Draft standards of competence for the RIS operator

INTRODUCTION

This standard developed for those who already work or are applying for a position of RIS operator. The proposed standard includes three main sections: **Navigation, GIS technology and RIS operational/technical service,** which determine the required competencies, as well as the knowledge and skills that the applicant must possess. Based on this document, it will be possible to compile model study courses of educational disciplines and curricula. This standard involves the development of model study courses taking into account the prospects for the development of autonomous navigation, as well as the ability to handling vessels directly from the RIS centres.

1. NAVIGATION

1.1 The RIS operator shall be able to assist of the craft during the voyage in real situations on inland waterways. The RIS operator shall be able to do so, on all types of waterways and all types of ports and terminals.
In particular the RIS operator shall be able to:

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
1. describe with mooring, unmooring and hauling (towage) operations;	1. Knowledge of outstanding characteristics for mooring, unmooring and hauling (towage) operations for all the type of IWT. 2. Ability to communicate with the craft using the shore-craft communication systems. 3. Knowledge of the effects of water movement around craft and local effects on sailing circumstances including the shallow water relating to craft's draught. 4. Knowledge of the water movement affecting the craft during manoeuvring, including the interaction effects when two craft pass or overtake each other in narrow fairways, and the interaction effects on a craft moored alongside when another craft proceeds in the fairway and passes at a short distance.
2. Describe of manoeuvre taking into account geographical, hydrological, meteorological and morphological characteristics of the main inland waterways;	1. Knowledge of the hydrological and morphological characteristics of the main waterways, e.g. catchment area and watershed, types of rivers by water source, the slope and course of a river, flow velocity and current pattern, human intervention in the course of a river. 2. Knowledge of the meteorological effects on the main inland waterways, e.g. weather forecast and warning services, scale of Beaufort, district division for wind and storm warnings with factors such as air pressure, wind, high and low pressure areas, clouds, fog, types and passage of fronts, ice warning and high water warning. 3. Ability to provide geographical, hydrological, meteorological and morphological information.
3. undertake necessary actions for assist the safety of navigation;	1. Knowledge of safety regulations in order to avoid of dangerous and emergency situations. 2. Ability to recognize of unsafe situations and make assist to follow-up

	actions according to the safety regulations. 3. Ability to immediately warn the rescue team in case of damage craft.
4. describe the characteristics of main European inland waterways, ports and terminals for using in FIS&TIS;	1. Knowledge of the most important national and international inland waterways. 2. Knowledge of the main port and terminals located in the European inland waterway transport (IWT) network. 3. Knowledge of the influence of engineering structures, waterway profiles and protection works on navigation. 4. Knowledge of the classification characteristics of rivers, canals and inland waterways of maritime character: bottom width, bank type, bank protection, water level, water movement, vertical and horizontal bridge clearance and depth. 5. Knowledge of navigational aids and instruments needed when navigating on inland waterways with maritime character. 6. Ability to explain the characteristics of various types of inland waterways for FIS&TIS preparation.
5. describe of required signals, signs and marking system, what is using on IWW;	1. Knowledge of agreed set of rules applicable in inland navigation and police regulations applying to the relevant inland waterways. 2. Knowledge of the buoyage and marking system SIGNI and IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) part A.
6. describe the procedures of craft passing locks and bridges;	1. Knowledge of the shape, layout and facilities of locks and bridges, lockage (locking process), types of locks, bollards and stairs, etc. 2. Knowledge the procedures during approach, entering, locking and leaving the lock or bridge. Timetable for drawbridges, bridge characteristics and water level for safe passage for certain dimensions of crafts without wiring (lifting) of the bridge.

7. use the information from various systems of traffic control.	1. Knowledge of various traffic control systems in use such as day and night signs on locks, weirs and bridges. 2. Ability to identify day and night signs on locks, weirs and bridges and make assistance to craft while passing it. 3. Ability to use radio equipment in emergency situations. 4. Knowledge of Inland AIS and Inland ECDIS.
8. assist information support to take appropriate actions for safety of navigation;	1. Knowledge of appropriate actions for safety navigation according to mandatory rules 2. Ability to immediately warn the rescue team in case of calamity abatement needs. 3. Knowledge of communication systems with organizations responsible for rescue operations in a particular region
9. describe the various types of locks and bridges in relation to their operation;	1. Knowledge of the shape, layout and facilities of locks and bridges, lockage (locking process), types of lock gates, bollards and stairs, etc. 2. Ability to explain the general procedures to skipper while passing locks, weirs and bridges.
10. respect the general provisions, signals, signs and marking system.	1. Knowledge of police regulations applying to the relevant inland waterways. 2. Knowledge of the IWW day and night marking system, signs and sound signals. 3. Knowledge of buoyage and marking system according to SIGNI and IALA part A.
11. distinguish various types of craft;	1. Knowledge of the most common types of craft including convoys used in European IWT and their corresponding construction, dimensions and tonnages. 2. Ability to explain the characteristics of the most common types of craft including convoys used in European IWT.
12. describe modern electronic navigation aids;	1. Knowledge of functions and operation of navigation aids. 2. Knowledge of operating principles, limitations and sources of error of navigation aids.

	3. Ability to describe of using nautical sensors and indicators providing navigation information, e.g. (D) GPS, position, heading, course, speed, distance, depth, Inland ECDIS, Radar. 4. Ability to use operational in River Information Services (RIS) and technologies, e.g. Inland AIS, Inland ECDIS, Electronic Reporting and Notices to Skipper, FIS (Fairway Information Services), TIS (Traffic Information Services), TMS (Traffic Management Services), CAS (Calamity Abatement Services), ITL (Information for Transport Logistics), ILE (Information for Law Enforcement), ST (Statistics), WCHD (Waterway Charges and Harbour Dues) distance, depth, also in connection with Radar. 5. Ability to detect misrepresentation of information and apply methods of correction.

1.2 The RIS operator shall be able to made suggestion the importance of act in the event of emergencies.

The RIS operator shall be able to:

COLUMN 1 **COMPETENCE**	COLUMN 2 **KNOWLEDGE AND SKILLS**
1. assist in the case of emergencies on the craft, according to applicable instructions and procedures;	1. Knowledge of various types of emergencies. 2. Knowledge of instructions to follow in the case of an alarm. 3. Knowledge of procedures applicable in the case of an accident. 4. Ability to act according to instructions and procedures.

1.3 The RIS operator shall be able to take assist in case fire-fighting in the craft.

The RIS operator shall be able to:

COLUMN 1 **COMPETENCE**	COLUMN 2 **KNOWLEDGE AND SKILLS**
4. follow instructions concerning: seek assistance from nearby shore services or ships, provide information support for using methods, extinguishing agents and procedures during firefighting and rescue operations.	1. Knowledge of procedures to avoid craft danger. 2. Ability to assist of act according to the emergency procedure.

1.4 The RIS operator shall be able to perform duties taking into account the importance of protecting the environment.

The RIS operator shall be able to:

COLUMN 1 **COMPETENCE**	COLUMN 2 **KNOWLEDGE AND SKILLS**
1. assist information support to prevent pollution of the environment;	1. Knowledge of general precautions to prevent pollution of the environment. 1. Knowledge of the national and international regulations concerning the protection of the environment. 2. Ability to use available documentation and information systems concerning environmental issues according to instructions.
1.5 The RIS operator shall be able to use the actual information and communication system	
1. instruct stakeholders on information- and communication systems;	1. Knowledge of information- and communication systems available on shore. 2. Ability to instruct the stakeholders on the use of the shore communication, media and IT systems.
2. collect, save and manage data with regard to data protection laws.	1. Knowledge of the use of all the RIS computer systems. 2. Ability to collect and store data in accordance with applicable legislation.
3. describe circumstances by using relevant technical and nautical terminology;	1. Knowledge of the correct use of relevant technical and nautical terms. 2. Ability to RIS communication.
4. apply knowledge of the documentation required for the RIS operation.	1. Knowledge of the RIS obligatory documentation. 2. Ability to explain the importance of documentation in relation to international and national requirements and legislation.
5. present facts using technical terms.	1. Knowledge of the required technical and nautical terms as well as terms related to social aspects in standardized communication phrases. 2. Ability to use required technical and nautical terms as well as terms related to social aspects in standardized communication phrases.

1.6 The RIS operator shall be able to take assist of the craft navigation. **The RIS operator shall be able to:**	
1. Assist to navigate on European inland waterways including locks and lifts according to navigation agreements;	1. Knowledge of national and international waterways used by inland navigation, geographical location of rivers, canals, seaports, inland harbours. 2. Knowledge of Conference of the European ministers of transport (CEMT) classification of inland waterways, dimensions of the waterway in relation to craft dimensions using modern information systems. 3. Ability to calculate with water levels, depth and (air) draught using relevant information sources. 4. Ability to calculate distances and sailing time using information sources concerning distances, locks, restrictions and sailing speed/time. 5. Knowledge of liability and insurance. 6. Ability to assist shipboard personnel to perform tasks in a safe way.
2. describe and apply traffic regulations applicable to navigation on inland waterways to avoid damage;	1. Knowledge of the rules of the road such as the agreed set of rules applicable in inland navigation for the inland waterway which is being sailed to avoid damage (e.g. collision). 2. Ability to apply relevant traffic regulations applicable to the waterway which is being sailed.
3. consider economic and ecological aspects of the RIS operation in order to use the craft efficiently and respect the environment;	1. Knowledge of the environmental aspects when sailing on inland waterways. 2. Ability to assist environmentally sustainable and economical navigation with regard to e.g. shallow water and waste management.
4. take account of technical structures and profiles of the waterways, and support to use precautions;	1. Knowledge of the influence of engineering structures, waterway profiles and protection works on navigation. 2. Ability to assist navigate passing through various types of locks and the locking procedures, various types of bridges, profiles of canals and rivers and to make assist of “safe harbours” and overnight ports.
5. provide up-to-date charts/maps, Notices to Skippers/Mariners and other actual publications;	1. Knowledge of navigation aids. 2. Ability to describe navigation aids as applicable e.g. satellite position system. 3. Ability to use nautical charts considering factors relating to accuracy and chart reading such as chart date, symbols, soundings, bottom description, depths and datums (WGS84) and to use international charts standards such as Inland ECDIS. 4. Ability to provide nautical publications such as Notices to Skippers/Mariners in order to collect necessary information required for safe navigation stations, finding height of tide at any time, information on ice, high/low water levels, berths and port directory.

6. provide relevant traffic supervision tools and be able to apply them;	1. Knowledge of signals. 2. Ability to describe day and night signs such as lights according to guide. Knowledge of Inland AIS, Inland ECDIS, electronic reporting and Notices to Skippers/Mariners, surveilled and non-surveilled vessel traffic services (VTS) systems and its components. 3. Ability to provide traffic information tools.
1.7 The RIS operator shall be able to recognise and take assist of the various type of crafts and their behaviour on sailing time. **The RIS operator shall be able to:**	
1. explained effects of current, waves, wind and water-levels in relation with interactions of crossing, meeting and overtaking craft as well as ship-shore (canal effect);	1. Knowledge of the influence of waves, wind and current on sailing, maneuvering or stationary craft, including the effect of wind e.g. cross wind when maneuvering, also at nautical superstructures or when entering or leaving ports, locks and secondary waterways. 2. Knowledge of the influence of current on sailing, maneuvering, and stationary craft on waterways used by inland navigation such as the effect of current, e.g. when maneuvering upstream and downstream or with empty or loaded craft and when e.g. entering and leaving ports, locks or secondary waterways. 3. Knowledge of the influence of water movement during sailing, maneuvering and when stationary such as the influence of water movement regarding draught subject to water depth and the reaction to shallow water effects e.g. by decreasing sailing speed. 4. Ability to make suggestion for interaction effects when sailing, maneuvering and when stationary in a narrow fairway and to recognise the interaction effects relating to empty or loaded craft.
2. describe the principles of inland waterway shipbuilding and construction;	1. Knowledge of importance and impact of craft dimensions and dimensions of inland waterway craft according to applicable rules. 2. Ability to assist of operate craft according to their dimensions and applicable construction legislation.
3. ddistinguish construction methods of craft and their behaviour in the water, especially in terms of stability and strength;	1. Knowledge of craft features as laid down in construction drawings of various types of craft and of the effect of the construction to the craft behaviour and its stability and strength. 2. Knowledge of the craft's behaviour in various conditions and environments. 3. Knowledge the craft's stability and instructions accordingly.
4. understand structural parts of craft and damage analysis;	1. Knowledge of key elements of craft and different types of craft including basic knowledge on the technical requirements for inland navigation vessels, as referred to in Directive (EU) 2016/1629. 2. Ability to recognise the craft's core elements for the different types of

	transport and give suggestion accordingly. 3. Knowledge of the longitudinal and transversal structure and local reinforcements in order to analyse damage. 4. Ability to understand the functions of the equipment and considerate of different holds and compartments in order to analyse damage.
1. collect, save and manage data with regard to data protection laws.	1. Knowledge of the use of all the craft´s computer systems. 2. Ability to collect and store data in accordance with applicable legislation.
1. describe circumstances by using relevant technical and nautical terminology;	1. Knowledge of the correct use of relevant technical and nautical terms. 2. Ability to RIS operator communication.
2. prepare, evaluate and distribute information with relevance to boards.	1. Knowledge of procedures to follow in voyage crafts communication. 2. Ability to use the standard communication phrases.
1. ensure a good social working environment;	1. Ability to take the good relationship in case of communications with differences team on boards well. 2. Knowledge and awareness of team-related and cultural differences.
2. apply national, European and international social legislation;	1. Knowledge of the various national, European and international social laws. 2. Ability assist to instruct RIS stakeholders in using relevant parts of applicable social legislation.

2. GEO INFORMATION SYSTEM AND TECHNOLOGIES

2.1 GIS Definition, general aims, tasks and solutions

The RIS operator shall be able to use and recognise of the various type of GIS and their technologies.

The RIS operator shall be able to:

1. apply knowledge of the created GIS technologies appropriate in the RIS operation.	1. Knowledge of the GIS technologies using in RIS operation. 2. Ability to explain the importance of the GIS technologies using in RIS operation.
2. Describe GIS definition and explain of GIS structure	1. Knowledge of GIS definition and it`s tasks. 2. Ability to use of GIS structure in RIS operation

3. Use the GIS functions in RIS operation	1. Knowledge of existing GIS functions. 2. Ability to work according GIS functions feasibility in RIS operation
4. Use the GIS software according the RIS required	1. Knowledge of the using software in RIS centres 2. Ability to work with using software in RIS centres
5. Use the information supply of GIS	1. Knowledge for use the attributive in existing GIS 2. Knowledge of using geographic date in charts and IS 3. Ability to work with information supply of GIS

2.2 Main models of 3-dimension date

The RIS operator shall be able to use and recognise of the various type of GIS 3-D models

The RIS operator shall be able to:

1. use the vector 3-D date models	1. Knowledge to describe of vector 3-D date models 2. Ability to use of vector 3-D date models
2. use the non-topology 3-D date models (*ArcView, MapInfo*)	1. Knowledge to describe of non-topology 3-D date models **(*ArcView, MapInfo*)** 2. Ability to use of non-topology 3-D date models **(*ArcView, MapInfo*)**
3. use the topology 3-D date models (*ArcInfo*);	1. Knowledge to describe of topology 3-D date models **(*ArcInfo*);** 2. Ability to use of topology 3-D date models **(*ArcInfo*);**
4. use the object-orientation 3-D date models (*ArcGis 8; SmolWord*)	1. Knowledge to describe of object-orientation 3-D date models **(*ArcGis 8; SmolWord*)** 2. Ability to use of object-orientation 3-D date models **(*ArcGis 8; SmolWord*)**

3. RIS OPERATIONAL/TECHNICAL SERVICE

3.1 The RIS operator shall be able to perform operational work to apply traffic regulations and control technical equipment to ensure assist sustainable navigations.

The RIS operator shall be able to:

1 apply knowledge of the documentation required for the RIS operation.	1. Knowledge of the RIS obligatory documentation. 2. Ability to explain the importance of documentation in relation to international and national requirements and legislation.
2. maintain RIS devices according to technical instructions;	1. Knowledge of technical instructions for maintenance and repair programmes. 2. Ability to maintain and take care of all RIS equipment according to their instructions. 3. Ability to use maintenance programmes (including digital) under supervision.
3. present facts using technical terms.	1. Knowledge of the required technical and nautical terms as well as terms related to social aspects in standardised communication phrases. 2. Ability to use required technical and nautical terms as well as terms related to social aspects in standardised communication phrases.
4. respect and apply traffic regulations applicable to navigation on inland waterways to avoid damage;	1. Knowledge of the rules of the road such as the agreed set of rules applicable in inland navigation for the inland waterway which is being sailed to avoid damage (e.g. collision). 2. Ability to apply relevant traffic regulations applicable to the waterway which is being sailed.
5. consider economic and ecological aspects of the RIS operation in order to use the IWT efficiently and respect the environment;	1. Knowledge of the environmental aspects when sailing on inland waterways. 2. Ability to perform environmentally sustainable and economical navigation with regard to correct ETA, TTI, FIS e.t.c..
6. take account of technical structures and profiles of the waterways, and use precautions;	1. Knowledge of the influence of engineering structures, waterway profiles and protection works on navigation. 2. Ability to assist of navigate passing through various types of locks and the locking procedures, various types of bridges, profiles of canals and rivers and to make use of “safe harbours” and overnight ports.
7. work with up-to-date charts/maps, Notices to Skippers/Mariners and other publications;	1. Knowledge of navigation aids. 2. Ability to describe of navigation aids as applicable e.g. satellite position system. 3. Ability to use nautical charts considering factors relating to accuracy and chart reading such as chart date, symbols, soundings, bottom description, depths and datums (WGS84) and to use international charts standards such as Inland ECDIS.

	4. Ability to compile nautical publications such as Notices to Skippers/Mariners in order to distribute necessary information required for safe navigation stations, finding height of tide at any time, information on ice, high/low water levels, berths and port directory.
8. describe relevant traffic supervision tools and be able to explain them;	1. Knowledge of signals. 2. Ability to explain day and night signs such as lights to appropriate guide. 3. Knowledge of Inland AIS, Inland ECDIS, electronic reporting and Notices to Skippers/Mariners, RIS, surveilled and non-surveilled vessel traffic services (VTS) systems and its components. 4. Ability to describe traffic information tools.
9. Explain how to use modern electronic navigation aids;	1. Knowledge of functions and operation of navigation aids. 2. Knowledge of operating principles, limitations and sources of error of navigation aids. 3. Ability to use shore nautical sensors and indicators providing navigation information, e.g. (D) GPS, position, direction, course, speed, distance, depth, Inland ECDIS, Inland AIS, Radar. 4. Ability to operational of River Information Services (RIS) and technologies, e.g. Inland AIS, Inland ECDIS, Electronic Reporting and Notices to Skipper, FIS (Fairway Information Services), TIS (Traffic Information Services), TMS (Traffic Management Services), CAS (Calamity Abatement Services), ITL (Information for Transport Logistics), ILE (Information for Law Enforcement), ST (Statistics), WCHD (Waterway Charges and Harbour Dues) distance, depth, also in connection with Radar. 5. Ability to detect misrepresentation of information and apply methods of correction.
10. respect technical requirements for the RIS operational;	1. Knowledge of structure and content of the applicable technical requirements and of the content of the RIS centre. 2. Ability to initiate checks and certification procedures (when it`s needed).

3.2. The RIS operator shall be able to follow up different instructions, technical documents and manuals .

The RIS operator shall be able to:

COLUMN 1 **COMPETENCE**	COLUMN 2 **KNOWLEDGE AND SKILLS**

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
1. use various type of information and manual document for selected and distribution information between stakeholders.	1. Knowledge of technical documentation and manuals. 2. Ability to document operational work.
2. work with different types of materials and documents used for RIS operation;	1. Ability to use relevant methods for RIS operation including ability to choose different materials. 2. Ability to correctly maintain and store documents. 3. Ability to conduct operational work according to environmental protection rules.
3. maintain RIS centres devices according to instructions;	1. Knowledge of actual instructions for maintenance programmes. 2. Ability to take care of all RIS equipment according to instructions and to use maintenance programmes (including digital) under supervision.

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
4. prepare and carry out working plans.	1. Knowledge of principles of RIS operational work. 4. Apply various working methods according to appropriate instructions. 5. Ability to evaluate the quality of work.

3.3 The RIS operator shall be able to communicate generally and professionally, which includes the ability to use standardised communication phrases in situations with communication problems.

The RIS operator shall be able to:

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
1. use information and communication systems;	1. Knowledge of intercom installation for shore-craft or terminal communication, of the (mobile) phone, radio, (satellite) TV and camera system. 2. Ability to use the office's (mobile) phone system, the various radio, (satellite) TV and camera systems. 3. Knowledge of operation principles of the Inland AIS system. 4. Ability to use Inland AIS data to address to craft and other offices.
2. solve different tasks with the help of different types of digital devices, River Information Services (RIS)) and communication systems;	1. Knowledge of digital devices available in inland waterway transport. 2. Ability to use the various digital devices according to instructions to perform simple tasks.
3. collect and store data including backup and data update;	1. Knowledge of the RIS communication system for data collection, storage and update. 2. Ability to process data under strict supervision.

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
4. follow instructions for data protection;	1. Knowledge of data protection regulations and professional secrecy. 2. Ability to process data according to data protection regulations and professional secrecy.
5. present facts using technical terms;	1. Knowledge of the required technical and nautical terms as well as terms related to social aspects in standardised communication phrases. 2. Ability to use required technical and nautical terms as well as terms related to social aspects in standardised communication phrases.
6. obtain nautical and technical information to assistant safety of navigation.	1. Knowledge of the available information sources. 2. Ability to use information sources to obtain necessary nautical and technical information to assistant safety of navigation.

3.4 The RIS operator shall be able to be sociable.

The RIS operator shall be able to:

COLUMN 1 COMPETENCE	COLUMN 2 KNOWLEDGE AND SKILLS
1. follow instructions and communicate with others in terms of duties in RIS center;	1. Knowledge of importance of orders given by the RIS operational, formal and informal instructions, rules and procedures and of the importance of being a role model for inexperienced RIS centre's members. 2. Ability to follow up orders given by the RIS operational and other instructions and rules, as well as to accompany inexperienced RIS centre's members. 3. Knowledge of RIS office`s rules. 4. Ability to comply with RIS office`s rules.
2. contribute to good social relations and cooperate with others stakeholders;	1. Knowledge of cultural diversity. 2. Ability to accept different cultural standards, values and habits. 3. Ability to work independently . 4. Ability to take leadership and to carry out the distributed tasks. 5. Knowledge of importance of respect for distance work.
3. prevent potential damage electronic devices on RIS center;	1. Knowledge of electronics equipment and safety devices e.g. automation, instrumentation and control systems to prevent damage. 2. Ability to apply of working condition of RIS electronic devices.
4. follow-up activities to connect or disconnect RIS center facilities.	1. Knowledge of safety requirements for working with electronic information systems. 2. Knowledge of the construction and operational characteristics of RIS centre electronic systems and equipment in relation to RIS facilities. 3. Ability to give assistant to safe RIS centre connection at any time and to recognise dangerous situations with regard to RIS facilities.