



Inland ECDIS Harmonisation Group

Status Report Europe

October 2019
New Orleans, USA

Status report Europe

- European waterways
- Status of the legislation and the status of implementation in Europe
 - Status of the European standardization process
 - Integration of the RIS expert groups into CESNI/TI
- Topics related to the Inland ECDIS Standard
 - Preparation of IES 2.5 (from European point of view)
 - EU project: RIS COMEX
 - COMEX Corridors
 - COMEX Corridor management levels
 - Sub Activity 5.1: Safety of Navigation

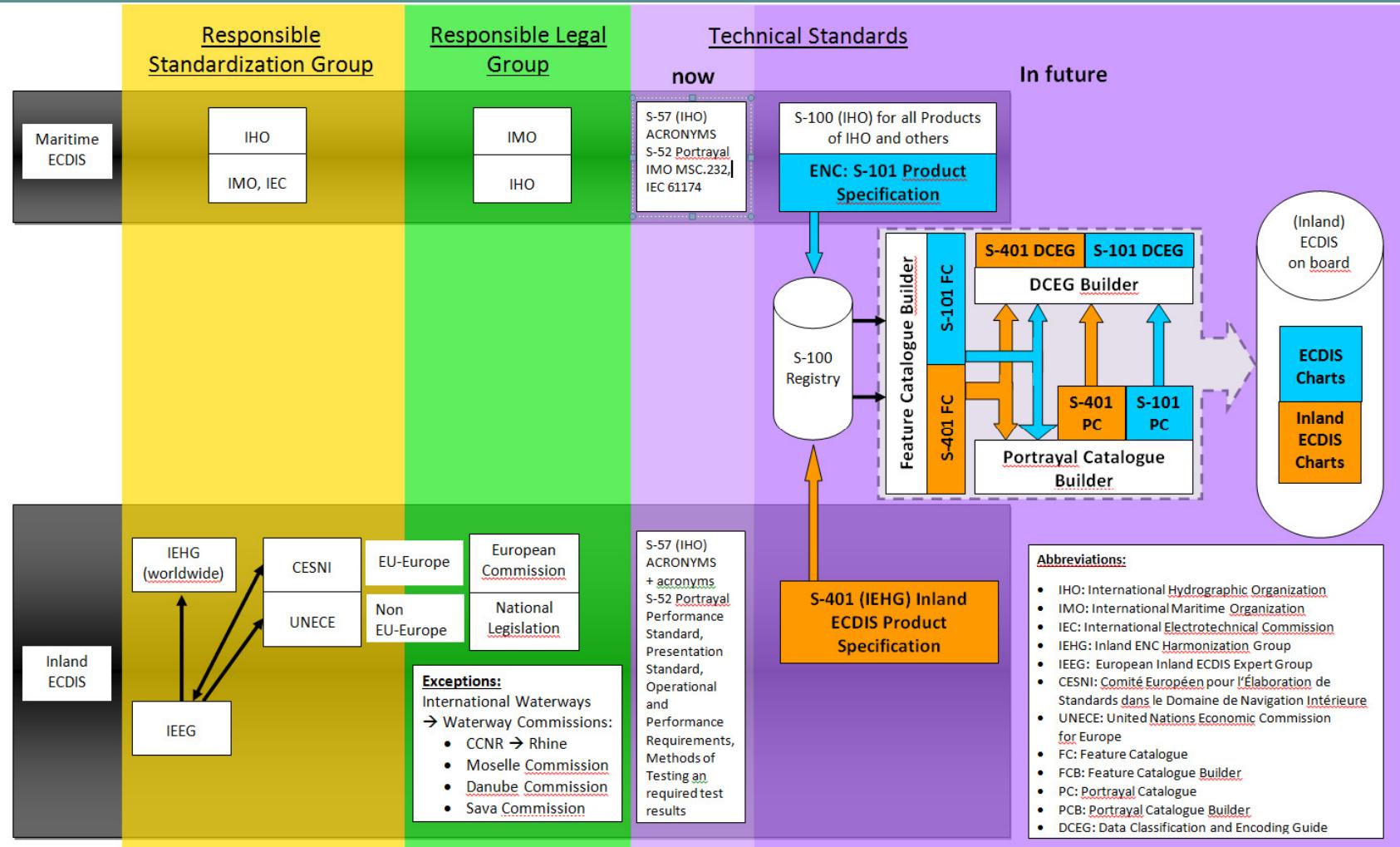
Inland waterways, connected to the European Union



Map of the European Inland Waterway Network – Carte du réseau européen des voies navigables – Карта европейской сети внутренних водных путей



Inland ECDIS standardization and legislation, now and in future



Status of the European standardization process

Inland ECDIS, Standard Edition 2.4 (IES2.4) is:

- Published by the EC at 19th of December 2018 at:
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1545226716926&uri=CELEX:32018R1973>
- The European member states and the Inland ECDIS manufacturers have time until June of 2021 for the adjustment to this standard version
- Next steps are defined in CESNI/TI work program (2019-2021):
 - Technical requirements for the processing and visualization of Inland AIS related data in Inland ECDIS Displays (Edition 1.1)
 - Preliminary draft “Inland ECDIS Standard, Version 2.5”
 - Extraction of the requirements from the Inland ECDIS standard text (preliminary draft “Inland ECDIS Test Standard”)
 - Preliminary Draft of S-401 related to the future evolution of the Inland ECDIS

Status of the European standardization process

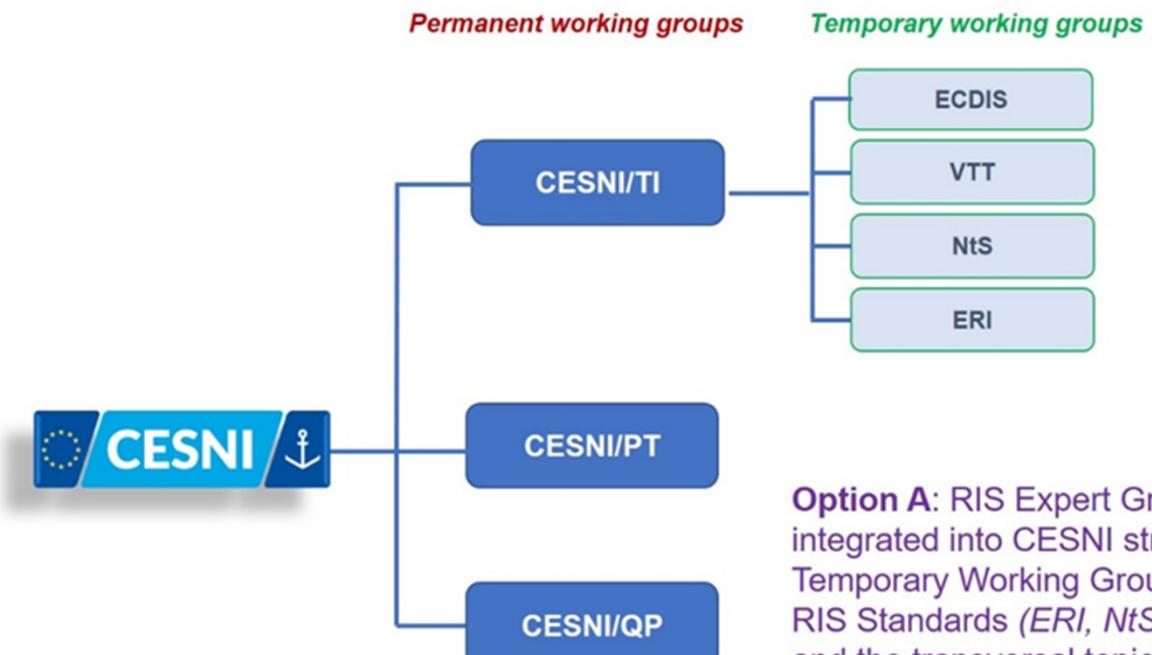
The IES 2.4 was already published in 2016 by the **UNECE**, as Resolution 48, Revision 3, but has to be updated to be in accordance with the wording of the IES2.4 version by the European Commission (EC). This process is ongoing.

The EC refers regarding the technical appendices to Resolution 48:

- (Inland ECDIS) Resolution 48, Rev.3 is published at the UNECE website:
<https://www.unece.org/trans/main/sc3/sc3res.html>
- The annexes and appendices are only available in English at:
https://www.unece.org/fileadmin/DAM/trans/doc/finaldocs/sc3/Resolution_48_app_endices_for_rev3.zip
- And also the Inland ECDIS symbols:
https://www.unece.org/fileadmin/DAM/trans/doc/2015/sc3wp3/Appendices_to_Resolution_48_rev_2.zip

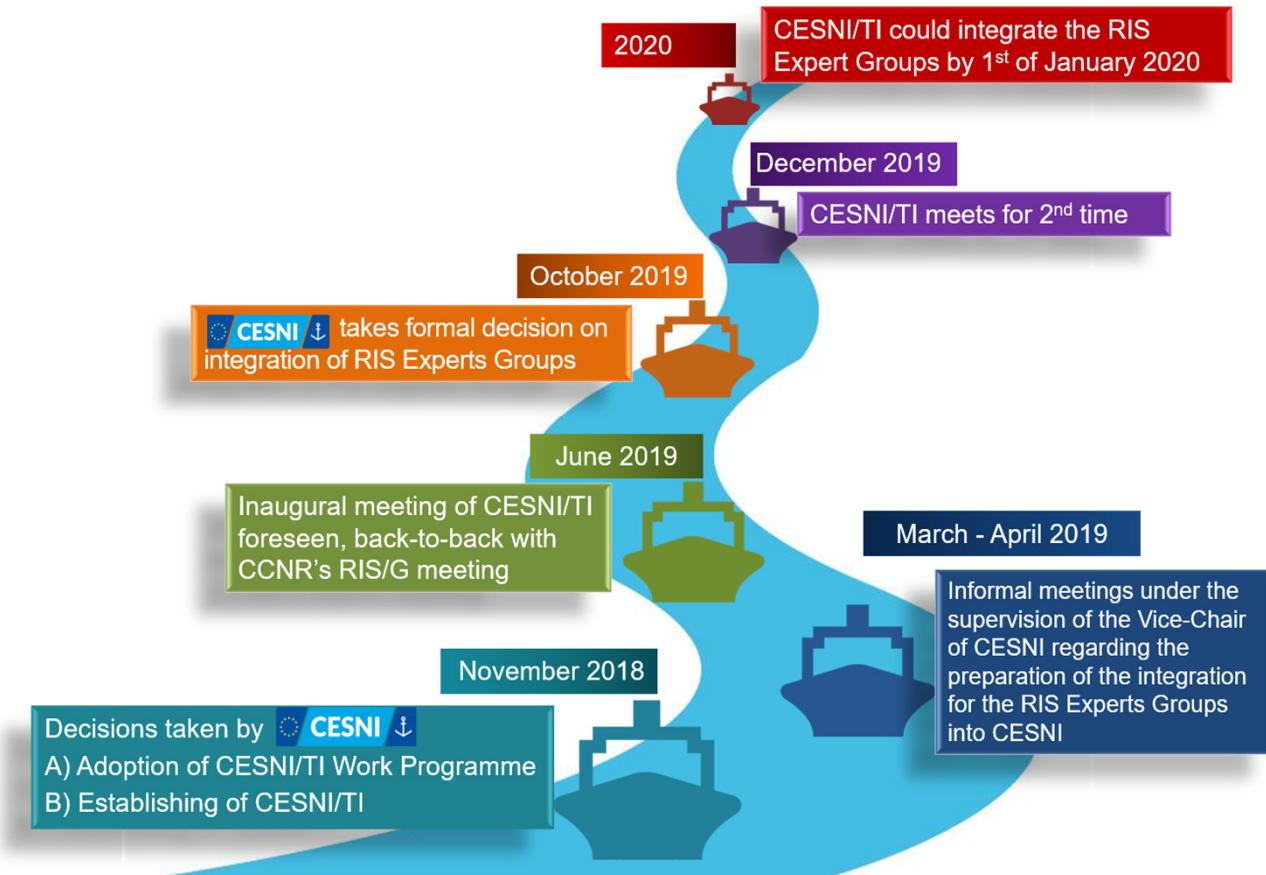
Integration of the RIS expert groups into CESNI/TI

Possible interface between CESNI and RIS Expert Groups

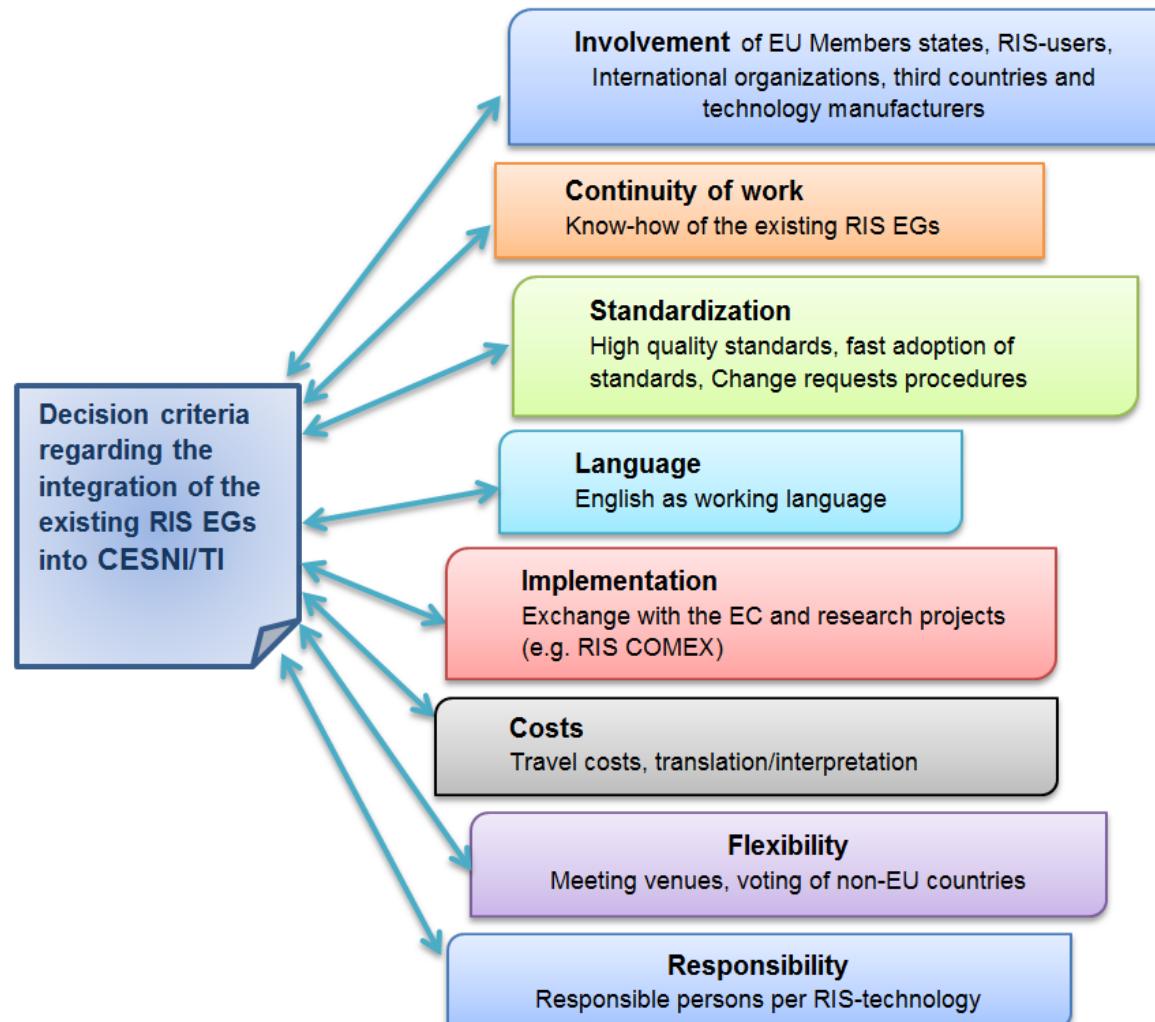


Option A: RIS Expert Groups could be integrated into CESNI structure as four Temporary Working Groups related to the 4 RIS Standards (*ERI, NtS, VTT, Inland ECDIS*) and the transversal topics such (e.g. related to the RIS Index) shall be addressed by CESNI/TI. In addition, *Ad hoc meetings* on a specific topic could also take place.

Integration of the RIS expert groups into CESNI/TI



Integration of the RIS expert groups into CESNI/TI



Topics related to the Inland ECDIS Standard

Preparation of IES 2.5 (from European point of view)

- **Inland ECDIS in Navigation mode**
 - Radar overlaid with IENC, but a lot of skippers prefer “pure radar” plus additional information screen
 - Many software and hardware requirements
 - The screen used for navigation need a more detailed scale
 - The screen used for information needs a smaller scale (overview)
 - Type approved systems necessary
 - No police regulation in Europe makes equipment and use obligatory

Topics related to the Inland ECDIS Standard

Preparation of IES 2.5 (from European point of view)

- **Inland ECDIS in Information mode**
 - No Radar overlaid with IENC, pure Radar is used at bad weather conditions
 - Less software and hardware requirements
 - If two screens, one can be used in a more detailed scale
 - The screen used for information needs a smaller scale (overview, traffic picture)
 - The system needs no type approval, but the most manufacturers develop one system for both modes
 - Equipment and use is obligatory by many police regulation in Europe

Topics related to the Inland ECDIS Standard

Preparation of IES 2.5 (from European point of view)

- **Conclusions from the European side**
 - “Navigation mode” and “Information mode” are operational modes of the same system. “Information mode” is also the fallback mode for the “Navigation mode”.
 - The product specification of the IES should be rearranged to consider this.
 - Proposal:
 - General requirements
 - Requirement for “Navigation mode”
 - Requirements for “Information mode”
 - Separate chapter or appendix regarding type approval requirements

Topics related to the Inland ECDIS Standard

European Project RIS COMEX, COMEX corridors

- Amsterdam – Antwerp - Liège
- Amsterdam – Antwerp - Brussels
- Rhine
- Danube
- Elbe
- Moselle
- Dunkirk – Scheldt



Topics related to the Inland ECDIS Standard

European Project RIS COMEX, Corridor management levels (CoRISMa)

- Level 1
Infrastructural information
(enable reliable route planning by providing dynamic and static infrastructural information)
- Level 2
Traffic information (Level 2a current traffic situation & 2b predicted traffic situation)
(enable reliable travelling times for voyage planning and for traffic management by using traffic information)
- Level 3
Information for the logistics sector
(support the transport management of the logistics partners)

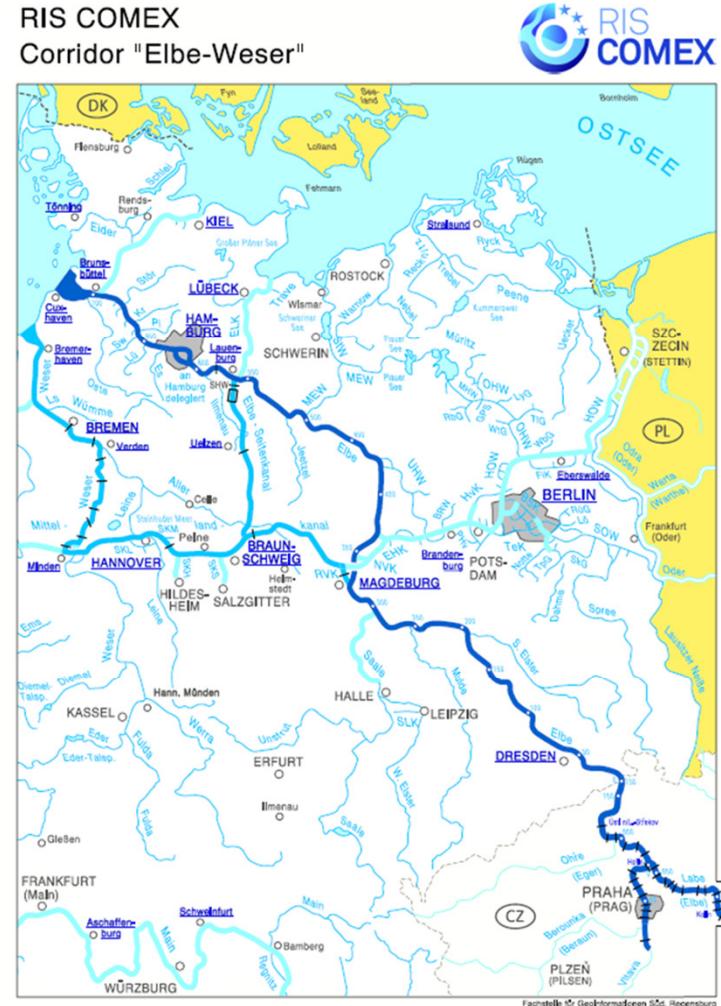
Topics related to the Inland ECDIS Standard

European Project RIS COMEX

- Sub Activity 5.1: Safety of Navigation

- Within the frame of the European RIS COMEX project are reference applications foreseen.
- The main test field is the “Elbe-Weser” corridor.
- The necessary tech will be installed for the field testing of AIS AtoN.
- Both types of AIS AtoN, the “Real AIS AtoN” and the “Virtual AIS AtoN” will be applied.
- AIS AtoN messages offer the possibility to inform the skippers immediately about current dangerous situations on the track.

RIS COMEX
Corridor "Elbe-Weser"

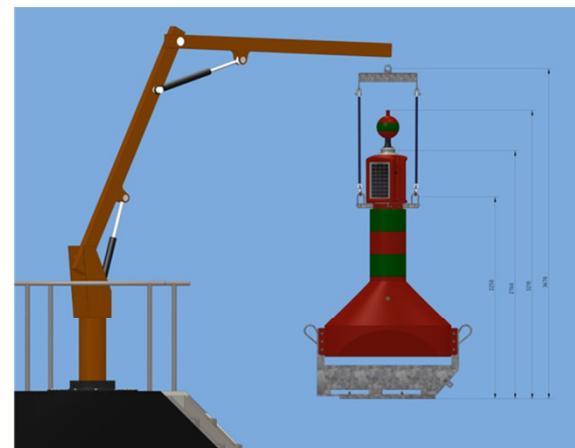


Topics related to the Inland ECDIS Standard

Reference application AIS AtoN

- Real AIS AtoN

- Buoys and beacons:
 - Existing as real objects
 - Equipped with transponders that regularly send condition and position via AIS
- Purpose: marking durable situations
- Inland ECDIS charts: “Real AtoN” have to be encoded

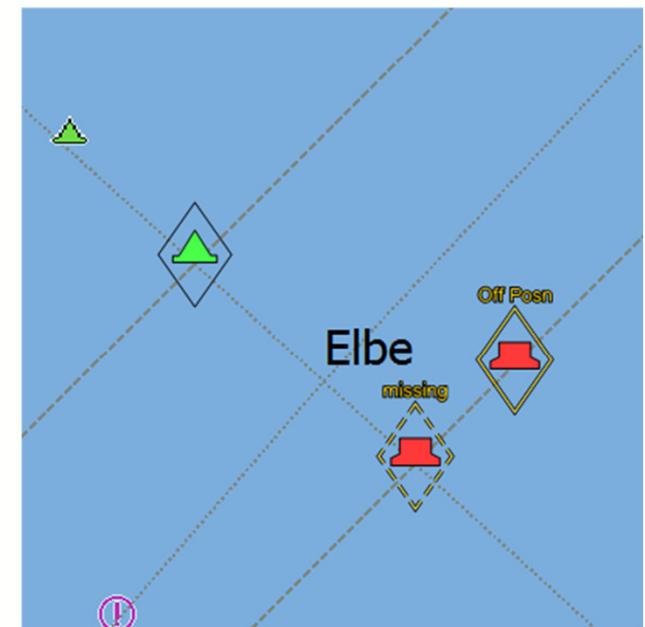


Topics related to the Inland ECDIS Standard

Reference application AIS AtoN

- Real AIS AtoN

- Visualization in Inland ECDIS:
 - Case „on position“: point object with current position
 - Case „off position“:
 - “missing – symbol” at required position
 - “off position – symbol” at actual position

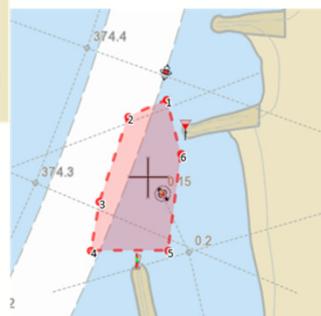
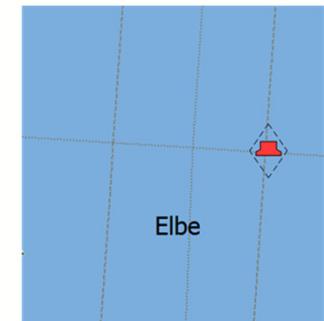


Topics related to the Inland ECDIS Standard

Reference application AIS AtoN

- Virtual AIS AtoN

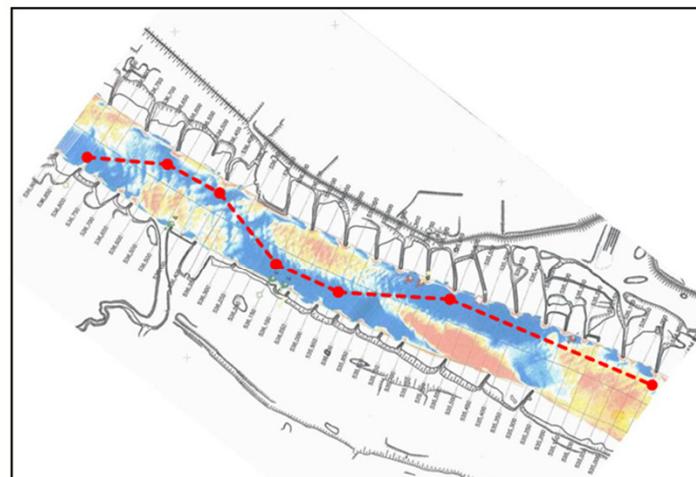
- Virtual buoys, beacons, line and area objects, provided via AIS land infrastructure:
 - Digital projections, not existing as real objects
- Purpose: marking temporary situations (restrictions) and/or dangerous spots
- Inland ECDIS charts: “Virtual AIS AtoN” are not provided by Inland ECDIS charts, only via AIS messages
- Visualization in Inland ECDIS chart on board:
 - as point, line or area



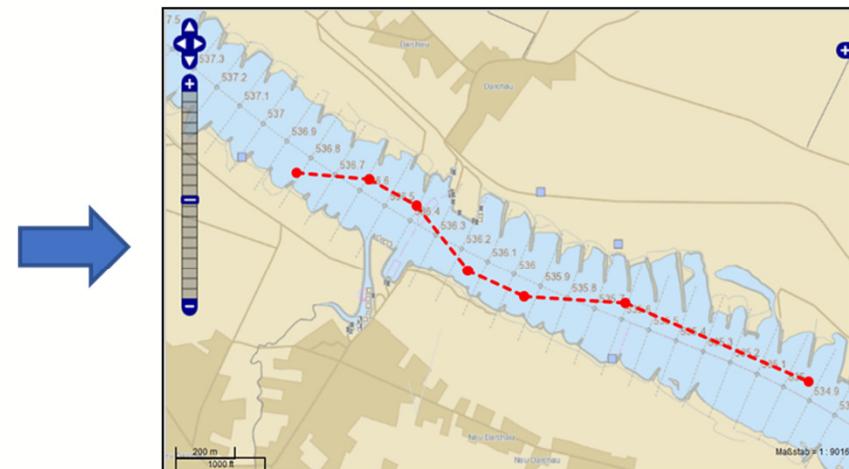
Topics related to the Inland ECDIS Standard

Reference application AIS AtoN, examples

- Recommended tracks in specific shallow sections



Construction of a recommended track



Visualized in Inland ECDIS

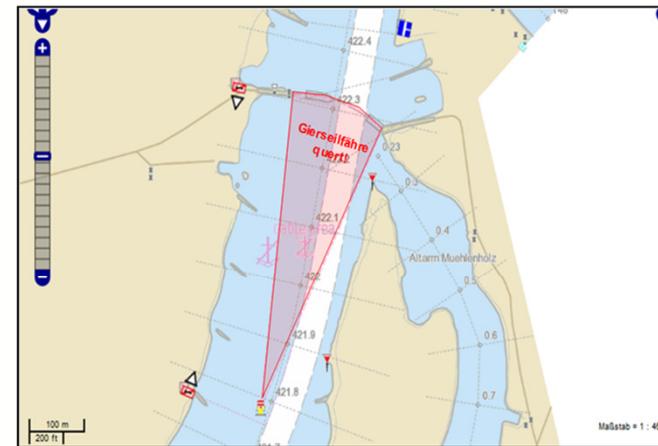
Topics related to the Inland ECDIS Standard

Reference application AIS AtoN, examples

- Indication of a virtual caution area while a cable ferry is crossing



Cable ferry at the river Elbe



Virtual caution area while the ferry is crossing

Topics related to the Inland ECDIS Standard

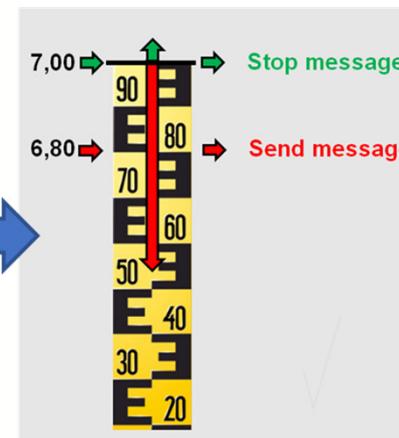


Reference application AIS AtoN, examples

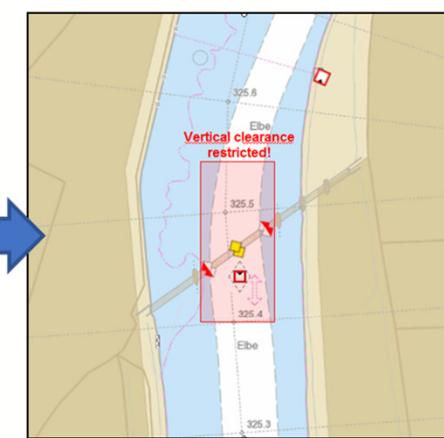
- Indication of currently limited vertical clearance under bridges (pending on water level)



Bridge at the river Elbe



Reference gauge



Virtual caution area is indicating low vertical clearance

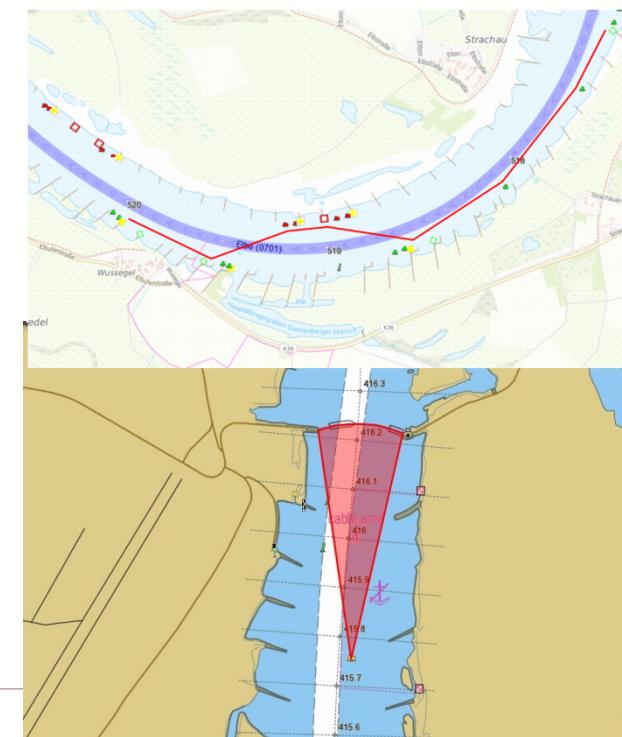
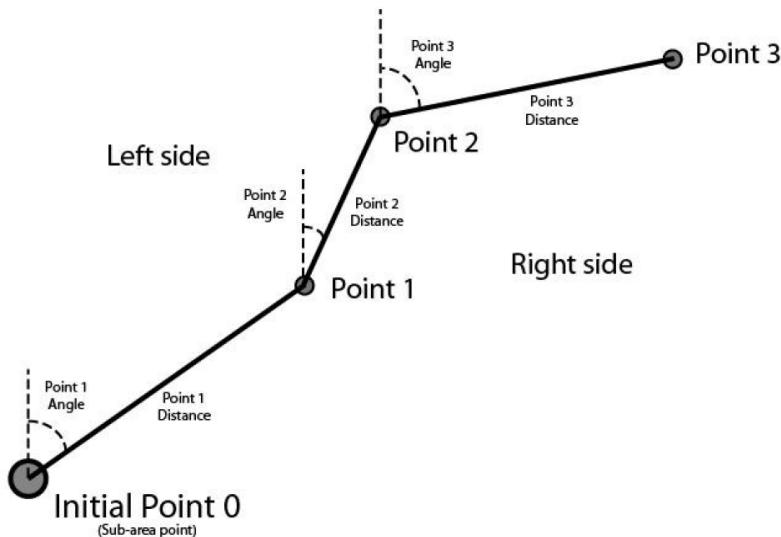
Topics related to the Inland ECDIS Standard

The previous applications use the AIS Geographic Notice Message

- The AIS Geographic Notice Message, Release Version: 2, is released by the US Coast Guard for maritime applications
- It uses point, line and area geometries to inform about the extent of temporary dangers and traffic limitations

Area Notice

Sub-Area: Point (0) Radius: 0 "Initial Point 0"
Sub-Area: Polyline (3) Point 1: Point 1 Angle Point 1 Distance Point 2: Point 2 Angle Point 2 Distance Point 3: Point 3 Angle Point 3 Distance



Topics related to the Inland ECDIS Standard

Reference application AIS AtoN, examples

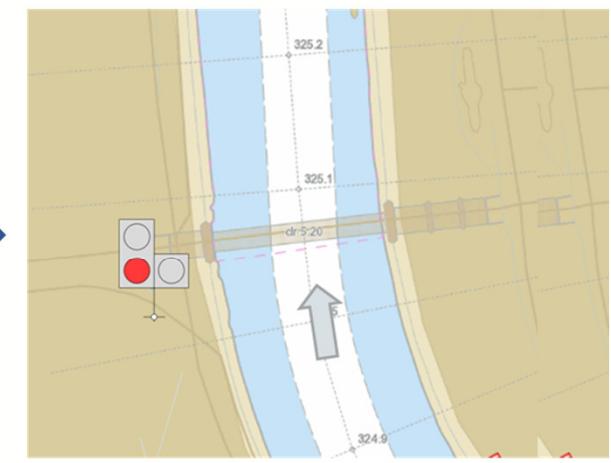
- Indication of the current switching status of signals with the direction of impact



Current switching the signal



Signal outside

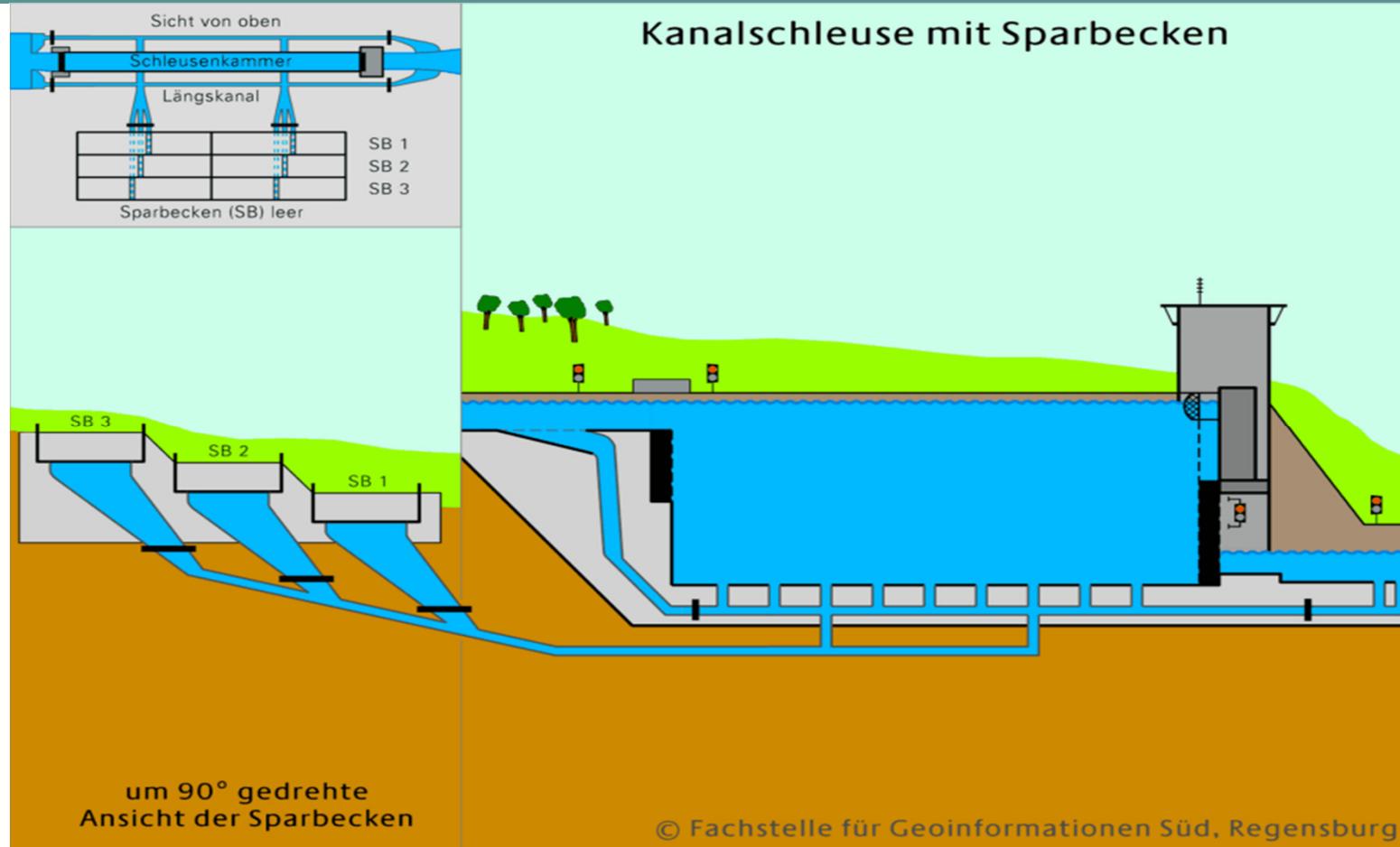


Status visualized in Inland ECDIS

Abbreviations

AIS	Automatic Identification System
AtoN	Aids To Navigation (any sort of admitted marker which aids in navigation)
AIS AtoN message	AtoN related message, broadcasted via AIS
CCNR	Central Commission for Navigation on the Rhine
CESNI	European Committee for drawing up Standards in Inland Navigation
CESNI/PT	CESNI working group on Technical Requirements
CESNI/TI	CESNI working group on Information Technology
CESNI/QP	CESNI working group on Professional Qualifications
ECDIS	Electronic Chart Display and Information System
IEEG	Inland ECDIS Expert Group (European RIS standardization group)
IEHG	Inland ECDIS Harmonization Group (International standardization group)
IENC	Inland Electronic Navigational Chart
IHO	International Hydrographic Organization
IMO	International Maritime Organization
UNECE, UN/ECE	United Nations Economic Commission for Europe

Thank you for your attention!



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