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Working Party on Inland Water Transport

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Item 8 (a) of the provisional agenda
Promotion of River Information Services (RIS) as well as other Information and Communication Technologies (ICT) in inland navigation: International Standards for Notices to Skippers and for Electronic Ship Reporting in Inland Navigation (Resolution No. 60)

International Standards for Notices to Skippers in Inland Navigation (draft Resolution No. 80)

Note by the secretariat

I. Mandate

1. This document is submitted in line with cluster 5: Inland Waterway Transport, paragraph 5.2 of the programme of work 2014–2015 (ECE/TRANS/2014/23) adopted by the Inland Transport Committee on 27 February 2014.

2. The Working Party on Inland Water Transport (SC.3) decided at its fifty-seventh session to separate Resolution No. 60 (ECE/TRANS/SC.3/175 and Amend.1) into two resolutions, since within the European Union, the Standards for Notices to Skippers and for Electronic Ship Reporting in Inland Navigation were maintained by two different international expert groups. The Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3), at its forty-fifth session, considered the draft Resolutions Nos. 79 and 80, and decided to add a reference to the work of the groups of experts who maintain these standards (ECE/TRANS/SC.3/WP.3/90 para. 54).

3. The Working Party on Inland Water Transport is invited to consider and adopt the draft Resolution No. 80, “International Standards for Notices to Skippers in Inland Navigation”, (part II of this document) and its annex (part III).

II. Draft Resolution No. 80, “International Standards for Notices to Skippers in Inland Navigation”

Resolution No. 80
(adopted by the Working Party on Inland Water Transport on ... November 2014)

The Working Party on Inland Water Transport,

Considering its resolution No. 57 on River Information Services (TRANS/SC.3/165) and desiring to promote the rapid establishment of harmonized river information services on the European inland waterway network,

Believing that the adoption within the UNECE of single pan-European standards for notices to skippers in inland navigation will serve to achieve this goal, help to overcome language difficulties, facilitate the electronic exchange of data between all partners involved in transport by inland navigation vessels and increase the efficiency and safety of such transport,

Taking into account that relevant international standards were adopted recently by the member States of the Central Commission for the Navigation of the Rhine and that the Danube Commission is also considering their use,

Bearing in mind the report of the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation on its twenty-ninth session (TRANS/SC.3/WP.3/58, para. 45),

1. *Recommends* Governments to base the development and introduction of systems for the dissemination of notices to skippers in inland navigation on the international standards reproduced in the annex to this resolution,

2. *Requests* Governments to inform the Executive Secretary of the Economic Commission for Europe whether they accept this resolution,

3. *Requests* the Executive Secretary of the Economic Commission for Europe to place the question of the application of this resolution periodically on the agenda of the Working Party on Inland Water Transport.

4. *Decides* that the annex to this Resolution replaces the part I of the annex to Resolution No. 60 as reproduced in document ECE/TRANS/SC.3/175 and ECE/TRANS/SC.3/175/Amend.1.

III. Annex to the draft Resolution No. 80, “International Standards for Notices to Skippers in Inland Navigation”

I. Introduction

1. In the following, the primary functions and performance requirements of international standards for notices to skippers for inland navigation are described.

2. Fairway Information Services (FIS) contain geographical, hydrological and administrative data that are used by skippers and fleet managers to plan, execute and monitor a trip. FIS provide dynamic information (e.g. water levels, water level predictions etc.) as well as static information (e.g. regular operating times of locks and bridges) regarding the use and status of the inland waterway infrastructure, and thereby support tactical and strategic navigation decisions.

3. Traditional means to supply FIS are e.g. visual aids to navigation, notices to skippers on paper, broadcast and fixed telephone on locks. The mobile phone using GSM has added new possibilities of voice and data communication, but GSM 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 (ENC) services (e.g. Electronic Chart Display and Information System for inland navigation (Inland ECDIS) with ENCs).

4. The following technical specifications for Notices to Skippers provide rules for the data transmission of fairway information via Internet services.

5. The standardization of Notices to Skippers shall

(a) provide automatic translation of the most important content of notices in all the languages of the participating countries;

(b) provide a standardised structure of data-sets in all the participating countries to facilitate the integration of notices in voyage-planning systems,

(c) provide a standard for water level information;

(d) be compatible with the data-structure of Inland ECDIS to facilitate integration of Notices to Skippers into Inland ECDIS;

(e) facilitate data-exchange between different countries.

6. It will not be possible to standardize all the information, which is contained in Notices to Skippers. Part of the information will be provided as “free text” without automatic translation. The standardized part should 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 (for example: closure of locks, reduction of vertical clearance, etc.).

7. Additional information (for example: cause of the closure of a lock) can be given as free text.

II. Data standard

8. Notices to Skippers shall be provided according to Chapter VII on structure of the messages and coding in XML format, part XML Message Specification.

9. In order to enable a broad applicability, the XML message definition contains a wide range of elements. The message is structured into entities (tags), such as sections, groups, subgroups and data elements. The use of free text in the data elements should be restricted

to a minimum. Wherever possible, data elements are encoded (standardised). The XML message definition defines the structure of the XML message and the codes. The standardized code values, their explanation and translation into relevant languages are provided in reference tables maintained by the Notices to Skippers (NtS) Expert Group (http://www.ris.eu/expert-groups/notices-skippers-nts) [1].

10. The XML scheme for Notices to Skippers, which is based on the XML definition and the standardised code values and which contains a complete definition for all the XML elements including possible formats and code values is maintained by the Notices to Skippers (NtS) Expert Group.

11. In order to obtain a machine-readable XML message one has to fill out the empty fields in the XML scheme (free text) and to select the code values from the value lists provided in the XML scheme.

III. Water level information

12. Water level information is very important for voyage planning as well as for the safety of navigation. At the moment there is no common standard of referencing water level information (Germany for example is using the GlW, “gleichwertiger Wasserstand”, the Danube Commission is recommending the RNW, Regulierungs Niederwasser, which is defined slightly different. The vertical clearance is mostly referred to a high water level, but sometimes to low water level. The values of gauges are referring to different sea-levels or to special reference points.). Therefore, it is not possible to integrate water level information in systems for automatic calculation of clearances.

13. Reference data for water level gauges relevant to navigation shall be provided by member States. The water level information in the message can be referred to the zero point of a gauge, as it has been done in the past, and the on-board software can calculate the absolute height by use of the reference data.

IV. Weather messages

14. In most tidal waters and on many of the other inland waterways, a number of hydro-meteo items are measured continuously and distributed online. The primary addressee of these measurements are the water(-way) authorities. The distribution of these data to users like skippers of inland waterway vessels varies greatly. In order to facilitate the distribution of hydro-meteo information from hydro-meteo networks to skippers, dedicated weather messages shall be distributed as Notices to Skippers in accordance with the Chapter VII, table. XML message definition.

15. Member States are not obliged to provide weather data. If such data is provided, this shall be done in line with these technical specifications.

V. Way of distribution

16. If the competent authorities provide Notices to Skippers of their own country in such a way that these notices can be used by speakers of other languages, they shall be provided

[1] Secretariat of the NTS Expert group: nts@ris.eu
www.ris.eu/expert_groups/nts

according to this standard in XML format downloadable in the Internet. In order to enable a specific download, Internet services should provide a possibility to select:

(a) Specific waterway section (ID number of a fairway section according to Chapter VII, table); or

(b) Specific part of a waterway, defined by the river-km (fairway hectometer of the ID according to Chapter VII, table) of the starting and the end point;

(c) Time of validity (starting date and end date according to Chapter VII, table); and

(d) Date of publication of the notice (date of publication according to Chapter 7, table).

17. Notices according to this standard can additionally be provided for example by

(a) Wireless Application Protocol (WAP) services;

(b) E-mail services.

18. Data exchange between the authorities is recommended. All the authorities using this standard can integrate Notices of other authorities and countries in their own services. The participating parties (authorities) can agree on the procedure of transmitting the XML messages by push or pull services directly.

VI. Procedure for changes in reference tables and XML scheme of notices to skippers

19. Proposals for amendments to the reference tables or the XML scheme have to be sent together with an explanation, why the amendment is needed to the chairperson of the Notices to Skippers expert group. The chairperson shall distribute the proposal to the members of the expert group. As regards the expert group, the amendment procedure as defined in the Terms of Reference for the Notices to Skippers expert group shall apply. Proposals that are adopted by the expert group will be published on the website of the Notices to Skippers expert group.

20. Proposals for amendment of the resolutions of the United Nations Economic Commission for Europe (UNECE) relating to the International Standard for Notices to Skippers based on consolidated adopted proposals are forwarded to the UNECE Working Party on Inland Water Transport in consultation with the UNECE secretariat. The UNECE secretariat will proceed with such amendment in accordance with the procedures established by the UNECE. In this context, one shall take due account of the work of the expert group. If a proposal for an amendment of the relevant resolution of the UNECE based on consolidated proposals is adopted, the updated resolution is published by the UNECE secretariat.

VII. Structure of the messages and coding in XML format

21. This chapter describes the structure and formatting of standardized electronic Notice to Skippers messages.

7.1 Structure of the Notices to Skippers

7.1.1 General

22. Notices to Skippers messages have the following information sections:

(a) Identification of the message;

(b) Fairway and traffic related message;

(c) Water level related messages as:

- Water level messages;
- Least sounded depth – messages;
- Vertical clearance – messages;
- Barrage status– messages;
- Discharge messages;
- Regime messages;
- Predicted water level – messages;
- Least sounded predicted depth – messages;
- Predicted discharge – messages;

(d) Ice message;

(e) Weather messages.

23. A standardized message in XML format contains therefore also 4 different sections, in addition to the message identification:

(a) Message identification;

(b) Fairway and traffic related messages;

(c) Water level related messages;

(d) Ice messages;

(e) Weather messages.

24. In one message only two sections will be filled: the message identification section and at least one of the following sections: Fairway and Traffic related messages, Water level related message, Ice message or Weather message (mix of sections, different type of message information is not allowed).

25. The fairway and traffic related section contains limitations for a Fairway (link) or an Object. A Notice to Skippers relates to a Fairway or a geographical Object (point). If the message is about an Object, the fairway section shall be filled with the related fairway information without the limitation section.

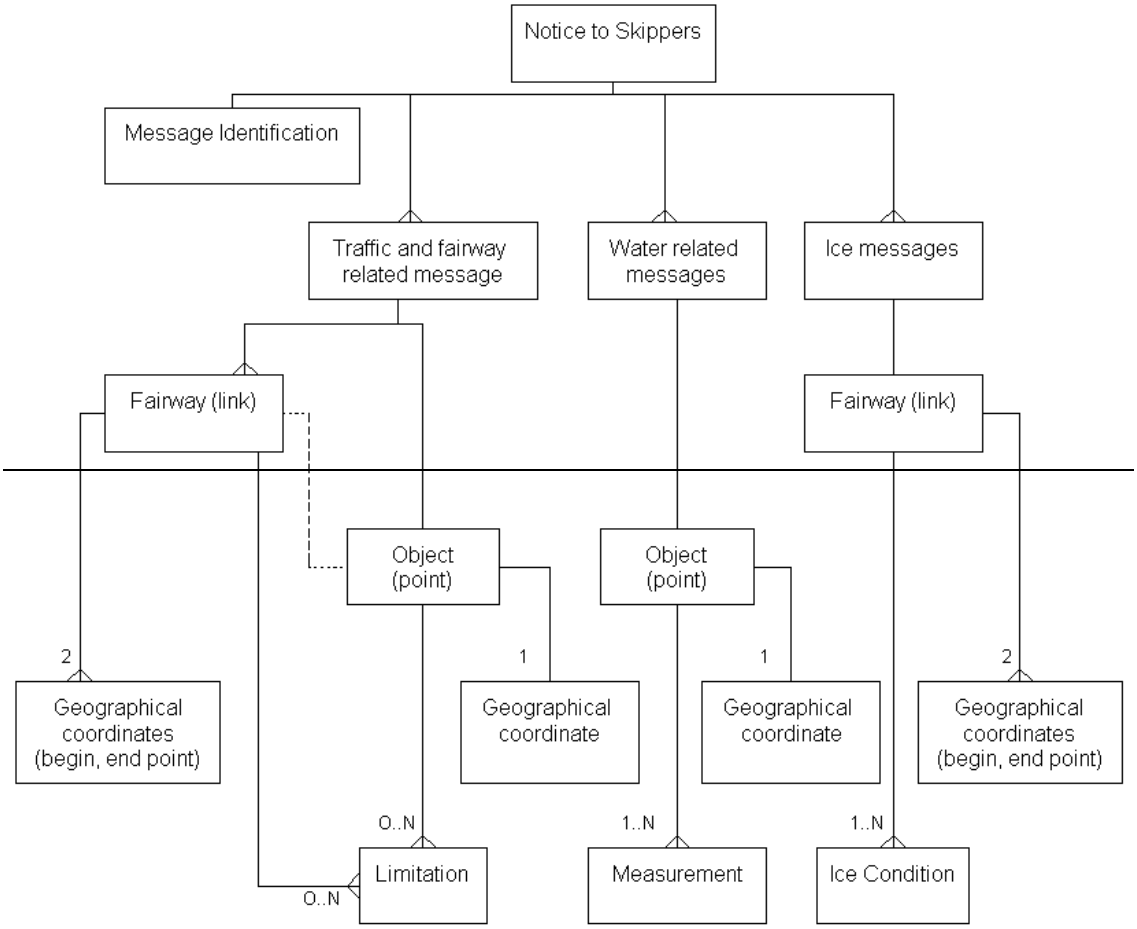
26. If a notice contains different limitations for different target groups or different communication information for different limitations, several fairway and traffic related sections with the same number can be used.

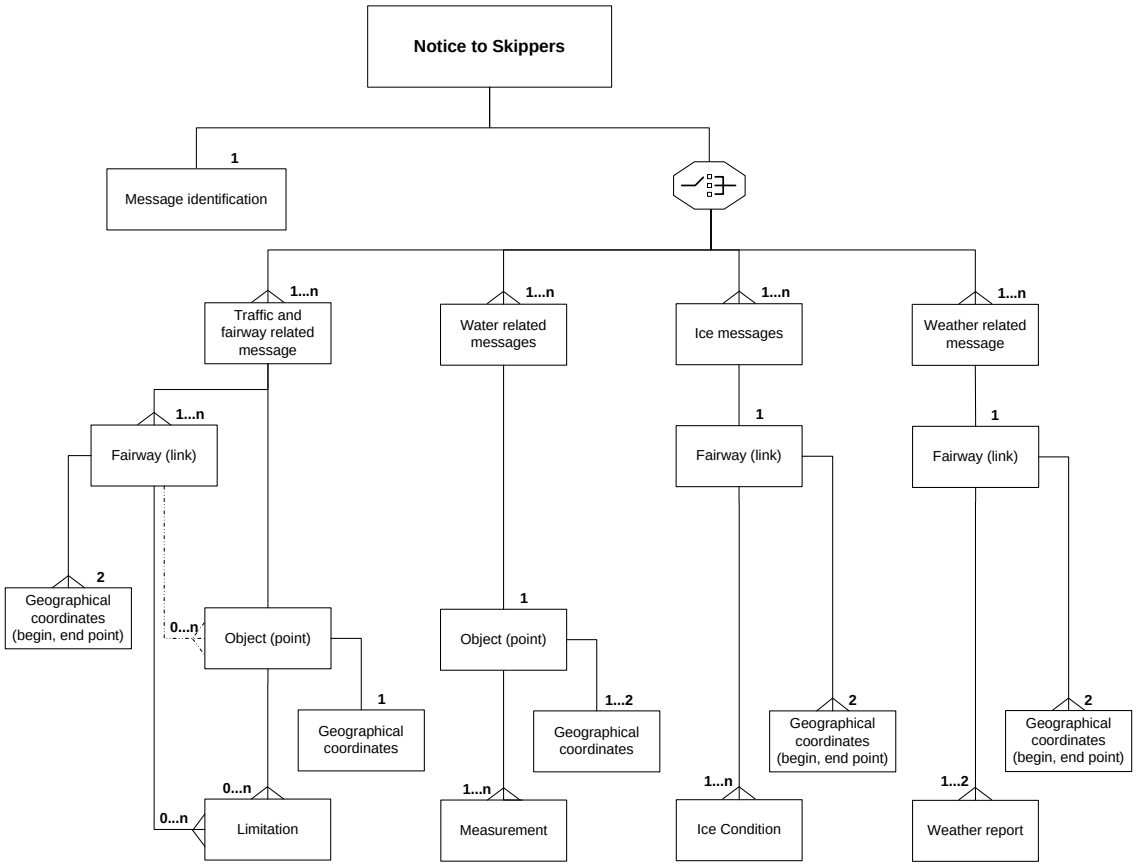
27. The Water level related message section contains measurements for an Object usually a tide gauge.

28. The Ice message section contains information about the ice conditions for a fairway (link).

29. The Weather message contains information about the weather conditions for a fairway (link).

Figure
Notice to Skippers Message structure





7.1.2 XML message definition overview

30. This section gives an overview of the definition of the message coded in XML. The XML scheme containing a complete definition for all the XML elements including the possible formats, is maintained by the Notices to Skippers Expert Group.

Table, XML message definition
(English only)

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
	<?xml version=”1.0” encoding=”utf-8” ?>			
	<RIS_Message>	Notice to Skippers		
1s	<identification>	Identification section	M	1
1.1	<from>String</from>	Sender of the message	M	
1.2	<originator>Riza</originator>	Originator (initiator) of the information in this message	M	
1.3	<country_code>CH</country_code>	Country where message is valid	M	
1.4	<language_code>HU</language_code>	Original language used in the textual info. (contents)	M	
1.5	<district>WaddenZee</district>	District / Region within the specified country, where the message is applicable	C	
1.6	<date_issue>20011231<date_issue>	Date of editing	C	
1.7	<time_issue>1145<time_issue>	Time of editing	C	
1e	</identification>			
2s	<ftm>	Fairway and traffic related section	C	1
2.1	<year>2001</year>	Year of first issuing of the notice	M	
2.2	<number>9999</number>	Number of the notice (per year)	M	
2.3	<serial_number>99</serial_number>	Serial number of the notice (replacements and withdrawals). Original notice: 00	M	
2.4s	<target_group>	Target group information	C	
2.4.1	<target_group_code>ALL</target_group_code>	Target group (vessel type) for this message	M	Default: all
2.4.2	<direction_code>ALL</direction_code>	Upstream or downstream traffic, or both	M	Default: all

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
2.4e	</target_group>			
2.5	<subject_code>OBSTRU</subject_code>	Subject code	M	
2.6s	<validity_period>	Overall period of validity	M	
2.6.1	<date_start>20011231</date_start>	Start date of validity period	M	
2.6.2	<date_end>99999999</date_end>	End date of validity period (indefinite: 99999999)	M	
2.6e	</validity_period>			
2.7	<contents>String</contents>	Contents / notice text in original language	C	
2.8	<source>String</source>	Notice source (authority)	C	
2.9	<reason_code>REPAIR</reason_code>	Reason / justification of notice	C	
2.10s	<communication>	Communication channel information	C	
2.10.1	<reporting_code>INF</reporting_code>	Reporting regime (information or duty to report)	M	5
2.10.2	<communication_code>TEL</communication_code>	Communication code (telephone, VHF etc.)	M	5
2.10.3	<number>String</number>	Telephone, VHF number, e-mail address, URL or teletext	C	5
2.10e	</communication>			
2.11s	<fairway_section>	Fairway section, also available for objects (no. 2.12)	M	2
2.11.1s	<geo_object>	Geo information of fairway	M	
2.11.1.1	<id>String</id>	Unique id of the fairway section (1x or 2x)	M	
2.11.1.2	<name> String </name>	(Local) Name of the fairway section (f.e.: Rhine between bridge A and bridge B)	M	
2.11.1.3	<type_code>FWY</type_code>	Type of geographical object	M	Default: FWY

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
2.11.1.4s	<coordinate>	Fairway section begin and end coordinates (2x)	C	7
2.11.1.4.1	<lat>42 34.1234 N</lat>		M	5
2.11.1.4.2	<long>123 45.1234 E</long>		M	5
2.11.1.4e	</coordinate>			
2.11.1e	</geo_object>			
2.11.2s	<limitation>	Fairway section limitations	C	
2.11.2.1s	<limitation_period>	Limitation periods / intervals	C	
2.11.2.1.1	<date_start>20011231</date_start>	Start date of limitation period (overall)	M	5
2.11.2.1.2	<date_end>20011231</date_end>	End date of limitation period	C	
2.11.2.1.3	<time_start>1420</time_start>	Start time of limitation period	C	
2.11.2.1.4	<time_end>0500</time_end>	End time of limitation period	C	
2.11.2.1.5	<interval_code>SAT</interval_code>	Interval for limitation if applicable	C	
2.11.2.1.e	</limitation_period>			
2.11.2.2	<limitation_code>OBSTRU</limitation_code>	Kind of limitation	M	5
2.11.2.3	<position_code>AL</position_code>	Position, which side	M	5, default: all AL
2.11.2.4	<value>3.14159</value>	Value of limitation (i.e. max draught)	C	
2.11.2.5	<reference_code>NAP</reference_code>	Value reference	C	
2.11.2.6	<indication_code>MAX</indication_code>	Indication of the type of value (select a code from the reference table)	C	
2.11.2e	</limitation>			
2.11.e	</fairway_section>			
2.12s	<object>	Object section ()	C	3

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
2.12.1s	<geo_object>	Geo Information of object	M	5
2.12.1.1.	<id>String</id>	Unique id of the geographical object	M	5
2.12.1.2	<name>String</name>	(Local) Name of the geographical object	M	5
2.12.1.3	<type_code>FWY</type_code>	Type of geographical object	M	5
2.12.1.4s	<coordinate>	Object coordinates (1x)	C	8
2.12.1.4.1	<lat>42 34.1234 N</lat>		M	5
2.12.1.4.2	<long>123 45.1234 E</long>		M	5
2.12.1.4e	</coordinate>			
2.12.1e	</geo_object>			
2.12.2s	<limitation>	Object limitation section	C	
2.12.2.1s	<limitation_period>	Limitation periods / intervals	C	
2.12.2.1.1	<date_start>20011231</date_start>	(see <fairway section>)	M	5
2.12.2.1.2	<date_end>20011231</date_end>		C	
2.12.2.1.3	<time_start>1420</time_start>		C	
2.12.2.1.4	<time_end>0500</time_end>		C	
2.12.2.1.5	<interval_code>SAT</interval_code>		C	
2.12.2.1e	</limitation_period>			
2.12.2.2	<limitation_code>OBSTRU</limitation_code>		M	5
2.12.2.3	<position_code>AL</position_code>		M	5, default: all AL
2.12.2.4	<value>3.14159</value>		C	
2.12.2.5	<reference_code>NAP</reference_code>		C	
2.12.2.6	<indication_code>MAX</indication_code>		C	
2.12.2e	</limitation>			

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
2.12e	</object>			
2e	</ftm>			
3s	<wrm>	Water level related section	C	1
3.1s	<validity_period>	Overall period of validity of water level message	C	
3.1.1	<date_start>20011231</date_start>	Start date of validity period	M	5
3.1.2	<date_end>20011231</date_end>	End date of validity period	M	5
3.1e	</validity_period>			
3.2s	<geo_object>	Geo Information of measurement location, tide gauge	M	5
3.2.1	<id>String</id> (Waterway section)	Unique id of the geographical object	M	5
3.2.2	<name>String</name> (Pegelname)	(Local) Name of the geographical object	M	5
3.2.3	<type_code>FWY</type_code>	Type of geographical object	M	5, default: FWY
3.2.4s	<coordinate>	Object coordinates (1x or 2x)	C	9
3.2.4.1	<lat>42 34.1234 N</lat>		M	5
3.2.4.2	<long>123 45.1234 E</long>		M	5
3.2.4e	</coordinate>			
3.2.e	</geo_object>			
3.3	<reference_code>NAP</reference_code>	Value reference (measurement reference)	C	6
3.4s	<measure>	Measurements (normal or predicted values)	M	5
3.4.1	<predicted>1</predicted>	Predicted measurement (1) or real measurement (0)	M	5
3.4.2	<measure_code>DIS</measure_code>	Kind of water level related information	M	5
3.4.3	<value>314159</value>	Value	C	10

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
3.4.4	<difference>314159</difference>	Difference with previous measurement	C	
3.4.5	<barrage_code>OPD</barrage_code>	Barrage status	C	11
3.4.6	<regime_code>HIG</regime_code>	Regime applicable	C	12
3.4.7	<measuredate>20011231</measuredate>	Date of measurement	M	5
3.4.8	<measuretime>1420</measuretime>	Time of measurement	M	5
3.4e	</measure>			
3e	</wrm>			
4s	<icem>	Ice related section	C	1
4.1s	<validity_period>	Overall period of validity of ice information	C	
4.1.1	<date_start>20011231</date_start>	Start of validity period	M	5
4.1.2	<date_end>20011231</date_end>	End of validity period	M	5
4.1e	</validity_period>			
4.2s	<fairway_section>	Fairway	M	5
4.2.1	<geo_object>	Geo Information of fairway location	M	5
4.2.1.1	<id>String</id>	Unique id of the fairway section (1x or 2x)	M	5
4.2.1.2	<name>String</name>	(Local) Name of the fairway section	M	5
4.2.1.3	<type_code>FWY</type_code>	Type of geographical object	M	5, default: FWY
4.2.1.4	<coordinate>	Fairway section begin and end coordinates (2x)	C	7
4.2.1.4.1	<lat>42 34.1234 N</lat>		M	5
4.2.1.4.2	<long>123 45.1234 E</long>		M	5
4.2.1.4e	</coordinate>			
4.2.1e	</geo_object>			

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
4.2.2s	<limitation>	Fairway section limitations		not applicable
4.2.2e	</limitation>	Fairway section limitations		not applicable
4.2e	</fairway_section>			
4.3s	<ice_condition>	Ice conditions	M	5
4.3.1	<measuredate>20011231</measuredate>	Date of measurement	M	5
4.3.2	<measuretime>1420</measuretime>	Time of measurement	M	5
4.3.3	<ice_condition_code>A</ice_condition_code>	Condition code	C	4
4.3.4	<ice_accessibility_code>A</ice_accessibility_code>	Accessibility code	C	4
4.3.5	<ice_classification_code>A</ice_classification_code>	Classification code	C	4
4.3.6	<ice_situation_code>NOLA</ice_situation_code>	Situation code	C	4
4.3e	</ice_condition>			
4e	</icem>			
5s	<werm>	Weather related section	C	1
5.1s	<validity_period>	Period of validity	M	5, 13
5.1.1	<date_start>20011231</date_start>	Start of validity period	M	
5.1.2	<date_end>20011231</date_end>	End of validity period (indefinite: 99999999)	M	
5.1e	</validity_period>			
5.2s	<fairway_section>	Fairway	M	5
5.2.1s	<geo_object>	Geo Information of fairway location	M	5
5.2.1.1	<id>String</id>	Unique id of the fairway section (1x or 2x)	M	5
5.2.1.2	<name>String</name>	(Local) Name of the fairway section	M	5
5.2.1.3s	<coordinate>	Fairway section begin and end co-ordinates (2x)	C	7

Nr.	*Tag (Group headers and closers are boldly printed)*	*Description*	*Mandatory Conditional*	*Rule applicable*
5.2.1.3.1	<lat>42 34.1234 N</lat>		M	5
5.2.1.3.2	<long>123 45.1234 E</long>		M	5
5.2.1.3e	</coordinate>			
5.2.1e	</geo_object>			
5.2e	</fairway_section>			
5.3s	<weather_report>	Weather Report (1x or 2x)	M	5
5.3.1	<forecast>0</forecast>	Actual (0) or Forecast (1) report	M	
5.3.2	<weather_class_code>ORAIN</weather_class_code>	Classification of weather report (0..Nx)	M	5, 14
5.3.3s	<weather_item>	Weather items (0..Nx)	C	5
5.3.3.1	<weather_item_code>WI</weather_item_code>	Weather item type (Wind, Wave etc)	M	5
5.3.3.2	<value_min>4</value_min>	Actual or Minimum value	M	
5.3.3.3	<value_max>5</value_max>	Maximum value	C	
5.3.3.4	<value_gusts>7</value_gusts>	Gusts value (Wind)	C	
5.3.3.5	<weather_category_code>2</weather_category_code>	Classification of wind report	C	
5.3.3.6	<direction_code_min>W</direction_code_min>	Direction of wind or wave	C	
5.3.3.7	<direction_code_max>N</direction_code_max>	Direction of wind or wave	C	
5.3.3e	</ weather_item >			
5.3e	</weather_report>			
5e	</werm>			
	</RIS_Message>			

31. The following rules apply to the table:

(a) In one message at least 2 sections have to be filled in:

- the identification section (1);
- one of the sections:
  - Fairway and traffic related messages (2);
  - Water level related message (3);
  - Ice message (4);
  - Weather message (5).

(b) Group 2.11 (fairway section) is also available for object related messages (no. 2.12);

(c) Group 2.12 (objects) is not available for fairway related messages (no. 2.11);

(d) In group 4.3, at least one of the conditional elements 4.3.3 to 4.3.6 have to be filled in;

(e) If a conditional group contains mandatory subgroups or elements, these are only mandatory if the group on the higher level is applied;

(f) Only mandatory for water levels and vertical clearances;

(g) A fairway section is defined by the begin and end coordinates (2 sets of coordinates);

(h) An object is defined by the coordinates of its center point (1 set of coordinates);

(i) A wrm geo_object has 2 sets of coordinates in case the type_code is FWY, otherwise only 1 set of coordinates is to be used;

(j) Mandatory if measure_code is either "DIS", "VER", "LSD" or "WAL";

(k) Mandatory if measure code is "BAR";

(l) Mandatory if measure code = "REG";

(m) Predictions for different periods require individual weather messages;

(n) May contain combinations of weather_class_code tags.

7.1.3 Explanation of tags

32. The meaning of the different tags used in the XML definition is described on the page “Tags” of the reference table for Notices to Skippers.

7.1.4 Explanation of codes

33. The meaning of the different codes used in the XML definition is described in the reference tables for Notices to Skippers. The formats and possible values of all XML elements are described in the XML Scheme for Notices to Skippers.

34. Notices to Skippers can be divided into two categories, namely URGENT and NOT URGENT. Urgent notices always contain a limitation for shipping traffic. There must therefore be one or more records in the limitations section. If there is no limitation section, the message is not urgent.

35. Latitude (Lat) and Longitude (Long) coordinates are referred to WGS 84 and presented in degrees and minutes with at least three, but preferable four decimals (dd mm.mmmm N, ddd mm.mmmm E).

36. Decimals in numeric fields are indicated with a decimal point (“.”). No thousand separators are used.

37. Only cm, m^3/s, h, km/h, kW, Bft (wind), mm/h (rain) and degree Celsius are allowed to be used as units.

38. For Waterways there is no Objects section. For Objects (bridges, etc.) the waterway section shall be included.

39. The location code according to the technical specification for electronic ship reporting has to be used as unique ID.

7.1.4.1 Subject codes assigned to the notices to skippers

40. In the following table, the meaning of and the situations defined by the different (examples of) subject codes are explained.

Blockage	*In case no form of navigation is possible:* • *through all the lock chambers of a lock;* • *through all the passages of a bridge;* • *passing a specified point on the fairway;* • *on a specified section of the fairway.*
Partial obstruction	In case limited navigation is possible: • through one or more lock chambers of a lock, leaving at least one open; • through one or more passages of a bridge, leaving at least one open; • passing a specified point on the fairway, leaving a part of the fairway open.
Delay	In case an obstruction occurs, limited in time, at a bridge, lock or on a section, between specified start and end date. *For example. Delay of at most 2 hours on November 13 2002 between 08:00 and 17:00.* *Encoded:* *date_start: 20021113* *date_end: 20021113* *time_start: 0800* *time_end: 1700* *limitation_code: Delay* *Position_code: all* *value: 2*
No service	In case a movable bridge is not operated during a specified period. This period should lie within the normal operating hours. No service of a lock is an “Obstruction” or “Delay”. No service of a movable bridge means that passing under the bridge still is possible. Otherwise it is an ‘Obstruction’.
Change Service	In case a modification in the normal operating hours occurs at a lock

	In case no form of navigation is possible: • *through all the lock chambers of a lock;* • *through all the passages of a bridge;* • *passing a specified point on the fairway;*
Blockage	• *on a specified section of the fairway.*
	or a bridge. Normally this means a limitation of the operating hours, due to work, rather than an increase. A limitation in the operating hours of a lock usually implies an obstruction. For example, if a lock normally is operated between 06:00 and 20:00, and the operating hours are now limited to between 10:00 and 14:00, then this will result in an obstruction between 06:00 and 10:00 and another obstruction between 14:00 and 20:00. A limitation in the operating hours of a bridge usually implies “No Service”.
Vessel length	In case somewhere a smaller maximum length for passing vessels is allowed/possible. Usually this occurs at a lock (half lock chamber).
Clearance width	In case somewhere a smaller maximum width for passing vessels is available. This occurs during work on a lock/bridge. This subject is also used if the available width of the fairway is less, even if this has no influence on the maximum available width of the waterway.
Vessel air draught	In case somewhere a smaller maximum height for passing vessels is allowed.
Clearance height	This occurs also if the vertical clearance is locally decreased by for example painting equipment.
Vessel draught	In case somewhere a smaller maximum draught for passing vessels is allowed.
Available depth	In case the least sounded depth is modified. This has no impact on the maximum draught.
No mooring	In case somewhere on the fairway mooring is not allowed.
Change marks	In case a change occurs in the fairway marks used for navigational purposes, such as buoys, beacons, sector lights, notice marks, etc. Encoding of “Change marks” can be used for new marks as it indicates the change from the state “no marks” to “some marks”.
Work	Other activities on or near the fairway which do not fall within the mentioned subjects.
Dredging	Dredging activities for which none of the other mentioned subjects are valid.
Exercises	Exercises for which none of the other mentioned subjects are valid.

	In case no form of navigation is possible:
	• *through all the lock chambers of a lock;*
	• *through all the passages of a bridge;*
	• *passing a specified point on the fairway;*
Blockage	• *on a specified section of the fairway.*
Event	Events (rowing competitions, fireworks etc.) where none of the other mentioned subjects are valid.
Announcement	All other notices where none of the other (structured) subjects are valid.
Notice withdrawn	The message has to be published as a serial number of the original message.

41. If for one single message more subjects are possible, then the limitation with the greatest impact on shipping traffic is selected.

7.1.4.2 Explanation of ice codes

42. The meaning of the ice codes used in the XML definition is described in the reference tables of Notices to Skippers.

43. The thickness indicated in column 2 of the ice_condition_code gives information on average thickness only. The description has to be used to select the code for a specific situation.

7.1.4.3 Encoding of limitation periods

44. The limitation period has to be encoded by

(a) date_start

(b) date_end

(c) time_start

(d) time_end

(e) interval_code

45. As the limitation period is very important for voyage planning, limitation periods have to be encoded in accordance with the following examples:

Limitation period	*date_start*	*date_end*	*time_start*	*time_end*	*Interval_code*
2005-01-01, 07:00 to 2005-01-31, 20:00	20050101	20050131	0700	2000	Continuous (C)
2005-01-01 to 2005-01-31, each day from 07:00 to 20:00	20050101	20050131	0700	2000	Daily (M)
2005-01-01 to 2005-01-31, every working day (Monday to Friday) from 07:00 to 20:00	20050101	20050131	0700	2000	Monday to Friday (M)
2005-01-01 to 2005-01-21, each week from Monday 07:00 to Friday 20:00	20050103	20050107	0700	2000	Continuous (C)
	20050110	20050114	0700	2000	Continuous (C)
	20050117	20050121	0700	2000	Continuous (C)

Limitation period	*date_start*	*date_end*	*time_start*	*time_end*	*Interval_code*
2005-01-01 to 2005-01-31, each day from 07:00 to 20:00 with the exception of 2005-01-06	20050101	20050131	0700	2000	Daily (M)
	20050106	20050106			With the exception of (M)