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RIS development in Germany

DIGITALIZATION IN INLAND WATER TRANSPORT

4th October 2018

UNECE SC.3 Workshop 2018

Geneva

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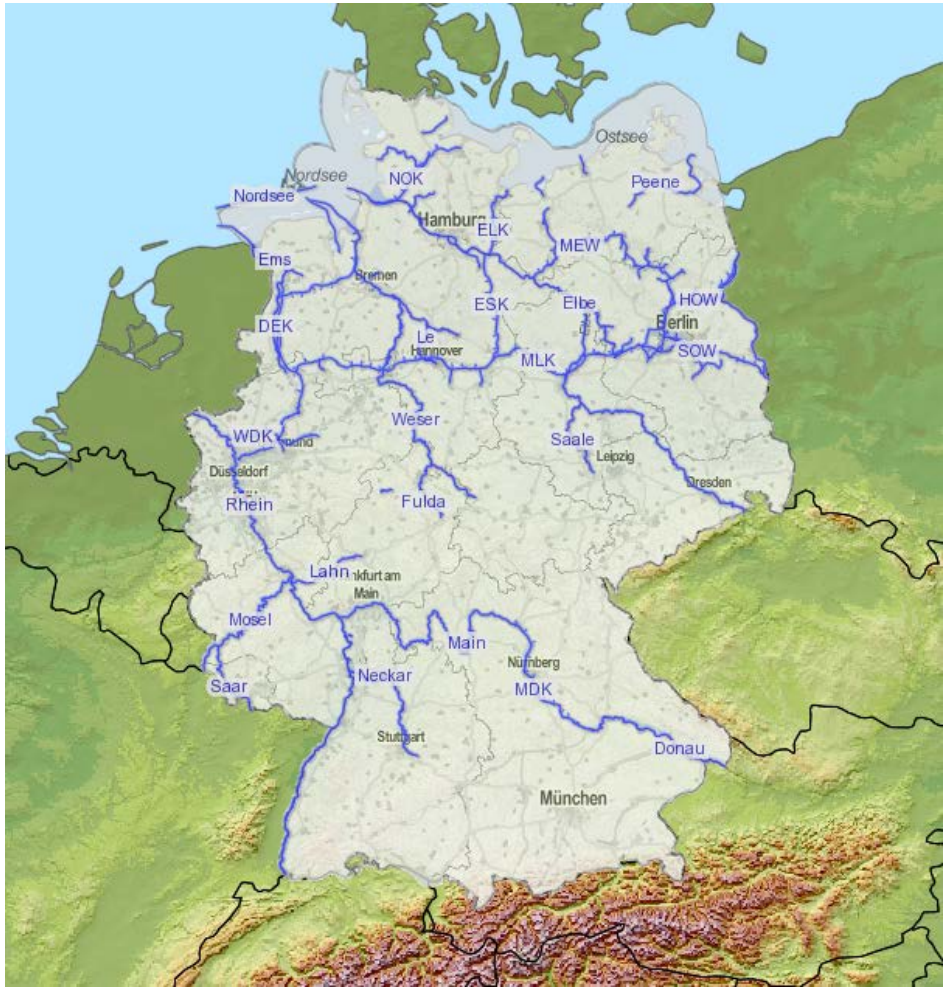
Main Waterways in Germany

The German Waterways and Shipping Agency is responsible for

- 23,000 km² of maritime waterways
- 7,300 km of inland waterways
  - 75 % rivers, 25 % canals
  - 450 lock chambers, 300 weirs,
    2 shiplifts, 2 barrages and 1,300 bridges
  - Direct connections with the inland waterways of Austria, the Czech Republic, France, Luxembourg, the Netherlands, Poland and Switzerland
  - 5,100 km of main waterways
    (class IV or above)
- 15.600 fixed and floating navigational aids



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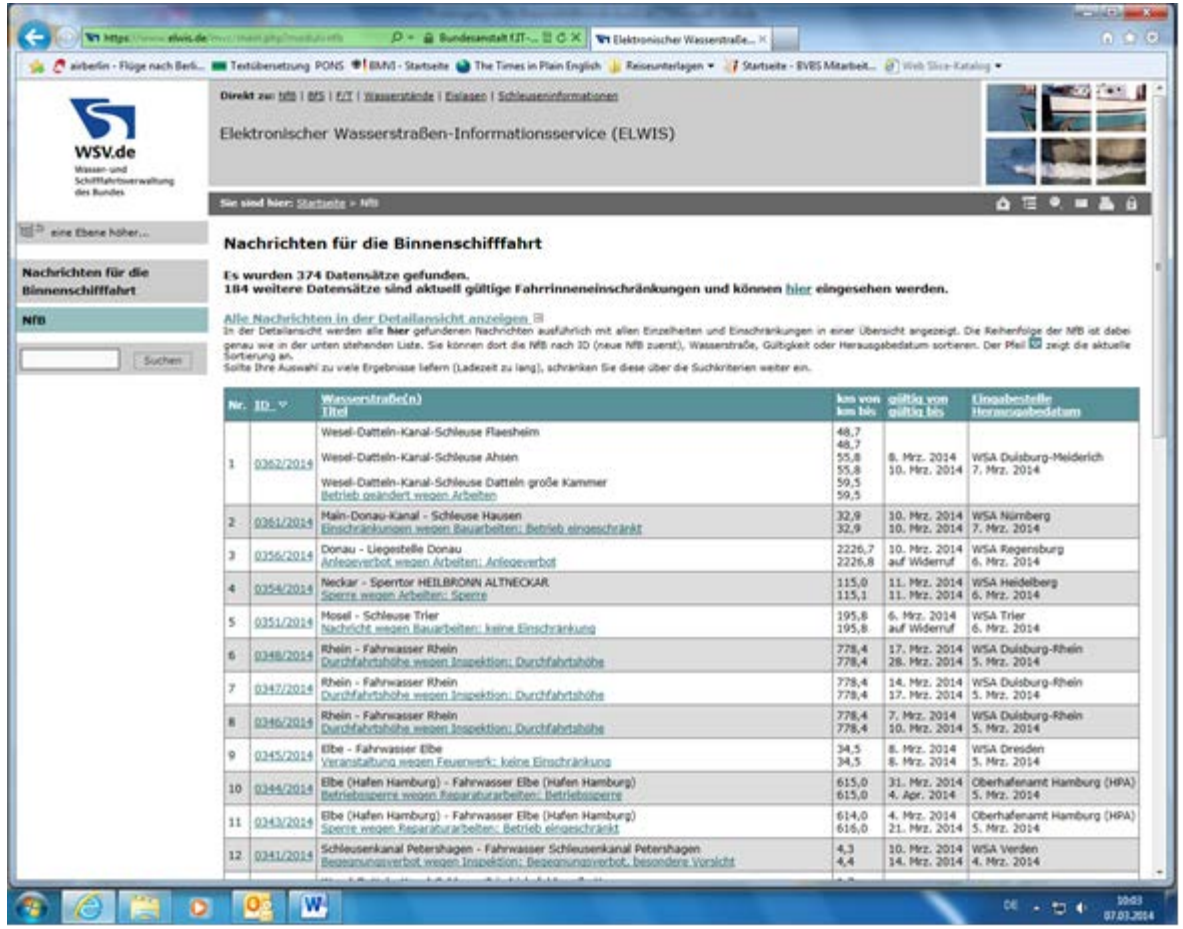
ELWIS – The German internet portal for inland navigation

- ELWIS access in 2017:
- **38 million** pages were accessed via internet
- **4,4 million** e-mails were sent
- **298 authors** contributed to notices to skippers, information to seafares and ice messages
- At the moment, a route- and chart-based search function is being developed

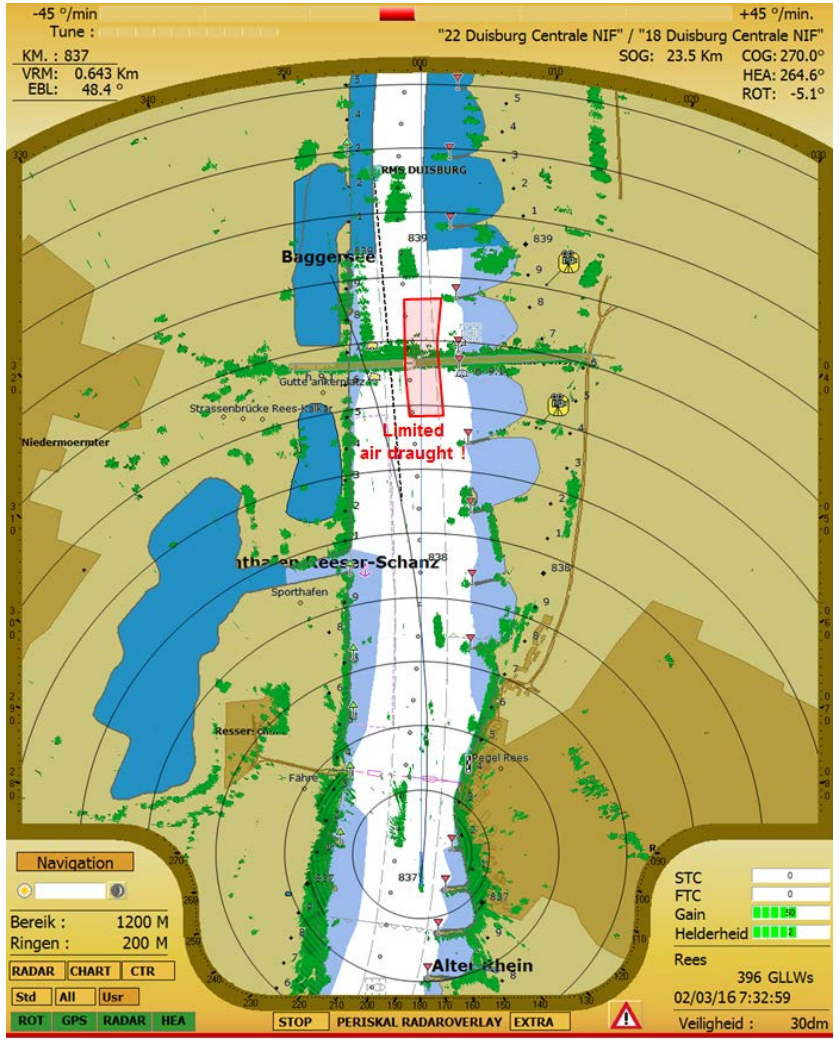
-> www.elwis.de



Safety of Navigation
- improved by Inland AIS and Inland ECDIS

RISVTT RISECDIS

- Inland AIS and Inland ECDIS are suitable technical standards to improve safety of navigation. All the more when these standards are used in combined applications.
- The aim is to inform about the current situations and to visualize it in the Inland ECDIS chart on board of the vessels.
- On 23.12.2016 Germany introduced a carriage requirements for Inland AIS and Inland ECDIS in information mode for vessels navigating on German inland waterways



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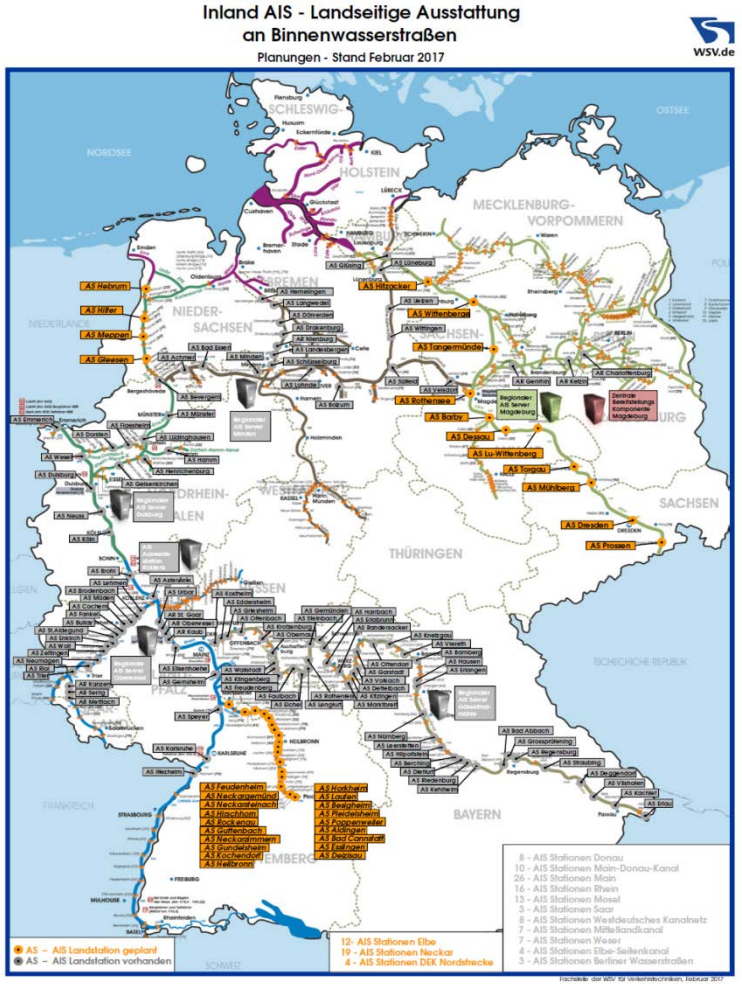
Technical implementation of the German Inland AIS shore infrastructure

The Inland AIS network will cover about 2800 km of inland waterways. It consists of:

- 130 physical Inland AIS shore stations along the rivers and canals,
- 10 AIS Repeater Stations,
- 5 Regional AIS servers,
- 1 Central AIS server,
- 1 Testserver

The Regional AIS Servers provide the Logical AIS shore station which is the functional interface with other RIS services, like VTS, lock operation, and provides those services with data for further processing.



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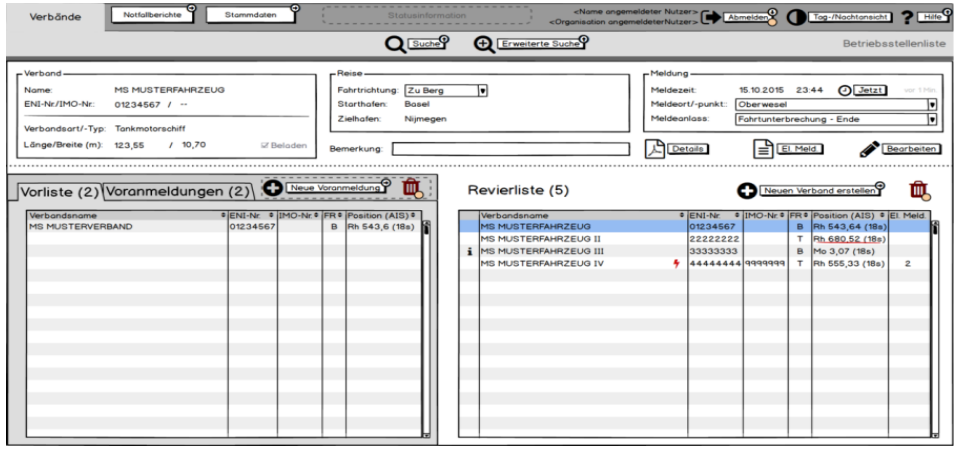
German Electronic Reporting and Information System in Inland Navigation (NaMIB)

- Realisation of a central system that is easy to configure, infinitely scalable, and integratable with other river information services (RIS).
- Simultaneous digital collection and transmission of information on accidents and stranded parties to the responding emergency and rescue services.
- Taking into account the position information of vessels and convoys.
- Compliance with demanding safety and security standards with regard to availability, confidentiality and data integrity.


VTS Center Oberwesel / Germany



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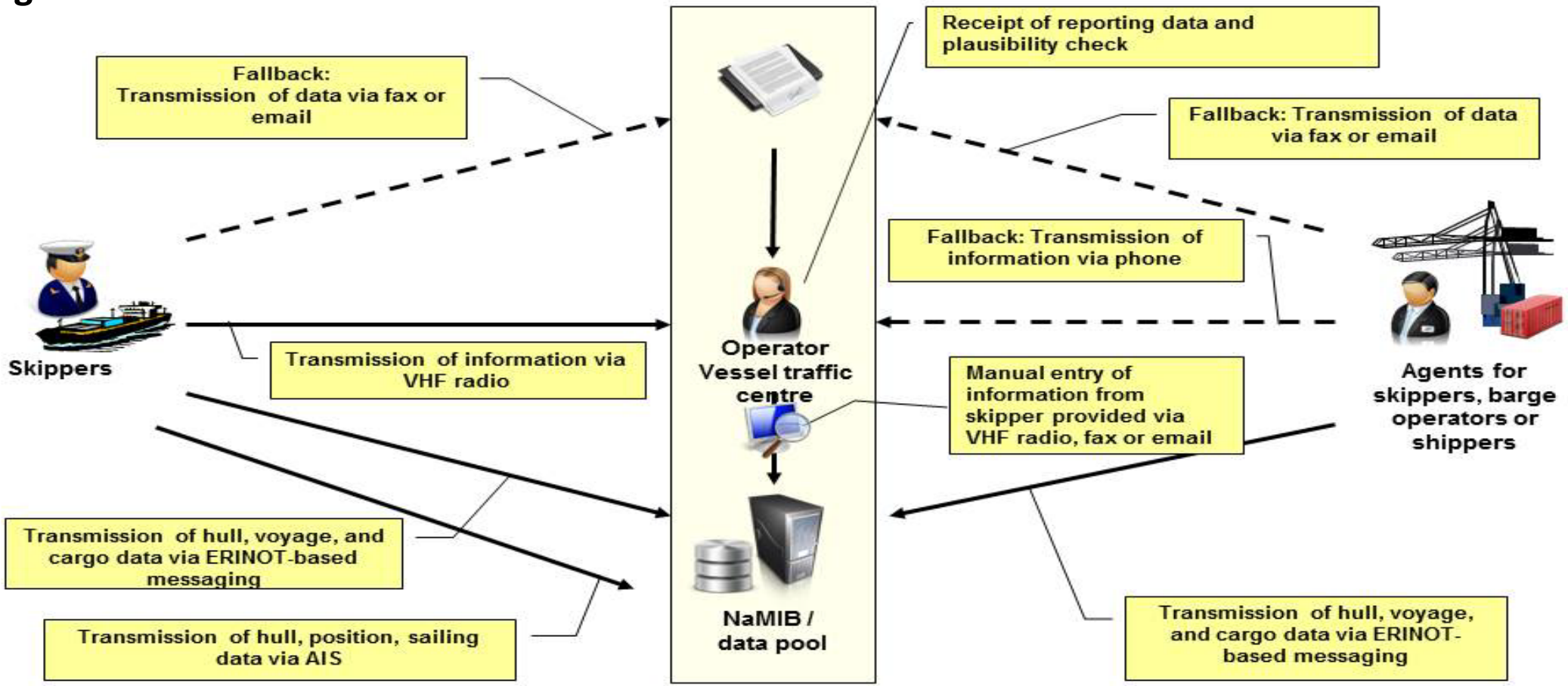
Reporting of Business Processes in Compliance with Police Regulations



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Overview of Reporting and Information System Inland Navigation (NaMIB)

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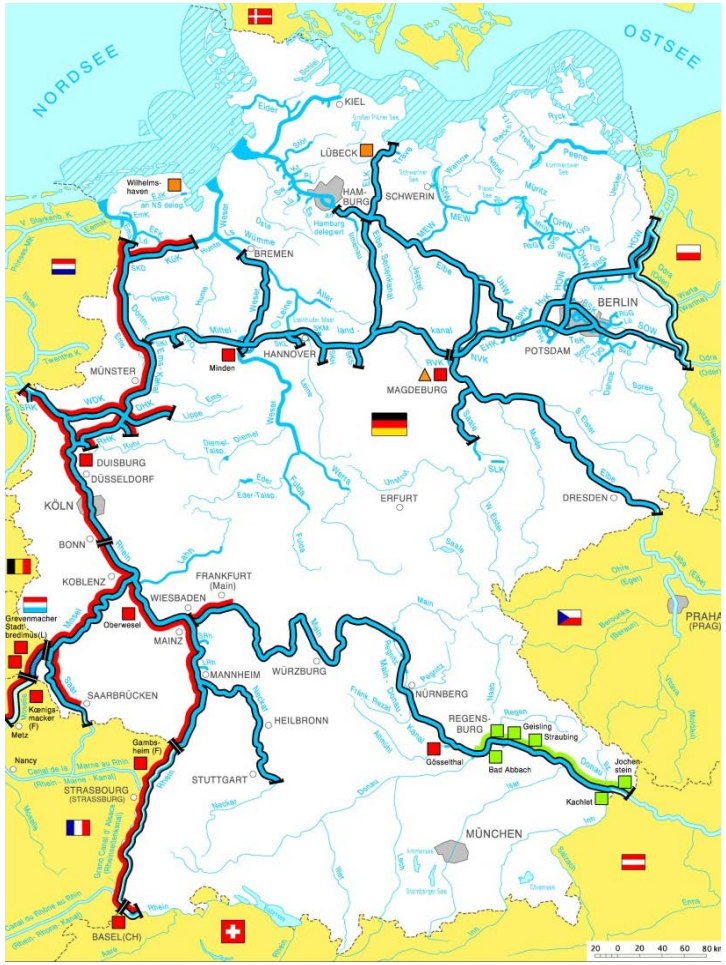

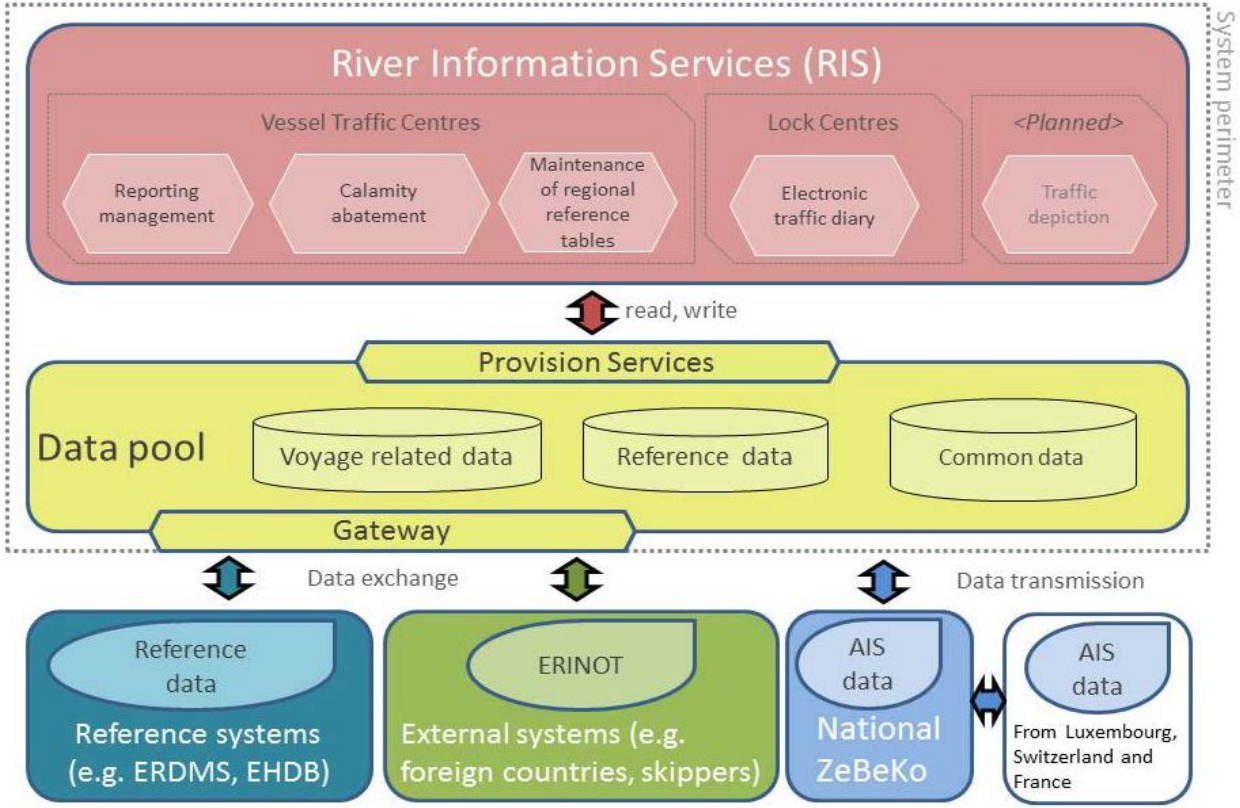

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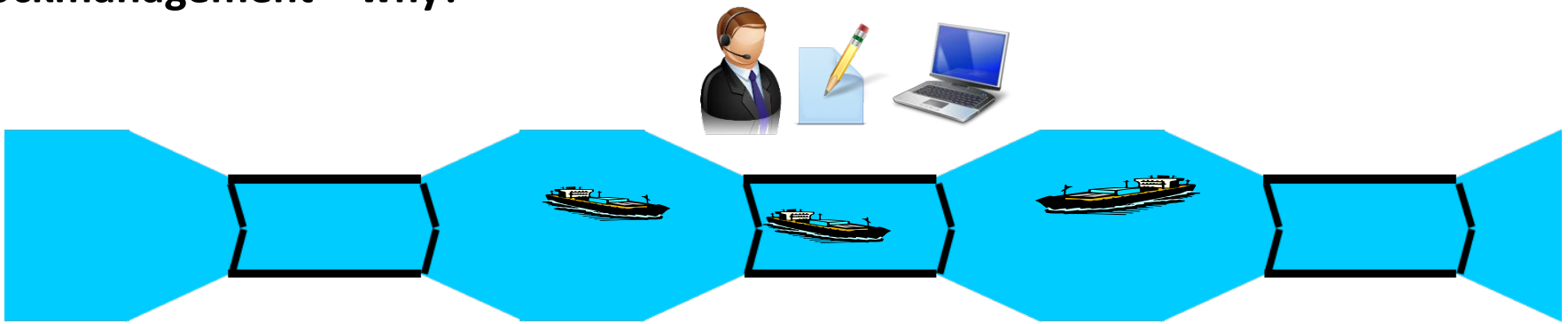
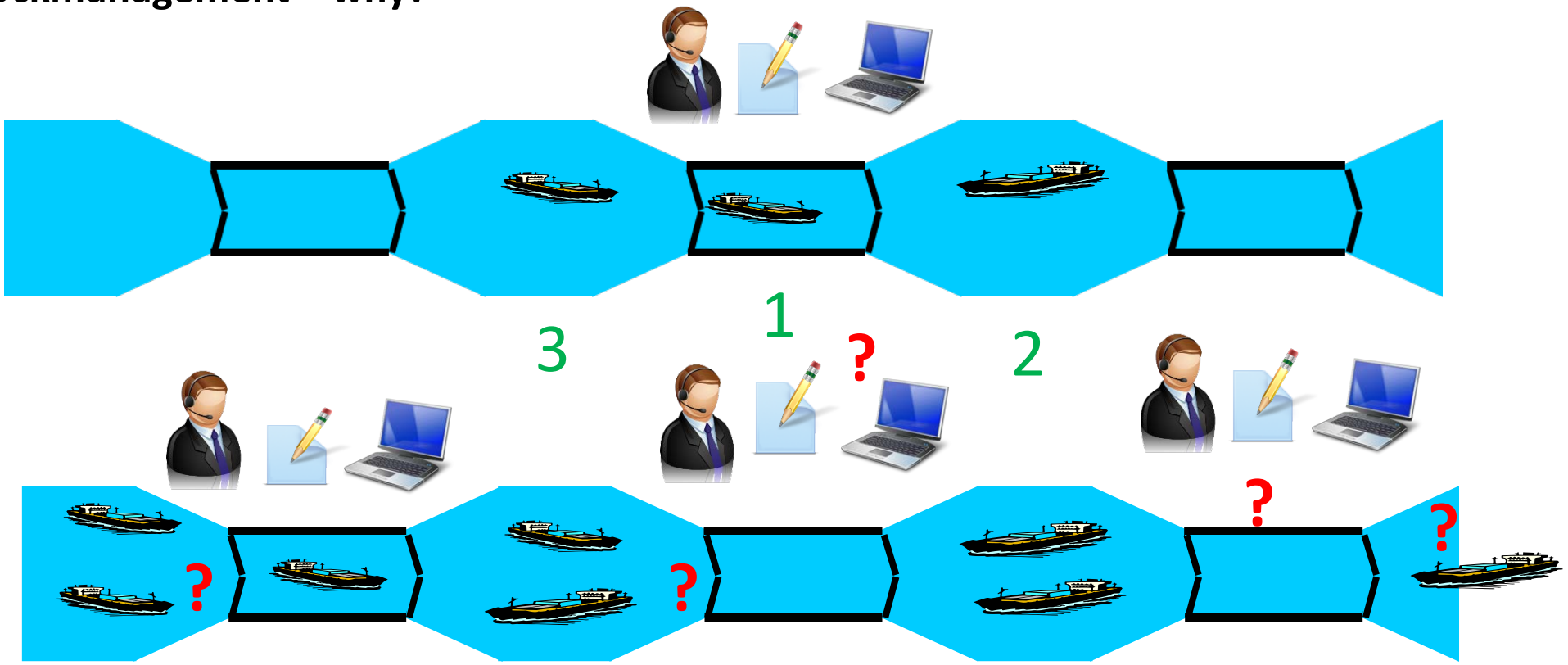
Pilotproject Lock Management
- along the river Danube

- Lock management can be improved considerably by significantly improving the available traffic information with regard to approaching vessels. Knowing the exact position of an approaching vessel, its speed, size and type helps to plan the chamber reservation and the locking procedure.
- proposal on lock planning considering a chain of locks to optimize smooth traffic flow
- using Inland AIS information for traffic surveillance
- automated lock journal, statistics

Lockmanagement – why?



Lockmanagement – why?



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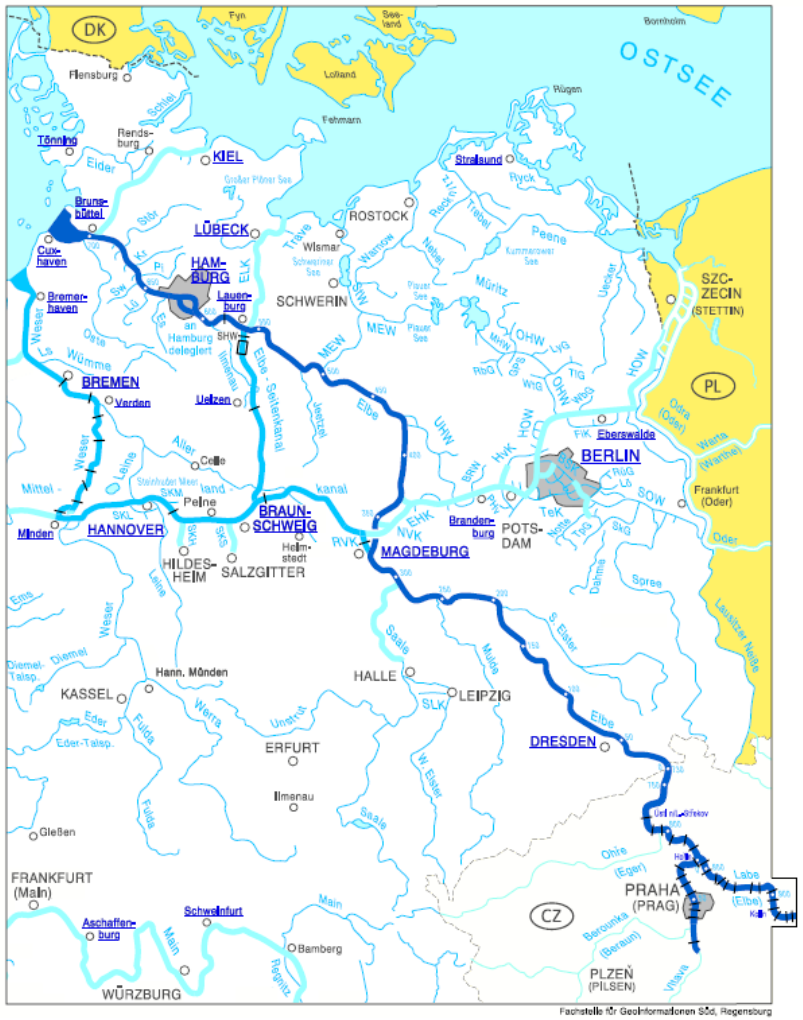
Savety of Navigation
- European project RIS COMEX

- Several concrete reference applications on the “Elbe-Weser” corridor, started within the frame of the RIS COMEX project. They will be installed and field tested. Both types of AIS AtoN, the “Real AIS AtoN” and “Virtual AIS AtoN” will be used for specific AIS AtoN messages.
- AIS AtoN messages offer the possibility to inform the skippers immediately about dangerous situations.

RIS COMEX
Corridor "Elbe-Weser"



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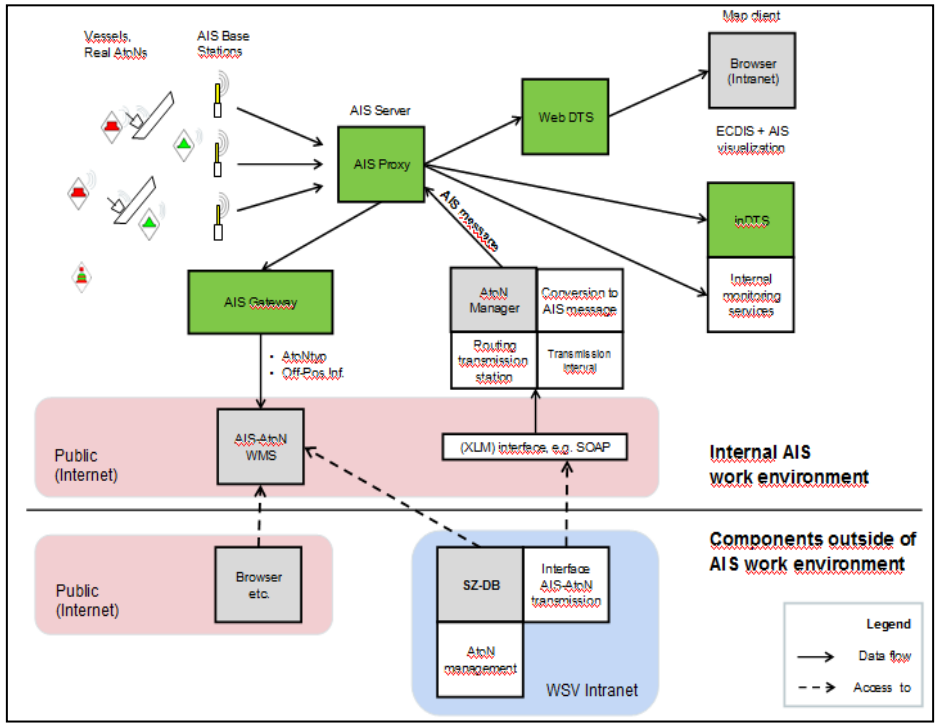
European project

RIS COMEX

RIS COMEX – Corridor “Elbe-Weser”:

- Extending AIS land infrastructure and realizing specific Inland AIS AtoN messages
- Amending existing working environment for managing, providing and monitoring AIS AtoNs
- Amending Inland ECDIS to receive Inland AIS AtoN messages and visualize them in the system on board
- To test efficiency and effectivity of providing information via incremental IENC updates
- To provide in addition AIS AtoN information via Web Map Service for pleasure crafts which are not legally obligated to use Inland ECDIS on board.

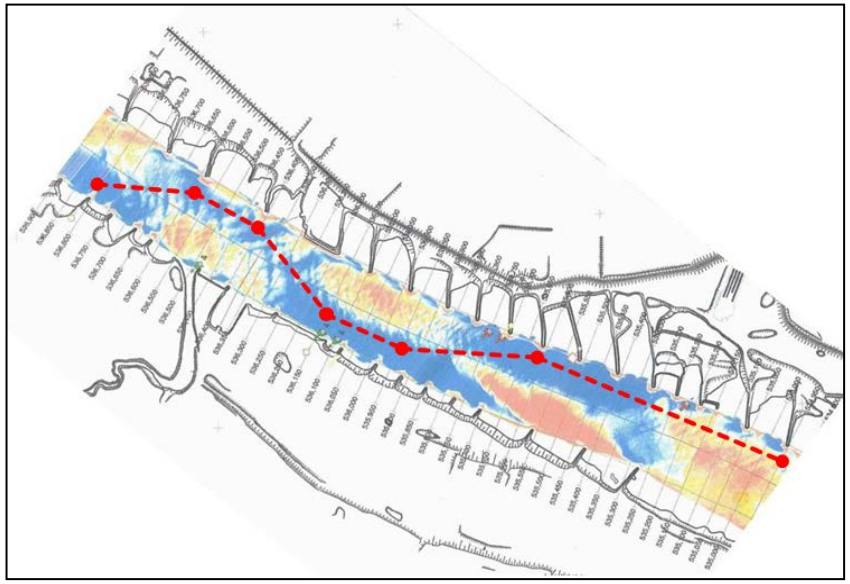
The project is co-financed by the European Union.



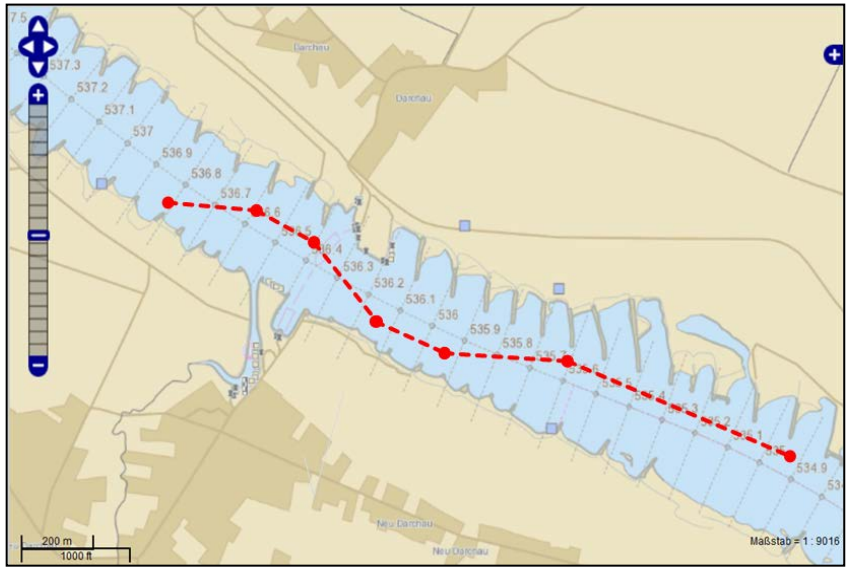
AIS data management and AIS services

Reference applications in RIS COMEX

- Recommended tracks in specific shallow sections with frequent changes of the river bed, provided by virtual Inland AIS AtoN line messages



Construction of a recommended track

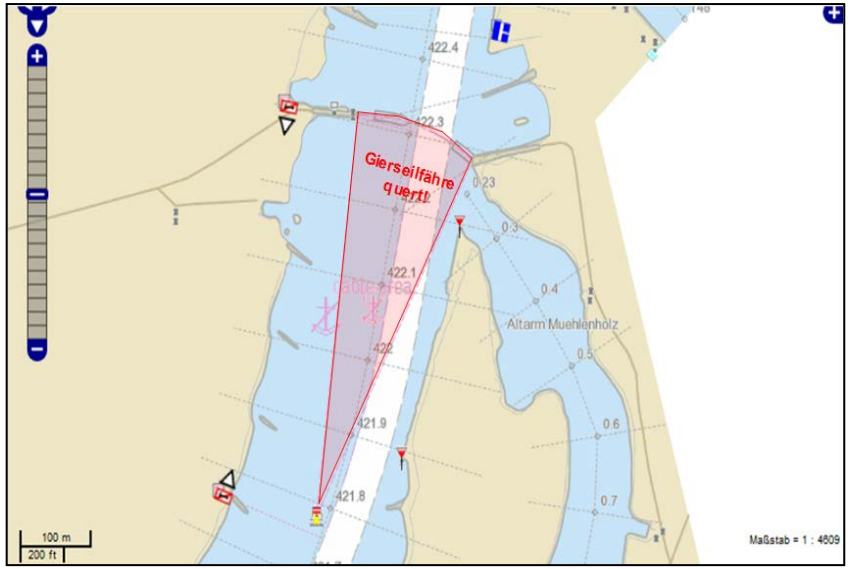


Visualized in Inland ECDIS

Reference applications in RIS COMEX

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

Cable ferry at the river Elbe



Virtual caution area while the ferry is crossing

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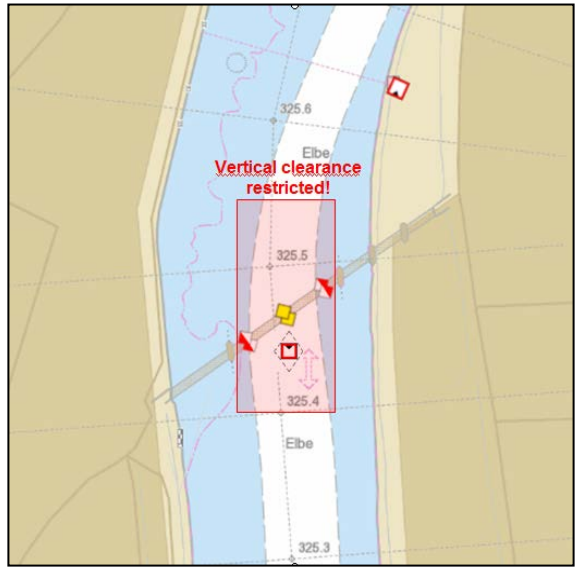
Reference applications in RIS COMEX

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

Bridge at the river Elbe

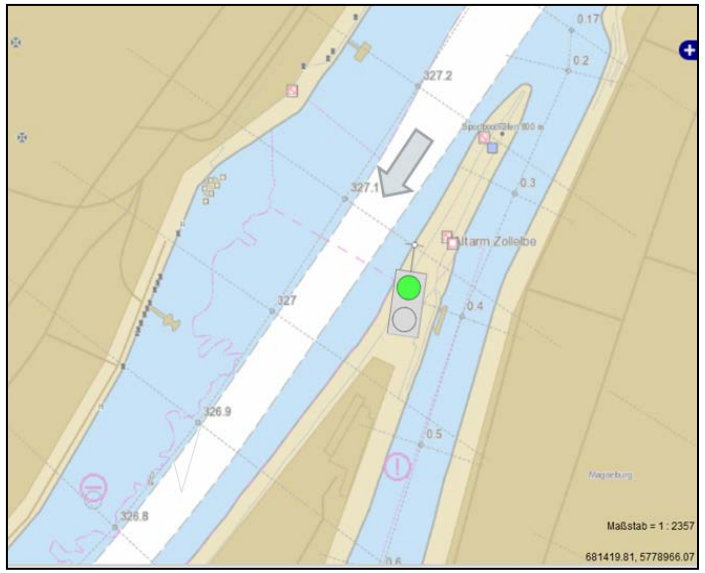


Virtual caution area is indicating low vertical clearance

Reference applications in RIS COMEX

- Indication of the current switching status of signals, by the use of application specific messages

Current switching status of signals



Visualized in Inland ECDIS

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Thank you for your attention!

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