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| IALA Guideline |

Gnnnn

VTS in Inland Waters

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|  |  |  |
|  |  |  |

1 INTRODUCTION 5

PURPOSE 5

2 AND OBJECTIVES 5

3 FEATURES OF VTS IN INLAND WATERS 5

3.1 Ships and crew 5

3.2 Vessel traffic flow 6

3.3 Equipment 6

3.4 General navigation environment 6

4 IALA GUIDANCE OF RELEVANCE TO VTS IN INLAND WATERS 6

4.1 REGULATORY AND LEGAL FRAMEWORK 7

4.1.1 IALA guidance 7

4.1.2 Inland waters considerations 7

4.2 IMPLEMENTATION 8

4.2.1 IALA guidance 8

4.2.2 Inland waters considerations 8

4.3 OPERATIONS 8

4.3.1 IALA guidance 8

4.3.2 Inland waters considerations 9

4.4 COMMUNICATIONS 9

4.4.1 IALA guidance 9

4.4.2 Inland waters considerations 9

4.5 AUDITING & ASSESSING 9

4.5.1 IALA guidance 9

4.5.2 Inland waters considerations 10

4.6 ADDITIONAL SERVICES 10

4.6.1 IALA guidance 10

4.6.2 Inland waters considerations 10

4.7 DATA & INFORMATION MANAGEMENT 10

4.7.1 IALA guidance 10

4.7.2 Inland waters considerations 10

4.8 TECHNOLOGIES & PROCUREMENT 10

4.8.1 IALA guidance 11

4.8.2 Inland waters considerations 11

DATA MODELS & DATA ENCODING 11

4.9 TRAINING & ASSESSMENT 11

4.9.1 Standard IALA guidance 11

4.9.2 Inland waters considerations 12

4.10 ACCREDITATION, COMPETENCY, CERTIFICATION & REVALIDATION 12

4.10.1 IALA guidance 12

4.10.2 Inland waters considerations 12

4.11 RISK MANAGEMENT 12

4.11.1 Standard IALA guidance 12

4.11.2 Inland waters considerations 13

4.12 QUALITY MANAGEMENT 13

4.12.1 Standard IALA guidance 13

4.12.2 Inland waters considerations 13

5 DEFINITIONS 13

6 REFERENCES 13

# INTRODUCTION

IMO Resolution A.xxx(xx) - Guidelines for Vessel Traffic Services is associated with SOLAS Chapter V Regulation 12. It provides high-level guidance for planning, implementing and operating a vessel traffic service under national law. This guideline recognises IALA as an important contributor to IMO's role and responsibilities relating to vessel traffic services (VTS) and encourages Contracting Governments to take into account IALA standards and associated recommendations, guidelines and model courses

SOLAS Chapter V Regulation 1 sets out the applicability of Chapter V but includes the provision that Administrations may decide to what extent this chapter shall apply to ships operating solely in waters landward of the baselines which are established in accordance with international law.

IALA Standards, Recommendations, Guidelines and Model Courses relating to VTS are issued to provide guidance on planning, implementing and operating a VTS within the territorial sea, with some limited provisions for VTS beyond territorial seas.

IALA recognises the benefit of extending this guidance to inland waters as deemed appropriate by national authorities.

# PURPOSE AND OBJECTIVES

The purpose of this guideline is to highlight important standard IALA guidance that might be relevant to a VTS established in inland waters (Inland VTS) and to identify considerations when applying or adapting IALA guidance to inland waters.

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| IALA Guideline Gnnnn – VTS in Inland Watershighlight important standard IALA guidance that might be relevant to a VTS established in inland waters and to identify considerations when applying or adapting IALA guidance to inland waters.  Guideline Gnnnn is not associated with any of the normative provisions of IALA Recommendation R0127. It is an informative provision of IALA Standard 1040 Vessel Traffic Services and simply describes desirable practices. |

# FEATURES OF VTS IN INLAND WATERS

Inland vessels, including barges, operating in inland waters may navigate beyond inland waters into coastal and port/harbour areas and seagoing ships may also operate in inland waters. It follows that there is considerable benefit in the control and management of vessel traffic in inland waters being harmonised to similar global standards as far as is appropriate and to follow the IALA guidance for operating VTSs in territorial seas and coastal waters and port/harbour areas.

National administrations should consider, therefore, legislating for the control and management of vessels operating in inland waters to be aligned as appropriate with the guidance provided for VTSs covering territorial seas and coastal waters and port/harbour areas.

There are many features of VTS in inland waters that may require special consideration in the development of national policy

## Ships and crew

There are a wide variety of different types of vessel that operate in inland waters, alone or as a part of an inland waterway convoy, of which pleasure and small craft may account for a relatively large proportion. The carriage requirements for VHF radiotelephone, AIS and other communication equipment and the crewing standards of these vessels may be different from those of seagoing ships engaged in international voyages. They may be regulated at the local, regional, or national level and requirements may differ from country to country.

Passenger vessels and vessels carrying dangerous goods may be subject to higher safety requirements than other types of vessel when navigating in inland waters. More resources may need to be coordinated during Search and Rescue.

In inland waters, pollution prevention requirements for vessels may be different from MARPOL regulations and are established at local, regional and national level. In particular, the monitoring of vessels carrying dangerous goods may be more stringent.

Skippers and other persons responsible for the navigation of vessels that operate primarily in inland waters may have poor VTS awareness and a lack of skills in communicating with VTS. Since most of them can only communicate in their native language or even dialect, communication with other vessels engaged in international voyages, port authorities and VTS operators may be difficult.

## Vessel traffic flow

In the inland waters connected to the sea area and in coastal areas, vessel traffic and vessel traffic flow is often affected by the tide, meteorological conditions (the wind, icing, fog etc.) and seasonal variations in fluvial flow. There may be a peak of vessel traffic flow during the period of rapid rise and fall of the tide and a rapid change of weather conditions.

Inland VTS 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.

Due to the limited dimensions of many fairways in inland waters and permanent waterway structures such as locks, dams, weirs and bridges, the distribution of docks, berths and anchorages may be concentrated and, in some sections, vessel traffic may be dense. Therefore, it is difficult for VTS to predict the position of vessels through TCPA and CPA and information at micro level may be limited. It may be necessary to rely mainly on the macro traffic organization to implement VTS traffic management.

In relatively large water systems, lakes and busy waterways there may be many VTS centres operating in stages and coordination among VTS centres is important.

## Equipment

When the VTS system is established in inland waters, it is may be prone to radar clutter and low resolution. Due to the large number of vessels being tracked, the AIS signal may become less reliable or even lost. The VTS alarm function may be difficult to use effectively. CCTV, therefore, has an increased importance as an inland VTS sensor, especially when linked with Vessel Tracking and Tracing (VTT).

When the VTS covers a long and narrow section of a waterway, the VHF working channels of adjacent VTS centres upstream and downstream may be similar or even the same resulting in interference.

Inland waters are close to shore and in areas covered by Wi-Fi or other mobile networks, thus, ship-to-shore communication can be carried out in a more timely and effective manner through these networks. However, public mobile networks should not be used to transmit distress signals.

AIS applied in inland waters is compatible with the maritime AIS, it enables a direct data exchange between sea-going ships and inland vessels navigating in mixed traffic areas.

## General navigation environment

In inland waters, the revetment configuration, arrangement of aids to navigation, dimensions of the fairway, water level, bridges, dams, weirs, ship locks and other permanent structures may cause various restrictions on the navigation and operation of vessels and various conditions will change. The VTS centre may need to process a large amount of information in real time. For special waterway sections or canals the arrangement of a passage plan, a system of traffic clearances or other appropriate measures may be required.

# IALA GUIDANCE OF RELEVANCE TO VTS IN INLAND WATERS

The IALA VTS Manual [1] gives a useful overview of VTS. Detailed advice on VTS is provided through a series of IALA recommendations and guidelines.

IALA Standards apply to VTSs in international, territorial and coastal areas and in ports/harbours. Many of the associated recommendations and guidelines may have a relevance to VTS in inland waters. However, the applicability of this IALA guidance to inland waters may vary considerably dependent on such high-level aspects as the density of traffic, the type of vessels navigating the waterway, the nature of the waterway and the applicable local, regional and national provisions.

In assessing the need for a VTS should it be considered that a degree of control and traffic management is required, many detailed factors and the applicability of the IALA guidance may need to be considered. These include, but are not limited to, factors in the sections below.

This guideline identifies those recommendations and guidelines that may have relevance to VTS in inland waters and offers considerations for applying or adapting IALA guidance to inland waters, which national administrations may wish to take into account when applying this to national policy. Such considerations have been identified as significant but are not an exhaustive list and may vary between waterways.

This Guideline should be read in conjunction with the IALA VTS Manual. Each of the subheadings that follow are aligned with those of the VTS Manual. Each subheading is followed with:

• an “IALA Guidance” subsection identifying IALA guidance of potential relevance to inland waters. The IALA VTS Manual should be referred to for a short description and up-to-date referencing for any of the documents quoted.

• An “Inland Waters Considerations” subsection setting out considerations and best practice that may apply in inland waters.

## REGULATORY AND LEGAL FRAMEWORK

### IALA guidance

IMO Resolution XXX(XX) recognizes IALA as an important contributor to IMO's role and responsibilities relating to VTSs.

The recommendation also recognises that IALA publishes standards and associated recommendations, guidelines and model courses specifically related to the establishment and operation of VTSs to contribute to achieving worldwide harmonization of VTSs.

It encourages Contracting Governments to take into account IALA standards and associated recommendations, guidelines and model courses.

### Inland waters considerations

The establishment of a VTS in inland waters is an entirely national responsibility. However, it is recommended as best practice that any VTS established in inland waters:

* is aligned to international standards set out by IMO and expanded upon by IALA as far as is reasonably practicable;
* is formally established in national law;
* has appointed VTS providers that are legally empowered; and
* coordinated between nations at borders or where responsibilities are shared.

The national structure may differ from that recommended in IMO Recommendation A.XXX(XX) and IALA guideline G1089, it is recommended that provision is made to ensure that:

* a legal basis for any inland VTS is established;
* a regulatory framework for establishing and operating an inland VTS is put in place; and
* inland VTS providers are authorised to operate an inland VTS within a delineated VTS area.
* a compliance and enforcement framework with respect to violations of Inland VTS regulatory requirements is established

Local, regional or national regulations may be required to reflect the navigable environment and custom and practice relating to such issues as pilotage, prohibited zones and traffic control which will usually take precedence.

It should be noted that the International Regulations for Preventing Collisions at Sea only apply to vessels on the high seas and all waters connected to the high seas and navigable by seagoing ships. Special regional and/or national rules may apply in inland waters.

Special consideration may be needed for areas where inland waters connect with waters connected to the high seas and the transition between differing regulatory regimes.

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| Considerations  Inland watersare rivers, lakes or other stretches of water, whether linked to the sea or landlocked, which by natural or man-made features are suitable for navigation.  The term “inland waters” is not used in the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS refers to a nation's internal waters, which include waters on the side of the baseline of a nation's territorial waters that is facing toward the land, except in archipelagic states.  In inland waters, sovereignty of the state is equal to that which it exercises on the mainland. The coastal state is free to make laws relating to its internal waters, regulate any use, and use any resource. Foreign vessels have no right of passage within internal waters, and this lack of right to innocent passage is the key difference between internal waters and territorial waters. Passage of foreign vessels in inland waters is regulated by regional or national legislation.  While, SOLAS Chapter V Regulation 12 and IMO Resolution A.xxx(xx) - Guidelines for Vessel Traffic Services does not provide for Contracting Governments ‘to arrange for the establishment of VTS where, in their opinion, the volume of traffic or the degree of risk justifies such services’ it is recommended that its provisions are taken into account. |

## IMPLEMENTATION

### IALA guidance

IALA provides guidance on planning and implementing a VTS. References relevant to implementation include:

* a recommendation on “Establishment a VTS” and
* an associated guideline on “Establishing, planning and implementing a VTS”.

In waterways where a national authority is of the opinion that the navigational complexity, volume of traffic or the degree of risk does not justify the establishment of a VTS, a Local Port Service (LPS) may be implemented. In such circumstances, IALA provides guidance on “The Provision of Local Port Services other than VTS”.

Further guidance is also provided on the “Standard Nomenclature to Identify and Refer to a VTS”.

### Inland waters considerations

The provisions of IMO Recommendation A.XXX(XX) 5.3 on the responsibilities of a VTS provider and those of participating ships at 6.1 are relevant to an inland VTS. In particular, an inland VTS should be provided with appropriate equipment, systems and facilities for the delivery of the VTS and should be adequately staffed with inland VTS personnel who are appropriately trained and qualified.

IALA Guideline G1089 expands further on the provision of a VTS. Particular note should be made of the further explanation given on the purpose of a VTS in the provision of timely and relevant information, the monitoring and managing of vessel traffic, VTT and responding to developing situations. The close confines of many inland waterways and the ability to maintain a comprehensive traffic image may result in a more limited ability to respond to developing situations. Nevertheless, as long as the possibility exists that such intervention might be necessary, then it is important that inland VTS personnel are appropriately trained and certified.

If it is assessed that the navigational complexity, volume of traffic or the degree of risk does not justify the establishment of an inland VTS then note should be taken of the provisions of IALA guideline G1142 for the establishment of a local port service or equivalent noting the provisions of IALA guideline G1083 that any service that is not authorised as a VTS should not use the term ‘VTS’ in its name identifier.

## OPERATIONS

### IALA guidance

IALA provides a number of documents relating to key operational considerations.

IALA documents relating to operational considerations include:

* a recommendation on “VTS Operations” and an associated guideline on “Operational Procedures for a VTS”;
* a guideline that sets out advice on the “Provision of a VTS” including the responsibilities and purpose;
* a guideline on the “Use of Decision Support Tools for VTS Personnel”;
* a guideline on “Setting and measuring VTS objectives”;
* a guideline on “Staffing Levels at VTS Centres”;
* a guideline on “Marine Casualty / Incident Reporting and Recording, Including Near Miss Situations”;
* a guideline on “Promulgating the Requirements of a VTS to Mariners”; and,
* Guideline 1144 – “Promulgating the Requirements of a VTS to Mariners – A VTS Users Guide Template”.

### Inland waters considerations

Many of the detailed considerations for operational procedures listed in the IALA guidance may not be relevant to inland waters. However, the need for operational guidance is of equal importance to VTS personnel in inland waters and the principle of setting out operational procedures should be followed and the basic principles of the IALA guidelines adapted as appropriate and appropriate objectives are set.

While the decision support tools may be different, the use of decision support tools is likely to be of similar value to a VTS in inland waters and the IALA guidance of equal relevance.

Where a waterway is managed by multiple VTS centres, coordination between adjacent VTS centres or sub-centres is essential.

Information promulgating the requirements of an inland VTS should be publicised in a concise and harmonized format to reduce the burden on masters and minimise misunderstandings when moving from one inland VTS area to another. The IALA guidance with a standardised format is recommended.

## COMMUNICATIONS

### IALA guidance

A major factor in the effective delivery of VTS is the provision of precise and unambiguous voice communications. IALA provides a recommendation on “VTS Communications” with an associated guideline providing greater detail on “VTS Voice Communications and Phraseology”.

### Inland waters considerations

IALA documentation seeks to ensure the harmonisation of procedures and communications worldwide. Both inland vessels and seagoing ships may operate in inland waters and may transit both inland and port/harpour VTS areas. National administrations are recommended to ensure that inland VTS providers follow the IALA guidance as far as is reasonably practicable.

It is recognised that local language may be the primary language for a VTS in inland waters but it is recommended that the principles of phraseology and standardised phrases recommended by IALA are still used when translated into the local language and that principles for VTS nomenclature are followed.

Local, regional and national agreements and recommendations of river commissions on the use of the language in radio communications on inland waterways may apply.

National administrations may consider the promotion of inland VTS procedures to users of inland waters in order to enhance their VTS understanding and their response to VTS communications.

Where interference to VHF communications cannot be avoided, VTS providers may consider other means to achieve effective communication, such as telephone or Internet.

## AUDITING & ASSESSING

### IALA guidance

A VTS should be routinely evaluated to ensure that the operational objectives are being met, the technical and operational performance is acceptable and the risks identified and defined in determining the need for the VTS have been mitigated to an acceptable level. IALA provides a recommendation on “Auditing and Assessing Vessel Traffic Services” and an associated guideline on “Auditing and Assessing a VTS”.

### Inland waters considerations

The IALA guidance provides a sound basis for auditing and assessing a VTS which is largely applicable to an inland VTS.

The responsibilities may differ from those set out in the IALA guideline on auditing and assessing a VTS. The annexed checklists may also require further modification to suit the circumstances of a specific VTS but the subject headings are mostly relevant and provide a good starting point to identify checks that might be considered.

Enhanced environmental protection measures may be necessary due to the special considerations relating to inland waterways such as bridges, tunnels, optical cables and high numbers of passenger vessels. Particular emphasis on auditing and assessing may be necessary.

The probability of collision and groundings in inland waters may be higher than in open waters so the audit index should be set accordingly.

## ADDITIONAL SERVICES

### IALA guidance

VTS is often involved in providing information and supporting other services due to its capacity to maintain a traffic image and interact with ships and other services in the VTS area. IALA provides guidelines on:

* the “VTS Role in Managing Restricted or Limited Access Areas”,
* “VTS Interaction with Allied or Other Services”, and
* the “Technical Aspects of Information Exchange between VTS and Allied or Other Services”.

### Inland waters considerations

Interactions with allied and other services may be very different but the guidance may still prove helpful and restricted or limited access areas may still be encountered in some inland waters. Reference to IALA guidance may be of value in such cases.

Standards for Vessel Tracking and Tracing, Electronic Ship Reporting in Inland Navigation and Notices to Skippers may be relevant.

Additional services of inland VTS differ greatly from those of coastal waters. In contrast, additional services account for a higher proportion and have a more important position in inland VTS. Administrations should define the additional services matrix and the applied opportunity and waters.

If the additional services include Allied or Other Services, VTS authorities should develop the issues, criteria and principles to be applied.

## DATA & INFORMATION MANAGEMENT

### IALA guidance

The compilation of an accurate traffic image is essential for VTS personnel to monitor traffic, evaluate situations and make decisions accordingly. The traffic image is dependent on the integration and portrayal of data from different sensors (e.g. radar, AIS, CCTV), information from reports such as VHF voice, and is supported by an effective data and information management framework. IALA provides:

* a recommendation on the “Portrayal of VTS Information and Data”;
* guidance on the “Use and Presentation of Symbology at a VTS Centre”; and
* a guideline on the Shore-Side Portrayal Ensuring Harmonisation with E-Navigation Related Information”.

### Inland waters considerations

Whilst a VTS in inland waters may have a restricted set of functions, many of the principles set out in the guidance on the portrayal of information to VTS personnel will be relevant in establishing a suitable environment for VTS operations.

The use of symbology to identify vessels of particular interest such as passenger vessels, vessels carrying dangerous goods and vessels restricted in their ability to manoeuvre can be of particular use in improving situational awareness in an inland VTS.

*[China MSA]*

## TECHNOLOGIES

### IALA guidance

A significant proportion of the investment associated with the implementation and on-going operation of a VTS is the equipment and systems. Once the need for a VTS has been established, it will be necessary to set out the requirements for procurement.

IALA documents relating to setting the technical requirements include:

* a recommendation on the “Operational and Technical Performance Standards of VTS systems”; and
* a guideline on the “Preparation of Operational and Technical Performance Requirements for VTS Systems”.

### Inland waters considerations

IALA guidance on the procurement, technical specifications and performance standards for a VTS assume the need for continuous and uninterrupted surveillance of the entire area for which it is responsible with a high degree of reliability and redundancy. The technical specifications, particularly for radar, relate to relatively open waters. Not all of these may relate to inland waters; equally, there may be additional requirements unique to inland waters such the management of locks and bridges that require additional consideration. Gapless coverage may not be feasible or necessary. The guidance does, however, provide a useful baseline on which to draw in developing the specifications for a VTS in inland waters.

Equipment and facilities shall be equipped in accordance with their obligations. The technical performance of the VTS equipment is consistent with the objectives of the VTS. Authorities and providers should consider the following items when implementing VTS:

• The obligations of inland VTS varies in different countries or different waters. VTS providers should clarify their obligations.

• The power of AIS, VHF and other equipment of inland vessels is usually low, and the navigable environment of inland waters is complex. These factors should be taken into account for the station departments and equipment performance of shore-based facilities such as VHF base station, AIS base station and radar station.

The performance of radar, target tracking and associated decision support warnings may be seriously diminished in the inland environment. Greater emphasis may be needed on the use of other monitoring equipment such as CCTV and Virtual Reality video.

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[Proposed addition by China MSA]

The inland waters have narrow navigation channels and are close to shore. The CCTV system can be used if possible. The use of the CCTV system can make the monitoring more intuitive. *[Comment – covered by similar text above proposed for section 4.7.2 and added immediately above – proposed to delete]*

The special marking of vessels by VTS in inland waters is conducive to the monitoring of special vessels (passenger vessels, vessels carrying dangerous goods, vessels restricted in its ability to manoeuvre). *[Comment – Explained as relating to the use of symbology. Amended and transferred to appropriate section 4.7.2?]*

VTS may collect data from vessels passing through or navigating on fixed routes to establish a database，which will facilitate traffic management. *[Comment – perhaps more appropriate to section 4.9.2 (transferred)]*

*--------------------------*

The technical specifications for radiotelephone installations, radar installations and AIS in inland waters are contained in the relevant international, regional or national provisions.

(At the same time, considering the above characteristics, the use of small radars to cover part of the VTS area has also become an option) Is the intent here to say “The use of short range, high-definition radar may also be considered”?

## DATA MODELS & DATA ENCODING

### IALA guidance

An IALA recommendation on “The Inter-VTS Exchange Format (IVEF) Service” provides a framework with formats and protocols for data exchange between VTS systems, stakeholders and relevant external parties to assist in the efficient deployment of services to the mariner and to the maritime community by facilitating the harmonization, connectivity and the integration of components.

### Inland waters considerations

With the increasing globalisation of maritime operations, the increasing emphasis on data management is likely to be of high importance in inland waters and the IALA guidance on IVEF of significant relevance.

Network information systems in inland waters are widely used, and the compatibility of data exchange should be considered when building network information systems.

Inland VTS may collect data from vessels passing through or navigating on fixed routes to establish a database and facilitate traffic management.

## TRAINING & ASSESSMENT

### IALA guidance

IALA has established international standards for training set out in:

* a recommendation on the “Training and Certification of VTS personnel”;
* a guideline on the “Recruitment Training and Certification of VTS personnel”;
* a guideline on the “Assessment of Training for VTS”; and
* a guideline on “Simulation in VTS Training”.

Model courses have been designed and are set out in model courses for:

* “VTS operator Training";
* “VTS supervisor Training”;
* “VTS On-the-Job-Training”;
* the training of a “VTS On-the-Job Training Instructor”; and
* “The Revalidation Process for VTS Qualification and Certification”.

### Inland waters considerations

Whilst it is for the national administration to mandate the training and certification requirements for VTS personnel in inland waters, there is a clear benefit in drawing on the international standards set by IALA for training and certification, which includes guidance on the management and accreditation of training establishments. The use of IALA modules may serve as the basis for training and certification of VTS operators in inland waters and enable them to transition more easily to other VTS centres as part of their career progression. The closer a VTS in inland waters is aligned to the international standard, the greater the potential for all training to be conducted to the same model course standard, thus achieving equivalent levels of safety, economies of scale and international/worldwide recognition of certification.

Factors such as the characteristics of inland waters and crew differences should be considered in training and evaluation. Training on local rules and communication skills with crew may need to be strengthened.

## ACCREDITATION, COMPETENCY, CERTIFICATION & REVALIDATION

### IALA guidance

IALA specifies the practices associated with the generic accreditation of training organizations in a recommendation on “Accreditation of Training Organisations”. For VTS training, detailed guidance is provided in a guideline on the “Accreditation and Approval Process for VTS Training Courses”.

### Inland waters considerations

In training and certification, the rapid changes of actual situations in channels and coastal wharves in inland waters should be considered, and training certification requirements should be adjusted appropriately.

## RISK MANAGEMENT

### IALA guidance

IALA provides guidance on risk assessment processes that assist in assessing the need for a VTS through risk management in:

* a generic recommendation on “Risk Management for Marine Aids to Navigation”; and
* a guideline on “Risk Management”.

Three risk management tools are offered in guidelines on:

* “The Use of IALA Waterway Risk Assessment Programme (IWRAP Mk I)”;
* “The Use of Ports and Waterways Safety Assessment (PAWSA) Mk II Tool”; and
* “The Use of the Simplified IALA Risk Assessment Method (SIRA)”.

### Inland waters considerations

Guidance on the assessment of risk is based on international, territorial and coastal areas and in ports/harbours. The tools set out in the IWRAP and PAWSA models may prove to be too sophisticated for an inland waterway. SIRA provides a simpler process that may be more relevant. Nevertheless, all draw on the capture of AIS information as important source data and this may still be very relevant to risk assessment of inland waters where such data can be gathered.

Whilst the IALA recommendation and guideline on the establishment of a VTS is based on the requirements for SOLAS vessels and IMO provisions, these documents set out basic principles, many of which will be of significant relevance to a VTS in inland waters.

The traffic characteristics of inland waters and the requirements of local, regional and national rules, regulations and conventions relating to inland waters should be taken into consideration when conducting risk assessment.

## QUALITY MANAGEMENT

### IALA guidance

If a formally appointed VTS is established, a quality management structure is considered necessary. IALA provides guidance on quality management in the form of a recommendation on “Quality Management for Aids to Navigation Authorities” and an associated guideline on “Quality Management Systems for Aids to Navigation Service Delivery”.

### Inland waters considerations

A VTS in inland waters should have a quality management system in place and auditing forms part of this process. The IALA guidance may be adapted as appropriate taking into account local, regional and national requirements as appropriate.

A VTS in inland waters needs to take into account of the needs of the government where the VTS is located when establishing a quality management system.

## ADDITIONAL GUIDANCE RELATED TO THE PROVISION OF VTS

### IALA guidance

Helpful guidance on AIS is provided in a guideline that provides an “Overview of AIS”.

### Inland waters considerations

Many inland waterways draw heavily on AIS as a primary tool for VTT and it is important that the capabilities and limitations are fully understood. IALA’s guidance has relevance to VTSs in inland waters.

The specifications for AIS equipment on inland vessels may be lower than those for AIS on seagoing ships; inland VTSs should consider screening the display of the received AIS data from inland vessels for accuracy.

# DEFINITIONS

The definitions of terms used in this IALA Guideline can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at <http://www.iala-aism.org/wiki/dictionary> and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

# ACRONYMS

VTT Vessel Tracking and Tracing

# REFERENCES

[1] IALA VTS Manual

Definitions for IALA Dictionary:

Inland VTS Inland vessel traffic service (Inland VTS) means a service implemented by a Government with the capability to interact with vessel traffic and respond to developing situations within an inland VTS area to improve safety and efficiency of navigation, contribute to the safety of life at sea and support the protection of the environment

Vessel Tracking and Tracing (VTT) – definition required

Vessel Tracking means the function of maintaining status information of the vessel, such as the current position and characteristics and – if needed – combined with information on cargo and consignments.

Vessel Tracing means the retrieving of information concerning the whereabouts of the vessel and – if needed – information on cargo, consignments and equipment.

Inland waters - are rivers, lakes or other stretches of water, whether linked to the sea or landlocked, which by natural or man-made features are suitable for navigation.

Waterway The term “waterway” means any inland water open to navigation (CEVNI).

Waterway: River, canal, lake or other stretch of water which by natural or man-made features is suitable for navigation (Glossary for transport statistics, ITF-UNECE-Eurostat).

Convoy In inland waters, the term “convoy” means a towed convoy, a pushed convoy or a side-by-side formation;

1. The term “towed convoy” means any group consisting of one or more vessels, floating establishments or assemblies of floating material towed by one or more motorized vessels, the later forming part of the convoy and being known as tugs;
2. The term “pushed convoy” means a rigid group of vessels, one at least of which is placed in front of the motorized vessel propelling the convoy and is known as a pusher. A convoy composed of a pusher and a pushed craft so as to permit guided articulation is also considered as rigid;
3. The term “side-by-side formation” means a group consisting of vessels coupled side-by-side, none of which is placed in front of the motorized vessel propelling the formation.