical regulations for the development of international road, rail, inland navigation and intermodal transport as well as for the transport of dangerous goods and the construction of road vehicles.

The UNECE Working Parties on Inland Water Transport (SC.3) and on the Standardization of Technical Safety Requirements in Inland Navigation (SC.3/WP.3) address numerous issues related to navigational, technical and safety standards in inland navigation. The activities of the Working Party are focused on a pan-European network of inland waterways of international importance with a sustainable and resilient infrastructure and services as an integrated part of inland transport networks and markets. The goal of a new strategy of SC.3 to 2021 is aimed to support economic development with a focus on affordable and equitable access for all UNECE member States possessing navigable inland waterways. The activities encourage cost-efficient and safe services with a minimal impact on the environment, integrated with other transportation modes and focusing on the development of quality infrastructure that is resilient to climate change. It is important that national transport strategies support these aims and capitalize on the comparative advantages of inland water transport (IWT).²

The main building blocks of the new strategy are:

- (a) Consolidating efforts and involving all UNECE member States when addressing modern challenges and assisting the implementation of the Sustainable Development Goals where this is pertinent for the sector;
- (b) Supporting the development of IWT related statistics and analytical capacity aimed at providing much needed data for the sector;
- (c) Coordinating measures for further integration of IWT in multimodal transport chains;
- (d) Developing and maintaining efficient legal mechanisms aimed at ensuring equal and transparent conditions for all players;

² UNECE, Draft proposal for a new strategy of the Working Party on Inland Water Transport for 2016-2021, Geneva, pp.3, 2016, <https://www.unece.org/fileadmin/DAM/trans/doc/2016/sc3wp3/ECE-TRANS-SC3-2016-03e.pdf>.

- (e) Cooperation with new players on the European market as well as players from other regions of the world where they can benefit from the technical harmonization being developed by the Working Party;
- (f) Fostering innovations in the IWT sector;
- (g) Facilitate the development of synergic capabilities with maritime and land transport, on the one side, and water-related activities, on the other side;
- (h) Fostering RIS and other Information and Communication Technologies (ICT) in inland navigation in all UNECE member States;
- (i) Developing partnerships and increasing the visibility of IWT.

In the European Union, since 2011, the basis for the transport policy is the White Paper “Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system”, published by the European Commission in 2011.³ The White Paper included 40 concrete initiatives for the next decade to build a competitive transport system to increase mobility, remove major barriers in key areas and fuel growth and employment, as well as reduce the dependence on imported oil and cut carbon emissions in transport by 60% by 2050.

In 2016, the European Commission published a Commission Staff Working Document on the implementation of the White Paper, which highlighted the progress in the implementation of the initiatives under the ten-year programme and presented changes in the context against which the policy objectives, achievements and challenges.

The NAIADES II Communication (2013) sets out the European Union programme for policy action in the field of inland waterway transport for 2014–2020.⁴ Actions are taken in six key areas of intervention: (i) Infrastructure; (ii) Innovation; (iii) Functioning of the Single Market; (iv) Environmental performance; (v) Human factor, and (vi) Integration into multimodal logistics chains. In the first key area, Infrastructure, the most important development is the adoption of an integrated approach for planning and implementation of inland waterway projects in the TEN-T Core Network Corridors, introduced by Regulation (EU) No. 1315/2013 of the European Parliament and of the Council of 11 December 2013 and Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility (CEF).⁵ The NAIADES II mid-term progress report on the implementation of the NAIADES Action Programme for the promotion of inland waterway transport report published in 2017⁶ presented progress achieved up to 2017 and the on-going actions for implementing NAIADES II until 2020.

In 2017, the European Commission launched an initiative on the Digital Inland Waterway Area (DINA) on the future digitalization of IWT based on the study “Towards a Digital Inland Waterway Area and Digital Multimodal Nodes”,⁷ which proposed a number of short, medium and long-term building blocks. A short-term focus was made on the continued implementation and extension of RIS, standardization and the implementation of the shared European databases: the European Reference Data Management System (ERDMS), the European Hull Database and, most recent, the European Crew Qualifications Database. The medium-term focus is on initiating joint public-private initiatives for developing the future e-IWT onboard tools, the data platform for barge operators and the integration with other stakeholders, and the long-term will focus on further integration with other modalities and the usage of DINA as a platform for new applications. In 2018, the Commission Staff Working Document on Digital Inland Navigation was issued which described existing initiatives and tools in the area of digitalisation of inland navigation in an integrated way and

³ <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52011SC0359>.

⁴ <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52013DC0623>.

⁵ ECE/TRANS/SC.3/WP.3/2017/3.

⁶ https://ec.europa.eu/transport/sites/transport/files/modes/inland/promotion/doc/sec_2011_453.pdf.

⁷ <https://ec.europa.eu/transport/sites/transport/files/studies/2017-10-dina.pdf>.

presented the findings of the DINA study and ongoing Commission initiatives and tools in the area of digitalisation of inland navigation.⁸

The EC DG MOVE Digital Transport and Logistics Forum⁹ studies the acceptance of e-transport documents and data exchange in corridors. There is a specific focus on the use of standards and on the introduction and use of digital platforms for e-freight with the purpose to improve digital interoperability in logistics and freight transport across Europe.

Since 2014, continuous monitoring of IWT in the European Union, on the Rhine and Danube is performed by market observatory prepared by CCNR in collaboration with European inland navigation organizations.¹⁰ This market observatory supports further promotion of the sector and provides: analysis of the demand for inland waterway transport, of the offer on the inland waterway market, an overview of navigation conditions on Europe's inland waterways, a microeconomic analysis of the sector and related issues.

A recent development has been the creation of CESNI (European committee for drawing up common standards in the field of inland navigation) by the European Union and the Central Commission for the Navigation on the Rhine (CCNR) in 2015. This committee was set up in order to create common standards in the field of inland navigation.¹¹ CESNI aims at a deeper harmonization in this field by implementing a commonly acknowledged regime of technical standards for inland vessels and the respective equipment, the implementation of information technology, such as RIS, AIS and the creation of common standards in the field of the education, training and certification of crews. The main areas of work of CESNI include: (a) harmonized technical standards for inland vessels; (b) (a) the European Standard laying down Technical Requirements for Inland Navigation Vessels (ES-TRIN), which defines harmonized technical standards for inland vessels; (b) the European Standard for Qualification in Inland Navigation (ES-QIN), which was recently introduced in 2018. This work is supported by CESNI working groups on technical requirements for vessels (CESNI/PT), on professional qualifications for navigation personnel (CESNI/QP) and on inland navigation information technologies (CESNI/IT).¹²

The European Union addresses the main technical, economic and legal issues of inland navigation, such as access to the market and the profession, state aid, competition, pricing, technical prescriptions applicable to inland vessels and the boatmasters' licences, through a number of specialized directives. Potential uncertainties as to the applicability of the European Union legislation to navigation on the Rhine, governed by the Mannheim Convention, which precedes the European Union legislation and involves a third State (Switzerland),¹³ are being resolved by progressive harmonization between the two regimes and close cooperation between the European Commission and CCNR.¹⁴

In 2018, CCNR adopted a number of ambitious objectives for the next five years which would contribute to the sustainable development of inland navigation in ecological, social and economic terms called "Vision 2018" in support of "NAIADES II" action programme of the European Commission in the key areas.¹⁵

⁸ <https://ec.europa.eu/transport/sites/transport/files/legislation/swd20180427-digital-inland-navigation.pdf>.

⁹ <http://www.dtlf.eu/>.

¹⁰ <https://inland-navigation-market.org>.

¹¹ CESNI, <https://cesni.eu/en/about-cesni>.

¹² <https://www.cesni.eu/en/activities-2>.

¹³ R. Bieber, F. Maiani, M. Delaloye, *Droit Européen des transports*, Helbing and Lichtenhahn, *Dossiers de droit européen*, 2006, «Les transports par voie navigable», paras. 138–143.

¹⁴ ECE/TRANS/SC.3/2017/17.

¹⁵ www.ccr-zkr.org/files/documents/vision/Vision2018_en.pdf.

In order to encourage joint and co-operative initiatives and promote cooperation between intergovernmental institutions and bodies in Europe, a number of agreements have been concluded: (a) the Memorandum of understanding on cooperation between the Sava Commission and DC in January 2009; (b) the Administrative Arrangement concerning a framework for cooperation between the DC secretariat and the Directorate-General for Mobility and Transport of the European Commission in July 2015; (c) the Cooperation Arrangement between DC and MS in June 2018.

At the pan-European level, there have been no pan-European Ministerial Conferences on Inland Water Transport since the Bucharest conference in September 2006.¹⁶ On 18 and 19 April 2018, UNECE jointly with by the Ministry of Maritime Economy and Inland Navigation of Poland organized the first International Ministerial Conference “Connecting by Inland Navigation” in Wrocław, Poland. The conference was aimed at increasing the focus of policy on fostering the role of inland water transport and addressing the challenges of sustainable development of mobility in inland water transport. The Conference continued the practice of Pan-European high-level conferences on inland water transport held in 1991, 2001 and 2006.

On 18 April 2019, the Ministers and Heads of Governmental delegations were invited to sign the Ministerial Declaration “Inland Navigation in a Global Setting” which established main objectives and actions required for the sector for the years to come and invited countries and all parties concerned to develop action plans for their implementation.

In 2018, two ministerial conferences dedicated to the milestone dates for the development of river navigation in Europe were held:

- On 29 June 2018, the Ministerial Conference was held in Belgrade on the occasion of the 70th anniversary of the signing of the Convention regarding the Regime of Navigation on the Danube (the Belgrade Convention). The participants adopted the Communiqué “Danube Commission – Strengthening the partnership in free navigation on the Danube”.¹⁷ The conference followed by the 90th jubilee meeting of DC.
- On 17 October 2018, the sixth congress of CCNR took place on the occasion of the 150th jubilee of the Mannheim Declaration. CCNR member States adopted the Ministerial Declaration “150 years of the Mannheim Act – the driving force behind dynamic Rhine and inland navigation”.¹⁸

The table below provides an overview of membership in the above-mentioned international organizations and bodies.

Membership in inland navigation organizations

(Only full membership)

	<i>UNECE</i>	<i>EU</i>	<i>CESNI</i>	<i>CCNR</i>	<i>DC</i>	<i>SC</i>	<i>MC</i>
Austria	X	X	X		X		
Belarus	X						
Belgium	X	X	X	X			
Bosnia and Herzegovina	X		X			X	
Bulgaria	X	X	X		X		
Croatia	X		X		X	X	

¹⁶ These conferences include Ministerial Conference on Timely Issues of European Inland Waterway Transportation (Budapest, September 1991); Pan European Conference on Accelerating Pan European Co-operation towards a Free and Strong Inland waterway transport (Rotterdam, 5–6 September 2001) and Bucharest conference on Inland Navigation: a Key Element of the Future Pan European Transport System (Bucharest, 13–14 September 2006). The most recent Ministerial Declarations are available at: www.unece.org/trans/cd.html.

¹⁷ http://www.danubecommission.org/uploads/doc/press/2018/DC_90_Session_Belgrade_20180629.pdf.

¹⁸ https://www.ccr-zkr.org/files/documents/dmannheim/Mannheimer_Erklaerung_en.pdf.

	<i>UNECE</i>	<i>EU</i>	<i>CESNI</i>	<i>CCNR</i>	<i>DC</i>	<i>SC</i>	<i>MC</i>
Czech Republic	X	X	X				
Finland	X	X	X				
France	X	X	X	X			X
Germany	X	X	X	X	X		X
Hungary	X	X	X		X		
Ireland	X	X					
Italy	X	X	X				
Lithuania	X	X	X				
Luxembourg	X	X	X				X
Republic of Moldova	X				X		
Netherlands	X	X	X	X			
Poland	X	X	X				
Romania	X	X	X		X		
Russian Federation	X				X		
Serbia	X				X	X	
Slovakia	X	X	X		X		
Slovenia	X	X	X			X	
Switzerland	X		X	X			
Ukraine	X				X		
United Kingdom	X	X	X				
United States of America	X						

In addition to member States, International Organizations and NGOs, the most notable stakeholders' organizations in the field of IWT in Europe are:

- European Barge Union (EBU), which represents the shipping companies and barge operators;
- European Skippers Organization, which represents the owner-operators, who are boat masters that own the vessel they operate;
- International Association for the representation of the mutual interests of the inland shipping and the insurance and for keeping the register of inland vessels in Europe (IVR);
- Association for European Inland Navigation and Waterways (VBW), which promotes multimodal transport system water road/ship/port with interdisciplinary orientation through discussion and editing scientific, technical, legal and practical issues relating to the construction, the operation and the use of inland waterways and ports;
- European River-Sea Transport Union (ERSTU), which represents the interest of the river-sea transport sector;
- European Federation of Inland Ports (EFIP), which promotes the role of European inland ports as intermodal nodes in the transport and logistic chain;
- Education in Inland Navigation (EDINNA), which represents the educational institutes that are involved in the education and training of IWT crews;
- Inland Navigation Europe (INE), which represents the waterway authorities;

- AQUAPOL, the association of the European water police;
- The International Transport Workers Federation ETF, which represents the workers unions in the transport industry;
- Conference of Directors of Danube Shipping Companies – participants of the Bratislava Agreements (CDDSC), which promotes the cooperation between shipping companies engaged in international navigation on the Danube;
- European Boating Association (EBA), which promotes recreational navigation throughout Europe.

2. The regulatory environment in European IWT

The landscape of rules and regulations in European IWT is a diverse one, as laid out in the White Paper 2011. The key players in this field remain UNECE, the European Union and river commissions, as well as various non-governmental organizations (NGOs), which represent the stakeholders in the industry.

UNECE has the widest geographical coverage, since all European countries involved in inland navigation are a member. In its work on inland navigation, UNECE has prepared and maintains international agreements and conventions: the European Agreement on Main Inland Waterways of International Importance (AGN), the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN), The most important conventions are, the 1973 Convention relating to the Limitation of the Liability of Owners of Inland Navigation Vessels (CLN), the 1976 Convention on the Contract for the International Carriage of Passengers and Luggage by Inland Waterway (CVN) and the 2001 Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI).

In the field of inland navigation, UNECE has prepared and maintains international conventions: the European Agreement on Main Inland Waterways of International Importance (AGN), the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) and a number of international conventions relevant to IWT. The most important are: the Convention relating to the Unification of Certain Rules concerning Collisions in Inland Navigation, the Convention on the Registration of Inland Navigation Vessels, the Convention on the measurement of inland navigation vessels which was adopted in 1966.¹⁹ Pan-European rules for the carriage of goods by inland waterways are established by the Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI), prepared jointly by UNECE, CCNR and DC.

The UNECE Working Party on Inland Water Transport (SC.3) addresses a large number of issues related to technical and safety standards in inland navigation and ensures their harmonized application by means of resolutions. The acceptance and implementation of these resolutions by UNECE member States is monitored regularly by the Working Party.²⁰

Most important UNECE resolutions are:

(a) resolutions related to the status and Parameters of European network of Inland Waterways: resolution No. 30, “Classification of European Inland Waterways”; resolution No. 49 “Inventory of most important bottlenecks and missing links in the E Waterway Network”, revision 2;

(b) resolutions that establish the rules and signs on inland waterways: resolution No. 24, “European Code for Inland Waterways (CEVNI)”, revision 5; resolution No. 90, “European Code for Signs and Signals on Inland Waterways (SIGNI)”;

(c) resolutions that establish the technical requirements for inland vessels: resolution No. 15, “Ship-Borne Barges”, resolution No. 61, revision 2, “Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels” and

¹⁹ The complete list of UNECE IWT conventions is available on the “Legal Instruments” webpage: www.unece.org/trans/main/sc3/sc3_legalinst.html.

²⁰ The full inventory of UNECE resolutions on Inland Water Transport and the secretariat’s report on their acceptance are available at: www.unece.org/trans/main/sc3/sc3res.html.

resolution No. 69, “Guidelines for Passenger Vessels also suited for carrying Persons with Reduced Mobility”;

(d) resolution No. 31 “Recommendations on Minimum Requirements for the Issuance of Boatmaster’s certificates in Inland Navigation with a view to their Reciprocal Recognition for International Traffic”;

(e) resolutions on RIS: resolution No. 48 “Recommendation on electronic chart display and information system for inland navigation (Inland ECDIS)”, resolution No. 57 “Guidelines and Recommendations for River Information Services”, resolution No. 58 “Guidelines and Criteria for Vessel Traffic Services on Inland Waterways”, resolution No. 63 “International Standard for Tracking and Tracing on Inland Waterways (VTT)”, resolution No. 79 “International Standard for Electronic Ship Reporting in Inland Navigation” and resolution No. 80 “International Standard for Notices to Skippers”;

(f) resolution No. 21 “Prevention of Pollution of inland Waterways by vessels”;

(g) resolutions promoting recreational navigation, the most important are resolution No. 40, “International Certificate for Operators of Pleasure Craft” and resolution No. 52, “European Recreational Inland Navigation Network”.

On 27 September 2012, the new Strasbourg Convention of 2012 on the Limitation of Liability in Inland Navigation (CLNI 2012) was concluded at the Diplomatic Conference convened by CCNR. The purpose of the revision was to improve the legal security of international river transport and to ensure adequate compensation for parties suffering some prejudice. CLNI 2012 has extended the scope of application of the limitations on liability to IWT on other major waterways, including the Danube, the Elbe, the Oder and the Sava, and has increased the limits of liability, also thereby increasing the protection afforded to passengers carried by IWT. CLNI 2012 entered into force on 1 July 2019 in Germany, Hungary, Luxembourg, the Netherlands and Serbia. Belgium and France have announced a short-termed ratification after which these countries will apply the convention as well. At the same time the CLNI 1988 convention that was in force in Germany, Luxembourg, the Netherlands and Switzerland, ceased.

The updated regulatory framework of the European Union for IWT includes Directive (EU) 2016/1629 of the European Parliament and of the Council of 14 September 2016 laying down technical requirements for inland waterway vessels,²¹ Regulation (EU) 2016/1628 Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery²² and Directive (EU) 2017/2397 of the European Parliament and of the Council of 12 December 2017 on the recognition of professional qualifications in inland navigation²³ which are supported by CESNI standards: (a) the European Standard laying down Technical Requirements for Inland Navigation Vessels (ES-TRIN) which defines harmonized technical standards for inland vessels; (b) the European Standard for Qualification in Inland Navigation (ES-QIN) which was adopted in 2018.

The Convention on the collection, deposit and reception of waste generated during navigation on the Rhine and other inland waterways (CDNI)²⁴ entered into force on 1 November 2009. For the Danube and Sava basins, the following regulations apply: (a) chapter 10 of DFND and the DC Recommendation on waste management from vessels navigating on the Danube, which will come into force by the end of 2019, and (b) the Protocol on the Prevention of the Water Pollution Caused by Navigation to the Framework Agreement on the Sava River Basin, which is in force since December 2017.

The navigation rules maintained by the River Commissions, include (a) the Police Regulations for the Navigation of the Rhine by CCNR, (b) the Basic Rules of Navigation on the Danube (DFND) by DC, (c) the Police Regulations for the Navigation of the Mosel by

²¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016L1629>.

²² <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R1628>.

²³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017L2397>.

²⁴ www.cdni-iwt.org/wp-content/uploads/2015/06/cdni_2014_EN.pdf.

MC and (d) the Navigation Rules on the Sava River Basin by the Sava Commissions, which apply on the Sava River and its tributaries. DFND and the Navigation Rules on the Sava River Basin are fully in line with CEVNI revision 5. CCNR and MC are currently working on aligning their regulatory framework with CESNI standards.

3. Examples of current international IWT-related projects in the ECE region

- Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries and FAIRway Danube: The Connecting Europe Facility (CEF) project FAIRway Danube is a Connecting Europe Facilities (CEF) co-funded project aiming on the implementation of the “Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries”, which is part of the TEN-T Corridor Work Plan for the Rhine Danube Core Network Corridor. This Master Plan maps several harmonized initiatives for the removal of infrastructure bottlenecks along the Rhine-Danube Corridor and has been elaborated in close cooperation with all Danube riparian states. The project is led by the Austrian waterway authority via donau.
- RIS COMEX (River Information Services – Corridor RIS Management Execution): This project, is a Connecting Europe Facility (CEF) funded project under the management of the Austrian Waterway authority VIADONAU, which focuses on the definition, implementation and operation of reliable corridor RIS services. The programme started in 2016 and will conclude in 2020. The aim of RIS COMEX is the evolution of River Information services from a safety management tool to an integrated system, that also serves as a facilitator in the whole logistics chain.
- PROMINENT (Promoting Innovation in the Inland Waterways Transport Sector) – Is a Horizon 2020 funded programme that is addressing the key needs for technological development, as well as the barriers to innovation and greening in the European inland navigation sector. The project aims on lowering the energy consumption of the IWT fleet and with it its carbon footprint. The project consisted out of 17 partners from the Rhine and Danube region. It started in 2015 and concluded in 2018. The total budget of POMINENT was 6.25 million Euro.
- Examples of projects in the framework of the European Union Strategy for the Danube Region (EUSDR) are: (a) Innovative Danube Vessel;²⁵ (b) PROMINENT (Promoting Innovation in the Inland Waterways Transport Sector);²⁶ (c) Danube Transnational Programme (INTERREG): GREEN DANUBE – Integrated transnational policies and practical solutions for an environmentally-friendly Inland Water Transport system in the Danube region ²⁷ and GRENDDEL (Green and efficient Danube fleet).²⁸
- EMMA – A project aimed at enhancing freight mobility and logistics in the Baltic Sea Region by strengthening inland waterway and river sea transport and promoting new international shipping services – is a transnational project focusing on the further development of inland waterway and river-sea logistics in the Baltic Sea region.²⁹ The project period spans from 2016 to 2019. The main objective of EMMA is an enhanced integration of inland waterway transport and river-sea transport into the logistics chain of the Baltic Sea region and hence an improved use of the of the huge yet underused potential of the sector in the region.
- #IWTS 2.0 is an innovation project focusing on a better use of the waterways in Europe.³⁰ Where EMMA focusses on the Baltic Sea Region, #IWTS 2.0 is based around the North Sea. The project period spans from 2017 and 2021 and tackles the issue of the revitalization of underused waterways with three distinct approaches:
 - The minimal adaption of smaller waterways in order to make them suitable for a given CEMT standard vessel;

²⁵ www.danube-navigation.eu/uploads/files/Conferences/2014-01-30_IDV_full_report.pdf.

²⁶ <http://www.prominent-iwt.eu>.

²⁷ www.interreg-danube.eu/approved-projects/green-danube.

²⁸ www.interreg-danube.eu/approved-projects/grendel.

²⁹ <http://project-emma.eu>.

³⁰ <https://northsearegion.eu/iwts20>.

- The development of new, or the adaption of existing vessels in order to give them access to a designating waterway which is not easily adaptable;
- A general enhancement of the knowledge of the potential of IWT as a mode of land transport and is therefore somewhat broader.

II. Developments and Challenges in European IWT

The European IWT sector is currently facing numerous challenges. The ongoing climate change demands a greener industry, which emits less or no more greenhouse gasses and handles its wastes properly. There is furthermore a growing shortage of available staff and the current workers in the industry are aging. Moreover, there is no common standard yet for the education and training of future IWT crews, although there is an instrument in development for the EU states at this moment.

Propulsion and greening/ Resilience to climate change

1. Fleet modernization and greening

Many the vessels currently operating on the European waterways were built more than 30 years ago. In fact, the average construction year of a dry cargo vessel in the Rhine area is 1965 and for a tanker vessel 1979.³¹ It is a common situation when a vessel of this age still runs with the engine that was installed during its original construction. Almost the entire fleet is equipped with diesel combustion engines and diesel-powered electrical generators to provide electrical power on board. Environmental performance can be improved by using alternative propulsion systems, alternative fuels and by the aftertreatment of the emissions from engines.

The readiness of the sector to proactively invest into new and enhanced power supply systems is rather low, since most owners will not replace an engine that is still functional. And even if an engine needs replacement it might be hard to find a suitable replacement, since engine manufacturers are just beginning to provide engine, that meet the requirements of the new European regulations for Non-Road Mobile Machinery (NRMM) (stage V requirements in Regulation (EU) 2016/1628).

Alternative propulsion systems are at the moment a widely discussed topic in the IWT sector, which already has implemented low sulphur diesel as an industry standard, thus significantly lowering the emission of sulphur oxides. The most common alternatives for diesel are Liquefied Natural Gas (LNG), Gas to Liquid (GTL) and hydrogen. The success of these systems in the future will be highly dependent on their reliability, their availability, their durability and probably very importantly, their price. Ultimately, there might be no single substitute for the Diesel engine. It is highly likely, that we will see a combination of different systems coexisting, each fit for a designated purpose. Even the diesel engine might still be around for quite some time.

2. Building a resilient IWT infrastructure

The past years showed the impact of the climate change on the water levels on some of Europe's main waterways such the Rhine and the Danube. Long lasting low-water periods hindered navigation to a point where the vessels could only transport fractions of their usual loading capacity. On the other side, high water periods, and even flooding events also appear regularly. This causes, beside the damage done by the water to the infrastructure itself and neighbouring structures, the water bound traffic to stop until the water level dropped to a safe level again.

A resilient and well-maintained waterway infrastructure is crucial for the IWT sector. The flawless functioning of the waterways and the waterway infrastructure are paramount for green, safe and efficient shipping. Some ECE countries already have started with initiatives aiming on the re-naturalization of rivers in order to give the water more space in the case of

³¹ CCNR, Annual Report 2017, Inland navigation in Europe, Market Observation, p. 94.

high-water periods. At the Wrocław International Ministerial Conference, the ministers agreed, that the effects of the climate change should have an impact on the infrastructure planning, and that the impact of modifications of infrastructure should be considered for longer periods in order to cope with the effects of the climate change.

3. Waste management

The and proper disposal of IWT related waste is another important factor for the improvement of the environmental performance of IWT. There are typically three types of waste, that occur during vessel operations. Oily and greasy wastes from the engine rooms, cargo residues left in the holds after unloading operations, household wastes and wastewater. Each of these wastes must be treated in a different fashion, and the vessel operators need a reliable system, in which they can dispose of these substances in a safe and reliable manner. There are currently two systems in place that deal with the collection of wastes and residues in European IWT at the moment. For the Rhine states, the Convention on Collection, Deposit and Reception of Waste Produced during Navigation on the Rhine and Inland Waterways (CDNI) is in effect since 1996. For the Danube Region, the project on the Convention on Waste Management for Inland Navigation on the Danube (CO-WANDA)³² has developed a concept for on an International Danube Ship Waste Convention (IDSWC) which is not yet in effect. It is very important to the sector to have sufficient access to these waste disposal facilities throughout the entirety of the waterway network. The most pressing issue in this regard seems to be the access to waste water disposal sites for passenger vessels, which are not allowed to pump this water overboard.

4. Smart and autonomous shipping, digitalization

Automated and autonomous sailing is a key focus of the sector for several years now. It is highly desired by shipping companies, not only because it potentially beneficial for the navigational safety and reliability, but also because automated vessels require less or even no crew, depending on a semi- or fully automated vessel. In the light of a growing shortage of IWT staff, this is of particular interest for shipping companies.

Currently there are various systems, that are being developed and tested ranging from semi-autonomous assistance systems that are already available on the market which offer the crew of a vessel the opportunity of assisted navigation by setting waypoints along the desired route the vessel should travel. The vessel will then constantly follow these markings but is unaware of what is happening around the vessel like dense traffic or moving sandbars. The crew can therefore not leave the helm unattended. Another step in the evolution of (semi) autonomy is the remote steering of a vessel from a land-based station. In combination with automated mooring facilities, these vessels have the potential to travel unmanned. The last stage of the evolution would be a fully autonomous system, for which there is no real-life application available at this moment, but experiments with smaller water-based drones on inland waterways are already underway.

The degree of automation that will be seen in the foreseeable future will be highly dependent, not only on the technical possibilities, but also on political and insurance requirements. The question of the ultimate liability for the actions of fully autonomous vessels is not yet solved and autonomous vessels will need different safety management and assessment rules than manned vessels. Another issue not yet solved is the secure data communication, which is not only required in order to operate autonomous vessels, but also for the enhanced functionalities of the RIS system or the implementation of electronic transport documents. However, the governments of the Flemish region in Belgium and the Netherlands are currently allowing real live tests with autonomous vessels to assess their impact and interaction with other inland navigation vessels.

³² www.danube-navigation.eu/projects/co-wanda-convention-for-waste-management-for-inlandnavigation-on-the-danube.

5. Education and training

The education and training of future IWT crews will be one of the more pressing issues for the sector in the upcoming years also because there is a fragmented landscape of education and training offered to future crew members of inland navigation vessels. The main challenges for the education and training of future IWT professionals are plentiful and include the fact that some crew members do not undertake homogenous training. They may have undergone a dual education consisting of practical and theoretical training on a regular training institute in the best case. Other professionals received theoretical training before entering the sector. In addition, numerous workers have not received any formal education at all.

It is furthermore necessary to assess the current content of training and education in the light of the ongoing digitalization of the sector. It is to be expected, that the operation of (semi)-autonomous vessels will require a different, more digitally, oriented skill set than the operation of a conventional vessel.

At the moment there is a system of mutual recognition of certificates in place, but there is neither a unified educational landscape throughout Europe, nor are there common standard regarding the mode in which the competences were obtained and assessed.

Since 2008, the key stakeholders in the sector started to work together towards a more harmonized and modernized regime of professional qualifications in inland navigation. One immediate result of these efforts is the foundation network of the European Inland Navigation educational institutions, EDINNA (Education in Inland Navigation), an educational network of European inland waterway navigation schools and training institutes. It was founded in 2009 as a reaction to the growing urge of the Directorate-General for Mobility and Transport of the European Commission for a modernization of the current certification and education regime as laid down in directives 96/50/EC and 91/672/EEC from 1995 and 1991 respectively, which only addressed the qualifications of the boat masters and did not tackle any other professional qualification onboard IWT vessels, such as deckhands. This has now been replaced by a new directive 2017/2397/EU, formally adopted in 2017. The directive implements a mutually recognized regime for IWT crews on the EU waterways for the first time. It defines professional qualifications and competences in inland navigation according to defined competence-tables and sets standards for qualification and certification on management and operational level that should guarantee a high and comparable standard of qualification and hence improve the safety, labour mobility and attractiveness of the job on all European waterways.

Another pressing issue with regard to training and education, as well as navigational safety is the fact that there is no common communication language when sailing an inland vessel. As a possible solution to this issue, The INTERREG project LE SINCP developed an online tool available as downloadable app, based on the EDINNA “Standard communication phrases”, a simplified glossary of phrases in simple English which closely resemble the IMO “Sea speak”. English was selected as the language of choice as most students in secondary education learn this language in school and it is the most popular second language in the world.

6. Working and wages

The average age of workers on an IWT vessel is greater than 50, the boat masters are even older on average. This means that a growing number of IWT professionals are about to leave the sector due to their age and cannot be sufficiently replaced by newly recruited staff. European educational institutions report dwindling numbers of new students.

The job market within the European IWT sector is currently characterized by a large number of vacancies and an insufficient influx of newcomers. There are insufficient crew available, even if the jobs are, at least in western Europe, relatively well paid (compared to the wages paid in short sea shipping) and offer predictable free time, since most crews enjoy several

work free weeks after their usually two- or four-week shifts.³³ The IWT job market is most likely so tense at the moment, because the sector is still existing as a niche and is little known in the general public. It has furthermore the image of a rather rough and hard trade. Finally, it is technical profession, which is not the first choice for many youngsters when they choose a career path.

The working environment in the European IWT sector has been in flux over the past decades and is still in a transformation process. While in the past, the job market was characterized by an abundance of relatively low-skilled workforce, the current trend towards an ongoing automation and modernization of the fleet demands a larger and differently skilled workforce. In addition, the number of female workers professionals, both on the operational level and management level is very low. This also applies to the number of new apprentices, who start their career. In 2009, less than ten percent of the workforce was female.³⁴ The numbers of female IWT personnel is currently rising but IWT remains a predominantly male profession.

III. The Ministerial Declaration adopted in Wrocław (Poland) on 18 April 2018

The International Ministerial Conference “Connecting by Inland Navigation” was held on 18 and 19 April in the city of Wrocław in Poland. This event was organized jointly by the Ministry of Maritime Economy and Inland Navigation of Poland and the UNECE as the first high-level conference for inland Navigation that was held on a global level. High-ranking participants came also from non-UNECE regions like Asia and Africa.

Starting in 1991, UNECE organized Ministerial Conferences in this sector have played a key role in coordinating the development of the European waterways. They were also the starting point of the development of the multimodal network of the Pan-European transport corridors. Finally, they set up action plans on an improved role of inland waterway transport in the European modal mix.

The first in the line of these events was the Pan-European Ministerial Conference Dedicated to Timely Issues of Inland Waterway Transport, which was held on 11 September 1991 in Budapest, the second Pan-European Conference on Inland Waterway Transport took place on 5 and 6 September 2001 in Rotterdam (The Netherlands). This was followed by the Pan-European Conference on inland waterway transport which took place on 13 and 14 September 2006 in Bucharest. One major outcome of this meeting was the subsequent adoption of resolution No. 258, “Supporting further development of inland water transport” on 8 February 2007 by the Inland Transport Committee (ITC), the highest policy-making body of UNECE.³⁵ After a 10-year break, it was followed by the International High-Level Conference on Inland Water Transport on 22 February 2017 in Geneva during the eightieth session of ITC.

The Wrocław conference focused on main areas relevant to effective and sustainable transport, that can ease the congestion on roads while having a very favourable performance when it comes to energy consumption and emissions per tonne-kilometre.

³³ For example, the average captain on a Dutch IWT vessel will earn a gross salary between €2,500 and € 3,500 per month, a senior deckhand or helmsman between €1,800 and €2,500 per month, depending on the level qualification, experience and type of vessel.

³⁴ CCNR, Marktbeobachtung 1/2009, p.44, www.ccr-zkr.org/files/documents/om/om091_de.pdf.

³⁵ UNECE, 2018, International Ministerial Conference “Connecting by Inland Navigation”, www.unece.org/trans/areas-of-work/inland-water-transport/meetings/inland-water-transport/meeting/2018/international-ministerial-conference-connecting-by-inland-navigation/doc.html.

The Conference covered key aspects for the development of inland waterway sector, including:³⁶

- The coordinated development of inland waterways at national and regional level;
- Inland water transport around the world;
- Major international projects and investments in inland waterways;
- Employment and education in inland navigation;
- Reducing the carbon footprint of inland navigation and advancing climate action;
- The legislative framework for inland water transport and UN legal instruments.

At the Conference, a declaration was signed by 14 countries and, later on, four more countries have become signatories.³⁷ The ministers recognized the importance of inland navigation for the European economies and its positive impact on sustainability.

Inland waterway transport is described as an important and integral part of well-balanced logistics chain throughout Europe. IWT has a very high standard when it comes to cost efficiency, energy efficiency, reliability and overall safety. It is practically free of congestion and produces very low emissions per tonne-kilometre. The ministers also emphasized the favourable role of IWT in the fight against climate change.

The ministers suggested the creation and maintenance of a regulatory framework aimed at increasing the efficiency of inland water transport. This can best be done bilaterally and multilaterally through treaties and agreements as a result of an ongoing policy dialogue as well as the exchange of good practices in IWT. They furthermore suggested to those countries in need of a better regulatory framework to agree to the UN's international conventions regarding the sector.

The ministers stressed that IWT is very competitive in terms of safety, efficiency and reliability and has huge potential as part of an integrated logistics chain, which can lower the use of road transport for large quantities of cargo over longer distances. Multimodality is therefore key in order to take full advantage of IWT, which can ease congestion, lower emissions and energy consumption. Inland navigation is highly dependent on a reliable and accessible infrastructure in order to achieve its peak performance. The coordinated development and maintenance of a serviceable waterway infrastructure that proves to be resilient to climate change throughout Europe is therefore a precondition for the success of multimodality.

The ministers also addressed that the modernization of the European IWT fleet so that the vessels can navigate safely, efficiently and in an environmentally friendly manner. The ministers asked the IWT sector to invest in new technologies that increase the level of navigational safety, like alternative propulsion systems and reduce the ecological footprint of the fleet, like RIS and automation. Retrofitting the existing fleet might not be enough to reach the desired level of modernization. If necessary, new types of vessels must be developed.

Finally, the ministers call for the enhancement of the attractiveness of the sector as mode of transport, as well as for those working on IWT vessels. Inland navigation still has a low profile in the logistics industry due to its geographical limitations and a relative unfamiliarity among logistics decision-makers. The perception of IWT must be safe, reliable and available in order to create awareness and a broad acceptance as a viable link in the transport chain. It is up to the sector to create this image. However, there must be a level-playing field between the modes of transport, for which the countries are encouraged to act.

To make the sector more attractive as a job market, education and training must be contemporary and must meet high standards in order to assure that young people see the work

³⁶ www.unece.org/info/media/news/transport/2018/international-ministerial-conference-to-focus-on-how-to-unlock-potential-of-connecting-by-inland-navigation/doc.html.

³⁷ Ministerial declaration of the International Ministerial Conference on Inland Water Transport, Wrocław, 18 April 2018, www.unece.org/fileadmin/DAM/trans/doc/2018/sc3/Ministerial-declaration_e.pdf.

on the European rivers as a viable career opportunity. It is also necessary to ease the mobility of workers in the IWT through a wider recognition of professional certificates.

As of November 2018, the following countries have signed the Ministerial Declaration:

Austria, Belarus, Belgium, Bulgaria, China, Croatia, Czech Republic, Germany, Luxembourg, Netherlands, Poland, Portugal, Romania, Russian Federation, Slovakia, Switzerland, Thailand and Ukraine.

On 22 February 2019, ITC at its eighty-first session adopted its resolution No. 265 “Facilitating the Development of Inland Water Transport” in support of the Ministerial Declaration adopted in Wrocław (ECE/TRANS/288, Annex III).
