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Working Party on Inland Water Transport

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

Fifty-fifth session

Geneva, 19–21 June 2019

Item 7 (b) of the provisional agenda

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)

Revision of the International Standard for Notices to Skippers in Inland Navigation (resolution No. 80): Appendix C: NtS XML Schema Definition (XSD)*

**Transmitted by the Chair of the International Notices to Skippers
Expert Group**

* The text of the appendix is reproduced from Commission Implementing Regulation (EU) 2018/2032 of 20 November 2018 amending Commission Regulation (EC) No 416/2007 concerning the technical specifications for Notices to Skippers (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R2032>).

Appendix C

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
	xmlns:nts="http://www.ris.eu/nts/4.0.4.0"			
	<RIS_Message>	Notice to Skippers		
1s	<identification>	Identification section	M	1
1.1	<internal_id> xs:string (64)</internal_id>	Internal ID	C	
1.2	<from> xs:string (64)</from>	Sender (System) of the message	M	
1.3	<originator> xs:string (64)</originator>	Originator (initiator) of the information in this message	M	
1.4	<country_code> nts:country_code_enum</country_code>	Country where message is valid	M	
1.5	<language_code> nts:language_code_enum</language_code>	Original language used in the textual info. (contents)	M	
1.6	<district> xs:string (64)</district>	District / Region within the specified country, where the message is applicable	C	
1.7	<date_issue> xs:dateTime<date_issue>	Date and time of publication including time zone (yyyy-mm-ddThh:mm:ss+hh:mm)	M	
1e	</identification>			
2s	<ftm>	Fairway and traffic related section	C	1
2.1	<internal_id> xs:string (64)</internal_id>	Internal ID	C	
2.2s	<nts_number>	NtS Number	M	
2.2.1	<organisation> xs:string (64)</organisation	Name of the publishing organisation (NtS Provider)	M	
2.2.2	<year> xs:gYear (1900-9999)</year>	Year of first issuing of the notice	M	
2.2.3	<number> xs:integer (0-99999999)</number>	Number of the notice (per year, starting with: 1, 0 shall not be used for published notices)	M	
2.2.4	<serial_number> xs:integer (0-99)</serial_number>	Serial number of notice (replacements and withdrawals), original notice: 0	M	
2.2e	</nts_number>			
2.3s	<target_group>	Target group information	C	
2.3.1	<target_group_code> nts:target_group_code_enum</target_group_code>	Target group (vessel type) for this message	M	5
2.3.2	<direction_code> nts:direction_code_enum</direction_code>	Upstream or downstream traffic, or both	M	5
2.3e	</target_group>			
2.4	<subject_code> nts:subject_code_enum</subject_code>	Subject code	M	
2.5s	<validity_period>	Overall period of validity	M	
2.5.1	<date_start> xs:date</date_start>	Start date of validity period including time zone (yyyy-mm-dd+hh:mm)	M	

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
2.5.2	<date_end> xs:date</date_end>	End date of validity period including time zone (yyyy-mm-dd+hh:mm)	C	
2.5e	</validity_period>			
2.6	<contents>xs:string (500)</contents>	Additional information in local language	C	
2.7	<source>xs:string (64)</source>	Notice source (name of authority)	C	
2.8	<reason_code>nts:reason_code_enum</reason_code>	Reason / justification of notice	C	
2.9s	<communication>	Communication channel information	C	
2.9.1	<reporting_code>nts:reporting_code_enum</reporting_code>	Reporting regime (information or duty to report)	M	5
2.9.2	<communication_code>nts:communication_code_enum</communication_code>	Communication code (telephone, VHF etc.)	M	5
2.9.3	<number>xs:string (128)</number>	Telephone, VHF number (including callsign), e-mail address, URL or teletext	C	
2.9.4	<label>xs:string (256)</label>	Name of the attachment or additional information	C	
2.9.5	<remark>xs:string (1024)</remark>	Additional remarks concerning the communication	C	
2.9e	</communication>			
2.10s	<fairway_section>	Fairway section, also available for objects (no 2.11)	C	2
2.10.1s	<geo_object>	Geo information of fairway	M	5
2.10.1.1	<id>nts:isrs_code_type</id>	ISRS Location Code of the fairway section (2x) Pattern=[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}	M	7
2.10.1.2	<name>xs:string (256)</name>	Local name of the fairway section (f.e.: Rhine between bridge A and bridge B)	M	
2.10.1.3	<type_code>nts:type_code_enum</type_code>	Type of geographical object (default=FWY)	M	
2.10.1.4	<position_code>nts:position_code_enum</position_code>	Describes the position related to the fairway	C	
2.10.1.5s	<coordinate>	Fairway section begin and end coordinates (2x)	C	7
2.10.1.5.1	<lat>xs:string (10-12)</lat>	[d]d mm.mmm[m] N	M	5
2.10.1.5.2	<long>xs:string (10-13)</long>	[d][d]d mm.mmm[m] E	M	5
2.10.1.5e	</coordinate>			
2.10.1.6	<fairway_name>xs:string (256)</fairway_name>	Waterway name (usefull if no RIS Index is available).	C	
2.10.1e	</geo_object>			
2.10.2s	<limitation>	Fairway section limitations	C	

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
2.10.2.1s	<limitation_period>	Limitation periods / intervals (All limitations have to include a limitation period with an interval code in order to allow proper calculations within voyage planning applications)	C	
2.10.2.1.1	<date_start> xs:date </date_start>	Start date of limitation period (overall) INCLUDING time zone format=yyyy-mm-dd+hh:mm	M	5
2.10.2.1.2	<date_end> xs:date </date_end>	End date of limitation period INCLUDING time zone format=yyyy-mm-dd+hh:mm	C	
2.10.2.1.3	<time_start> xs:time </time_start>	Start time of limitation period WITHOUT time zone format=hh:mm:ss [whereas ss=00]	C	
2.10.2.1.4	<time_end> xs:time </time_end>	End time of limitation period WITHOUT time zone format=hh:mm:ss [whereas ss=00]	C	
2.10.2.1.5	<interval_code> nts:interval_code_enum </interval_code>	Interval for limitation (mandatory M(5) but is set to C to be compatible with former XSD version)	C	
2.10.2.1e	</limitation_period>			
2.10.2.2	<limitation_code>nts:limitation_code_enum</limitation_code>	Kind of limitation	M	5
2.10.2.3	<position_code>nts:position_code_enum</position_code>	Describes the position of the limitation related to the fairway	C	
2.10.2.4	<value>xs:float</value>	Value of limitation (i.e. max draught)	C	
2.10.2.5	<unit>nts:unit_enum</unit>	Unit of the value of the limitation	C	
2.10.2.6	<reference_code>nts:reference_code_enum</reference_code>	Value reference	C	
2.10.2.7	<indication_code>nts:indication_code_enum</indication_code>	Minimum or maximum or reduced by	C	
2.10.2.8s	<target_group>	Target group information	C	
2.10.2.8.1	<target_group_code> nts:target_group_code_enum </target_group_code>	Target group (vessel type) for this limitation	M	5
2.10.2.8.2	<direction_code> nts:direction_code_enum </direction_code>	Upstream or downstream traffic, or both	M	5
2.10.2.8e	</target_group>			
2.10.2e	</limitation>			
2.10e	</fairway_section>			
2.11s	<object>	Object section	C	2
2.11.1s	<geo_object>	Geo information of object	M	5
2.11.1.1	<id>nts:isrs_code_type</id>	ISRS Location Code of the object (1x) Pattern=[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}	M	8
2.11.1.2	<name>xs:string (256)</name>	Local name of the aggregated object	M	
2.11.1.3	<type_code>nts:type_code_enum</type_code>	Type of geographical object	M	

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
2.11.1.4	<position_code> nts:position_code_enum</position_code>	Describes the position related to the object	C	
2.11.1.5s	<coordinate>	Object coordinates (1x)	C	8
2.11.1.5.1	<lat>xs:string (10-12)</lat>	[d]d mm.mmm[m] N	M	5
2.11.1.5.2	<long>xs:string (10-13)</long>	[d][d]d mm.mmm[m] E	M	5
2.11.1.5e	<coordinate>			
2.11.1.6	<fairway_name> xs:string (256)</fairway_name>	Waterway name (usefull if no RIS Index is available).	C	
2.11.1e	<geo_object>			
2.11.2s	<limitation>	Object limitation section	C	
2.11.2.1s	<limitation_period>	Limitation periods / intervals (All limitations have to include a limitation period with an interval code in order to allow proper calculations within voyage planning applications)	C	
2.11.2.1.1	<date_start>xs:date</date_start>	Start date of limitation period (overall) INCLUDING time zone format=yyyy-mm-dd+hh:mm	M	5
2.11.2.1.2	<date_end>xs:date</date_end>	End date of limitation period INCLUDING time zone format=yyyy-mm-dd+hh:mm	C	
2.11.2.1.3	<time_start>xs:time</time_start>	Start time of limitation period WITHOUT time zone format=hh:mm:ss [whereas ss=00]	C	
2.11.2.1.4	<time_end>xs:time</time_end>	End time of limitation period WITHOUT time zone format=hh:mm:ss [whereas ss=00]	C	
2.11.2.1.5	<interval_code>nts:interval_code_enum</interval_code>	Interval for limitation (mandatory M(5) but is set to C to be compatible with former XSD version)	C	
2.11.2.1e	<limitation_period>			
2.11.2.2	<limitation_code> nts:limitation_code_enum</limitation_code>	Kind of limitation	M	5
2.11.2.3	<position_code> nts:position_code_enum</position_code>	Describes the position of the limitation related to the fairway	C	
2.11.2.4	<value> xs:float</value>	Value of limitation (i.e. max draught)	C	
2.11.2.5	<unit> nts:unit_enum</unit>	Unit of the value of the limitation	C	
2.11.2.6	<reference_code> nts:reference_code_enum</reference_code>	Value reference	C	
2.11.2.7	<indication_code> nts:indication_code_enum</indication_code>	Minimum or maximum or reduced by	C	
2.11.2.8s	<target_group>	Target group information	C	
2.11.2.8.1	<target_group_code>nts:target_group_code_enum</target_group_code>	Target group (vessel type) for this limitation	M	5
2.11.2.8.2	<direction_code>nts:direction_code_enum</direction_code>	Upstream or downstream traffic, or both	M	5

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
2.1.1.2.8e	</target_group>			
2.1.1.2e	</limitation>			
2.1.1e	</object>			
2e	</ftm>			
3s	<wrm>	Water related section	C	1
3.1	<internal_id> xs:string (64) </internal_id>	Internal ID	C	
3.2s	<nts_number>	NtS Number	C	
3.2.1	<organisation> xs:string (64) </organisation	Name of the publishing organisation (NtS Provider)	M	5
3.2.2	<year> xs:gYear (1900-9999) </year>	Current year of the notice	M	5
3.2.3	<number> xs:integer (0-99999999) </number>	Number of the notice (see Developers Guide for WRM-Message Number generation)	M	5
3.2.4	<serial_number> xs:integer (0-99) </serial_number>	Serial number of the notice (see Developers Guide for WRM-Message Serial Number generation)	M	5
3.2e	</nts_number>			
3.3s	<validity_period>	Overall period of validity	M	
3.3.1	<date_start> xs:date </date_start>	Start date of validity period including time zone (yyyy-mm-dd+hh:mm)	M	
3.3.2	<date_end> xs:date </date_end>	End date of validity period including time zone (yyyy-mm-dd+hh:mm)	C	
3.3e	</validity_period>			
3.4s	<geo_object>	Geo Information of measurement location	M	5
3.4.1	<id> nts:ists_code_type </id>	ISRS Location Code of the object/fairway (1x or 2x) Pattern=[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}	M	9
3.4.2	<name> xs:string (256) </name>	Local name of the object/fairway	M	
3.4.3	<type_code> nts:type_code_enum </type_code>	Type of geographical object/fairway	M	
3.4.4	<position_code> nts:position_code_enum </position_code>	Describes the position related to the object/fairway	C	
3.4.5s	<coordinate>	Object/Fairway coordinates (1x or 2x)	C	9
3.4.5.1	<lat> xs:string (10-12) </lat>	[d]d mm.mmm[m] N	M	5
3.4.5.2	<long> xs:string (10-13) </long>	[d][d]d mm.mmm[m] E	M	5
3.3.5e	</coordinate>			

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
3.3.6	<fairway_name> <xs:string (256)</fairway_name>	Waterway name (usefull if no RIS Index is available).	C	
3.4e	</geo_object>			
3.5	<reference_code> nts:reference_code_enum</reference_code>	Value reference (measurement reference)	C	6
3.6s	<measure>	Measurements (normal or predicted values)	M	5
3.6.1	<predicted> xs:boolean</predicted>	Predicted measurement (1 or true) or real measurement (0 or false)	M	
3.6.2	<measure_code> nts:measure_code_enum</measure_code>	Kind of water related information	M	
3.6.3	<value> xs:float</value>	Measured or predicted value	C	10
3.6.4	<value_min> xs:float</value_min>	Lowest value of confidence interval	C	
3.6.5	<value_max> xs:float</value_max>	Highest value of confidence interval	C	
3.6.6	<unit> nts:unit_enum</unit>	Unit of the water related value	C	
3.6.7	<barrage_code> nts:barrage_code_enum</barrage_code>	Barrage status	C	11
3.6.8	<regime_code> nts:regime_code_enum</regime_code>	Regime applicable	C	12
3.6.9	<measuredate> xs:dateTime</measuredate>	Date and Time of measurement or predicted value including time zone Format=yyyy-mm-ddThh:mm:ss+hh:mm	M	
3.6.10s	<difference>	Difference with comparative value	C	
3.6.10.1	<value_difference> xs:float</value_difference>	Difference with comparative value	M	5
3.6.10.2	<time_difference> xs:duration</time_difference>	Time difference to measuredate of comparative value	M	5
3.6.10e	</difference>			
3.6e	</measure>			
3e	</wtm>			
4s	<icem>	Ice related section	C	1
4.1	<internal_id> xs:string (64)</internal_id>	Internal ID	C	
4.2s	<nts_number>	NtS Number	M	
4.2.1	<organisation> xs:string (64)</organisation	Name of the publishing organisation (NtS Provider)	M	
4.2.2	<year> xs:gYear (1900-9999)</year>	Current year of the notice	M	
4.2.3	<number> xs:integer (0-9999999)</number>	Number of the notice (per year, starting with: 1, 0 shall not be used for published notices)	M	
4.2.4	<serial_number> xs:integer (0-9)</serial_number>	Serial number of notice, original notice: 0	M	
4.2e	</nts_number>			

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
4.3s	<validity_period>	Overall period of validity	M	
4.3.1	<date_start> xs:date</date_start>	Start date of validity period including time zone (yyyy-mm-dd+hh:mm)	M	
4.3.2	<date_end> xs:date</date_end>	End date of validity period including time zone (yyyy-mm-dd+hh:mm)	C	
4.3e	</validity_period>			
4.4s	<fairway_section>	Fairway section — the limitation inside the fairway section cannot be used in the ICEM	M	5
4.4.1s	<geo_object>	Geo Information of fairway	M	5
4.4.1.1	<id> nts:isrs_code_type</id>	ISRS Location Code of the fairway section (2x) Pattern=[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}	M	
4.4.1.2	<name> xs:string (256)</name>	Local Name of the fairway section (f.e.: Rhine between bridge A and bridge B)	M	
4.4.1.3	<type_code> nts:type_code_enum</type_code>	Type of geographical object (default=FWY)	M	
4.4.1.4	<position_code> nts:position_code_enum</position_code>	Describes the position related to the fairway	C	
4.4.1.5s	<coordinate>	Fairway section begin and end coordinates (2x)	C	7
4.4.1.5.1	<lat> xs:string (10-12)</lat>	[d]d mm.mmm[m] N	M	5
4.4.1.5.2	<long> xs:string (10-13)</long>	[d][d]d mm.mmm[m] E	M	5
4.4.1.5e	</coordinate>			
4.4.1.6	<fairway_name> xs:string (256)</fairway_name>	Waterway name (usefull if no RIS Index is available).	C	
4.4.1e	</geo_object>			
4.4e	</fairway_section>			
4.5s	<ice_condition>	Ice conditions	M	
4.5.1	<measuredate> xs:dateTime</measuredate>	Date and Time of measurement or prediction including time zone Format=yyyy-mm-ddThh:mm:ss+hh:mm	M	
4.5.2	<ice_condition_code> nts:ice_condition_code_enum</ice_condition_code>	Condition code	C	4
4.5.3	<ice_accessibility_code> nts:ice_accessibility_code_enum</ice_accessibility_code>	Accessibility code	C	4
4.5.4	<ice_classification_code> nts:ice_classification_code_enum</ice_classification_code>	Classification code	C	4
4.5.5	<ice_situation_code> nts:ice_situation_code_enum</ice_situation_code>	Situation code	C	4
4.5e	</ice_condition>			
4e	</icem>			

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
5s	<werm>	Weather related section	C	1
5.1	<internal_id>xs:string (64)</internal_id>	Internal ID	C	
5.2s	<nts_number>	NtS Number	C	
5.2.1	<organisation>xs:string (64)</organisation>	Name of the publishing organisation (NtS Provider)	M	5
5.2.2	<year>xs:gYear (1900-9999)</year>	Year of issuing of the notice	M	5
5.2.3	<number>xs:integer (0-99999999)</number>	Number of the notice (per year, starting with: 1, 0 shall not be used for published notices)	M	5
5.2.4	<serial_number>xs:integer (0-99)</serial_number>	Serial number of notice, original notice: 0	M	5
5.2e	</nts_number>			
5.3s	<validity_period>	Overall period of validity	M	13
5.3.1	<date_start>xs:date</date_start>	Start date of validity period including time zone (yyyy-mm-dd+hh:mm)	M	
5.3.2	<date_end>xs:date</date_end>	End date of validity period including time zone (yyyy-mm-dd+hh:mm)	C	
5.3e	</validity_period>			
5.4s	<fairway_section>	Fairway section	M	
5.4.1s	<geo_object>	Geo Information of fairway	M	
5.4.1.1	<id>nts:isrs_code_type</id>	ISRS Location Code of the fairway section (2x) Pattern=[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}	M	7
5.4.1.2	<name>xs:string (256)</name>	Local name of the fairway section (f.e.: Rhine between bridge A and bridge B)	M	
5.4.1.3	<type_code>nts:type_code_enum</type_code>	Type of geographical object (default=FWY)	M	
5.4.1.4	<position_code>nts:position_code_enum</position_code>	Describes the position related to the fairway	C	
5.4.1.5s	<coordinate>	Fairway section begin and end coordinates (2x)	C	7
5.4.1.5.1	<lat>xs:string (10-12)</lat>	[d]d mm.mmm[m] N	M	5
5.4.1.5.2	<long>xs:string (10-13)</long>	[d][d]d mm.mmm[m] E	M	5
5.4.1.5e	</coordinate>			
5.4.1.6	<fairway_name>xs:string (256)</fairway_name>	Waterway name (usefull if no RIS Index is available).	C	
5.4.1e	</geo_object>			
5.4e	</fairway_section>			
5.5s	<weather_report>	Weather Report (1x or 2x)	M	
5.5.1	<measuredate>xs:dateTime</measuredate>	Date and Time of measurement or predicted value including time zone Format=yyyy-mm-ddThh:mm:ss+hh:mm	C	

No	Tag (Group headers and closers are boldly printed)	Description	Occ.	Rule
5.5.2	<code><forecast>xs:boolean</forecast></code>	Forecast (true or 1) OR Actual report (false or 0)	M	
5.5.3	<code><weather_class_code>nts:weather_class_code</weather_class_code></code>	Classification of weather report (0..Nx)	M	3
5.5.4s	<code><weather_item></code>	Weather items (0..Nx)	C	
5.5.4.1	<code><weather_item_code>nts:weather_item_code_enum</weather_item_code></code>	Weather item type (Wind, Wave etc)	M	5
5.5.4.2	<code><value_min>xs:float</value_min></code>	Actual or Minimum value	M	5
5.5.4.3	<code><value_max>xs:float</value_max></code>	Maximum value	C	
5.5.4.4	<code><value_gusts>xs:float</value_gusts></code>	Gusts value (Wind)	C	
5.5.4.5	<code><unit>nts:unit_enum</unit></code>	Unit of the value	C	
5.5.4.6	<code><weather_category_code>nts:weather_category_code_enum</weather_category_code></code>	Classification of wind report	C	
5.5.4.7	<code><direction_code_min>nts:weather_direction_code_enum</direction_code_min></code>	Direction of wind or wave	C	
5.5.4.8	<code><direction_code_max>nts:weather_direction_code_enum</direction_code_max></code>	Direction of wind or wave	C	
5.5.4e	<code></weather_item></code>			
5.5e	<code></weather_report></code>			
5e	<code></werm></code>			

Legend for Occurrence (Occ.):

Mandatory (M)

Conditional (C)

Rules applicable to table "NtS XSD V.4.0.4.0":

1.	In one <RIS Message> at least two sections have to be filled in: — the <identification> section (1), — one of the following sections: — <ftm> (fairway and traffic related messages) (2), — <wrm> (water related message) (3), — <icem> (ice message) (4), — <werm> (weather related message) (5).
2.	At least one of the Group 2.10 (<fairway section>) or Group 2.11 (<object>) has to be given within <ftm>.
3.	A combinations of <weather_class_code> tags (5.5.3) in section <weather_report> can be given.
4.	In group 4.5 (<ice condition>) at least one of the conditional elements 4.5.2 to 4.5.5 have to be given.
5.	If a conditional group contains mandatory subgroups or elements these will only be mandatory if the group on the higher level is applied.
6.	Element <reference_code> is only mandatory for "WAL" (water level) in <wrm> (3.5).
7.	A <geo_object> in <fairway section> (<ftm> 2.10.1 , <icem> 4.4.1, <werm> 5.4.1) is defined by the begin and end ISRS Location Codes and coordinates (2 ISRS Location Codes and 2 sets of coordinates).
8.	A <geo_object> in <object> section (<ftm> 2.11.1) is defined by the ISRS Location Code and coordinates of its center point (1 ISRS Location Code 1 set of coordinates).
9.	A <geo_object> in <wrm> has 2 ISRS Location Codes and 2 sets of coordinates in case the <type_code> (3.4.3) is "FWY", "RIV" or "CAN", otherwise only 1 ISRS Location Code and 1 set of coordinates has to be given.
10.	If there is a measurement the elements <value> (3.6.3) or <value_min> (3.6.4) and <value_max> (3.6.5) is/are mandatory if <measure_code> (3.6.2) is either "DIS", "VER", "LSD" or "WAL". In case there is no measurement (and a message should be sent anyhow) the value elements shall be omitted.
11.	Element <barrage_code> (3.6.7) is mandatory if <measure code> (3.6.2) is "BAR".
12.	Element <regime_code> (3.6.8) is mandatory if <measure code> (3.6.2) is "REG".
13.	Predictions for more than one <validity_period> (5.3) require individual <werm> messages.
14.	In case of <icem> (4.4.2) and <werm> a <limitation> section is not applicable. Limitations shall be provided via FTM notices.

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:nts="http://www.ris.eu/nts/4.0.4.0" xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.ris.eu/nts/4.0.4.0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="4.0.4.0">
  <!--
  =====
  = definition of main element RIS_Message =
  = and corresponding type RIS_Message_Type =
  =====
  -->
  <xs:element name="RIS_Message" type="nts:RIS_Message_Type">
    <xs:annotation>
      <xs:documentation>River Information Service Message</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:complexType name="RIS_Message_Type">
    <xs:sequence>
      <xs:element name="identification" type="nts:identification_type">
        <xs:annotation>
          <xs:documentation>Identification section</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:choice>
        <xs:annotation>
          <xs:documentation>One msg contains one of these sections</xs:documentation>
        </xs:annotation>
        <xs:element name="ftm" type="nts:ftm_type" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>Fairway and traffic related section</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="wrm" type="nts:wrm_type" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>Water related section</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="icem" type="nts:icem_type" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>Ice related section</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="werm" type="nts:werm_type" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>Weather related section</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:choice>
    </xs:sequence>
  </xs:complexType>

```

```

<!--
=====
= definition of identification_type, =
= used in definition of RIS_Message_Type =
=====
-->
<xs:complexType name="identification_type">
  <xs:sequence>
    <xs:element name="internal_id" type="nts:internal_id_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Internal ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="from">
      <xs:annotation>
        <xs:documentation>Sender (System) of the message</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="originator">
      <xs:annotation>
        <xs:documentation>Originator (initiator) of the information in this message</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="country_code" type="nts:country_code_enum">
      <xs:annotation>
        <xs:documentation>Country where message is valid</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="language_code" type="nts:language_code_enum">
      <xs:annotation>
        <xs:documentation>Original language used in the textual info. (contents)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="district" minOccurs="0">
      <xs:annotation>
        <xs:documentation>District / Region within the specified country, where the message is applicable
        </xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

    <xs:element name="date_issue" type="xs:dateTime">
      <xs:annotation>
        <xs:documentation>Date and time of publication including time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!--
=====
= types used in definition of identification_type =
=====
-->
<xs:simpleType name="country_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="AT"/>
    <xs:enumeration value="BE"/>
    <xs:enumeration value="BG"/>
    <xs:enumeration value="CH"/>
    <xs:enumeration value="CY"/>
    <xs:enumeration value="CZ"/>
    <xs:enumeration value="DE"/>
    <xs:enumeration value="DK"/>
    <xs:enumeration value="EE"/>
    <xs:enumeration value="ES"/>
    <xs:enumeration value="FI"/>
    <xs:enumeration value="FR"/>
    <xs:enumeration value="GB"/>
    <xs:enumeration value="GR"/>
    <xs:enumeration value="HR"/>
    <xs:enumeration value="HU"/>
    <xs:enumeration value="IE"/>
    <xs:enumeration value="IT"/>
    <xs:enumeration value="LT"/>
    <xs:enumeration value="LU"/>
    <xs:enumeration value="LV"/>
    <xs:enumeration value="MD"/>
    <xs:enumeration value="ME"/>
    <xs:enumeration value="MT"/>
    <xs:enumeration value="NL"/>
    <xs:enumeration value="PL"/>
    <xs:enumeration value="PT"/>
    <xs:enumeration value="RO"/>
    <xs:enumeration value="RS"/>
    <xs:enumeration value="SE"/>
    <xs:enumeration value="SI"/>
    <xs:enumeration value="SK"/>
    <xs:enumeration value="RU"/>
    <xs:enumeration value="UA"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:simpleType name="language_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="DE"/>
    <xs:enumeration value="EN"/>
    <xs:enumeration value="FR"/>
    <xs:enumeration value="NL"/>
    <xs:enumeration value="SK"/>
    <xs:enumeration value="HU"/>
    <xs:enumeration value="HR"/>
    <xs:enumeration value="SR"/>
    <xs:enumeration value="BG"/>
    <xs:enumeration value="RO"/>
    <xs:enumeration value="RU"/>
    <xs:enumeration value="CS"/>
    <xs:enumeration value="PL"/>
    <xs:enumeration value="PT"/>
    <xs:enumeration value="ES"/>
    <xs:enumeration value="SV"/>
    <xs:enumeration value="FI"/>
    <xs:enumeration value="DA"/>
    <xs:enumeration value="ET"/>
    <xs:enumeration value="LV"/>
    <xs:enumeration value="LT"/>
    <xs:enumeration value="IT"/>
    <xs:enumeration value="MT"/>
    <xs:enumeration value="EL"/>
    <xs:enumeration value="SL"/>
  </xs:restriction>
</xs:simpleType>
<!--
=====
= definition of ftm_type, =
= used in definition of RIS_Message_Type =
=====
-->
<xs:complexType name="ftm_type">
  <xs:sequence>
    <xs:element name="internal_id" type="nts:internal_id_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Internal ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="nts_number" type="nts:nts_number_type">
      <xs:annotation>
        <xs:documentation>NtS Number</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="target_group" type="nts:target_group_type" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Target group information</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:element name="subject_code" type="nts:subject_code_enum">
  <xs:annotation>
    <xs:documentation>Subject code must contain one of the following: Announcement (ANNOUN),
    Warning (WARNIN), Notice withdrawn (CANCEL) or Information service (INFSER). More information
    on the use of codes can be found in the NtS Encoding Guide.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="validity_period" type="nts:validity_period_type">
  <xs:annotation>
    <xs:documentation>Overall period of validity</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="contents" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Additional information in local language</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:maxLength value="500"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
<xs:element name="source" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Notice source (name of authority)</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:maxLength value="64"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
<xs:element name="reason_code" type="nts:reason_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Reason / justification of the notice</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="communication" type="nts:communication_type" minOccurs="0"
maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Communication channel information</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:choice maxOccurs="unbounded">
  <xs:element name="fairway_section" type="nts:fairway_section_type">
    <xs:annotation>
      <xs:documentation>Fairway section</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:element name="object" type="nts:object_type">
    <xs:annotation>
      <xs:documentation>Object section</xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>

```



```

<!--
=====
= types used in definition of ftm_type =
=====
-->
<xs:simpleType name="subject_code_enum">
  <xs:restriction base="xs:string">
    <xs:minLength value="3"/>
    <xs:maxLength value="6"/>
    <xs:enumeration value="ANNOUN"/>
    <xs:enumeration value="WARNIN"/>
    <xs:enumeration value="CANCEL"/>
    <!-- the following values are added due to CR 128 -->
    <xs:enumeration value="INFSER"/>
    <!-- obsolete values due to CR 128 but still valid for backwards compatibility -->
    <xs:enumeration value="OBSTRU"/>
    <xs:enumeration value="PAROBS"/>
    <xs:enumeration value="DELAY"/>
    <xs:enumeration value="VESLEN"/>
    <xs:enumeration value="VESHEI"/>
    <xs:enumeration value="VESBRE"/>
    <xs:enumeration value="VESDRA"/>
    <xs:enumeration value="AVALEN"/>
    <xs:enumeration value="CLEHEI"/>
    <xs:enumeration value="CLEWID"/>
    <xs:enumeration value="AVADEP"/>
    <xs:enumeration value="NOMOOR"/>
    <xs:enumeration value="SERVIC"/>
    <xs:enumeration value="NOSERV"/>
    <xs:enumeration value="SPEED"/>
    <xs:enumeration value="WAVWAS"/>
    <xs:enumeration value="PASSIN"/>
    <xs:enumeration value="ANCHOR"/>
    <xs:enumeration value="OVRTAK"/>
    <xs:enumeration value="MINPWR"/>
    <xs:enumeration value="DREDGE"/>
    <xs:enumeration value="WORK"/>
    <xs:enumeration value="EVENT"/>
    <xs:enumeration value="CHGMAR"/>
    <xs:enumeration value="CHGSER"/>
    <xs:enumeration value="SPCMAR"/>
    <xs:enumeration value="EXERC"/>
    <xs:enumeration value="LEADEP"/>
    <xs:enumeration value="LEVDEC"/>
    <xs:enumeration value="LEVRIS"/>
    <xs:enumeration value="LIMITA"/>
    <xs:enumeration value="MISECH"/>
    <xs:enumeration value="ECDISU"/>
    <xs:enumeration value="NEWOBJ"/>
    <xs:enumeration value="CHWWY"/>
    <xs:enumeration value="CONWWY"/>
    <xs:enumeration value="DIVER"/>
    <xs:enumeration value="SPECTR"/>
    <xs:enumeration value="LOCRUL"/>
    <xs:enumeration value="VHFCOV"/>
    <xs:enumeration value="HIGVOL"/>
    <xs:enumeration value="TURNIN"/>
  </xs:restriction>
</xs:simpleType>

```

```
<xs:enumeration value="CONBRE"/>
<xs:enumeration value="CONLEN"/>
<xs:enumeration value="REMOBJ"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="reason_code_enum">
  <xs:restriction base="xs:string">
    <xs:minLength value="3"/>
    <xs:maxLength value="6"/>
    <xs:enumeration value="EVENT"/>
    <xs:enumeration value="WORK"/>
    <xs:enumeration value="DREDGE"/>
    <xs:enumeration value="EXERC"/>
    <xs:enumeration value="HIGWAT"/>
    <xs:enumeration value="HIWAI"/>
    <xs:enumeration value="HIWAI"/>
    <xs:enumeration value="LOWWAT"/>
    <xs:enumeration value="SHALLO"/>
    <xs:enumeration value="CALAMI"/>
    <xs:enumeration value="LAUNCH"/>
    <xs:enumeration value="DECLEV"/>
    <xs:enumeration value="FLOMEA"/>
    <xs:enumeration value="BLDWRK"/>
    <xs:enumeration value="REPAIR"/>
    <xs:enumeration value="INSPEC"/>
    <xs:enumeration value="FIRWRK"/>
    <xs:enumeration value="LIMITA"/>
    <xs:enumeration value="CHGFWY"/>
    <xs:enumeration value="CONSTR"/>
    <xs:enumeration value="DIVING"/>
    <xs:enumeration value="SPECTR"/>
    <xs:enumeration value="EXT"/>
    <xs:enumeration value="MIN"/>
    <xs:enumeration value="SOUND"/>
    <xs:enumeration value="OTHER"/>
    <xs:enumeration value="STRIKE"/>
    <xs:enumeration value="FLOMAT"/>
    <xs:enumeration value="EXPLOS"/>
    <xs:enumeration value="ICE"/>
    <xs:enumeration value="OBSTAC"/>
    <!--the following values are added due to CR 128-->
    <xs:enumeration value="CHGMAR"/>
    <xs:enumeration value="DAMMAR"/>
    <xs:enumeration value="FALMAT"/>
    <xs:enumeration value="MISECH"/>
    <xs:enumeration value="HEARIS"/>
    <xs:enumeration value="HIGVOL"/>
    <xs:enumeration value="ECDISU"/>
    <xs:enumeration value="LOCRUL"/>
    <xs:enumeration value="NEWOBJ"/>
    <xs:enumeration value="OBUNWA"/>
    <xs:enumeration value="VHFCOV"/>
    <xs:enumeration value="REMOBJ"/>
    <xs:enumeration value="LEVRIS"/>
    <xs:enumeration value="SPCMAR"/>
```

```

<!--the following value is added due to CR 155-->
<xs:enumeration value="WERMCO"/>
<!--obsolete values due to CR 128 but still valid for backwards compatibility -->
<xs:enumeration value="INFSER"/>
</xs:restriction>
</xs:simpleType>
<xs:complexType name="communication_type">
  <xs:sequence>
    <xs:element name="reporting_code" type="nts:reporting_code_enum">
      <xs:annotation>
        <xs:documentation>Reporting regime (information, or duty to report)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="communication_code" type="nts:communication_code_enum">
      <xs:annotation>
        <xs:documentation>Communication code (telephone, VHF etc.)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="number" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Telephone, VHF number (including callsign), e-mail address, URL or
        teletext</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="128"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="label" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Name of the attachment or additional information</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="256"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="remark" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Additional remarks concerning the communication</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="1024"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:simpleType name="reporting_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="INF"/>
    <xs:enumeration value="ADD"/>
    <xs:enumeration value="REG"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="communication_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="TE"/>
    <xs:enumeration value="AP"/>
    <xs:enumeration value="EM"/>
    <xs:enumeration value="AH"/>
    <xs:enumeration value="TT"/>
    <xs:enumeration value="FX"/>
    <xs:enumeration value="LS"/>
    <xs:enumeration value="FS"/>
    <xs:enumeration value="SO"/>
    <xs:enumeration value="EI"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="object_type">
  <xs:sequence>
    <xs:element name="geo_object" type="nts:geo_object_type">
      <xs:annotation>
        <xs:documentation>Geo Information of object</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="limitation" type="nts:limitation_type" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Object limitation section</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!--
=====
= definition of wrm_type, =
= used in definition of RIS_Message_Type =
=====
-->
<xs:complexType name="wrm_type">
  <xs:sequence>
    <xs:element name="internal_id" type="nts:internal_id_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Internal ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="nts_number" type="nts:nts_number_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>NtS Number</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>

```

```

<xs:element name="validity_period" type="nts:validity_period_type">
  <xs:annotation>
    <xs:documentation>Overall period of validity</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="geo_object" type="nts:geo_object_type">
  <xs:annotation>
    <xs:documentation>Object section</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="reference_code" type="nts:reference_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Value reference (measurement reference)</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="measure" type="nts:measure_type" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Measurements (normal or predicted values)</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<!--
=====
= types used in definition of wrm_type =
=====
-->
<xs:complexType name="measure_type">
  <xs:sequence>
    <xs:element name="predicted" type="xs:boolean">
      <xs:annotation>
        <xs:documentation>Predicted measurement (1 or true) or real measurement (0 or
          false)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="measure_code" type="nts:measure_code_enum">
      <xs:annotation>
        <xs:documentation>Kind of water related information</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value" type="xs:float" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Measured or predicted value</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value_min" type="xs:float" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Lowest value of confidence interval</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value_max" type="xs:float" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Highest value of confidence interval</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>

```

```

<xs:element name="unit" type="nts:unit_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Unit of the water related value</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="barrage_code" type="nts:barrage_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Barrage status</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="regime_code" type="nts:regime_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Regime applicable</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="measuredate" type="xs:dateTime">
  <xs:annotation>
    <xs:documentation>Date and Time of measurement or predicted value including time
    zone</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="difference" type="nts:difference_type" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Difference with comparative value</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:simpleType name="measure_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="DIS"/>
    <xs:enumeration value="REG"/>
    <xs:enumeration value="BAR"/>
    <xs:enumeration value="VER"/>
    <xs:enumeration value="LSD"/>
    <xs:enumeration value="WAL"/>
    <!-- obsolete values due to CR 151 but still valid for backwards compatibility -->
    <xs:enumeration value="NOM"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="barrage_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="CLD"/>
    <xs:enumeration value="OPG"/>
    <xs:enumeration value="CLG"/>
    <xs:enumeration value="OPD"/>
    <xs:enumeration value="OPN"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:simpleType name="regime_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="NO"/>
    <xs:enumeration value="HI"/>
    <xs:enumeration value="II"/>
    <xs:enumeration value="I"/>
    <xs:enumeration value="NN"/>
    <xs:enumeration value="LO"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="difference_type">
  <xs:sequence>
    <xs:element name="value_difference" type="xs:float">
      <xs:annotation>
        <xs:documentation>Difference with comparative value</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="time_difference" type="xs:duration">
      <xs:annotation>
        <xs:documentation>Time difference with measuredata of comparative
        measurement</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!--
=====
= definition of icem_type, =
= used in definition of RIS_Message_Type =
=====
-->
<xs:complexType name="icem_type">
  <xs:sequence>
    <xs:element name="internal_id" type="nts:internal_id_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Internal ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="nts_number" type="nts:nts_number_type">
      <xs:annotation>
        <xs:documentation>NtS Number</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="validity_period" type="nts:validity_period_type">
      <xs:annotation>
        <xs:documentation>Overall period of validity</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="fairway_section" type="nts:fairway_section_type">
      <xs:annotation>
        <xs:documentation>Fairway section — the limitation inside the fairway section cannot be used in the
        ICEM</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

    <xs:element name="ice_condition" type="nts:ice_condition_type" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Ice conditions</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!--
=====
= types used in definition of icem_type =
=====
-->
<xs:complexType name="ice_condition_type">
  <xs:sequence>
    <xs:element name="measuredate" type="xs:dateTime">
      <xs:annotation>
        <xs:documentation>Date and Time of measurement or prediction including time
        zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ice_condition_code" type="nts:ice_condition_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Condition code</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ice_accessibility_code" type="nts:ice_accessibility_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Accessibility code </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ice_classification_code" type="nts:ice_classification_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Classification code </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ice_situation_code" type="nts:ice_situation_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Situation code </xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="ice_condition_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="1"/>
    <xs:enumeration value="A"/>
    <xs:enumeration value="B"/>
    <xs:enumeration value="C"/>
    <xs:enumeration value="D"/>
    <xs:enumeration value="E"/>
    <xs:enumeration value="F"/>
    <xs:enumeration value="G"/>
    <xs:enumeration value="H"/>
    <xs:enumeration value="K"/>
    <xs:enumeration value="L"/>
    <xs:enumeration value="M"/>
    <xs:enumeration value="P"/>
  </xs:restriction>
</xs:simpleType>

```



```
<xs:enumeration value="R"/>
<xs:enumeration value="S"/>
<xs:enumeration value="U"/>
<xs:enumeration value="O"/>
<xs:enumeration value="V"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="ice_accessibility_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="1"/>
    <xs:enumeration value="A"/>
    <xs:enumeration value="B"/>
    <xs:enumeration value="F"/>
    <xs:enumeration value="L"/>
    <xs:enumeration value="C"/>
    <xs:enumeration value="D"/>
    <xs:enumeration value="E"/>
    <xs:enumeration value="G"/>
    <xs:enumeration value="H"/>
    <xs:enumeration value="M"/>
    <xs:enumeration value="K"/>
    <xs:enumeration value="T"/>
    <xs:enumeration value="P"/>
    <xs:enumeration value="V"/>
    <xs:enumeration value="X"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ice_classification_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="1"/>
    <xs:enumeration value="A"/>
    <xs:enumeration value="B"/>
    <xs:enumeration value="C"/>
    <xs:enumeration value="D"/>
    <xs:enumeration value="E"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ice_situation_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="NOL"/>
    <xs:enumeration value="LIM"/>
    <xs:enumeration value="NON"/>
  </xs:restriction>
</xs:simpleType>
```

```

<!--
=====
= definition of werm_type, =
= used in definition of RIS_Message_Type =
=====
-->
<xs:complexType name="werm_type">
  <xs:sequence>
    <xs:element name="internal_id" type="nts:internal_id_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Internal ID</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="nts_number" type="nts:nts_number_type" minOccurs="0">
      <xs:annotation>
        <xs:documentation>NtS Number</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="validity_period" type="nts:validity_period_type">
      <xs:annotation>
        <xs:documentation>Overall period of validity</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="fairway_section" type="nts:fairway_section_werm_type">
      <xs:annotation>
        <xs:documentation>Fairway section</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="weather_report" type="nts:weather_report_type" maxOccurs="2">
      <xs:annotation>
        <xs:documentation>Actual or Forecast report sections</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!--
=====
= types used in definition of werm_type =
=====
-->
<xs:complexType name="fairway_section_werm_type">
  <xs:sequence>
    <xs:element name="geo_object" type="nts:geo_object_type">
      <xs:annotation>
        <xs:documentation>Geo Information of fairway</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:complexType name="weather_report_type">
  <xs:sequence>
    <xs:element name="measuredate" type="xs:dateTime" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Date and time of measurement or predicted value including time
          zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="forecast" type="xs:boolean">
      <xs:annotation>
        <xs:documentation>Forecast (true or 1) OR Actual report (false or 0)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="weather_class_code" type="nts:weather_class_code_enum" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Classification of weather report</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="weather_item" type="nts:weather_item_type" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Weather items</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="weather_class_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="6"/>
    <xs:enumeration value="CLR"/>
    <xs:enumeration value="CLDY"/>
    <xs:enumeration value="OCST"/>
    <xs:enumeration value="DZZL"/>
    <xs:enumeration value="RAIN"/>
    <xs:enumeration value="LRAIN"/>
    <xs:enumeration value="ORAIN"/>
    <xs:enumeration value="HRAIN"/>
    <xs:enumeration value="SLEET"/>
    <xs:enumeration value="SNOW"/>
    <xs:enumeration value="SNFALL"/>
    <xs:enumeration value="HAIL"/>
    <xs:enumeration value="SHWRS"/>
    <xs:enumeration value="THSTRM"/>
    <xs:enumeration value="HAZY"/>
    <xs:enumeration value="FOG"/>
    <xs:enumeration value="FOGPAT"/>
    <xs:enumeration value="GALE"/>
    <xs:enumeration value="STRM"/>
    <xs:enumeration value="HURRC"/>
    <xs:enumeration value="FZRA"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:complexType name="weather_item_type">
  <xs:sequence>
    <xs:element name="weather_item_code" type="nts:weather_item_code_enum">
      <xs:annotation>
        <xs:documentation>Weather item type (Wind, Wave etc)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value_min" type="xs:float">
      <xs:annotation>
        <xs:documentation>Actual or Minimum value</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value_max" type="xs:float" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Maximum value</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="value_gusts" type="xs:float" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Gusts value (Wind)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="unit" type="nts:unit_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Unit of the value</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="weather_category_code" type="nts:weather_category_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Classification of wind report</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="direction_code_min" type="nts:weather_direction_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Direction of wind or wave</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="direction_code_max" type="nts:weather_direction_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Direction of wind or wave</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="weather_item_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="WI"/>
    <xs:enumeration value="WA"/>
    <xs:enumeration value="FG"/>
    <xs:enumeration value="RN"/>
    <xs:enumeration value="SN"/>
    <xs:enumeration value="AT"/>
    <xs:enumeration value="WT"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:simpleType name="weather_category_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="0"/>
    <xs:enumeration value="1"/>
    <xs:enumeration value="2"/>
    <xs:enumeration value="3"/>
    <xs:enumeration value="4"/>
    <xs:enumeration value="5"/>
    <xs:enumeration value="6"/>
    <xs:enumeration value="7"/>
    <xs:enumeration value="8"/>
    <xs:enumeration value="9"/>
    <xs:enumeration value="10"/>
    <xs:enumeration value="11"/>
    <xs:enumeration value="12"/>
    <xs:enumeration value="13"/>
    <xs:enumeration value="14"/>
    <xs:enumeration value="15"/>
    <xs:enumeration value="16"/>
    <xs:enumeration value="17"/>
    <xs:enumeration value="18"/>
    <xs:enumeration value="19"/>
    <xs:enumeration value="20"/>
    <xs:enumeration value="21"/>
    <xs:enumeration value="22"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="weather_direction_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="N"/>
    <xs:enumeration value="NE"/>
    <xs:enumeration value="E"/>
    <xs:enumeration value="SE"/>
    <xs:enumeration value="S"/>
    <xs:enumeration value="SW"/>
    <xs:enumeration value="W"/>
    <xs:enumeration value="NW"/>
    <xs:enumeration value="WRB"/>
  </xs:restriction>
</xs:simpleType>
<!--
=====
= types used in several definitions =
=====
-->
<xs:simpleType name="internal_id_type">
  <xs:annotation>
    <xs:documentation>Internal ID — best practice: global unique identifier</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:maxLength value="64"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:complexType name="nts_number_type">
  <xs:sequence>
    <xs:element name="organisation">
      <xs:annotation>
        <xs:documentation>Name of the publishing organisation (NtS Provider)</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="64"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="year">
      <xs:annotation>
        <xs:documentation>Year of first issuing of the notice</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:gYear">
          <xs:minInclusive value="1900"/>
          <xs:maxInclusive value="9999"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="number">
      <xs:annotation>
        <xs:documentation>Number of the notice (per year, starting with: 1, 0 shall not be used for published notices)</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:integer">
          <xs:minInclusive value="00000000"/>
          <xs:maxInclusive value="99999999"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="serial_number">
      <xs:annotation>
        <xs:documentation>Serial number of notice (replacements and withdrawals), original notice: 0</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:integer">
          <xs:minInclusive value="00"/>
          <xs:maxInclusive value="99"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:complexType name="validity_period_type">
  <xs:sequence>
    <xs:element name="date_start" type="xs:date">
      <xs:annotation>
        <xs:documentation>Start date of validity period including time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="date_end" type="xs:date" minOccurs="0">
      <xs:annotation>
        <xs:documentation>End date of validity period including time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="fairway_section_type">
  <xs:sequence>
    <xs:element name="geo_object" type="nts:geo_object_type">
      <xs:annotation>
        <xs:documentation>Geo information of fairway</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="limitation" type="nts:limitation_type" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Fairway section limitations</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="geo_object_type">
  <xs:sequence>
    <xs:element name="id" type="nts:isrs_code_type" maxOccurs="2">
      <xs:annotation>
        <xs:documentation>ISRS Location Code of the fairway/object</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="name">
      <xs:annotation>
        <xs:documentation>Local name of the fairway section</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="256"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="type_code" type="nts:type_code_enum" default="FWY">
      <xs:annotation>
        <xs:documentation>Type of geographical object</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="position_code" type="nts:position_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Describes the position related to the fairway</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:element name="coordinate" type="nts:coordinate_type" minOccurs="0" maxOccurs="2">
  <xs:annotation>
    <xs:documentation>Fairway section begin and end coordinates</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="fairway_name" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Waterway name (usefull if no RIS Index is available)</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:maxLength value="256"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:simpleType name="isrs_code_type">
  <xs:annotation>
    <xs:documentation>ISRS location code, unique identification of the geo object as defined in RIS Index
    encoding guide</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:length value="20"/>
    <xs:pattern value="[A-Z]{2}[A-Z]{3}[A-Z0-9]{5}[A-Z0-9]{5}[0-9]{5}" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="RIV"/>
    <xs:enumeration value="CAN"/>
    <xs:enumeration value="LAK"/>
    <xs:enumeration value="FWY"/>
    <xs:enumeration value="LCK"/>
    <xs:enumeration value="BRI"/>
    <xs:enumeration value="RMP"/>
    <xs:enumeration value="BAR"/>
    <xs:enumeration value="BNK"/>
    <xs:enumeration value="GAU"/>
    <xs:enumeration value="BUO"/>
    <xs:enumeration value="BEA"/>
    <xs:enumeration value="ANC"/>
    <xs:enumeration value="BER"/>
    <xs:enumeration value="MOO"/>
    <xs:enumeration value="TER"/>
    <xs:enumeration value="HAR"/>
    <xs:enumeration value="FDO"/>
    <xs:enumeration value="CAB"/>
    <xs:enumeration value="FER"/>
    <xs:enumeration value="PIP"/>
    <xs:enumeration value="PPO"/>
    <xs:enumeration value="HFA"/>
    <xs:enumeration value="HMO"/>
    <xs:enumeration value="SHY"/>
    <xs:enumeration value="REF"/>
    <xs:enumeration value="MAR"/>
  </xs:restriction>

```



```

<xs:enumeration value="LIG"/>
<xs:enumeration value="SIG"/>
<xs:enumeration value="TUR"/>
<xs:enumeration value="CBR"/>
<xs:enumeration value="TUN"/>
<xs:enumeration value="BCO"/>
<xs:enumeration value="REP"/>
<xs:enumeration value="FLO"/>
<xs:enumeration value="SLI"/>
<xs:enumeration value="DUK"/>
<xs:enumeration value="VTC"/>
<xs:enumeration value="RES"/>
<xs:enumeration value="LKB"/>
<xs:enumeration value="BRO"/>
<!--the following value is added due to CR 157-->
<xs:enumeration value="BNS"/>
</xs:restriction>
</xs:simpleType>
<xs:complexType name="coordinate_type">
  <xs:sequence>
    <xs:element name="lat">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="10"/>
          <xs:maxLength value="12"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="long">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="10"/>
          <xs:maxLength value="13"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="limitation_type">
  <xs:sequence>
    <xs:element name="limitation_period" type="nts:limitation_period_type" minOccurs="0"
      maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Limitation periods / intervals</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="limitation_code" type="nts:limitation_code_enum">
      <xs:annotation>
        <xs:documentation>Kind of limitation</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

<xs:element name="position_code" type="nts:position_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Describes the position of the limitation related to the fairway</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="value" type="xs:float" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Value of limitation (i.e. max draught)</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="unit" type="nts:unit_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Unit of the value of the limitation</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="reference_code" type="nts:reference_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Value reference</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="indication_code" type="nts:indication_code_enum" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Minimum or maximum or reduced by</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="target_group" type="nts:target_group_type" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Target group information</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="limitation_period_type">
  <xs:sequence>
    <xs:element name="date_start" type="xs:date">
      <xs:annotation>
        <xs:documentation>Start date of limitation period including time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="date_end" type="xs:date" minOccurs="0">
      <xs:annotation>
        <xs:documentation>End date of limitation period including time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="time_start" type="xs:time" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Start time of limitation period without time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="time_end" type="xs:time" minOccurs="0">
      <xs:annotation>
        <xs:documentation>End time of limitation period without time zone</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

    <xs:element name="interval_code" type="nts:interval_code_enum" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Interval for limitation if applicable</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="interval_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="CON"/>
    <xs:enumeration value="DAY"/>
    <xs:enumeration value="WRK"/>
    <xs:enumeration value="WKN"/>
    <xs:enumeration value="SUN"/>
    <xs:enumeration value="MON"/>
    <xs:enumeration value="TUE"/>
    <xs:enumeration value="WED"/>
    <xs:enumeration value="THU"/>
    <xs:enumeration value="FRI"/>
    <xs:enumeration value="SAT"/>
    <xs:enumeration value="DTI"/>
    <xs:enumeration value="NTI"/>
    <xs:enumeration value="RVI"/>
    <xs:enumeration value="EXC"/>
    <xs:enumeration value="WRD"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="limitation_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="6"/>
    <xs:enumeration value="OBSTRU"/>
    <xs:enumeration value="PAROBS"/>
    <xs:enumeration value="DELAY"/>
    <xs:enumeration value="VESLEN"/>
    <xs:enumeration value="VESHEI"/>
    <xs:enumeration value="VESBRE"/>
    <xs:enumeration value="VESDRA"/>
    <xs:enumeration value="AVALEN"/>
    <xs:enumeration value="CLEHEI"/>
    <xs:enumeration value="CLEWID"/>
    <xs:enumeration value="AVADEP"/>
    <xs:enumeration value="NOMOOR"/>
    <xs:enumeration value="SERVIC"/>
    <xs:enumeration value="NOSERV"/>
    <xs:enumeration value="SPEED"/>
    <xs:enumeration value="WAVWAS"/>
    <xs:enumeration value="PASSIN"/>
    <xs:enumeration value="ANCHOR"/>
    <xs:enumeration value="OVRTAK"/>
    <xs:enumeration value="MINPWR"/>
    <xs:enumeration value="ALTER"/>
    <xs:enumeration value="CAUTIO"/>
    <xs:enumeration value="NOLIM"/>
    <xs:enumeration value="TURNIN"/>
  </xs:restriction>
</xs:simpleType>

```

```

    <xs:enumeration value="NOSHORE"/>
    <xs:enumeration value="CONBRE"/>
    <xs:enumeration value="CONLEN"/>
    <!-- the following value is added due to CR 128 -->
    <xs:enumeration value="LEADEP"/>
    <!-- the following value is added due to CR 148 -->
    <xs:enumeration value="NOBERT"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="position_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="2"/>
    <xs:enumeration value="AL"/>
    <xs:enumeration value="LE"/>
    <xs:enumeration value="MI"/>
    <xs:enumeration value="RI"/>
    <xs:enumeration value="LB"/>
    <xs:enumeration value="RB"/>
    <xs:enumeration value="N"/>
    <xs:enumeration value="NE"/>
    <xs:enumeration value="E"/>
    <xs:enumeration value="SE"/>
    <xs:enumeration value="S"/>
    <xs:enumeration value="SW"/>
    <xs:enumeration value="W"/>
    <xs:enumeration value="NW"/>
    <xs:enumeration value="BI"/>
    <xs:enumeration value="SM"/>
    <xs:enumeration value="OL"/>
    <xs:enumeration value="EW"/>
    <xs:enumeration value="MP"/>
    <xs:enumeration value="FP"/>
    <xs:enumeration value="VA"/>
    <xs:enumeration value="RY"/>
    <xs:enumeration value="GY"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="reference_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="4"/>
    <xs:enumeration value="NAP"/>
    <xs:enumeration value="KP"/>
    <xs:enumeration value="FZP"/>
    <xs:enumeration value="ADR"/>
    <xs:enumeration value="TAW"/>
    <xs:enumeration value="PUL"/>
    <xs:enumeration value="NGM"/>
    <xs:enumeration value="ETRS"/>
    <xs:enumeration value="POT"/>
    <xs:enumeration value="LDC"/>
    <xs:enumeration value="HDC"/>
    <xs:enumeration value="ZPG"/>
    <xs:enumeration value="GLW"/>
    <xs:enumeration value="HSW"/>
    <xs:enumeration value="LNW"/>
  </xs:restriction>
</xs:simpleType>

```

```

    <xs:enumeration value="HNW"/>
    <xs:enumeration value="IGN"/>
    <xs:enumeration value="WGS"/>
    <xs:enumeration value="RN"/>
    <xs:enumeration value="HBO"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="indication_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="MAX"/>
    <xs:enumeration value="MIN"/>
    <xs:enumeration value="RED"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="target_group_type">
  <xs:sequence>
    <xs:element name="target_group_code" type="nts:target_group_code_enum" default="ALL">
      <xs:annotation>
        <xs:documentation>Target group (vessel type)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="direction_code" type="nts:direction_code_enum" default="ALL">
      <xs:annotation>
        <xs:documentation>Upstream or downstream traffic, or both</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="target_group_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="ALL"/>
    <xs:enumeration value="CDG"/>
    <xs:enumeration value="COM"/>
    <xs:enumeration value="PAX"/>
    <xs:enumeration value="PLE"/>
    <xs:enumeration value="CNV"/>
    <xs:enumeration value="PUS"/>
    <xs:enumeration value="NNU"/>
    <xs:enumeration value="LOA"/>
    <xs:enumeration value="SMA"/>
    <xs:enumeration value="CND"/>
    <xs:enumeration value="WOC"/>
    <xs:enumeration value="MOV"/>
    <xs:enumeration value="NMV"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="direction_code_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="3"/>
    <xs:enumeration value="ALL"/>
    <xs:enumeration value="UPS"/>
    <xs:enumeration value="DWN"/>
  </xs:restriction>
</xs:simpleType>

```

```
<xs:simpleType name="unit_enum">
  <xs:restriction base="xs:string">
    <xs:maxLength value="4"/>
    <xs:enumeration value="cm"/>
    <xs:enumeration value="m3/s"/>
    <xs:enumeration value="h"/>
    <xs:enumeration value="km/h"/>
    <xs:enumeration value="kW"/>
    <xs:enumeration value="m/s"/>
    <xs:enumeration value="mm/h"/>
    <xs:enumeration value="°C"/>
  </xs:restriction>
</xs:simpleType>
</xs:schema>
```
