platina

platform for the implementation of NAIADES

Consolidation of the RIS Index and Reference data

Final report

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1. INTRODUCTION

PLATINA SWP5.2 description of work includes the task of setting up a server for the maintenance of reference data including the RIS Index.

In order to develop such a reference data maintenance tool it is essential that:

- There is a harmonised set of the Reference Data on European level
- The RIS index is implemented in an harmonised way throughout Europe
- There are clear responsibilities and procedures for maintenance and distribution of the reference data and the RIS index
- There is a clear and unambiguous user guide

Therefore, PLATINA SW5.2 has performed an analysing inventory on the reference data and the RIS Index as first step towards the definition of requirements of the reference data maintenance tool.

Based on the results of this inventory the Platina team concluded that for the RIS Index a specific document[1] was necessary with proposals for the improvement of the collection, maintenance and distribution of location related information (RIS Index). Based on the same inventory proposals were made to improve in special the consistent and optimal use of reference data in the different RIS standards[2]. These proposals for improvement of the reference data and the RIS index have been discussed with the chairs of the Expert groups and the national experts working on the implementation of the standards in their applications or national implementation of RIS.

This report reflects the results of the improvement process as well as the proposal for the procedures to the maintenance of the reference data and the RIS index. The procedures and the consolidation results of reference data and RIS index are the basis for the specification of the maintenance tool which is included in this report.

[1] The document “Consolidation of the RIS Index - Decision cases on the RIS Index” Version 1.0 dated 2010-01-25

[2] The document “RIS Codes and Reference Data - Decision cases on maintenance and publication” version 0.5 dated 2010-01-25.

2. BACKGROUND

2.1. Current status Reference data

RIS references and code tables are key elements in the RIS-standards and are an important link between the various RIS-services. The exchange of computerised data without direct human interference between the RIS users and the RIS services is facilitated by the use of codes and references. To ensure proper exchange of data there are a number of pre-conditions:

- Reference and code tables are not static,they may change by international and or local rules and regulations additional requirements, the need for harmonisation and other requests. However it is of the utmost importance that the reference and codes tables are stable and consistent
- In order to ensure interoperability, throughout the whole transport and logistics chain, there is the general principle that the components of the RIS reference data shall be kept in line with international standards such as the ISO, UN/TDED, UN/ECE recommendations, and other relevant standards as has been indicated in the RIS Directive.
- Distribution of codes and reference data shall be executed in such way that all involved parties will have access to the data and will use the same reference and code tables to ensure compatibility.

In order to achieve the above objectives, clear and unambiguous reference data and maintenance procedures are an essential requirement. An inventory has been executed on the reference data as used in the different RIS standards. The results of this inventory are given in annex 1 of this document and include also the overview of the inventory results on the RIS index.

The inventory is based on the following standards:

- Tracking and tracing as published in Commission Regulation (EC) No 415/2007 of 13 March 2007
- Notices to skippers as published in Commission Regulation (EC) No 416/2007 of 22 March 2007:
- Electronic reporting as published in Commission Regulation (EU) No 164/2010 of 25 January 2010[3]
- The standard “Electronic Chart Display and Information System for Inland Navigation” edition 2.0 as published by the CCNR and will be published on short notice by the EC.

[3]At the moment the inventory was executed the regulation on electronic reporting was not yet published

2.2. RIS directive and the status of the RIS Index

In Article 2 (1) of the RIS directive it is stated that the RIS directive applies to the implementation and operation of RIS on all inland waterways of the Member States of class IV and above which are linked by a waterway of class IV or above to a waterway of class IV or above of another Member State, including the ports on such waterways…..

In Article 4 (3) of the RIS directive it is stated that Member States shall supply to RIS users all relevant data concerning navigation and voyage planning on inland waterways. These data shall be provided at least in an accessible electronic format;

In addition to Article 4, annex I of the EU RIS Directive stipulates the Minimum Data Requirements which should be supplied by the Member States.
The data requirements have been defined as follows:

MINIMUM DATA REQUIREMENTS
As referred to in Article 4(3)(a), in particular the following data shall be supplied:

- *waterway axis with kilometre indication,*
- *restrictions for vessels or convoys in terms of length, width, draught and air draught,*
- *operation times of restricting structures, in particular locks and bridges,*
- *location of ports and transhipment sites,*
- *reference data for water level gauges relevant to navigation.*

As stated above, these are the minimum requirements, however without a detailed specification what information should be provided by Member States and the technical format in which it should be provided is open for interpretation.

In order to identify and specify in an unique way all objects, used in the basic RIS technologies as inland ECDIS, Electronic Reporting, inland AIS and Notices to Skippers, it was seen as essential to develop a coding mechanism for these objects. A encoding mechanism for location and characteristics of objects has been elaborated and the locations an the respective characteristics are stored in the so called ***RIS index*** and has been agreed by the all expert groups.
The RIS index consists of:

1. the ISRS location code, a 20 digit alphanumerical code, with the following data elements:
   - UN Country code (2 lettres)
   - UN Location code (3 lettres)
   - Fairway section code (5 digits, alphanumerical)
   - Terminal code or passage point code (5 digits, alphanumerical)
   - Fairway section hectometre (5 digits, numerical)
2. Additional and specific characteristics of the location

In order to facilitate the users of the RIS index, as there are the organisations responsible for the coding of the objects and those who use these coded objects in their applications, an encoding guide has been compiled. The most recent encoding guide is “Encoding Guide for the RIS Index” Version 0.6.

3. RESULTS OF THE RECOVERY PROGRAM FOR RIS INDEX AND RIS REFERENCE DATA

The Platina team drafted, based on the inventory as depicted in annex 1, decision cases on the improvement of the RIS index and the codes and reference data. The decision cases have been discussed with the chairs of the RIS expert groups and the national experts on the implementation of RIS and the RIS index in their country. The proposals for improvement – decision cases - are given in the documents:

- Consolidation of the RIS Index - Decision cases on the RIS Index - Version 1.0 dated 2010-01-25
- RIS Codes and Reference Data - Decision cases on maintenance and publication - Version 0.5 dated 2010-01-25.

These documents are the basis for this final report on the improvement of the Code and Reference data and the RIS index. In the next chapters the results of the improvement process for Code and Reference data and RIS index is depicted. In the footnotes to each paragraph the relation is given to the related decision cases presented in the above mentioned documents.

3.1. Formal status of the RIS INDEX[4]

The EU RIS Directive() prescribes the minimum data which shall be supplied by the Member States for class waterways of class IV and higher and prescribes that these data will be supplied in an accessible electronic format.
Already during the research phase of River Information Services - e.g. in the COMPRIS project - the need was felt for e.g. voyage planning and Notices to Skippers to have a common agreed code-format for location and characteristics of objects. This has led to the definition of the RIS index as specified in chapter 2.2. The code-format of the RIS index has been agreed by the expert groups.
The RIS standards as there are published and under implementation are implicitly using the RIS index format. The RIS index is however not explicitly mentioned in the RIS directive 2005/44/EC of 7 September 2005 or the related regulations that formalise the RIS standards.

[4] Decision case no 1 on RIS index

The implementation of the basic RIS services, Notices to Skippers, inland ECDIS and electronic reporting, are part of the national obligations of implementation of the RIS directive. The RIS index is seen by most of the Member States as an essential step in the implementation of Notices to Skippers, inland ECDIS and electronic reporting.. Member States are implementing however the RIS Index on a “voluntary base” and as far as the Member States judge it is suitable and necessary in their national RIS implementation programme.

Due to the informal status of the RIS Index the RIS implementation of the RIS index by the members States is not consistent and harmonised throughout Europe.

The consequences of this way of working became – as a small example – apparent in the pilot implementations of IRIS Europe I. In this project the International data exchange did not work properly due to inconsistent use of location codes. In order to exchange data (hull data, AIS, ERI) between national RIS-services, quick fixes had to be applied to the location tables to bring them in line with each other.

Recommendations

As the RIS index is an essential instrument in the consistent and unambiguous implementation of the basic RIS services in the Members States, it is highly recommended that the European Commission starts the procedure to formalise the RIS index as the mandatory electronic format for geo-related objects as defined in article 4 (3) of the RIS directive

3.2. Minimum dataset - minimum object list of the RIS index[5]

The RIS Directive prescribes that the Member States shall supply to RIS users all relevant data concerning navigation and voyage planning on inland waterways. Referred to in Article 4(3)(a), in particular the following minimum set of data shall be supplied:

- Waterway axis with kilometre indication,
- Restrictions for vessels or convoys in terms of length, width, draught and air draught,
- Operation times of restricting structures, in particular locks and bridges,
- Location of ports and transhipment sites,
- Reference data for water level gauges relevant to navigation.

This minimum dataset will provide the necessary basic information to make the following basic RIS services possible:

- Electronic Reporting (e.g. start, passing and end points of voyages),

[5] Decision case 2 on RIS index

- Inland ECDIS
- Notices to Skippers
- Inland AIS (e.g. destination)
- Voyage planning (e.g. start and end points of voyages, junctions, limitations of an object)

There is a need to “translate” the minimum dataset as specified in the annex 1 of the RIS directive in the minimum list of objects as specified in the RIS directive. The minimum object list has to comply with the minimum service requirements of the above mentioned basic services and the minimum dataset of the RIS directive.
This minimum dataset will benefit the national RIS authorities responsible for the implementation of the RIS services and will lead to a harmonised implementation of the RIS index and the related basic services throughout Europe. The benefits for the RIS authorities are in special the more efficient coding-effort in their organisations.

Recommendations

As the minimum objects list - as given in annex 2 to this report – of the RIS index is a clear and unambiguous “translation” of the minimum dataset as specified in the RIS directive, it is recommended that the European Commission starts the procedure to amend the annex 1 of the RIS directive by the minimum objects list of the RIS index.

3.3. Maintenance and distribution of the RIS Index and reference data[6]

In accordance with the EU RIS Directive the Member States supply information about the waterway and the respective objects in their national RIS-indices, however there is no harmonized approach in the distribution of the RIS Index to the RIS users and in special also to the RIS application suppliers. National reference data can be found on national Internet websites or on the website of the RIS-expert group or is only available on request. In the worst case, different versions of a certain RIS Index are published on the several websites.

Recommendation
The Platina project will develop a RIS reference data management tool that will maintain and publish the European RIS reference data as defined in the RIS standards as mentioned in chapter 1.1 of this report. It is recommended to include the maintenance and publication of the national RIS indices in this European Reference Data Management tool. The responsibility on European level is restricted to the publication of the data and does not interfere with the national responsibility on the maintenance and the quality of the national RIS reference data/RIS index.

[6] Decision case 3 and 15 on RIS index

It is recommended to maintain and publish the RIS reference data and to publish the RIS index according to the procedures as provided in (a separate) annex 3 of this report[7].

Consequences of the use of the European Reference Data Management Tool (ERDM tool)

The consequences of the operation of the ERDM tool will be that Member States will send their national RIS Index to the RIS data administration focal point[8]. The European Data Manager combines the national RIS-indices into one European RIS Index. The result will be one master RIS Index table which contains all objects provided by the Member States. In order to ensure that all the RIS-services will use the same consolidated master RIS Index, it is recommended that the RIS-services and RIS-users only use the master RIS Index published by the RIS data administration focal point. Most of the RIS-services need only a sub-set of the master RIS Index. e.g. The services related to ERI need only the locations related to loading, departure, arrival, discharge and does not need the locations of a high-voltage cable above a waterway.

In order to generate a sub-set of the master RIS Index, several unique and unambiguous algorithms must be defined to generate a sub-set of the master RIS Index for specific RIS-services. These unique and unambiguous algorithms must the elaborated by the RIS-expertgroups and will be maintained by the European Data Manager. Based on the algorithms the European Data Manager will publish also the RIS index sub-sets to support a specific RIS-service.

Remark: In the IRIS Europe II project[9] the national maintenance tools will be developed. Participation in this activity, including the interfacing with the European Reference data management tool is NOT restricted to members of the PLATINA project or IRIS Europe II projects. All European countries are free to make use of the maintenance and distribution tool and interconnect to this tool.

Specifications of the European Reference Data Management Tool

Based on the maintenance procedure for the RIS reference data the specifications for the European reference data management are drafted and presented as (a separate) annex 4 to this report.

[7] Procedures for the reference data management as requested for in decision case 10 of the RIS index.

[8] See for the RIS data administration focal point' the procedure for the maintenance of reference data as given in annex 1

[9] The national component of the reference data management tool Is part of the IRIS Europe II project and the action are depicted in decision case 8

3.4. Joint task force on the RIS index[10]

It will be evident from previous chapters in this report and in special the minimum objects list as given in annex 2 the RIS index is relevant for all RIS standards and is affecting the work in all expert groups.

For this reason it is ***recommended*** to install a Joint Task Force and will be installed under the auspices of the expert group Notices to Skippers and will include activities on the RIS index related to the activities of all four expert groups
The Joint Task Force (JTF RIS index) will has to draft their task force "Terms of Reference"[11] and will have at least the tasks:

- To advise the European Commission on the formalisation of the RIS index and the minimum objects list.
- To improve the RIS index encoding guide
- To safeguard the quality and consistency of the RIS index

3.5. RIS index encoding guide[12]

The NtS expert group drafted an implementation guide to support the members States and application providers in the implementation of the RIS index. The "RIS Index encoding guide" provides guidelines how to code objects, including additional information, in the RIS Index.

To ensure a harmonised encoding of the waterway network an unambiguous encoding guide is a precondition, practice learns that the current encoding guide leaves some space for different interpretations. Understanding the encoding guide requires also a certain level of experience and knowledge of RIS, Fairway Network, etc. This required experience and knowledge is not always present by novices or they have another interpretation of the used terminology.

It is proposed to amend the RIS index encoding guide in such a way that the guide is a professional guide for novices and other interested parties. This includes:

- That the 'RIS Index encoding guide' will be amended with evident and unambiguous descriptions of all the elements (Columns in the RIS Index) and codes used in the RIS Index.
- The following meta-data will become available for each object and code (e.g Terminal Code):
  - Description of an element
  - Definition of an element

[10] Decision case 7 on RIS index

[11] As attachment to the ToR of the expert group Notices to skippers

[12] Decision case 7 on RIS index

- Aim of an element (For which purpose it can be used)
- What does the element represent
- Encoding of an element

Remark: The RIS index encoding guide provides two methods in transforming a waterway network in objects of the RIS index. It is recommended to merge the two methods in order to guarantee a harmonised coding of a waterway.

Recommendation
The RIS index encoding guide, as a supporting tool for the States implementing the RIS index, should be improved to guarantee the unambiguous coding and use of the RIS index. It is recommended that the "Joint Task Force on the RIS Index" takes up this essential task.[13] See chapter 3.4 of this report on the details with respect to the Joint Task Force on the RIS index.

3.6. RIS Directive and the extension of the waterway network for voyage planning[14]

In Article 4 (3) of the RIS directive it is stated that *Member States shall supply to RIS users all relevant data concerning navigation and voyage planning on inland waterways.*
Article 2 (1) of the RIS directive it is stated that *the RIS directive however only applies to the implementation and operation of RIS on all inland waterways of the Member States of class IV and above which are linked by a waterway of class IV or above to a waterway of class IV or above of another Member State, including the ports on such waterways…..*

This restriction is hampering the use of RIS for in special voyage planning, as the limitation implies that voyage planning for vessels starting and/or ending their voyage on a waterway at a lower class than class IV is only in a restricted part of the voyage possible.

Recommendation
It is recommended that the European Commission starts a procedure to extend the RIS directive to lower class fairways and make the provision of data for voyage planning, as specified in article 4 (3), mandatory for lower class fairways.

[13] Platina SWP5.2 will support the "Joint Task Force on the RIS index" as a short term solution and input in this task. In annex 5 the proposed table of content of the encoding guide is given, the Platina SWP5.2 team will provide a draft, based on version0.6, of the encoding encoding guide to the JTF

[14] Decision case 1 on RIS index

Based on the practical experience and information from the transport sector an extension of the waterway-network, for which Member States should provide a minimum set of data for voyage planning, to those fairways accessible for class IV vessels (CEMT class) would be a step forward in the use of RIS for voyage planning.

3.7. Unique sequence ID of the RIS INDEX[15]

The ISRS-code is used in the majority of the RIS-services and the underlying RIS-systems and databases. In the databases the ISRS-code is used to link the RIS Index with RIS-services (NtS) or to link RIS-services. The ISRS-code is a unique code that contains the location information of a specific object and the key for other information related to a specific object.

Within database terminology, the ISRS-code will be considered as the primary-key of the RIS Index. The ISRS-code is not only the key to the location and additional information of an object, the ISRS-code can in practice also be meaningful.

It is agreed that:

- The ISRS code is an administrative value that is only meaningful at the moment of coding of the object.
- The ISRS-code is THE unique identifier of the RIS-index and no new Unique sequence ID will be introduced in order to avoid two unique identifiers with in the RIS_index

Recommendation

The RIS authorities implementing the RIS index are advised to treat the ISRS code of the RIS index as a primary key and his respective characteristics(, an unique, meaningless and unchangeable identifier) - of an object.

It is recommended that the intended Joint Task Force on the RIS index will explain and stress this principle, including its consequences, explicitly in the RIS index encoding guide.

Consequences and implications

The current RIS-indices are a representation of the current situation, there is no historical information available. In case an IRSR-code was deleted, the information is lost. For the operational use of the RIS-services this is not a problem, however for statistical purpose and research or studies, there is a need to have access to the removed or adjusted ISRS-codes and the related information of an object.

[15] Decision case 4 and 17 on RIS index

It is decided to retain an ISRS code although the object has changed or there is no valid object anymore. This guarantees that historical data will remain available.
In the above depicted recommendation to treat the ISRS code as primary key, unchangeable implies also undeletable[16].

3.8. Unique Fairway ID of the RIS INDEX[17]

In order to link the RIS Indices of several countries, it is required to introduce a harmonised European Fairway ID, possibly on basis of the European Agreement on main inland waterways of international importance (AGN).

Recommendation
The introduction of a harmonized European fairway ID is seen as a positive contribution to the need for linking the RIS index of different countries. It is recommended that the Joint Task Force on the RIS Index takes up the task to define and introduce a strategy to introduce a unique and harmonized European Fairway ID.

3.9. Encoding of objects located on common stretches of waterways[18]

Currently in many cases national RIS Indices are not harmonized between neighbouring countries. If such RIS Indices are merged into one European RIS index it leads to existence of 2 different ISRS codes for certain objects “belonging” to both countries, located on the common stretch (e.g. a bridge crossing the waterway on a common stretch). This is in contradiction with one of the basic rules of encoding of objects in RIS Index - that an object must have one unique ISRS location code.

Therefore a suitable solution and an agreement on encoding of such objects is necessary to ensure that:

- There is only one unique ISRS code for a certain object,
- The ISRS code and additional information related to an object are available also in national RIS Indeces and can be used in national applications.

The following principle for encoding of objects on common stretches is proposed:

1. Concerned objects on the common stretches have to be identified.
2. Neighbouring countries have to agree mutually which objects in the RIS Index will be maintained by which country.
3. Objects shall be encoded in line with the RIS Index Encoding Guide but some specific conditions should be fulfilled:

[16] Decision case no 5 on the RIS index

[17] Decision cases 4 and 13 on RIS index

[18] Decision case 9 and 14 on RIS index

- The objects shall be included in both national RIS Indices, i.e. each national RIS Index will contain a few “foreign” objects with foreign ISRS codes,
- In order to avoid possible language problems when using the RIS Index on national level the local object name shall be indicated in both languages in the following order:
  1st entry: language corresponding to the country code of the object
  2nd entry: second language

Example of encoding bridges on common SK-HU stretch of Danube:

ISRS code	Object name
SKMED00001BRIDG18064	CESTNY MOST MEDVEDOV / MEDVE HID
HUKOM00001BRIDG17704	KOMAROMI HID / ZELEZNICNY MOST KOMARNO

Furthermore it needs to be checked whether this is an acceptable solution from the technical point of view, i.e. inclusion of "foreign" ISRS code in national RIS Index, possible restriction of the length of the field "Object name".

Recommendation
Each object in the RIS index shall have only one ISRS code, even when those objects are located on common stretches of a waterway for two or more countries. It is recommended that the object name in the RIS index is agreed between Member States sharing an object in the RIS index.

3.10. Object Joints[19]

Each RIS index is restricted to a national definition of codes, there exists no formal ways to interconnect different fairways. As an example The Zuid-Willemsvaart is a canal in the Netherlands and Belgium. The different sections of waterways can be connected to each other via the object _code, this code is in Belgium BE...f8976 and in the Netherlands NL...J1234.
It is proposed to add an international junction number in parallel with the country object code. Based upon the combination of country and object code

Recommendation
Although the proposal, to add an international junction number in parallel with the country object code, does not have a high priority it is recommended that the Joint Task Force on the RIS index puts this topic on their agenda..

[19] Decision case 11 on RIS index

3.11. Reference codes and tables included in the (paper/published) standards[20]

During the inventory of codes and reference tables used in RIS-standards it was observed that the RIS-standards contain code and reference tables which are an integral part of the (published written) standard. This approach has the advantage that is 100% clear which codes and reference tables must be used, however this approach has also some disadvantages.

- Code and reference tables which are an integral part of a (published) standard can only be modified in longer periods, e.g. once every two years.
- In case a code or reference is used in several standards, there is the possibility that several standards require different versions of the code or reference tables.
- It decreases the flexibility of modification to the codes and reference tables which can slower the adoption of the new developments

Recommendation

Based on the above presented observation the European Commission is recommended to investigate which codes and reference tables must be an integral part of the (published) standard and which codes and reference tables could be separately published in electronic format only.

Consequences

The proposed guideline is that all codes and reference tables which are considered as indicators(e.g. indicates the function or status of a messages) shall be an integral part of the (published) message and for all the other codes and reference tables a reference will be make in standard where the codes and reference table can be find.
To execute this recommendation there is two important pre-conditions:

- It should be clear by all the RIS-expert groups what the single unique spot will be where all the codes and reference tables will be published in order to make a correct and legally binding reference to the codes and reference data in the standards. The Platina team will investigate this legal issue and will provide input to the EC
- A maintenance guide and a maintenance organizsation should be available also after PLATINA.

[20] Decision case no 6 on reference data

3.12. Version maintenance of standards and reference data[21]

There is a serious concern on the update consequences of standards which are brought to the attention of the European Commission. Some examples of these concerns are:

- In different standards the same reference data tables are in use. A different update- timing of the standards could lead to different valid versions of the reference tables.
- There are standards in force and there are drafted amendments for the same standards (e.g. NtS) – there are countries that do not implement the commission regulation currently in force, but only the next one.
- Member States have a defined period (e.g. 30 months) to implement the relevant commission regulations after their publications, this means that there will be differences between the MS's implementation duration that will lead to different content.

3.13. Explanations of the codes and reference tables [22]

During the inventory of codes and reference tables used in RIS, it was observed that explanation on use and propose of codes and reference tables is summarily or missing. The current situation seems to be adequate for the direct involved participants, however based on reactions of novices the current situation raised questions with respect to the used codes and reference tables

In order to ensure that to all the participants (novices and experts) have a common understanding of the code and reference tables used in the RIS standards it is ***recommended*** that all the RIS-expert groups will elaborate an explanation on the use and purpose of the codes and reference tables as used in the standards.

3.14. Reference tables on vessel type and convoy type[23][24]

Vessel and convoy type (UN Recommendation 28) are used in the ERI and VTT standards. The VTT-expert group uses the codes published by the ERI-expert group at a certain moment of time.
In case changes are necessary, the both expert groups prepared a common Change Request to the UN/ECE (as maintenance organization of UN recommendation 28).

[21] Decision case 16 on RIS index

[22] Decision case no 5 on reference data

[23] Decision case no1 on reference data

[24] Reconsideration of this topic is needed based on the recent publication of the standard on electronic reporting.

The only difference is the publication of the code list:

- The ERI expert group has made a reference in standard to an external table (Published on the internet by the ERI-expert group) which is not an integral part of the standard.
- The VTT expert group has published the list as an integral part of the standard.

The consequence is that the ERI-expert group is able to update the list when changes are necessary and the VTT-expert group is restricted to update the list when the published VTT standard will be modified, at this moment this is only possible every two year. As result of the different approaches of publication of the same reference data, differences can occur between both published code lists, and this decreases the interoperability between the information provided.

It can be seen as beneficial to remove the Vessel and Convoy type list out of the VTT-standard and make reference in the VTT standard to the Vessel and Convoy type list which is published by the ERI expert group. The changes in the VTT table on vessel and convoy type will only require changes in exceptional cases, consequently it is proposed that there is no need for action on short term.

3.15. Reference tables on Communication code[25]

The code list regarding communication codes is defined in the NtS-standard and in the ERI-standard. The purpose of these codes is to indicate the type of communication (E.g. via fax, Phone etc). Although both standards are using codes with the same objective, the used codes are not the same. (e.g ERI is using FX to indicate a FAX-machine and NtS is using FAX to indicate a FAX-machine).
Besides the fact that both standards are using different codes to indicate the type of communication, the code lists are also an integral part of both standards.

Recommendations

In order to achieve harmonisation on the codes in use to indicate the type of communication, it is recommended that chairman of the NtS expert group will provide a Change Request defining a common list of codes to indicate the type of communication. The availability of already existing code lists to indicate the type of communication should be taken into account.

It is recommended that the NtS expert group will be responsible for publication of the communication code table.

[25] Decision case no 2 on reference data

3.16. RIS reference tables on Measure code (NTS) and Measurement purpose qualifier 6311(ERI) [26]

The measure code list is in use by the NtS-standard and the “measurement purpose qualifier” list is used in the ERI-standards. The aim of these codes is to indicate the type or purpose of a measure. At the present time there are two code lists which are giving the impression to be the same. In order to achieve harmonisation on the codes in use to indicate the type of measure it is recommended that the RIS Expert groups define a common list of codes to indicate the type of communication. The availability of already existing code lists to indicate the type of measure should be taken into account.

It is ***recommended*** that the NtS expert group will be responsible for the resulting measure code list and will draft a Change request

3.17. RIS reference data on Weather related reference data[27]

The code list regarding weather related reference data is defined in the NtS-standard and in the VTT-standard. The purpose of these codes is to indicate the weather conditions, both actual measurement as well as the predicted.
Some of the codes are the same and some are bit different. The case 7 shall focus on following weather condition reference data:

VTT Expert Group: reference codes	NtS Expert Group: reference codes
n.a.	NtS: Weather_class_code
VTT: Weather type code	NtS: Weather_item_code
VTT: Weather category code	NtS: Weather_category_code
VTT: Wind direction code	NtS:Direction_code_min / Direction_code_max

Besides the fact that both standards are using different codes to indicate the type of communication, the code lists is also an integral part of both standards:

- NtS – part of the reference data but not within XSD enumerations
- VTT – textual part of the Standard

Although the code lists are different it is ***recommended*** to leave the lists as they are because of the fact that both lists are in use in an operational environment. The amendment of one of the lists would lead to unnecessary additional implementation costs.

[26] Decision case no 3 on reference data

[27] Decision case no 7 on reference data

4. RECOMMMENDATIONS

In the next paragraphs a summary is given of the recommendations that are deducted from the improvement process of the RIS index and RIS reference codes and reference tables. The recommendations are summarised for each stakeholder group being the European Commission, the national RIS authorities and the RIS expert groups.

4.1. Recommendations to the European Commission

Paragraph 3.1: As the RIS index is an essential instrument in the consistent and unambiguous implementation of the basic RIS services in the members States, it is recommended that the European Commission starts the procedure to formalise the RIS index as the mandatory electronic format for geo-related objects as defined in article 4 (3) of the RIS directive.

Paragraph 3.2: As the minimum objects list - as given in annex 2 to this report – of the RIS index is a clear and unambiguous “translation” of the minimum dataset as specified in the RIS directive, it is recommended that the European Commission starts the procedure to replace the annex 1 of the RIS directive by the minimum objects list of the RIS index.

Paragraph 3.6: It is recommended that the European Commission starts a procedure to extend the RIS directive to lower class fairways and make the provision of data for voyage planning, as specified in article 4 (3), mandatory for lower class fairways. Based on the practical experience and information from the transport sector an extension of the waterway-network, for which Member States should provide a minimum set of data for voyage planning, to those fairways accessible for class IV vessels (CEMT class) would be a step forward in the use of RIS for voyage planning.

Paragraph 3.11: The European Commission is recommended to investigate, with the support of the Platina team, which codes and reference tables must be for legal reasons an integral part of the (published written) standard and which codes and reference tables could be separately published in electronic format only.

4.2. Recommendations to the national RIS authorities

Paragraph 3.3: The Platina project will develop a RIS reference data management tool that will maintain and publish the European RIS reference data as defined in the RIS standards as mentioned in chapter 1.1 of this report. It is recommended to include the maintenance and publication of the national RIS indices in this European Reference Data Management tool. The responsibility on European level is restricted

to the publication of the data and does not interfere with the national responsibility on the maintenance and the quality of the national RIS reference data/RIS index.
It is recommended to maintain and publish the RIS reference data and to publish the RIS index according to the procedures as provided in (a separate) annex 3 of this report[28].
Paragraph 3.7: The RIS authorities implementing the RIS index are advised to treat the ISRS code of the RIS index as a primary key and his respective characteristics (an unique, meaningless and unchangeable identifier) - of an object.

It is recommended that the intended Joint Task Force on the RIS index will explain and stress this principle, including its consequences, explicitly in the RIS index encoding guide.

Paragraph 3.9: Each object in the RIS index shall have only one ISRS code, even when those objects are located on common stretches of a waterway for two countries
It is recommended that the object name in the RIS index is agreed between Member States sharing an object in the RIS index.

4.3. Recommendations to the RIS expert groups

Paragraph 3.4: it is recommended to install a Joint Task Force on RIS index under the auspices of the expert group Notices to Skippers, the JTF will be responsible for all RIS index related tasks.
The Joint Task Force (JTF RIS index) will have to draft their task force Terms of Reference and will have at least the tasks:

- To advise the European Commission on the formalisation of the RIS index and the minimum objects list.
- To improve the encoding guide
- To safeguard the quality and consistency of the RIS index

Paragraph 3.5: The RIS index encoding guide, as a supporting tool for the Member States implementing the RIS index, should be improved to guarantee the unambiguous coding and use of the RIS index. It is recommended that the "Joint Task Force on the RIS Index" takes up this essential task.[29]

Paragraph 3.7: It is recommended that the Joint Task Force on the RIS index will explain and stress in the RIS index Encoding Guide the principle, including its consequences, to treat the ISRS code of the RIS index as the primary key, an unique, meaningless and unchangeable identifier, of an object.

[28] Procedures for the reference data management as requested for in decision case 10 of the RIS index.

[29] Platina SWP5.2 will support the "Joint Task Force on the RIS index" as a short term solution and input in this task.

Paragraph 3.8: The introduction of a harmonized European fairway ID is seen as a positive contribution to the need for linking the RIS index of different countries. It is recommended that the Joint Task Force on the RIS Index takes up the task to define and introduce a strategy to introduce a unique harmonized European Fairway ID.

Paragraph 3.10: Although the proposal, to add an international junction number in parallel with the country object code, does not have a high priority it is recommended that the Joint Taks Force on the RIS index puts this topic on the agenda.

Paragraph 3.13: In order to ensure that to all the participants (novices and experts) have a common understanding of the code and reference tables used in the RIS standards it is recommended that all the RIS-expert groups will provide an explanation on the use and purpose of the codes and reference tables as used in the standards.

Paragraph 3.15: In order to achieve harmonisation on the codes in use to indicate the type of communication, it is recommended that chairman of the NtS expert group will provide a Change Request defining a common list of codes to indicate the type of communication. The availability of already existing code lists to indicate the type of communication should be taken into account.
It is recommended that the NtS expert group will be responsible for publication of the communication code table.

Paragraph 3.16: it is recommended that the RIS Expert groups define a common list of codes to indicate the type of communication. The availability of already existing code lists to indicate the type of measure should be taken into account.
It is recommended that the NtS expert group will be responsible for the resulting measure code list and will draft a Change request

Paragraph 3.17: Although the code lists on weather related data are different for the NtS and VTT standard it is recommended to leave the lists as they are because of the fact that both lists are in use in an operational environment. The amendment of one of the lists would lead to unnecessary additional implementation costs.

ANNEX 1 STATUS OVERVIEW OF CODE AND REFERENCE TABLES

This annex is a status overview of several aspects of reference data and their maintenance. The status overview is based on a review of public documents, pilot implementations during the IRIS Europe project, participations in RIS-expert groups and other implementations and experiences. For each code or reference table it is specified which expert group is the “owner “of the table or in other words which expert group is responsible for the definition of the table. In addition it is specified which expert groups has the responsibility for the maintenance and which expert group has the responsibility for publication of the reference table. Yellow marked Codes and reference tables need special attention.