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**Promotion of River Information Services and other Information
and Communication Technologies in inland navigation:
International Standard for Notices to Skippers
in Inland Navigation (resolution No. 80)**

Revised annex to resolution No. 80, International Standard for Notices to Skippers in Inland Navigation

Note by the secretariat

The annex to the present document contains the text of the revised annex to resolution No. 80, International Standard for Notices to Skippers in Inland Navigation, preliminarily approved by the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation at its fifty-fifth session (ECE/TRANS/SC.3/WP.3/110, paras. 81–82). Some minor changes have been introduced to the text by the secretariat in consultation with the Chair of the International Notices to Skippers Expert Group.

Annex

International Standard for Notices to Skippers in Inland Navigation

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Appendices:

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- Appendix B: NtS Encoding Guide for application developers²
- Appendix C: NtS XML Schema Definition (XSD)
- Appendix D: NtS Web Service Specification (WSDL)
- Appendix E: NtS Reference Tables.

Note: Appendices C–E are available in electronic format only.

1. General provisions

1.1 Definitions

Fairway Information Services (FIS) mean geographical, hydrological and administrative information regarding the waterway (fairway) that are used by boatmasters and fleet managers to plan, execute and monitor a voyage. The terms “boatmaster” and “skipper” used in the present standard shall be deemed to be equivalent with the term 'ship master' used in the Guidelines and Recommendations for River Information Services (resolution No. 57), while the term “fleet managers” is defined in the International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63).

FIS provide dynamic information such as water levels, water level predictions as well as static information such as operating times of locks and bridges regarding the use and status of the inland waterway infrastructure, and thereby support tactical and strategic navigation decisions.

Traditional means to supply FIS include visual aids to navigation, notices to skippers published on paper, provided by broadcast and by fixed telephone on locks. The mobile phone has added new possibilities of voice and data communication, but cellular network is not available in all places and at all times. Tailor-made FIS for the waterways can be supplied by radiotelephone services on inland waterways, Internet services or electronic navigational chart service, such as the Inland Electronic Chart Display and Information System (Inland ECDIS) with Electronic Navigational Chart (ENC).

¹ See ECE/TRANS/SC.3/2019/16.

² See ECE/TRANS/SC.3/2019/17.

1.2 Primary functions and performance requirements for Notices to Skippers

This technical specification for Notices to Skippers (NtS) provides rules for the data transmission of fairway information via Internet.

NtS shall:

- (a) provide information related to fairway conditions, traffic, weather, water levels and ice for FIS;
- (b) provide automatic translation of the most important content of notices, using standard vocabulary based on code lists (the NtS Reference Tables as provided in appendix E);
- (c) be provided in a standardized structure of data-sets to facilitate the integration of notices in voyage planning systems;
- (d) be compatible with the data-structure of the RIS Index and Inland ECDIS to facilitate integration of Notices to Skippers NtS into Inland ECDIS.

The technical specifications for NtS facilitate the data exchange among NtS systems of different countries and towards other applications making use of NtS data, including Inland ECDIS.

Some information contained within NtS messages can be standardized, some cannot.

The standardized part shall cover all the information which is

- (a) important for the safety of inland navigation (for example: sunken small craft on the right side of the fairway at the Danube, river-km 2010);
- (b) needed for voyage planning, including closure of locks and reduction of vertical clearance.

Additional information that is not relevant for safety or voyage planning, including the cause of the closure of a lock may be given as free text, without automatic translation. The use of free text shall be restricted to a minimum.

2. Provision of Notices to Skippers

Member States shall ensure that NtS messages are accessible online and via standardized NtS web service, in accordance with the technical specifications described in this annex and its appendices. The standardized NtS web service specification is included in appendix D in the form of a 'Web Service Description Language' (WSDL).

The standardized NtS web services shall provide the user with the possibility to select messages on the grounds of at least one of the following criteria:

- (c) a specific waterway section;
- (d) a specific part of a waterway, defined by the river-km of the starting and the end point;
- (e) time of validity of the notice (start date and end date of validity period);
- (f) date of publication of the notice (date and time of publication).

NtS messages that comply with the standards referred to in this annex can be provided, among other tools, by:

- (a) mobile applications (apps);
- (b) E-mail services.

Data exchange among the NtS systems operated in different countries may be carried out. All systems using the standards described in the Annex of this Regulation may integrate NtS of other systems in their own services, provided the content of the message is not modified. Users shall be informed in case the connection to a source of integrated NtS is interrupted or not available.

3. NtS message types

NtS messages are essential messages that are standardized to the highest part possible. There are four NtS message types, namely:

- (a) Fairway and traffic related message;
- (b) Water related message;
- (c) Ice related message;
- (d) Weather related messages.

4. Structure of NtS and encoding of NtS messages

This chapter describes the structure and encoding of standardized electronic NtS messages.

An NtS message is a structured message using standardized elements, wherever possible. The use of free text in the data elements shall be restricted to a minimum.

The standardized NtS extended mark-up language (XML) schema definition, referred to as XSD in this standard, contains the standardized code values and possible formats is included in Appendix C.

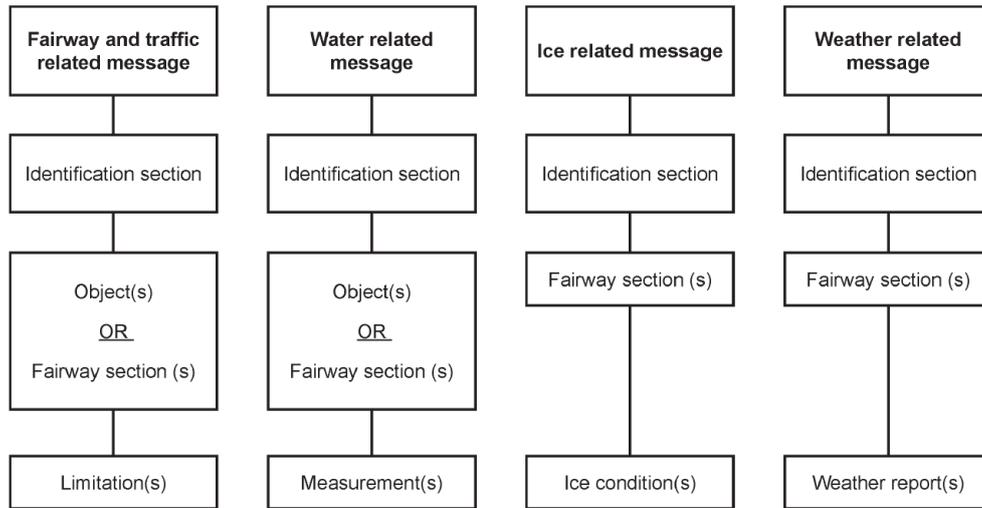
The standardized code values and the XML tags, their meaning and translation are provided in the NtS Reference Tables in Appendix E. They are also available electronically in the European Reference Data Management System (ERDMS) operated by the European Commission.

4.1 General structure

An NtS message consists of the following sections:

- (a) Message identification section;
- (b) Section defining the applicable object(s) or fairway section(s) the message is related to;
- (c) Limitation(s) for a fairway and traffic related message, measurement(s) for a water related message, ice condition(s) for an ice related message or weather report(s) for a weather related message.

Figure 1
Notice to Skippers message structure



4.1.1 *Identification section*

Each message must contain an identification section. The identification section contains general information about the issuer and date of publication of the message.

4.1.2 *Fairway and traffic related message*

The fairway and traffic related message contains information for fairway section(s) or object(s), and it is used to indicate limitation(s) for the following purposes:

- (a) “Warning”: relevant for safety. The warning must contain at least one limitation that results in direct and concrete endangerment of persons, crafts or facilities, such as welding works on a bridge producing sparks, inspection cage/workers hanging from a bridge, obstacle in the fairway,
- (b) “Announcement”: relevant for voyage planning or safety. The announcement may contain limitations, such as blockage of a lock chamber due to maintenance works, dredging on the fairway,
- (c) “Info service”: general information that is not directly linked to voyage planning or safety. The info service must not contain specific limitations, therefore it is not directly relevant to voyage planning or safety. Such information might include general information such as local rules of traffic, Inland ECDIS Update.

4.1.3 *Water related message*

The water related section contains values or predictions for:

- (a) Water level;
- (b) Least sounded depth;
- (c) Vertical clearance;
- (d) Barrage status;
- (e) Discharge;
- (f) Regime.

Usually, water related information is created and published automatically based on data received from sensor equipment (such as tide gauge), systems (such as water level model) or infrastructure (such as barrage status). There may be different triggers for publication, such as periodical publication or reaching certain value.

4.1.4 *Ice related message*

The ice related message contains information about the actual or predicted ice conditions for fairway section(s). Ice related information is usually generated by competent personnel based on local observation and professional assessment.

4.1.5 *Weather related message*

The weather related message contains information about (dangerous) weather conditions for inland navigation.

In order to facilitate the distribution of hydro-meteo information from hydro-meteo networks to skippers, weather related messages may be published.

4.2 **Explanation of XML tags and code values in the NtS Reference Tables**

The meaning of the different elements used in the NtS XML schema definition (XSD) is described in the NtS Reference Tables provided in appendix E. The structure, format and possible values of all XML elements are described in the NtS XSD in appendix C:

(a) Latitude and longitude coordinates are encoded according to the World Geodetic System 1984 and are presented in degrees and minutes with at least three, but preferable four decimals ([d]d mm.mmm[m] N, [d][d]d mm.mmm[m] E);

(b) Decimals in numeric fields are indicated with a decimal point ('.'). No separators for thousand are used;

(c) NtS messages shall only use the following units for the values included in the XML message: cm, m³/s, h, km/h and kW, m/s (wind), mm/h (rain) and degree Celsius. National applications may convert the units for user-friendly display.

4.3 **Identification of fairway sections and objects in NtS messages**

To fulfil the minimum data requirements for provision of information about objects relevant for inland navigation as referred to in paragraph 2.14, subparagraph (a), of the Guidelines and Recommendations for River Information Services (resolution No. 57), the International Ship Reporting Standard (ISRS) Location Code has to be used in the object section. The ISRS Location Code is used to uniquely identify objects and fairway sections and to ensure interoperable RIS Systems and Services (such as to combine information about infrastructure from the RIS Index, Inland ECDIS and NtS for voyage planning).

The ISRS Location Code is a 20-digit alphanumerical code used to establish a unique and standardized relation between objects in River Information Services. It consists of the following mandatory data elements, arranged in four information blocks:

(a) Block 1: UN/LOCODE (5 letters, alphanumerical), comprising

- Country code (2 digits, alphanumerical) (1), and
- Location code (3 digits, alphanumerical, 'XXX' if not available);

(b) Block 2: Fairway section code (5 digits, alphanumerical, to be determined by the national authority);

(c) Block 3: Object Reference Code (5 digits, alphanumerical, 'XXXXX' if not available);

(d) Block 4: Fairway section hectometre (5 digits, numerical, hectometre at the centre of the area or '00000' if not available).

The ISRS Location Codes and the reference data of objects are maintained by the member States in the RIS Index.

4.4 Rules for encoding of NtS messages

NtS messages shall be encoded in line with the NtS Encoding Guide for editors (appendix A) and in line with the NtS Encoding Guide for application developers (appendix B).
