



# Inland ECDIS Harmonisation Group Status Report Europe

Meeting October 2017

Niteroi, Brasil

# Agenda

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- European waterways
- Update on the legal and organizational background and the status of implementation in Europe
  - Status of the European standardization process concerning IES 2.4
  - Technical Clarification on Inland ECDIS Standard Edition 2.3
- Topics related to the Inland ECDIS Standard
  - **RIS**: AtoN reference applications within the project RIS COMEX
- Status of legal and practical implementation in the countries

# European Waterways







# Status of the European standardization process

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## **Inland ECDIS Standard Edition 2.4**

The adoption process by the European Commission regarding the **Inland ECDIS, Standard Edition 2.4** is still ongoing:

- Changes of the phrasing, in order to make the document more clear and better to understand, without substantial changes
- Improvements regarding references and definitions
- Including a new regulation rule regarding minimum requirements in information mode, based on a proposal from the Netherlands

# Status of the European standardization process

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The following wording was found regarding **minimal requirements in information mode** for the new Inland ECDIS standard 2.4:

## SECTION 1: PERFORMANCE STANDARD FOR INLAND ECDIS

### 1. INTRODUCTION GENERAL PROVISIONS

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- (c) Electronic chart display and information system for inland navigation (Inland ECDIS) can be designed for both, information mode and navigation mode, or for information mode only. *The minimum requirements for Inland ECDIS equipment designed for information mode only, specified in chapter 4.1 of SECTION 1 and SECTION 4 of the standard, are mandatory on waterways where carriage requirements are enacted by the responsible legislative organs. In other regions they are recommended.*

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# Status of the European standardization process

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## SECTION 1: PERFORMANCE STANDARD FOR INLAND ECDIS

### 1. INTRODUCTION GENERAL PROVISIONS

...

...

- (i) The producer or supplier of inland ECDIS software has to document in the user manual of the software which requirements for equipment (hardware) need to be fulfilled for inland ECDIS in information mode on waterways where carriage requirements are enacted by the responsible legislative organs. In other regions they are recommended.***

The CCNR, proposed another wording for the same issue. This formulation is supported by France and Austria and fits better to the legal framework in their opinion.



# Status of the European standardization process

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**Accuracy flag:** The European Commission demanded to indicate whether a GNSS position is augmented with differential corrections.

**Current situation with the AIS accuracy flag:**

From the ITU-R M.1371-5 Standard, AIS Message 1,2,3

Position accuracy

1

The position accuracy (PA) flag should be determined in accordance with Table 50  
1 = high ( $\leq 10$  m)  
0 = low ( $> 10$  m)  
0 = default



# Status of the European standardization process

How is this flag defined?

TABLE 50  
Determination of position accuracy information

Accuracy status from RAIM (for 95% of position fixes) <sup>(1)</sup>	RAIM flag	Differential correction status <sup>(2)</sup>	Resulting value of PA flag
No RAIM process available	0	Uncorrected	0 = low (>10 m)
EXPECTED RAIM error is ≤ 10 m	1		1 = high (≤10 m)
EXPECTED RAIM error is > 10 m	1		0 = low (>10 m)
No RAIM process available	0	Corrected	1 = high (≤10 m)
EXPECTED RAIM error is ≤ 10 m	1		1 = high (≤10 m)
EXPECTED RAIM error is > 10 m	1		0 = low (>10 m)

<sup>(1)</sup> The connected GNSS receiver indicates the availability of a RAIM process by a valid sentence of IEC 61162; in this case the RAIM-flag should be set to “1”. The threshold for evaluation of the RAIM information is 10 m. The RAIM expected error is calculated based on “expected error in latitude” and “expected error in longitude” using the following formula:

$$\text{EXPECTED RAIM error} = \sqrt{(\text{expected error in latitude})^2 + (\text{expected error in longitude})^2}$$

<sup>(2)</sup> The quality indicator in the position sentences of IEC 61162 received from the connected GNSS receiver indicates the correction status.

The current accuracy flag shows quite clearly the accuracy  
(>10m or ≤10m)!

# Technical Clarification on IES 2.3

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## **New type approval processes:**

- Progress in the radar technology, especially new digital interfaces lead to new Inland ECDIS Systems in navigation mode and to new type approval processes at the competent authority in Koblenz (FVT).
- Base for the type approval processes is Inland ECDIS 2.3 and the radar standard. The FVT detected discrepancies and ambiguous rules. A small working group clarified the questions.

## **Result:**

- The result is a clarification paper which will be published. The aim is to provide the same information level to all ECDIS manufacturers until the solution will be integrated in future standard versions.

[TechClarificationsInlandECDIS23 edition1.0 final.pdf](#)

# AtoN reference application in RIS COMEX

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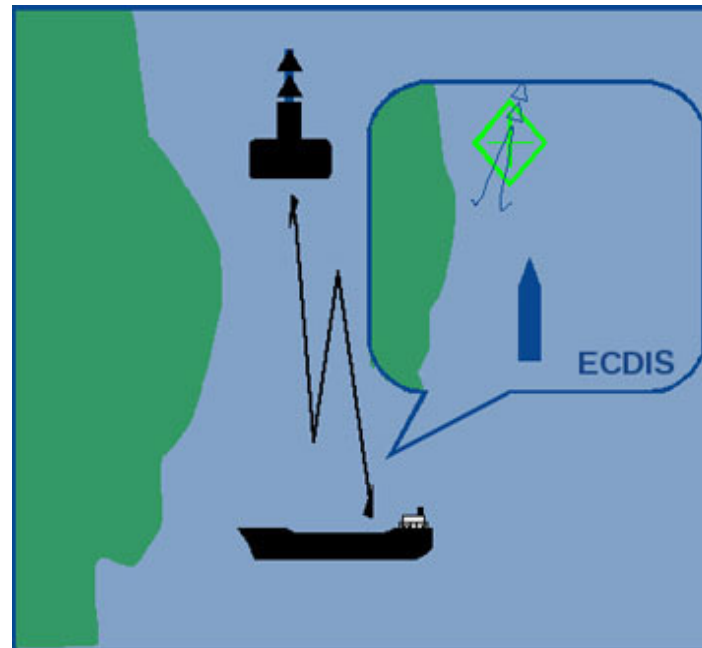
Two groups of AtoNs have to be distinguished, "Real AtoNs" and "Virtual AtoNs" :

## **„Real AtoNs“:**

- Buoys and beacons:
  - Existing as real objects along the waterway,
  - Equipped with transponders that regularly send the condition and position via AIS.
- Purpose: marking durable situations and/or dangerous spots
- Inland ECDIS charts: have to be encoded (e.g. via incremental updates)
- Visualization in Inland ECDIS:
  - Case „on position“: point object with current position and status
  - Case “off position”:
    - "missing" – symbol at required position and
    - "off position" – symbol at actual position

## Real AIS AtoN message

- AIS AtoN message for an „Real AtoN“ transmitted by an AIS transponder at the buoy



# AtoN reference application in RIS COMEX

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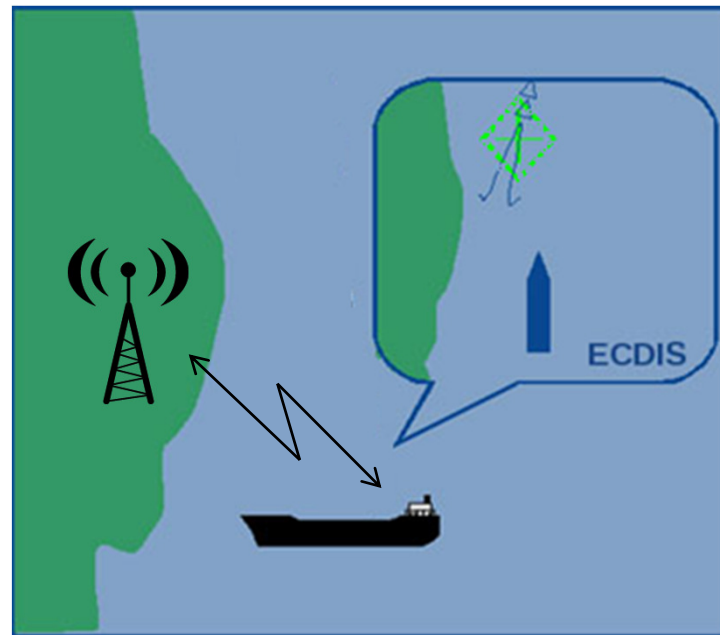
## „Virtual AtoNs“:

- Buoys, beacons, lines and areas, transmitted via AIS land infrastructure:
  - A digital projection, not existing as real objects along the waterway
- Purpose: marking temporary situations (restrictions) and/or dangerous spots
- Inland ECDIS charts: no chart update intended with this objects
- Visualization in Inland ECDIS:
  - AIS point object at position
  - Should be oriented, when there is an direction of impact
  - Lines and areas at position



## Virtual AIS AtoN message

- AIS AtoN message for an „Virtual AtoN“ transmitted by an AIS base station



























## Maritime- and Inland code tables

### Maritime AtoNs (IALA)

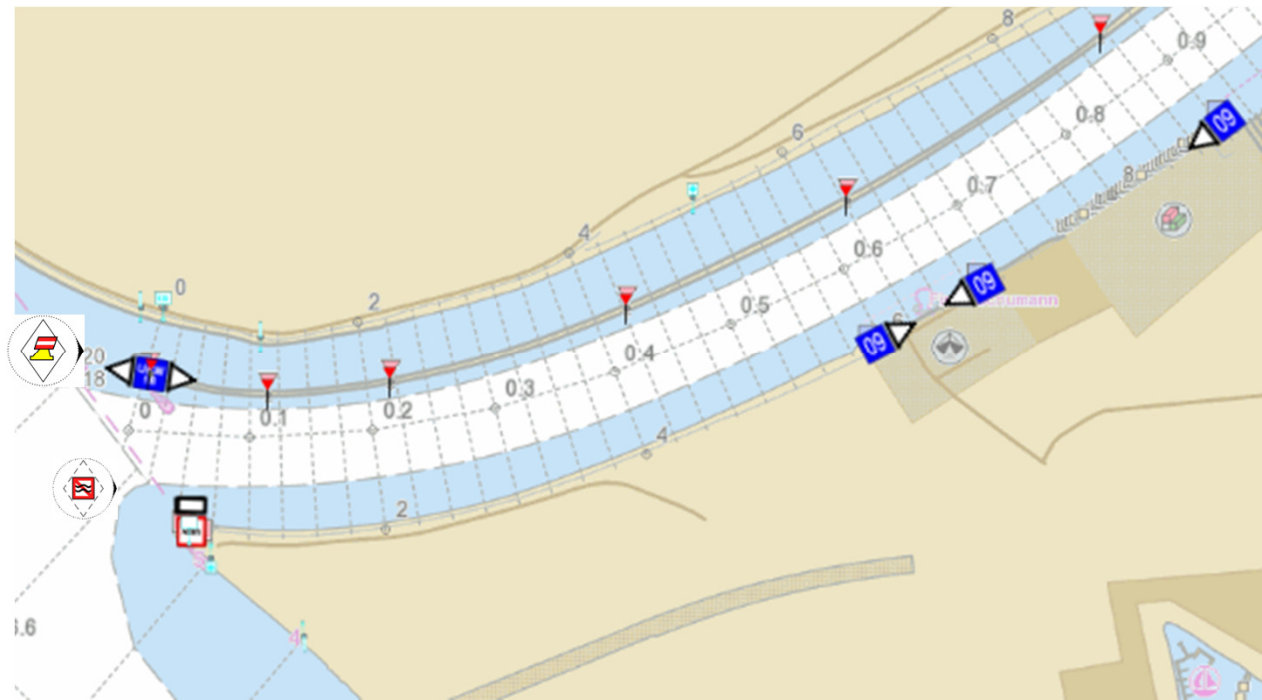
Code	Definition Maritime
0	Default, Type of AtoN not specified
1	Reference point
2	RACON
3	(NOTE 1 – This code should identify an obstruction that is fitted with an AtoN AIS station)
4	Emergency Wreck Marking Buoy
8	Leading Light Rear
9	Beacon, Cardinal N

### Inland AtoNs (CEVNI)

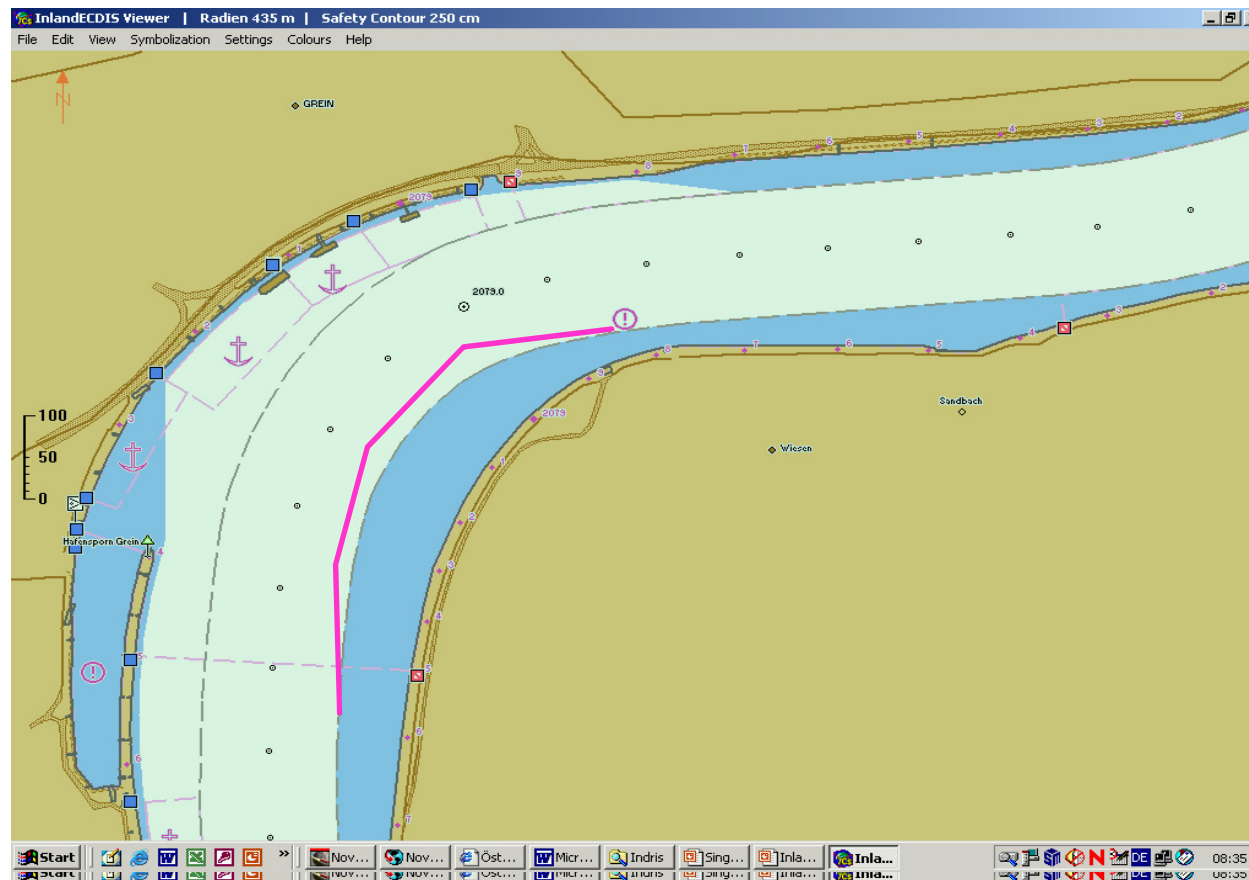
	Code	CEVNI code	on pos-o	miss-m	off pos-f	virt-v	Name
fixed aids, land marks	0						Default, Type not specified
	1	4.A + 4.B					Channel near the right bank
	2	5.A + 5.B					Channel near the left bank
	3	4.C + 4.D					Cross-over right bank
	4	5.C + 5.D					Cross-over left bank
	5	8.C - 8.C2					Bridge pillar
	6	8.C3 + 8.C4					Overhead cable

## Point objects with direction of impact

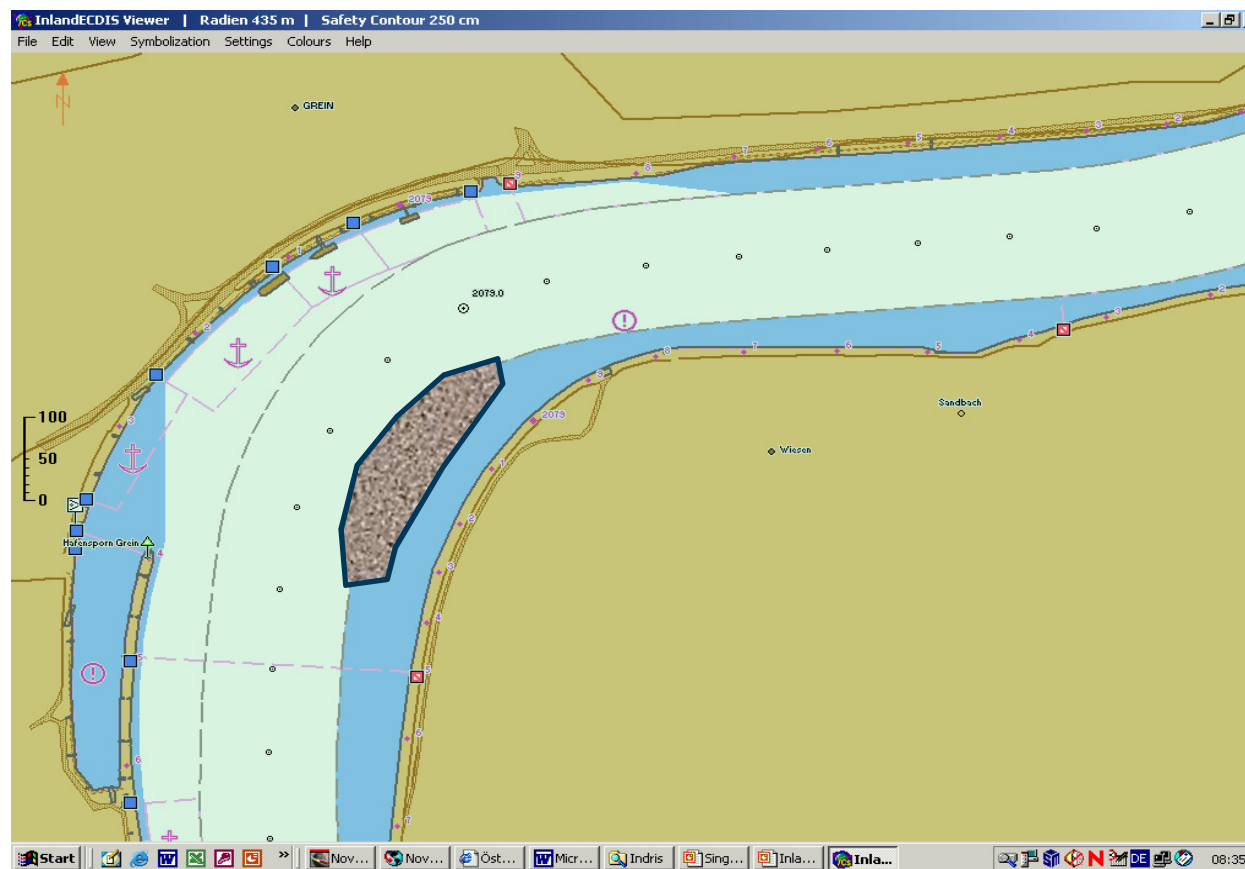
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- The image shows two traffic signs. The top sign is a yellow T-junction sign, which is a yellow T-shape on a white background, enclosed in a white diamond with a black border. The bottom sign is a red square sign with a white wavy line and a diagonal slash, enclosed in a white diamond with a black border.



## Virtual AIS AtoN line message



## Virtual AIS AtoN area message, lack of depth





# Status of legal and practical implementation

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IENC Production overview, updating the list “IENC overview in Europe”

([IENC Prod overview 20170601.xlsx](#))

**Inland ECDIS Standard Edition 2.3** Commission regulation No. 909/2013

Since 29.03.2016 each member state has to provide his IENCs according to this standard version.

**Inland ECDIS Standard Edition 2.4** Commission regulation expected in 2017

Member states have to produce Inland ENC's in accordance with this standard within 30 months after the entry into force.

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Thank you for your attention!

[Wieland.haupr@wsv.bund.de](mailto:Wieland.haupr@wsv.bund.de) , Germany 2017