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Working Party on Inland Water Transport

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

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Item 3 (b) of the provisional agenda

**Standardization of technical and safety requirements in inland navigation:
Signs and Signals on Inland Waterways (SIGNI) (Resolution No. 22, revised)**

Proposal for a new Chapter 12, Monitoring of signs and marking by AIS Aids to Navigation

Note by the secretariat

I. Mandate

1. This document is submitted in line with Cluster 5: Inland Waterway Transport, para. 5.1 of the programme of work 2016-2017 (ECE/TRANS/2016/28/Add.1) adopted by the Inland Transport Committee at its seventy-eighth session on 26 February 2016.
2. The Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (hereafter SC.3/WP.3) at its fiftieth session decided to draft a new Chapter 12 for the Signs and Signals on Inland Waterways (SIGNI) (ECE/TRANS/SC.3/WP.3/2017/100, para. 21), on the basis of information submitted by the Chairs of the Joint Working Group on Tracking and Tracing (VTT) and the Inland Electronic Chart Display and Information Systems (Inland ECDIS).
3. The secretariat prepared the present draft in consultations with the Chairs of the VTT and Inland ECDIS Expert Groups. The following documents, adopted by the International Telecommunications Union (ITU) and the International Association of Lighthouse Authorities (IALA), were used as references:
 - Recommendation ITU-R M.1371 “Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band”;

- IALA Maritime Buoyage System and Other Aids to Navigation;
- IALA Recommendation A-126 “The Use of the Automatic Identification Systems (AIS) in Marine Aids to Navigation Services”;
- IALA Aids to Navigation Guide;
- IALA Guideline No. 1062 “On the establishment of AIS as an Aid to Navigation”.

II. Amendment proposal to Chapter I, General

4. In paragraph 1.5.1 *replace* the IALA Maritime Buoyage System set out in the Agreement of 15 April 1982 *by* the IALA Aids to Navigation system.

5. *Add* a new paragraph 1.5.2 and renumber the existing paragraph 1.5.2 as 1.5.3:

Aid to Navigation (AtoN) means a device, system, or service, external to a vessel, designed and operated to enhance safe and efficient navigation of all vessels and/or vessel traffic.

III. Draft of a new Chapter 12, Monitoring of signs and marking by AIS Aids to Navigation

6. *Add* a new Chapter 12:

“12. MONITORING OF SIGNS AND MARKING BY AIS AIDS TO NAVIGATION

12.1 Function of AIS Aids to navigation

12.1.1 AIS AtoN is designed for displaying navigation signs and marks on electronic navigation charts. A special type of AIS station (AtoN AIS) fitted to an AtoN provides a positive identification of the aid without the need for a specialized shipborne display. In addition, this equipment can provide information and data that would:

- complement or replace an existing aid to navigation, providing identity, state of “health” and other information to surrounding ships or back to a shore authority;
- provide the position of floating aids (mainly buoys) by transmitting an accurate position to monitor if they are on station;
- provide real-time information for performance monitoring, with the connecting data link serving to remotely control changes in AtoN parameters or switching on back-up equipment;
- gather data AIS fitted shipping traffic for future aid to navigation planning purposes.

12.1-2 The use of AIS as an AtoN can provide the following services to AIS equipped vessels:

- Provide identification of the AtoN in all weather conditions;
- Complement existing signals from AtoN;
- Transmit accurate positions of floating AtoN;

- Indicate if a floating AtoN is off position;
- Mark or delineate tracks, routes, areas, and limits;
- Provide additional AtoN capability through use of virtual AIS AtoN where installation of physical AtoN is technically or economically difficult;
- Indicate AtoN status; and
- Provide an accurate position for fixed AtoN.

12.2 Types of AIS Aids to navigation

12.2-1 Real AIS Aids to navigation is an AIS station located on an AtoN that physically exists.

12.2-2 Synthetic AIS Aids to navigation is where the AtoN message is transmitted from a remote AIS station.

12.2-3 Virtual AIS Aids to navigation is transmitted as AIS AtoN message for an AtoN that does not physically exist. presentation only on electronic chart, even though there is no real AtoN such as a buoy or beacon.
