



# Economic and Social Council

Distr.: General  
14 February 2023

Original: English

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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Inland Water Transport

##### Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation

###### Sixty-second session

Geneva, 15–17 February 2023

Item 7 of the provisional agenda

###### Automation in Inland Navigation and Smart Shipping

## Recent Developments in the Regulatory Basis for Automated Navigation

### Note by the secretariat\*

#### I. Mandate

1. This document is submitted in line with the proposed Programme Budget for 2023, part V, Regional cooperation for development, section 20, Economic Development in Europe, Programme 17, Economic Development in Europe (A/77/6 (Sect. 20), table 20.6).
2. Following the decision of the Working Party on Inland Water Transport (SC.3) at its sixty-sixth session (ECE/TRANS/SC.3/217, paragraph 66), the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) may wish to begin discussion on provisions for automated navigation on inland waterways and provide guidance for the secretariat.

#### II. Overview of the Regulatory Basis

##### A. International Definition of Automation Levels in Inland Navigation Introduced by the Central Commission for the Navigation of the Rhine

3. At its plenary session in December 2018, the Central Commission for the Navigation of the Rhine (CCNR) adopted the first international definition of inland navigation automation levels by Resolution 2018-II-16 (reproduced in ECE/TRANS/SC.3/WP.3/2019/20). At its plenary session in autumn 2020, CCNR decided to extend the period of validity of the definitions of automation levels in inland navigation until 31 December 2022.<sup>1</sup>

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\* The present report was submitted after the deadline in order to reflect the most recent information.

<sup>1</sup> [www.ccr-zkr.org/files/documents/AutomatisationNav/Resolution2020-II-20\\_fr.pdf](http://www.ccr-zkr.org/files/documents/AutomatisationNav/Resolution2020-II-20_fr.pdf).

4. In 2022, CCNR published the international definition of levels of automation in inland navigation, edition 2022,<sup>2</sup> based on the experience gained with various research and development projects and pilot projects. The number of automation levels in edition 2022 remained unchanged and some minor adjustments have been introduced. It also contains preliminary definitions of the terms related to automated navigation. The 2022 edition is supported by an explanatory note that contains additional information related to the international definition of the levels of automation edition 2022.

## **B. Regulations for Automated Navigation and Pilot Projects**

### **(a) Maritime sector**

5. In May 2021, the IMO Maritime Safety Committee (MSC) approved the Outcome of the regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS), which provides the assessment of the degree to which the existing regulatory framework under purview of MSC might be affected in order to address MASS operations.<sup>3</sup> In April 2022, MSC began work on the development of a goal-based instrument regulating the operation of MASS and approved a road map containing a work plan for the development of IMO instruments for MASS. It is planned to develop a mandatory MASS Code which will enter into force on 1 January 2028.

6. The Vessel Traffic Service (VTS) Committee of the International Association of Marine Aids to Navigation and Lighthouse Authorities is developing a guidance on the implications of MASS from a VTS perspective and, in particular, “Case Studies” document. In the document, the use of case studies was identified as a useful tool in developing the Discussion Paper to assist the Committee in achieving a common understanding of MASS and its implications on the provision of VTS.<sup>4</sup>

7. Examples of international and national guidelines and regulations for automated ships:

- Operational Guidelines for Safe, Secure and Sustainable Trials of Maritime Autonomous Surface Ships (MASS), version 1, issued by the European Union in October 2020;<sup>5</sup>
- Circular RSV 12-2020 issued by the Norwegian Maritime Authority, which describes the documentation requirements and principles applied in the administrative processing of ships that are to be autonomous, and fully or partially remotely operated;
- Sixth version of the “MASS UK Industry Conduct Principles and Code of Practice, issued in November 2022;
- Provisions for autonomous shipping, developed by classification societies.<sup>6</sup>

### **(b) Inland waterways sector**

8. In order to allow implementing of a pilot project on automated navigation on the Rhine, which requires a temporary derogation from one or several CCNR regulations, CCNR has developed (a) an authorization procedure for a pilot project for automated navigation on the Rhine, and (b) an application for authorization for a pilot project to derogate from one or more CCNR regulations. It maintains the list of competent authorities for an authorization request of a pilot project in automated navigation requiring a derogation from the CCNR regulations which is available on the CCNR website. CCNR also maintains the list of international and national pilot and research projects in the field of automation in inland navigation, which includes the assessment of the specific level of automation.

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<sup>2</sup> [www.ccr-zkr.org/files/documents/AutomatisationNav/DefinitionAutomatisation\\_en.pdf](http://www.ccr-zkr.org/files/documents/AutomatisationNav/DefinitionAutomatisation_en.pdf).

<sup>3</sup> MSC.1/Circ.1638 of 3 June 2021.

<sup>4</sup> <https://academy.iala-aism.org/technical/mass>.

<sup>5</sup> [https://transport.ec.europa.eu/system/files/2020-11/guidelines\\_for\\_safe\\_mass.pdf](https://transport.ec.europa.eu/system/files/2020-11/guidelines_for_safe_mass.pdf).

<sup>6</sup> [https://erules.veristar.com/dy/data/bv/pdf/641-NI\\_2019-10.pdf](https://erules.veristar.com/dy/data/bv/pdf/641-NI_2019-10.pdf).

## C. Navigation Rules

9. At the sixty-third session of SC.3, Belgium presented document ECE/TRANS/SC.3/2019/13 on the harmonization of the legal framework and policy areas for fostering innovations in inland navigation. This document contains, in particular, proposals for evaluation of provisions of the European Code for Inland Waterways (CEVNI) in terms of gaps, challenges and bottlenecks that hamper the development of automated navigation.

10. At its autumn session of 2022, CCNR adopted Resolution 2022-II-12 which introduced a new article 1.26 to the Police Regulations for the Navigation of the Rhine concerning derogations for vessels engaged in automated navigation. The article will come into force on 1 December 2023.<sup>7</sup> The CEVNI Expert Group at its thirty-eighth meeting held on 13 February 2023 supported the proposal to include the item on automated navigation in the agenda of its next meeting with a view of elaborating an amendment proposal for CEVNI.

11. SC.3/WP.3 may wish to (a) continue discussion on the gaps and bottlenecks for the development of automated navigation in CEVNI based on the proposal of Belgium and (b) provide guidance to the CEVNI Expert Group for its further work in this field.

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<sup>7</sup> A working document will be issued by the secretariat for the sixty-third session of SC.3/WP.3.