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

Fifty-sixth session
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Item 9 (a) of the provisional agenda
Promotion of River Information Services and other Information and Communication Technologies in inland navigation: the International Standard for Tracking and Tracing on Inland Waterways (resolution No. 63, revised)

Amendments to the International Standard for Tracking and Tracing on Inland Waterways (annex to resolution No. 63, revised)

Transmitted by the Chair of the International Vessel Tracking and Tracing (VTT) Expert Group*

Mandate

1. This document is submitted in line with the Proposed Programme Budget for 2020. part 5, Regional cooperation for development section 20, Economic Development in Europe. Programme 17, Economic Development in Europe (A/74/6 (Sect. 20) and Supplementary).

2. At its fifty-fifth session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation asked the secretariat to prepare a draft revision of the annex to resolution No. 63, revised, in cooperation with the Chair of the International VTT Expert Group, based on the new version of the International Standard for Tracking and Tracing on Inland Waterways published by the Commission Implementing Regulation (EU) 2019/838 of 20 February 2019, for its next session (ECE/TRANS/SC.3/WP.3/110, para. 85).

3. The Working Party may wish to consider the amendment proposal to the text of the revised standard transmitted by the Chair of the International VTT Expert Group, as contained in the annex to this document, and decide as appropriate.**

* This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

** New chapters 4 and 5 to the revised standard and the updated list of references can be found in ECE/TRANS/SC.3/WP.3/2020/8. New annexes for the revised standard will be issued for the fifty-seventh session of SC.3/WP.3.

Annex*

Amendment proposal to the annex to resolution No. 63, revised, "International Standard for Tracking and Tracing on Inland Waterways (VTT)"

1. General provisions

1.1 Introduction

The technical specifications for Vessel Tracking and Tracing (VTT) systems is based on the work carried out in this field by relevant international organizations, namely already existing standards and technical specifications in inland navigation, maritime or other relevant areas.

Due to the application of VTT systems in mixed traffic areas including both inland and maritime navigation environments, like sea ports and coastal areas, VTT systems shall be compatible with the AIS Class A mobile stations as referred to in Chapter V of the SOLAS convention.

When VTT systems provide essential services [as defined in Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union, the provisions of that Directive apply].

1.2 References**

1.3 Definitions***

(a) Automatic Identification System

Automatic Identification System (AIS)

'Automatic Identification System (AIS)' means an automatic communication and identification system intended to improve the safety of navigation by assisting in the efficient operation of vessel traffic services (VTS), ship reporting, ship-to-ship and ship-to-shore operations.

Inland AIS

'Inland AIS' means AIS for the use in inland navigation and interoperable with (maritime) AIS-technically enabled by amendments and extensions to the (maritime) AIS.

Track and Trace

'Track and Trace' means the process of monitoring and recording the past and present whereabouts of a ship shipment, as it passes through different handlers on its way to its destination, through a network. Tracing refers to where the product has been, while tracking refers to where it is going next.

Track

'Track' means the path followed or to be followed between one position and another.

* *Note by the secretariat:* the text proposed for deletion is ~~strikethrough~~, the new text is **bold** (in the main text) and ***bold italics*** (in titles).

** *Note by the secretariat:* See ECE/TRANS/SC.3/WP.3/2020/8, annex I.

*** *Note by the secretariat:* the former annex A.

~~A.1~~*(b)* **Services**

River Information Services (RIS)

Replace the existing text with

> 'River Information Services (RIS)' means services provided in accordance with paragraph 2.1 of the Guidelines and Recommendations for River Information Services (annex to resolution No. 57, revised).

Vessel Traffic Management (VTM)

Replace the existing text with

> 'Vessel Traffic Management (VTM)' means the functional framework of harmonised measures and services to enhance the safety, security, efficiency of shipping and the protection of the marine environment in all navigable waters.

***Inland* Vessel Traffic Services (VTS)**

Replace the existing text with

> 'Inland Vessel Traffic Services (VTS)' means services within the meaning of paragraph 2.1.1 of the Guidelines and criteria for Vessel Traffic Services on Inland Waterways (annex to resolution No. 58).

VTS area (*delete*)

Navigational information

'Navigational information' ~~is~~ **means** information provided to the skipper on board to support in onboard decision-making. ~~(*Source*: IALA VTS guidelines)~~

Tactical Traffic Information (TTI)

Replace the existing text with

> 'Tactical Traffic Information' means the information affecting immediate navigation decisions in the actual traffic situation and the close geographic surroundings. Tactical Traffic Information is used to generate a Tactical Traffic Image.

Strategic Traffic Information (STI)

Replace the existing text with

> 'Strategic Traffic Information' means the information affecting the medium and long-term decisions of RIS users. Strategic Traffic Information is used to generate a Strategic Traffic Image.

~~(~~Vessel~~)~~ Tracking and Tracing *(VTT)*

Replace the existing text with

> 'Vessel Tracking and Tracing' means a function within the meaning of paragraph 2.15 of the Guidelines and Recommendations for River Information Services (annex to resolution No. 57, revised).

Vessel traffic monitoring, Logistics (*delete*)

Maritime Mobile Service Identity (MMSI)

'Maritime Mobile Service Identity (MMSI)' means series of nine digits which are transmitted over the radio path in order to uniquely identify ship, stations, coast stations and group calls.

Electronic Reporting International (ERI)

'Electronic Reporting International (ERI)' means the Technical guidelines and specifications established in accordance with section 4.4 of the Guidelines and Recommendations for River Information Services (annex to resolution No. 57, revised).

Inland Electronic Chart Display and Information System (Inland ECDIS)

'Inland Electronic Chart Display and Information System (Inland ECDIS)' means the Technical guidelines and specifications established in accordance with section 4.2 of the Guidelines and Recommendations for River Information Services (annex to resolution No. 57, revised).

~~A.2~~*(c)* **Players**

Shipmaster

Replace the existing text with

> 'Shipmaster' means the person on board of the ship being in command and having the authority to take all decisions pertaining to navigation and ship management. The terms 'shipmaster', 'boatmaster' and 'skipper' shall be deemed to be equivalent.

Conning skipper

'Conning skipper (Navigating skipper)' means the person who navigates the vessel according to **the** voyage plan instructions of the shipmaster. ~~(*Source*: (COMPRIS) WP2, Architecture)~~

VTS operator (*delete*)

Competent authority *for RIS*

Replace the existing text with

> The Competent Authority for RIS means the competent authority designated by the Member State in accordance with section 2.8 of the Guidelines and Recommendations for River Information Services (annex to resolution No. 57, revised).

RIS authority (*delete*)

RIS operator

'RIS operator' means a person performing one or more tasks ~~contributing to the services of RIS~~ **related to the provision of RIS services**.

Lock operator, Bridge operator, Terminal operator, Fleet manager, Operator in calamity centres of emergency services, Consignor, Consignee, Freight broker, Supply forwarder, Customs (*delete*)

1.4 Vessel Tracking and Tracing services and minimum requirements of Vessel Tracking and Tracing systems

VTT systems shall be able to support the following services:

- **Navigation,**
- **Traffic Information,**
- **Traffic Management,**
- **Calamity Abatement,**
- **Transport Management,**
- **Enforcement,**
- **Waterway dues and port infrastructure charges,**

- **Fairway Information Services,**
- **Statistics.**

~~This is without prejudice to the provisions of Regulation (EC) No 414/2007 applicable to those services.~~

The most important information of VTT relates to vessel identity and its position. VTT shall be capable of providing — at minimum — the following information on an automatic and periodical basis to other vessels and shore stations, provided these vessels or shore stations are appropriately equipped:

- **Unique vessel ID: unique European vessel identification number (ENI)/International Maritime Organisation number (IMO number),**
- **Vessel name,**
- **Vessel call sign,**
- **Navigational status,**
- **Type of vessel or convoy,**
- **Dimensions of vessel or convoy,**
- **Draught,**
- **Dangerous cargo indication (number of blue cones in compliance with ADN),**
- **Loading status (loaded/unloaded),**
- **Destination,**
- **Estimated Time of Arrival (ETA) at destination,**
- **Number of persons on board,**
- **Position (+ quality indication),**
- **Speed (+ quality indication),**
- **Course Over Ground (COG) (+ quality indication),**
- **Heading (HDG) (+ quality indication),**
- **Rate Of Turn (ROT),**
- **Blue sign information,**
- **Timestamp of position fix.**

These minimum requirements indicate the user needs and the necessary data for VTT systems in inland navigation.

A VTT system is designed to offer sufficient flexibility to accommodate future additional requirements.

2. ~~The use of vessel tracking and tracing in inland navigation~~ *Inland vessel tracking and tracing functions*

~~1.1~~ *2.1* Introduction

Replace with:

This section sets out the requirements relating to VTT information for different RIS service categories. Requirements for each service category are listed describing the user groups and usage of the VTT information.

The overview of VTT information needs is provided in Table 2.1 at the end of this section.

1.2 Scope (*delete*)

~~1.3~~ *2.2* Navigation

Vessel tracking and tracing can be used to support the active navigation on board. **Main user group are conning skippers.**

The process navigation can be ~~split~~ **divided** into three phases:

- Navigation, medium-term ahead;
- Navigation, short-term ahead;
- Navigation, very short-term ahead.

For each phase, the user requirements are different.

*~~1.3.1~~ **2.2.1** Navigation, medium-term ahead*

Navigation, ~~a~~ medium-term ahead, is the navigation phase in which the skipper observes and analyses the traffic situation looking some minutes up to an hour ahead and considers the possibilities of where to meet, pass or ~~overhaul~~ **overtake** other vessels.

The traffic image needed is the typical 'looking around the corner' feature and is mainly outside the scope of the onboard radar range.

Delete the third paragraph.

The update rate depends on the task and **differs from the situation in which the vessel is involved** ~~the status of the vessel. The maximum update rate is 2 seconds.~~

~~1.3.2~~ 2.2.2 Navigation, short-term ahead

Navigation, ~~a~~ short-term ahead, is the decision phase in the navigation process. In this phase, traffic information has relevance for the process of navigation, including collision avoidance measures, if necessary. This function deals with ~~observing~~ **the observation of** other vessels ~~located~~ in ~~close proximity to~~ **the close surroundings of the own** vessel.

Delete the fourth sentence, the first paragraph.

The actual traffic information ~~on position, identification, name, direction, Speed over Ground, course, heading and special manoeuvre indicator (blue sign) will~~ **shall** be exchanged continuously at least every 10 seconds. For some routes, the authorities will set a predefined update rate (maximum 2 seconds).

*~~1.3.3~~ **2.2.3** Navigation, very short term-ahead*

Replace the existing text with

> Navigation, very short term-ahead, is the operational navigation process. It consists of execution of the decisions that were made beforehand, on the spot and monitoring their effects. The traffic information needed from other vessels, especially in this situation, is related to its own vessel conditions, such as relative position, relative speed. It is necessary to follow highly accurate information in this phase.
>
> Therefore, Tracking and Tracing information cannot be used for very short-term navigation.

~~1.4~~ *2.3* Vessel Traffic Management

Vessel Traffic Management **(VTM)** comprises at least ~~one~~ of the **following** elements ~~defined below~~:

- Vessel Traffic Services;
- Lock planning and operation;
- Bridge planning and operation.

~~*1.4.1*~~ ***2.3.1*** *Vessel Traffic Services ~~(VTS)~~*

~~Within Vessel Traffic Services different services can be distinguished:~~ **Vessel Traffic Services (VTS) consist of the following services:**

- Information service;
- Navigational assistance service;
- Traffic organization service.

~~In the next paragraphs, user needs related to traffic information are described.~~

The user groups of Vessel Traffic Services are VTS operators and conning skippers. The user needs related to traffic information are indicated in paragraphs 2.3.1.1 to 2.3.1.3.

~~*1.4.1.1*~~ ***2.3.1.1*** *Information service*

The information service is provided by broadcasting information at fixed times and intervals or when deemed necessary by ~~the~~ VTS or at the request of a vessel~~. Such information~~**, and** may include~~, for example,~~ reports on the position, identity and intentions of other ~~traffic;~~ **vessels,** waterway conditions, weather **conditions,** ~~navigational hazards;~~ **hazardous situations** or any other factors that may influence the vessel's transit.

Replace the second paragraph with

> For the information services, an overview of traffic in a network or on a fairway stretch is required.

The competent authority ~~shall~~ **may** set a predefined update rate, **if needed for safe and reliable passage through the area.**

~~*1.4.1.2*~~ ***2.3.1.2*** *Navigational assistance service*

Navigational assistance service informs the **conning** skipper about difficult navigational or meteorological circumstances or **assists the conning skipper** ~~provides assistance~~ in case of defects or deficiencies. This service is normally rendered at the request of a vessel or by ~~the~~ VTS when deemed necessary.

To provide individual information to a **conning** skipper, the VTS operator needs an actual detailed traffic image.

The actual traffic information has to be exchanged continuously (every three seconds, almost real time or another predefined update rate set by the competent authority).

Delete the third, fourth and fifth paragraphs.

All other information shall be made available on demand of the VTS operator or in special ~~circumstances (on event~~) **occasions**.

~~*1.4.1.3*~~ ***2.3.1.3*** *Traffic organization service*

The traffic organization service concerns the operational management of traffic and the forward planning of vessel movements to prevent congestion and dangerous situations, and is particularly relevant in times of high traffic density or when the movement of special transports may affect the flow of other traffic. The service may also include establishing and operating a system of traffic clearances, or VTS sailing plans, or both in relation to priority of movements, allocation of space **(such as berthing places, lock space, sailing routes),** mandatory reporting of movements in the VTS area, routes to be followed, speed limits to be observed or other appropriate measures which are considered necessary by the VTS **Authority**. ~~The traffic organization service requirements for the traffic image are the same as those described in section 1.4.1.2.~~

~~1.4.2~~ ***2.3.2*** *Lock planning and operation*

~~In the following sections,~~ The lock planning processes — long- and medium-term — and lock operation process are described **in paragraphs 2.3.2.1 to 2.3.2.3. Main user groups are lock operators, conning skippers, shipmasters and fleet managers.**

~~1.4.2.1~~ ***2.3.2.1*** *Lock planning, long-term*

Long-term lock planning ~~a long term ahead~~ deals with the planning of a lock ~~a few~~ **some** hours up to a day ahead.

In this case, **the** traffic information is used to improve **the** information on waiting and passing times at locks, and are originally based on statistical information.

Delete the third paragraph.

~~The~~ **Estimated Time of Arrival (**ETA**)** should be available on demand or should be exchanged, if a deviation from the original ETA ~~is exceeded beyond the value predefined~~ **exceeds the deviation allowed** by the competent authority. **Requested time of arrival (**RTA**)** is the response to an ETA report **or may be sent from a lock to propose a locking time.**

~~1.4.2.2~~ ***2.3.2.2*** *Lock planning, medium-term*

Medium-term lock planning ~~a medium term ahead~~ deals with the planning of a lock up to two or four lock cycles ahead.

In this case, **the** traffic information is used to map the arriving vessels to the available lock cycles and **based on the planning** to inform the **conning** skippers about ~~the~~ RTA ~~(Requested Time of Arrival) based on the planning.~~

Delete the third paragraph.

~~The~~ ETA should be available on demand or should be exchanged, if a deviation from the original ETA ~~is exceeded beyond the value predefined~~ **exceeds the deviation allowed** by the competent authority. All other information should be available **once** at the ~~time of~~ first contact or on demand. RTA is the response to an ETA report **or may be sent from a lock to propose a locking time.**

~~1.4.2.3~~ ***2.3.2.3*** *Lock operation*

In ~~this~~ **lock operation** phase, the actual locking process takes place.

Delete the second paragraph.

The actual traffic information ~~on identification, position, direction, speed and course~~ must be exchanged either continuously or at an update rate predefined by the competent authority.

The accuracy of VTT information does not allow for high-precision applications like closing of lock gates.

~~1.4.3~~ ***2.3.3*** *Bridge planning and operation*

~~In the following sections,~~ The bridge planning processes — medium- and short-term — and bridge operation process are described **in paragraphs 2.3.3.1 to 2.3.3.3. Main user groups are bridge operators, conning skippers, shipmasters and fleet managers.**

~~1.4.3.1~~ ***2.3.3.1*** *Bridge planning, medium-term*

The bridge planning process in the medium term deals with the optimization of the traffic flow in such a way that the bridges are opened in time for passing of vessels (green wave). The ~~time looking ahead~~ **planning horizon** varies between fifteen minutes and two hours. The time frame ~~will~~ depend**s** on the local situation.

Delete the second paragraph.

~~The~~ ETA and position **information** should be available on demand or **such information** should be exchanged ~~if a deviation from the original ETA is exceeded beyond the value~~

~~predefined~~ **as soon as the deviation between the updated ETA and the original ETA exceeds a predefined value set** by the competent authority. All other information should be available **once** at the ~~time of~~ first contact or on demand. RTA is the response to an ETA report **or may be sent from a bridge to propose a passage time**.

~~*1.4.3.2*~~ ***2.3.3.2*** *Bridge planning, short-term*

In the case of ~~short term~~ bridge planning ~~process~~ **in the short-term**, decisions are made on **the basis of** the strategy for opening of the bridge.

Delete the second paragraph.

Actual traffic information on the position, speed and direction, should be available on demand or **exchanged in accordance with predefined update rate, for example, every five minutes, set by the competent authority** ~~set at an update rate predefined by the competent authority, e.g. every five minutes~~. ETA and position **information** should be available on demand or **such information** should be exchanged ~~if a deviation from the original ETA is exceeded beyond the value predefined~~ **as soon as the deviation between the updated ETA and the original ETA exceeds a predefined value set** by the competent authority. All other information should be available **once** at the ~~time of~~ first contact or on demand. RTA is the response to an ETA report **or may be sent from a bridge to propose a passage time.**

~~*1.4.3.3*~~ ***2.3.3.3*** *Bridge operation*

In ~~this~~ **bridge operation** phase, the actual opening and passing of the vessel through the bridge take~~s~~ place.

Delete the second sentence.

The actual traffic information ~~on identification, position, direction, speed and course has to~~ shall be exchanged either continuously or at ~~an~~ **another** update rate ~~predefined~~ **set** by the competent authority.

The accuracy of VTT information does not allow for high-precision applications like opening or closing of the bridge.

~~1.5~~ *2.4* Calamity Abatement

Calamity abatement in this context focuses on repressive measures: dealing with real accidents and providing assistance during emergencies. **Main user groups are operators in calamity centre, VTS operators, conning skippers, shipmasters and the competent authorities.**

Delete the second sentence.

In the case of an accident, the traffic information can be provided automatically or **the responsible organization shall ask for the respective information** ~~on request of a calamity fighter.~~

~~1.6~~ *2.5* Transport Management

~~This service~~ **Transport management (TS)** is divided into **the following** four activities:

- Voyage planning;
- Transport logistics;
- Port and terminal management;
- Cargo and fleet management.

Main user groups are shipmasters, freight brokers, fleet managers, consignors, consignees, supply forwarders, port authorities, terminal operators, lock operators and bridge operators.

~~*1.6.1*~~ ***2.5.1*** *Voyage planning*

Replace the existing text with

> Voyage planning in this context focuses on the planning on-trip. During the voyage, the shipmaster shall check his original planned voyage.

~~*1.6.2*~~ ***2.5.2*** *Transport Logistics*

Replace the existing text with

> Transport logistics consist of the organization, planning, execution and control of transport.
>
> All traffic information is needed on demand of the vessel owner or logistics stakeholders.

~~*1.6.3*~~ ***2.5.3*** *Intermodal port and terminal management*

Intermodal port and terminal management considers the planning of resources in ports and at terminals.

Delete the second paragraph.

The terminal and port manager ~~will~~ **shall** request **for the** traffic information or ~~will~~ **shall** agree that in predefined situations **the** traffic information will be sent automatically.

~~*1.6.4*~~ ***2.5.4*** *Cargo and fleet management*

Cargo and fleet management considers the planning and optimiz~~es~~**ing** the use of vessels, arranging cargo and transportation.

Delete the second paragraph.

The shipper or vessel owner ~~will ask~~ **shall request** for **the** traffic information or **the** traffic information ~~will~~ **shall** be sent in predefined situations.

~~**1.7**~~ ***2.6*** **Enforcement**

The scope of the enforcement task ~~described below~~ is limited to the services ~~concerning~~ **on** dangerous goods, immigration control and customs. **Main user groups are customs, competent authorities and shipmasters.**

Delete the second paragraph.

Traffic information ~~will~~ **shall** be exchanged with the appropriate authorities. **The** traffic information exchange will take place on demand or at fixed predefined points or ~~at~~ **in case of** special ~~described~~ circumstances defined by the **responsible** ~~competent~~ authority.

~~**1.8**~~ ***2.7*** **Waterway *dues* and port infrastructure charges**

At various locations in Europe, usage of the waterway and ports ~~is~~ **may be** subject to the payment of fees. **Main user groups are competent authorities, shipmasters, fleet managers, waterway authorities and port authorities**. ~~tolls are levied for the use of the waterway and ports~~.

Delete the second paragraph.

The traffic information **shall** ~~will~~ be exchanged on demand or at fixed points, defined by the competent waterway or port authority.

1.9 Fairway information services (*delete*)

1.10 Conclusion (*delete*)

2.8 Information needs

Table 2.1 provides an overview of the information needs of the different services.

Table 2.1

Overview of information needs

	Identification	*Name*	*Call sign*	*Navigational status*	*Type*	*Dimensions*	*Draught*	*Dangerous cargo*	*Loading status*	*Destination*	*ETA at destination*	*Number of persons*	*Position and time*	*Speed*	*Course=direction*	*Heading*	*Rate of turn*	*Blue sign*	*Other information*
Navigation — medium-term	X	X		X	X	X		X	X	X			X	X	X			X	
Navigation — short-term	X	X		X	X	X		X	X	X			X	X	X	X		X	
Navigation — very short-term	Requirements are currently not met by VTT																		
VTM — VTS services	X	X		X	X	X	X	X	X	X		X	X	X	X			X	
VTM — lock operation	X	X		X	X		X	X					X		X				Air draught
VTM — lock planning	X	X		X	X	X	X	X					X	X	X				Number of assisting tugboats,air draught, ETA/RTA
VTM — bridge operation	X	X			X	X							X	X	X				Air draught
VTM — bridge planning	X	X		X	X	X							X	X	X				Air draught, ETA/RTA
Calamity abatement	X	X			X			X	X	X		X	X		X				
TM — voyage planning	X	X				X	X		X	X			X	X					Air draught, ETA/RTA
TM — transport logistics	X	X									X		X		X				
TM — port and terminal management	X	X		X	X	X		X	X				X		X				ETA/RTA
TM — cargo and fleet management	X	X		X			X		X	X			X		X				ETA/RTA
Enforcement	X	X		X	X			X		X	X	X	X		X				
Waterway and port infrastructure charges	X	X			X	X	X			X			X						

~~2~~ *3* Inland AIS ~~Standard~~ *Technical Specification*

~~2.1~~ *3.1* Introduction

In maritime navigation, IMO has introduced the **carriage of** Automatic Identification System (AIS)**:** ~~As of 2005~~ all sea-going ships on international voyage falling under **Chapter V of** SOLAS ~~Chapter V~~, **"**Safety of **N**avigation**"**, must be equipped with AIS **Class A mobile stations since the end of 2004**.

~~The European Parliament and the Council have adopted~~ Directive 2002/59/EC **of the European Parliament and of the Council** establish~~ing~~**es** a Community vessel traffic

monitoring and information system for sea-going vessels carrying dangerous or polluting goods using AIS for Ship Reporting and Monitoring.

AIS ~~technology~~ is considered **as a** suitable **solution** ~~also~~ for automatic identification and vessel tracking and tracing in inland navigation. **Especially,** the real time performance of AIS and the availability of worldwide standards and guidelines are **beneficial** ~~particularly valuable~~ for safety-related applications.

To serve the specific requirements of inland navigation, AIS had to be further developed to the so-called Inland AIS ~~Standard~~ **technical specification** while preserving full compatibility with ~~IMO's SOLAS~~ **the maritime** AIS and already existing standards **and technical specifications** in inland navigation.

Because Inland AIS is compatible with the ~~SOLAS~~ **maritime** AIS, it enables a direct data exchange between sea-going and inland vessels navigating in mixed traffic areas.

Using AIS for automatic identification and vessel tracking and tracing in inland navigation presents the following features.

AIS is:

- A ~~maritime navigation~~ system **introduced by** IMO to support the maritime safety of **navigation; mandatory carriage requirement for all vessels in accordance with Chapter V of SOLAS** ~~required for all ships falling under the provisions of SOLAS~~
- **Operating** ~~A system that operates~~ in direct ship-to-ship mode as well as in ship-to-shore and shore-to-ship mode
- A safety system with high requirements regarding availability, continuity and reliability ~~of data~~
- A real-time system due to the direct ship-to-ship data exchange
- An autonomously operating system, in a self-organized manner, without a master station. There is no need for a central controlling intelligence
- ~~A system~~ Based on international standards and procedures **in accordance with Chapter V of** ~~i.e. IMO~~ SOLAS ~~chapter V regulations~~
- A type-approved system **to** enhanc~~ing~~**e** safety of navigation **following** ~~through the introduction of~~ a certification procedure.
- **Globally** ~~A system~~ interoperable ~~with SOLAS AIS~~.

The purpose of this chapter is to define all necessary functional requirements, amendments and extensions to the existing ~~SOLAS~~ AIS **Class A mobile stations** in order to **create** ~~develop~~ an Inland AIS **mobile station** for use in inland navigation.

~~2.2~~ *3.2* Scope

~~The Automatic Identification System (~~AIS~~)~~ is a shipborne radio data system exchanging static, dynamic and voyage-related vessel data between equipped vessels and between equipped vessels and shore stations. Shipborne AIS stations broadcast the vessel's identity, position and other data at regular intervals. By receiving these transmissions, shipborne or shore-based AIS stations within the radio range can automatically locate, identify and track AIS-equipped vessels on an appropriate display, such as a radar or **electronic chart display systems such as the Inland Electronic Chart Display and Information System (**Inland ECDIS) **as defined in the Recommendation on electronic chart display and information system for inland navigation (Inland ECDIS) (annex to resolution No. 48, revision 4).** AIS ~~systems are~~ **is** intended to enhance safety of navigation in ship-to-ship use, surveillance (VTS), Vessel Tracking and Tracing, and calamity abatement support.

~~Several types of~~ AIS **mobile** stations **are divided into the following types** ~~can be distinguished~~:

(a) Class A mobile stations to be used by all sea-going vessels falling under the ~~SOLAS Chapter V~~ carriage requirements of Chapter V of SOLAS;

(~~c~~ **b**) ~~Class A derivatives~~ **Inland AIS mobile station,** having full Class A functionality on Very High Frequency **(VHF)** Data Link level, **deviating in** ~~with certain~~ supplementary functions **designed for the use** ~~allowing them to be used~~ by inland vessels~~) hereafter Inland AIS;~~

(~~b~~ **c**) Class B SO/CS mobile stations with limited functionality ~~to be used on e.g. pleasure craft~~ **which may be used by vessels not falling under carriage requirements for Class A or Inland AIS mobile stations**;

(d) **AIS shore** ~~Base~~ stations, including ~~shore-based simplex and duplex repeater stations~~ **AIS base stations and AIS repeater stations**.

The following modes of operation can be distinguished:

(a) Ship-**to**-ship operation: all AIS-equipped vessels are able to receive static and dynamic information from all other AIS-equipped vessels within the radio range;

(b) Ship-**to**-shore operation: data from AIS-equipped vessels can also be received by AIS ~~base~~ **shore** stations connected to the RIS centre where a traffic image (Tactical Traffic Image ~~(TTI)~~ and/or Strategic Traffic Image ~~(STI)~~) can be generated;

(c) Shore-**to**-ship operation: **voyage and** safety-related data from shore to vessel can be transmitted.

A characteristic of AIS is the autonomous mode, using Self-Organiz**ed**~~ing~~ Time Division Multiple Access (SOTDMA) without any need for an organizing master station. The radio protocol is designed in a way that vessel stations operate autonomously in a self-organized manner by exchanging link access parameters. Time is divided into ~~1~~ **one** minute frames with 2 250 time slots per radio channel which are synchronized by ~~Universal Time Coordinated~~ GNSS[1] UTC[2] time ~~of Global Navigation Satellite System (GNSS~~). Each participant organizes ~~their~~ **its** access to the radio channel by choosing free time slots considering the future use of time slots by other stations. There is no need for a central intelligence controlling the slot assignment.

An Inland AIS **mobile** station consists in general of the following components:

(a) ~~Very High Frequency (~~VHF~~)~~ transceiver (~~1~~ **one** transmitter, ~~/2~~ **two** receivers);

(b) GNSS receiver;

(c) Data processor.

Universal shipborne AIS, as defined by IMO, ITU and IEC, and recommended for use in inland navigation, uses SOTDMA in the VHF maritime mobile band. AIS operates on the internationally designated VHF frequencies AIS 1 (161.975 MHz) and AIS 2 (162.025 MHz), and can be switched to other frequencies in the VHF maritime mobile band.

To serve the specific requirements of inland navigation, AIS has ~~been~~ **to be** further developed to the so-called Inland AIS while preserving ~~full~~ compatibility with ~~SOLAS~~ **the maritime** AIS and already existing standards in inland navigation.

Vessel Tracking and Tracing systems in inland navigation shall be compatible with ~~SOLAS~~ AIS **Class A mobile stations, as defined by IMO**. Therefore, AIS messages **shall be able to provide the following types of information**~~should contain~~:

(a) Static information, such as official ~~ship~~ **vessel** number, call sign of vessel, name of vessel, type of vessel;

(b) Dynamic information, such as vessel's position with accuracy indication and integrity status;

(c) Voyage-related information, such as length and beam of vessel or convoy, ~~presence of hazardous~~**dangerous** cargo on board;

[1] Global Navigation Satellite System.

[2] Universal Time Coordinated.

(d) Inland navigation specific information, ~~e.g.~~ **such as** number of blue cones/lights according to ADN or ETA at lock/bridge/terminal/ border.

For moving vessels, ~~an~~ **the** update rate for dynamic information on tactical level ~~can be switched between SOLAS mode and inland waterway mode~~ **shall be between 2 and 10 seconds**. ~~In inland waterway mode, it may be increased to once every two seconds~~. For vessels at anchor, it is recommended to have an update rate of several minutes, or **an update triggered** when information is amended.

Inland AIS mobile station does not replace, but supports navigational services such as radar target tracking and VTS. **Inland** AIS **mobile station provides** ~~is~~ an additional **input** ~~source~~ for navigational information**: its value added is to provide means of surveillance and tracking of vessels equipped with Inland AIS. The position accuracy derived from Inland AIS mobile station using the internal (uncorrected) GNSS is typically above 10 metres. When the position is corrected using DGNSS from either maritime beacon differential correction service, AIS Message 17 or EGNOS (SBAS) the accuracy is typically below 5 metres.** ~~As such AIS is not used as a substitute for navigational services such as radar target tracking and VTS, but rather provides additional support to them. A key advantage of AIS lies in enabling the surveillance and tracking of vessels equipped with it.~~ Due to their different characteristics, **Inland** AIS **mobile station** and radar complement each other.

~~2.3~~ *3.3* ~~Functional~~ Requirements

~~*2.3.1*~~ *3.3.1* *General requirements ~~for Inland AIS~~*

Inland AIS **mobile station** is based on ~~maritime AIS~~ **the AIS Class A mobile station** ~~developed~~ in accordance with ~~the provisions of~~ SOLAS.

Inland AIS **mobile station** should cover the main functionality of ~~SOLAS AIS~~ **AIS Class A mobile stations** while considering the specific requirements ~~of~~ **for** inland navigation.

Inland AIS should be compatible ~~with the SOLAS~~ **to the maritime** AIS and should enable a direct data exchange between sea-going and inland vessels navigating in a mixed traffic area.

~~Specific requirements for Inland AIS, which are not part of SOLAS AIS, are listed below~~. **The requirements set out in paragraphs 3.3 to 3.5 are complementary or additional requirements for Inland AIS, which differs from the AIS Class A mobile stations.**

The Inland AIS **mobile station** design should take into account the "Technical Clarifications on **the** Vessel Tracking and Tracing Standard" ~~for Inland Navigation, and Test Standard for Inland AIS~~.

The default setting of the transmission power shall be high power and shall only been set to low power if directed so by the competent authority.

~~2.3.2~~ *3.3.2* Information content

~~Generally,~~ Only Tracking and Tracing and safety-related information ~~is~~ **shall be** transmitted via Inland AIS **mobile station**.

The information content set out in paragraphs 3.3.2.1 to 3.3.2.5 shall be implemented in a way that it can be sent from an Inland AIS mobile station without the need for an external application.

~~Taking into consideration this requirement~~ **The** Inland AIS messages should contain the following information (items marked with "*" have to be handled differently ~~than~~ **as** for seagoing ships):

~~*2.3.2.1*~~ *3.3.2.1* *Static vessel information*

The static vessel information for inland vessels should have the same parameters and the same structure as ~~SOLAS AIS~~ **in the AIS Class A mobile stations** as far as **it is** applicable. **Any conversions from inland to maritime parameters shall be done automatically where feasible.** Unused parameter fields should be set to "not available".

Inland specific static vessel information should be added.

Static vessel information is broadcast autonomously from the vessel or on demand. ~~and consists of the following:~~

User identifier (MMSI)	~~(SOLAS AIS)~~ **in all messages**
Name of vessel	~~(SOLAS AIS)~~ **AIS Message 5**
Call sign ~~of the vessel~~	~~(SOLAS AIS)~~ **AIS Message 5**
IMO number~~*~~	**AIS Message 5** (~~SOLAS AIS/~~ not available for Inland vessels)
Type of vessel**/convoy** and cargo *	~~(SOLAS AIS/amended for Inland AIS)~~ **AIS Message 5 + Inland FI 10**
Overall length (decimetre accuracy) *	~~(SOLAS AIS/amended for Inland AIS)~~ **AIS Message 5 + Inland FI 10**
Overall beam (decimetre accuracy) *	~~(SOLAS AIS/amended for Inland AIS)~~ **AIS Message 5 + Inland FI 10**
Unique European vessel identification number (ENI)	**Inland FI 10** ~~(Inland AIS extension)~~
~~Type of vessel or convoy (ERI code)~~	~~(Inland AIS extension)~~
Reference point of reported position on the vessel (location of antenna) *	**AIS Message 5**

~~*2.3.2.2*~~ ***3.3.2.2*** *Dynamic vessel information*

The dynamic ~~ship~~ **vessel** information for inland vessels should have the same parameters and the same structure as ~~SOLAS AIS~~ **as in AIS Class A mobile stations** as far as **it is** applicable. Unused parameter fields should be set to "not available".

Inland specific dynamic vessel information should be added.

Dynamic vessel information is broadcast**ed** autonomously from the vessel or on demand ~~and consists of the following~~.

Position **according to World Geodetic System from 1984 (**WGS 84**)**	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Speed **Over Ground (**SOG**)** ~~(quality information)*~~	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Course ~~(~~COG~~)~~ ~~(quality information)*~~	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Heading ~~(~~HDG~~)~~ ~~(quality information)*~~	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Rate of turn ~~(~~ROT~~)~~	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Position accuracy (GNSS/DGNSS)	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Time of electronic position fixing device	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Navigational status	~~(SOLAS AIS)~~ **AIS Message 1, 2 and 3**
~~Status of~~ Blue sign **status***	~~(Inland AIS extension/regional bits in SOLAS AIS)~~ **AIS Message 1, 2 and 3**
Quality of speed information	~~(Inland AIS extension/derived from ship sensor or GNSS)~~ **Inland FI 10**
Quality of course information	~~(Inland AIS extension/derived from ship sensor or GNSS)~~ **Inland FI 10**
Quality of heading information	~~(Inland AIS extension/derived from certified sensor (e.g. gyro) or uncertified sensor)~~ **Inland FI 10**

~~*2.3.2.3*~~ ***3.3.2.3*** *Voyage-related vessel information*

The voyage-related vessel information for inland vessels should have the same parameters and the same structure as ~~SOLAS AIS~~ **in AIS Class A mobile stations** as far as **it is** applicable. Unused parameter fields should be set to "not available".

Inland specific voyage-related vessel information should be added.

Voyage-related vessel information is broadcast**ed** autonomously from the vessel or on demand. ~~and consists of the following:~~

Destination (~~ERI~~ **ISRS** location code~~s~~)	~~(SOLAS AIS)~~**AIS Message 5**
Category of ~~hazardous~~ **dangerous** cargo	~~(SOLAS AIS)~~ **AIS Message 5**
ETA	~~(SOLAS AIS)~~ **AIS Message 5**
Maximum present static draught*	~~(SOLAS AIS/amended for Inland AIS)~~ **AIS Message 5 + Inland FI 10**
~~Hazardous~~ **Dangerous** cargo **indication**	~~(Inland AIS extension)~~ **Inland FI 10**
Loaded/unloaded vessel	~~(Inland AIS extension)~~ **Inland FI 10**

2.3.2.4 Traffic management information (*delete*)

2.3.2.4.1 ETA at lock/bridge/terminal (*delete*)

2.3.2.4.2 RTA at lock/bridge/terminal (*delete*)

~~*2.3.2.4.3*~~ ***3.3.2.4*** *Number of persons on board*

The number of persons on board is transmitted ~~preferably~~ **either as a broadcast message or** as an addressed message from ~~ship~~ **vessel** to shore on demand or on event.

~~Total number of persons on board~~	~~(SOLAS AIS)~~
Number of crew members on board	~~(Inland AIS extension)~~ **Inland FI 55**
Number of passengers on board	~~(Inland AIS extension)~~ **Inland FI 55**
Number of shipboard personnel on board	~~(Inland AIS extension)~~ **Inland FI 55**

2.3.2.4.4 Signal status; 2.3.2.4.5 EMMA warnings; 2.3.2.4.6 Water levels (*delete*)

~~*2.3.2.4.7*~~ ***3.3.2.5*** *Safety-related messages*

Safety-related messages **(i.e. text messages)** are transmitted when required as broadcast or **as** addressed messages.

Addressed Safety related message	**AIS Message 12**
Broadcasted Safety related message	**AIS Message 14**

~~*2.3.3*~~ ***3.3.3*** *Reporting interval of information transmission*

Replace the existing text with

> The different information types of Inland AIS messages should be transmitted with different reporting rates.
>
> For moving vessels on inland waterways, the reporting rate for dynamic information can be switched between autonomous mode and assigned mode. The reporting behaviour shall be switchable from an AIS base station (via AIS Message 23 for group assignment or Message 16 for individual assignment) and by commands from external shipborne systems, via IEC 61162 interface as defined in Appendix B.

For static and voyage-related information, the reporting rate shall be 6 minutes on demand, or if information is amended.

The following reporting rates shall be applicable:

Static vessel information	Every 6 minutes, on demand or when data has been changed
Dynamic vessel information	Depends on navigational status and vessel operating mode, either autonomous (default) or assigned mode, see table 3.1
Voyage-related vessel information	Every 6 minutes, on demand or when data has been changed
Number of persons on board	As required or on request
Safety-related messages	As required
Application Specific Messages	As required (to be defined by the competent authority)

Table 3.1

Update rate of dynamic ship information

Ship dynamic conditions	*Nominal reporting interval*
Vessel status “at anchor” and not moving faster than 3 knots	3 minutes[3]
Vessel status “at anchor” and moving faster than 3 knots	10 seconds[3]
Vessel operating in autonomous mode, moving 0–14 knots	10 seconds[3]
Vessel operating in autonomous mode, moving 0–14 knots and changing course	3 1/3 seconds[3]
Vessel operating in autonomous mode, moving 14–23 knots	6 seconds[3]
Vessel operating in autonomous mode, moving 14–23 knots and changing course	2 seconds
Vessel operating in autonomous mode, moving faster than 23 knots	2 seconds
Vessel operating in autonomous mode, moving faster than 23 knots and changing course	2 seconds
Vessel operating in assigned mode[4]	assigned between 2 seconds and 10 seconds

~~*2.3.4*~~ ***3.3.4*** *Technology platform*

Replace the existing text with

The platform for Inland AIS mobile station is the AIS Class A mobile station.

The technical solution of Inland AIS mobile station is based on the same technical standards as AIS Class A mobile stations (Recommendation ITU-R M.1371 and International standard IEC 61993–2).

~~*2.3.5*~~ ***3.3.5*** *Compatibility with Class A transponders*

Replace the existing text with

Inland AIS mobile stations shall be compliant with AIS Class A mobile stations and shall be capable of receiving and processing all AIS messages (according to

[3] When a mobile station determines that it is the semaphore (refer to Recommendation ITU-R M.1371, annex 2, § 3.1.1.4), the reporting rate should increase to once per 2 seconds (refer to Recommendation ITU-R M.1371, annex 2, § 3.1.3.3.2). Shall be switched by competent authority,

[4] Shall be switched by the competent authority, when necessary.

Recommendation ITU-R M.1371 and IALA Technical clarifications on Recommendation ITU-R M.1371) and, in addition, the messages defined in paragraph 3.4.

~~*2.3.6*~~ ***3.3.6*** *Unique identifier*

In order to guarantee **the** compatibility with maritime vessels, the Maritime Mobile Service Identifier (MMSI) number must be used as a unique station identifier (radio equipment identifier) for Inland AIS ~~transponders~~ **mobile stations**.

2.3.7 Application identifier for Inland AIS application specific messages (*delete*)

~~*2.3.8*~~ ***3.3.7*** *Application requirements*

Replace with

Information referred to paragraph 3.3.2 shall be input, stored and displayed directly within the Inland AIS mobile station.

The Inland AIS mobile station shall be capable of storing also the inland specific static data in the internal memory, in order to keep the information when the unit is without power supply.

Necessary data conversions for the Minimum Keyboard Display (MKD) of the Inland AIS information content (e.g. knots into km/h) or MKD input and display of information concerning inland vessel types shall be handled within the Inland AIS mobile station.

Application Specific Messages (ASM) should be entered/displayed by an external application with the exemption of Inland AIS ASM DAC = 200 FI = 10 (Inland Ship static and voyage related data) and DAC = 200 FI = 55 (inland number of persons on board) which are implemented directly in the Inland AIS mobile station.

In order to program the inland specific data into the AIS transponder the digital interface sentences are defined in Appendix B.

The Inland AIS mobile station shall provide — as a minimum — an external interface for the input of DGNSS correction and integrity information according to the provisions of the Radio Technical Commission for Maritime Services Special Committee 104 on DGNSS.

~~*2.3.9*~~ ***3.3.8*** *Type approval*

Inland AIS ~~equipment~~ **mobile station** shall be type-approved for compliance with these technical specifications.

~~2.4~~ 3.4 Protocol amendments for Inland AIS *mobile station*

Due to evolution of the Recommendation ITU-R M.1371, several parameters allow for the use of new status codes. This does not harm the functioning of the AIS but may result in display of unrecognized status codes in equipment based on previous revisions of the standard.

~~*2.4.1*~~ ***3.4.1*** ~~*Message 1, 2, 3:*~~ *Position reports (~~ITU-R 1371-4~~* ***Message 1, 2, 3****)*

Table ~~2.2~~ **3.2**

Position Report

Column 3, *modify*

- Line 4 “Navigational status”, the description of 9 to 15, *replace with*

  9 = reserved for future amendment of Navigational Status for a high-speed craft;

10 = reserved for future amendment of Navigational Status for Wing In Ground (WIG);

11 = power-driven vessel towing astern (regional use);[5]

12 = power-driven vessel pushing ahead or towing alongside (regional use);[5]

13 = reserved for future use; 14 = AIS-SART (active); 15 = not defined = default (also used by AIS)

- Line 7 “Position Accuracy”, *replace* ITU-R.M.1371-4 *with* ITU-R.M.1371
- Line 13 “Special manoeuvre indicator (blue sign)”, in the beginning *add*

  Indication if the blue sign is set
- Line 15 “RAIM flag”, *replace* 1 = RAIM in use see ITU-R M.1371–4 *with* 1 = RAIM in use. RAIM-flag should be determined in accordance with ITU-R M. 1371.

~~*2.4.2*~~ ***3.4.2*** ~~*Message 5:*~~ *Ship static and voyage-related data (~~ITU-R 1371-4~~ **Message 5**)*

Table ~~2.3~~ **3.3**

Ship static and dynamic data report

Modify the table

- Line 2 “Repeat indicator”, column 3, *replace* Used *with* Sent
- Line 3 “User ID”, column 2, in the end *add* (MMSI)
- Line 4 “AIS version indicator”, column 3, the description of 1 to 3, *replace with*

  1 = Station compliant with Recommendation ITU-R.M.1371-3 (or later),

  2 = Station compliant with Recommendation ITU-R.M.1371-5 (or later),

  3 = Station compliant with future editions
- Line 6 “Call sign”, column 3, in the end *add*

  Craft associated with a parent vessel, should use ‘A’ followed by the last 6 digits of the MMSI of the parent vessel. Examples of these craft in- clude towed vessels, rescue boats, tenders, lifeboats and liferafts
- Line 8 “Type of ship and cargo”, *replace* ship *with* vessel; *replace* ITU-R.M.1371-4 *with* ITU-R.M.1371
- Line 9 “Overall dimension/reference for position”
  - column 1, *replace* the text *with* Overall dimensions of vessel/convoy and reference for position
  - column 3, *replace* ITU-R.M.1371-4 *with* ITU-R.M.1371
  - the existing footnote 11, *replace* SSD NMEA-record *with* SSD interface sentence
- Line 12 “Maximum present static draught”, column 3, *delete* the text after “default”, while keeping the existing footnote 10
- Line 13 “Destination”, column 3, delete the last sentence while keeping the existing footnote 12.****

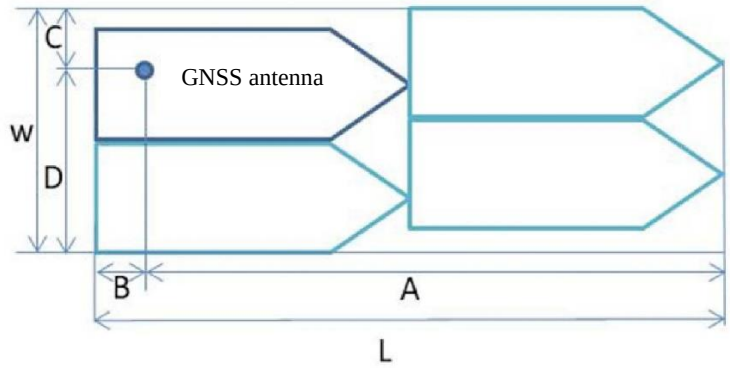
[5] [Not applicable within the Union for the purpose of this Regulation].

**** *Note by the secretariat:* it is proposed to replace the text of the existing footnote 12 “The UN/LOCODE location codes and ERI terminal codes should be used” with “The ISRS Location Codes as part of the RIS Index shall be used derived from the European Reference Data Management System (ERDMS) kept by the European Commission”. The Working Party may wish to discuss this proposal and decide as appropriate.

After the table, *add*

Figure 3.1

Reference point for reported position and overall dimension of the vessel/convoy



	Number of bits	*Bit fields*	*Distance (m)*	
A	9	Bit 21 – Bit 29	0 – 511511 = 511 m or greater	Reference Point for reported position
B	9	Bit 12 – Bit 20	0 –511511 = 511 m or greater	
C	6	Bit 6 – Bit 11	0 – 6363 = 63 m or greater	
D	6	Bit 0 – Bit 5	0 – 6363 = 63 m or greater	
L = A + B W = C + D		Defined in Inland FI 10		Overall dimension used in Inland AIS mobile station

The dimension should be in the direction of the transmitted heading information (bow).
Reference point of reported position not available, but dimensions of vessel/convoy are available:
A = C = 0 and B ≠ 0 and D ≠ 0.
Neither reference point of reported position nor dimensions of vessel/convoy are available:
A = B = C = D = 0 (= default). For use of the message table, A = most significant field. D = least significant field.

~~*2.4.3*~~ ***3.4.3*** ~~*Message 23:*~~ *Group Assignment Command (~~ITU-R M.1371-4~~* ***Message 23****)*

Replace the existing text *with*

> Inland AIS mobile stations shall be addressed for group assignment by Message 23 using station type '6 = inland waterways'.

Delete tables 2.4.and.2.5.

2.4.4 Application specific messages (ITU-R 1371–4) (delete)

2.4.4.1 Allocation of Function Identifiers (FI) within the Inland AIS branch (delete)

3.5 Inland AIS messages

3.5.1 Additional Inland AIS messages

To comply with the information needs, specific Inland AIS messages are defined. In addition to the information content which shall be implemented directly in the Inland AIS station, the Inland AIS mobile station may transmit additional information through Application Specific Messages (ASM). This information content is normally handled by an external application, such as Inland ECDIS.

The use of Inland AIS ASM is in the responsibility of the river commission or the competent authorities.

3.5.2 Application identifier for Inland AIS Application Specific Messages

The application specific messages consist of the AIS Class A mobile stations framework according Recommendation ITU-R M.1371 (message ID, repeat indicator, source ID, destination ID), the Application Identifier (AI = DAC + FI) and the data content (variable length up to a given maximum).

The 16-bit application identifier (AI = DAC + FI) consists of the following elements:

(a) 10-bit designated area code (DAC): international (DAC = 1) or regional (DAC > 1);

(b) 6-bit function identifier (FI) — allows for 64 unique application specific messages.

For the European harmonized Inland AIS Application Specific Messages, the DAC '200' is used.

In addition, national (regional) DAC may be used in local ASM e.g. test pilots. Nevertheless, it is strongly recommended to avoid the usage of regional ASM.

3.5.3 Information content through Application Specific Messages

Inland AIS ASM DAC = 200 FI = 10 (Inland Ship static and voyage related data) and DAC = 200 FI = 55 (inland number of persons on board) are implemented directly in the Inland AIS mobile station (see paragraphs 3.5.3.1 and 3.5.3.2).

~~*2.4.4.2 Definition of inland specific messages*~~

~~*2.4.4.2.1*~~ ***3.5.3.1*** ~~*Inland specific Message FI 10:*~~ *Inland vessel static and voyage-related data* ***(Inland specific Message FI 10)***

This message should be used by inland vessels only, to broadcast vessel static and voyage-related data in addition to Message 5. The message should be sent with binary Message 8 as soon as possible (from the AIS point of view) after Message 5.

Table ~~2.7~~ **3.4**
Inland vessel ~~static and voyage related~~ data report

Modify the table

- Line 5 "Application identifier", column 3, *replace* the existing text *with* DAC = 200, FI = 10
- Line 6 "Unique European vessel identification number", column 3, *replace* 000000 *with* 00000000
- Line 9 "Vessel or convoy type"
    - column 1, *replace* or *with* and
    - column 3, *replace* the first two lines *with* Numeric vessel and convoy type as described in Appendix C
- Line 10, *replace* column 1 *with* Dangerous cargo indication

Delete the text after the table.

2.4.4.2.2 Inland specific Message FI 21: ETA at lock/bridge/terminal (delete)

2.4.4.2.3 Inland specific Message FI 22: RTA at lock/bridge/terminal (delete)

~~*2.4.4.2.4*~~ ***3.5.3.2*** ~~*Inland specific Message FI 55:*~~ *Number of persons on board* ***(Inland specific Message FI 55)***

This message should be sent by inland vessels only, to inform about the number of persons (passengers, crew, shipboard personnel) on board. The message should be sent with binary Message 6**,** preferably on event or on demand**,** using International Application Identifier (IAI) binary functional Message 2.

Delete the second and the last paragraphs.

Table ~~2.10~~ **3.5**

Number of persons on board report

Modify the table

Line 8 “Application Identifier”, column 3, *replace* the existing text *with* DAC = 200, FI = 55.

2.4.4.2.5 Inland specific Message FI 23: EMMA warning (delete)

2.4.4.2.6 Inland specific Message FI 24: Water level (delete)

2.4.4.2.7 Inland specific Message FI 40: Signal status (delete)