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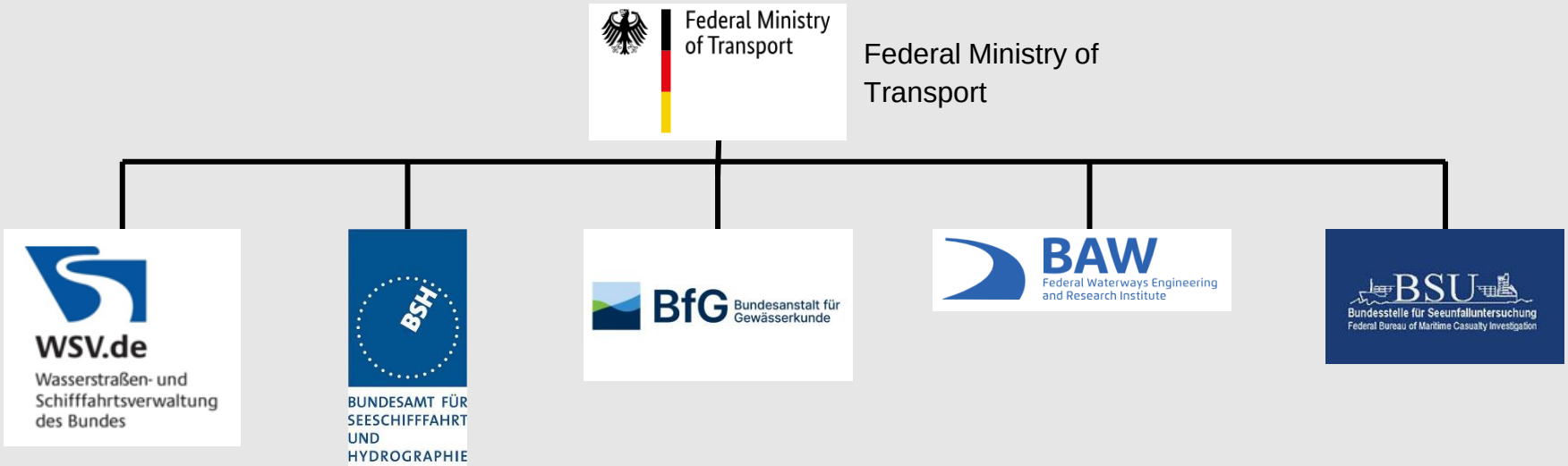
Wasserstraßen- und Schifffahrtsverwaltung des Bundes

Inland waterways presentation

Content

Introduction to WSV

Executive Agencies of the Federal Ministry of Transport (Wet Domain)



Federal Waterways and Shipping Administration

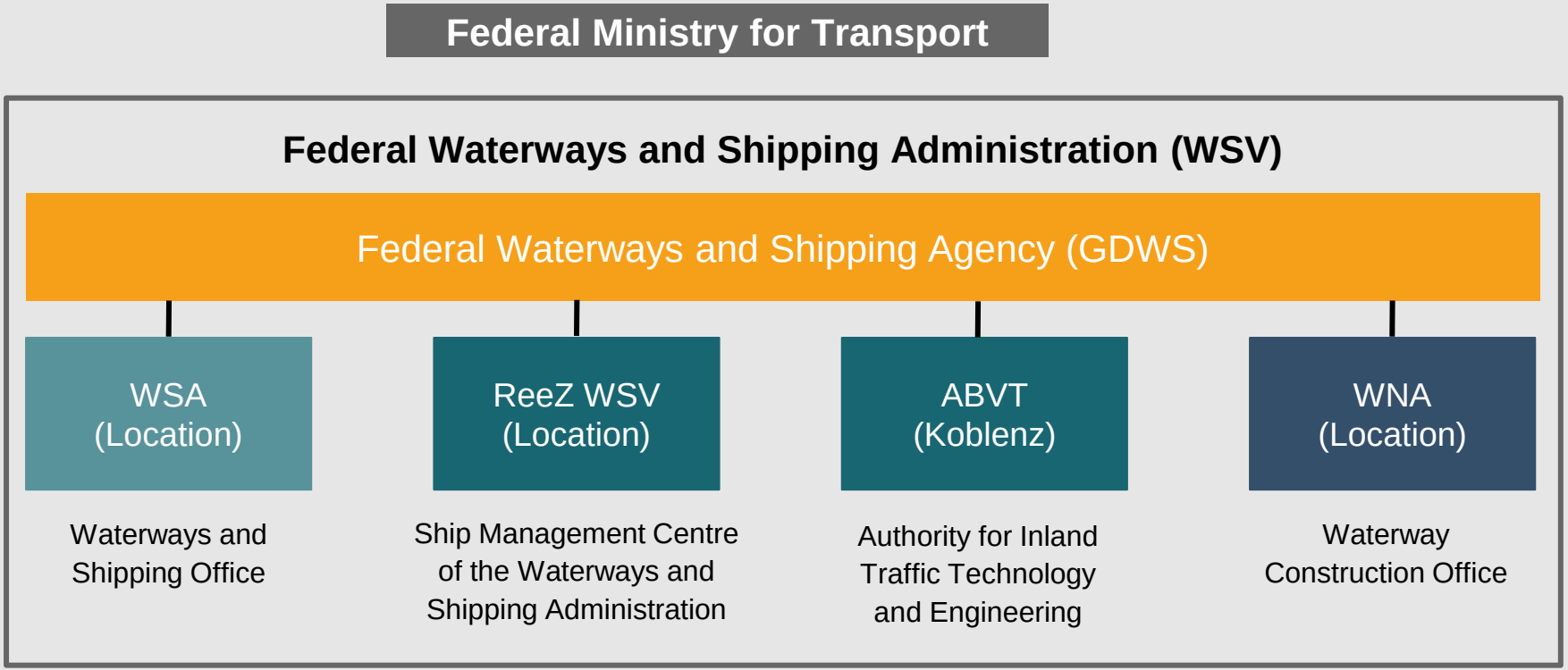
Federal Maritime and Hydrographic Agency

Federal Institute of Hydrology

Federal Waterways Engineering and Research Institute

Federal Bureau of Maritime Casualty Investigation

Introduction to WSV



Introduction to WSV

Some of the many tasks that are carried out by the WSV...

- As the river police and construction supervisory authority, we ensure that the waterways are in a condition required for navigation and that the federally owned shipping facilities meet all safety and order requirements.
- The WSV is responsible for the maintenance, operation, expansion and new construction of federal waterways and their facilities, including the official approval procedures (planning approval/planning permission)
- WSV inspects and approves inland waterway vessels, including those transporting dangerous goods, and issues type approvals for diesel engines and on-board sewage treatment plants.
- WSV maintains and operates 315 locks, over 300 weirs, 3 ship lifts, 1,300 road and rail bridges and 2 dams.

https://www.gdws.wsv.bund.de/DE/gdws/01_ueber-uns/aufgaben/aufgaben-node.html

Challenges in Inland Waterways

The **reliable** knowledge of a vessel's **position and movement** in relation to other traffic participants and obstacles is a fundamental requirement for navigation and to avoid collisions and groundings.

Challenges

- Digitalization and Automation of Navigation
- Need for resilient and precise navigation Systems
- Growing requirements for efficiency and sustainability

https://www.ccr-zkr.org/12050000-en.html

EGNOS in Inland Waterways Navigation

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Precise positioning on the waterway

High accuracy is required on narrow rivers, canals or in harbors (e.g. for locks, bridge crossings, bends).

EGNOS makes it possible to determine the exact position of the vessel within the fairway.

This **reduces** the **risk** of **grounding or collisions.**

Reliability for automated/ autonomous shipping

For future automated or remote-controlled ships, highly accurate and fail-safe positioning is a must.

EGNOS provides a reliable basis for multi-sensor navigation systems.

Ensures that **precise** shipping is possible even **without constant human control.**

EGNOS improves navigation on inland waterways by:

- High accuracy and integrity
- Support for automation and digital navigation,
- Integration into existing systems (AIS, RIS, ECDIS),

Projects that feature EGNOS in IWW

Projects with active involvement by the WSV

IWETT – Inland Waterway use of EGNOS for Tracking and Tracing

- Duration: 1 October 2022 - 31 December 2024 (24+3 Months)
- Project budget: 893.751,18 EUR
- Objectives: Establish GNSS positioning with EGNOS corrections in inland waterway transport; development of the I-MSR concept; integration with RIS (River Information Services)

AVIS - Automated Vessels on Inland waterways

- Duration: 2024 – 2027
- The AVIS project aims to improve navigation for autonomous vessels along Europe’s Inland Waterways (IWW) by using European Union space systems such as the European Global Navigation Satellite System (EGNSS) and Copernicus.

Projects that feature EGNOS in IWW

Projects with active involvement by the WSV

Further goals of the AVIS project include:

• defining (operating) requirements for autonomous vessels in European inland waterways

• developing a prototype for onboard equipment; providing proof of concept for the AVIS solution through several pilot tests on European inland waterways to prove its feasibility and added value

• creating new standards establishing the minimum requirements to guarantee safe navigation as a contribution to the European Committee for Drawing Up Standards in the Field of Inland Navigation (CESNI)

Projects that feature EGNOS in IWW

Projects with active involvement by the WSV

Registration Link - Avis WS2

Agenda

Time	Activity	Speaker
09:30	Welcome and Introduction	EY, EC/EUSPA
09:40	AVIS Project and Context	GMV
09:55	AVIS Technical Approach for EU Space Data Analysis: Presentation	GMV & Tresco
10:15	Open Discussion on AVIS technical approach	All
10:40	Survey & Validation on AVIS technical approach	EY
10:50	AVIS Pilots' Plan: Presentation	AVIS partners
11:05	Open discussion on the AVIS Pilots' Plan	All
11:30	*Break*	
11:45	Survey on AVIS Pilots' plan	EY
12:15	Open discussion on AVIS safety Case	All
12:30	Survey on AVIS Safety Case	EY
12:40	AVIS Standardization Activities	GMV & WSV
12:50	AVIS: Further Activities	GMV
13:00	Closing remarks & AoB	EY

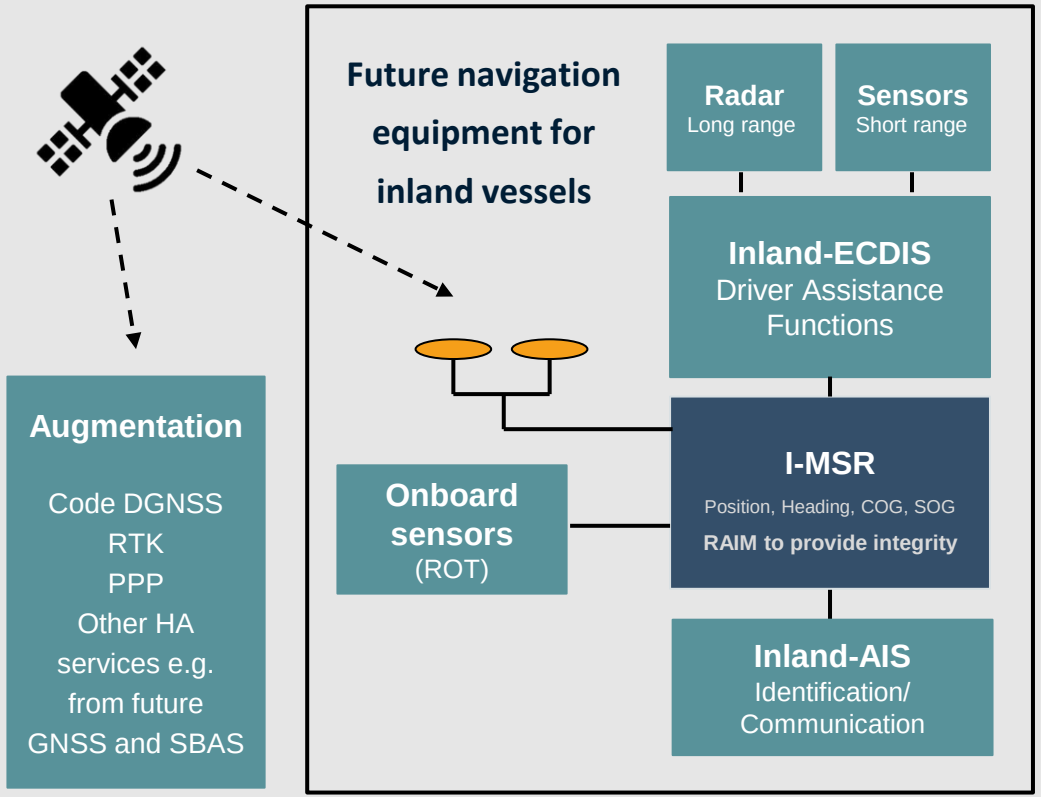
Standardization activities CESNI PNT/I-MSR

European Committee for drawing up standards in the field of inland navigation CESNI

Task1:
PNT Requirements for automated navigation on IWW

Task 2:
Performance requirements and test standard for a future I-MSR

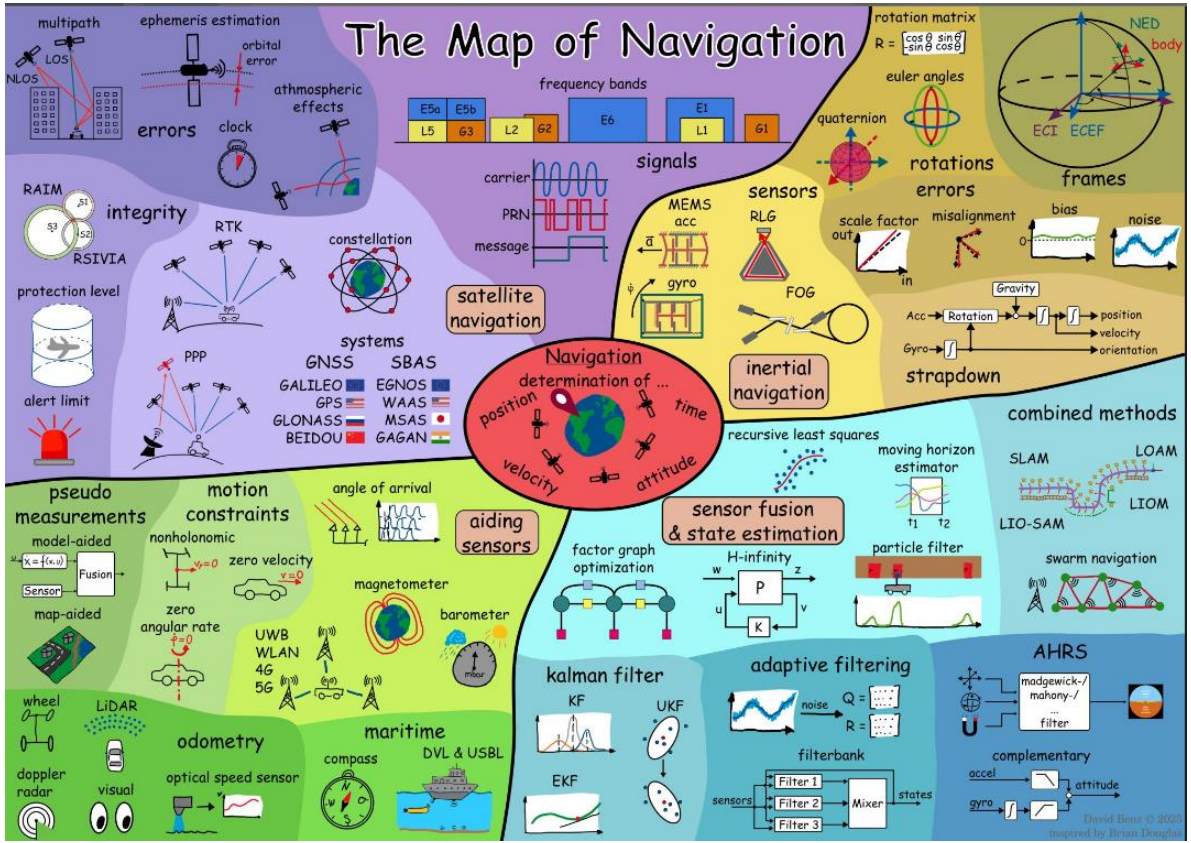
I-MSR concept is **derived from maritime standards**
Inland-Multi-system Shipborne Radionavigation Receiver



Summary & Outlook

- WSV drives standardization in the context of automation
- EGNOS significantly improves navigation & safety on inland waterways
- CESNI working group supports standardization on the receiver side and develops requirements for future navigation operations

Thank you for your attention!



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Questions?