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NELI – Act. 3.2

RIS part2 – Inland AIS

Vera Hofbauer, via donau

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Purpose of AIS

- Inland AIS (“Automatic Identification System“) is a standardised procedure for the automatic exchange of nautical data between ships and between ships and shore installations.
- Instrument for the tracking and tracing of inland navigation vessels
- Part of the “River Information Services” (RIS) for inland navigation
- Inland AIS and maritime AIS are compatible
- Inland AIS is an additional source for navigational information

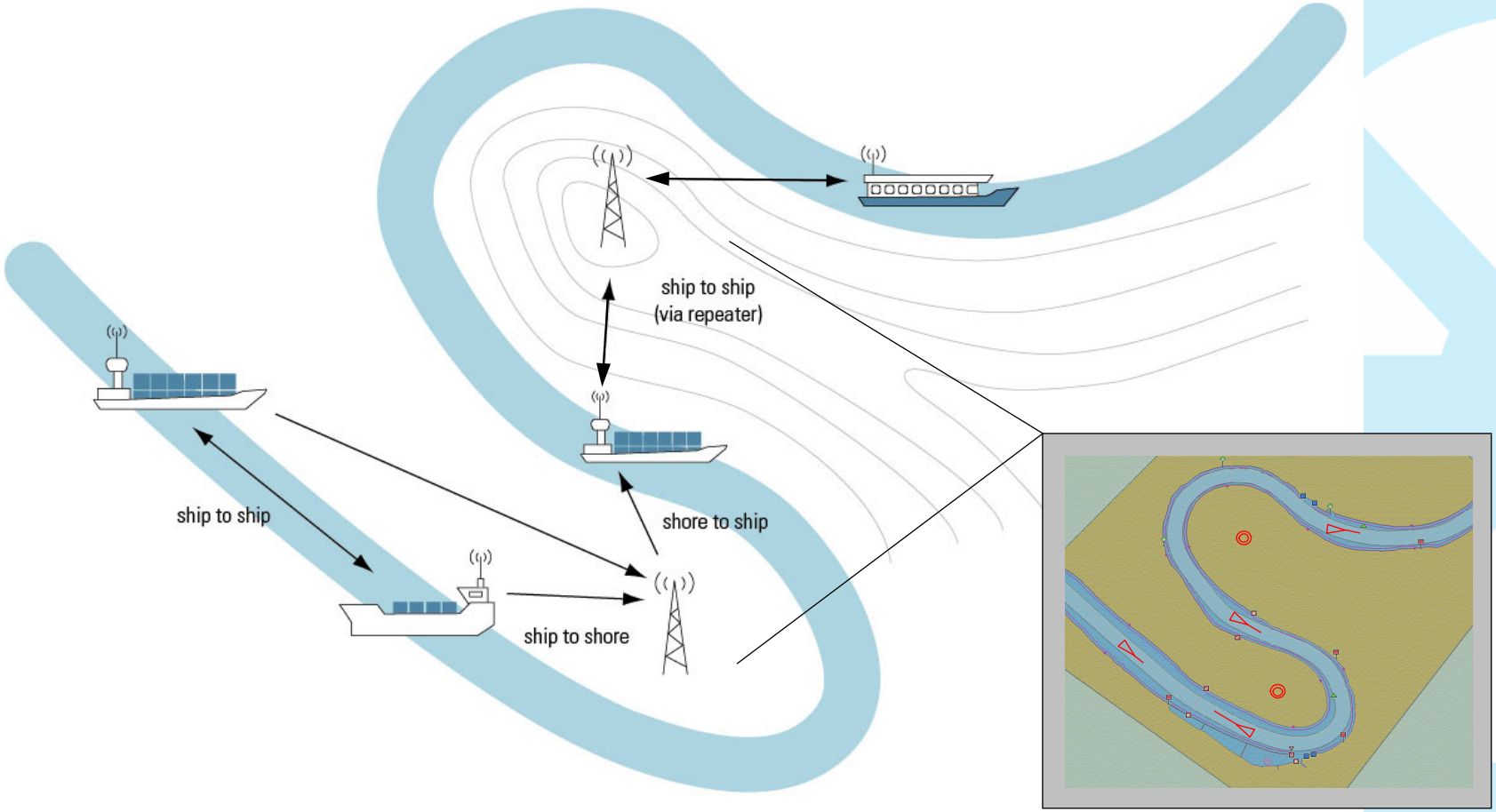
Characteristics of AIS

- Vessels fitted with AIS transmit and receive information on an automatic and periodical basis from other ships equipped with AIS. This information regards the vessel and its current nautical data:
  - Identity of the ship,
  - Its exact position,
  - Its course and speed,
  - Other ship-specific data in regular intervals

Operating modes of AIS

- **Ship to ship**: All vessels fitted with AIS are able to receive static and dynamic information from all other vessels equipped with AIS within the area of coverage
- **Ship to shore**: Data from vessels equipped with AIS can also be picked up by AIS base stations and relayed to an RIS Centre where they can be used to display Tactical Traffic Information (TTI) and Strategic Traffic Information (STI)
- **Shore to ship**: Safety-related data can be transmitted to vessels by shore installations

AIS communication

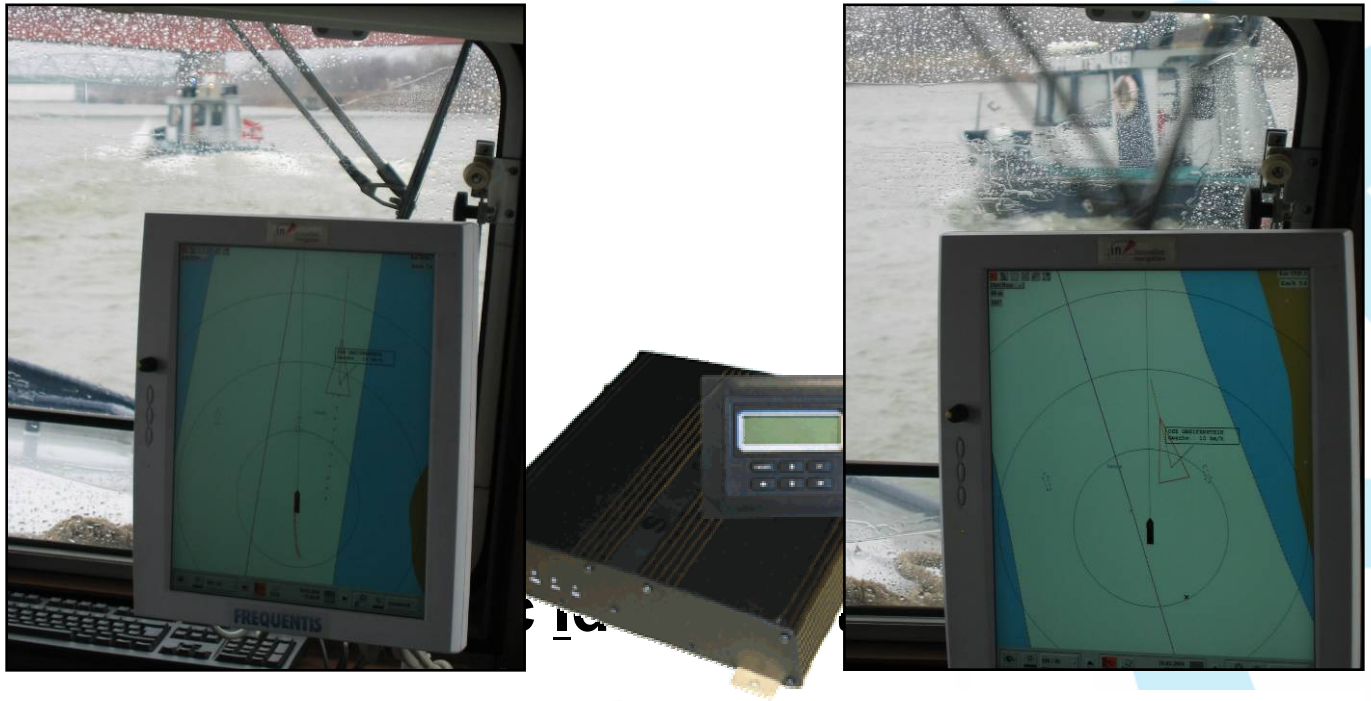


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Data exchange ship to ship



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Installation on Board „Minimal“

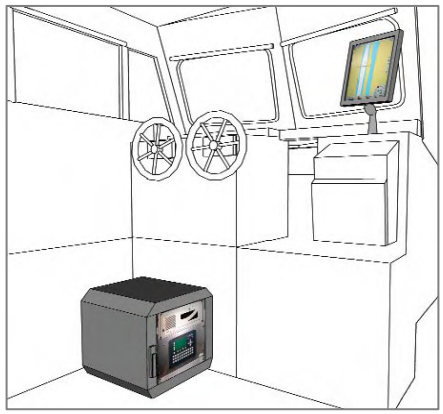
- Installed or mobile transponder





Installation on Board „Navigation“

- Combination with Inland ECDIS / ev. radar



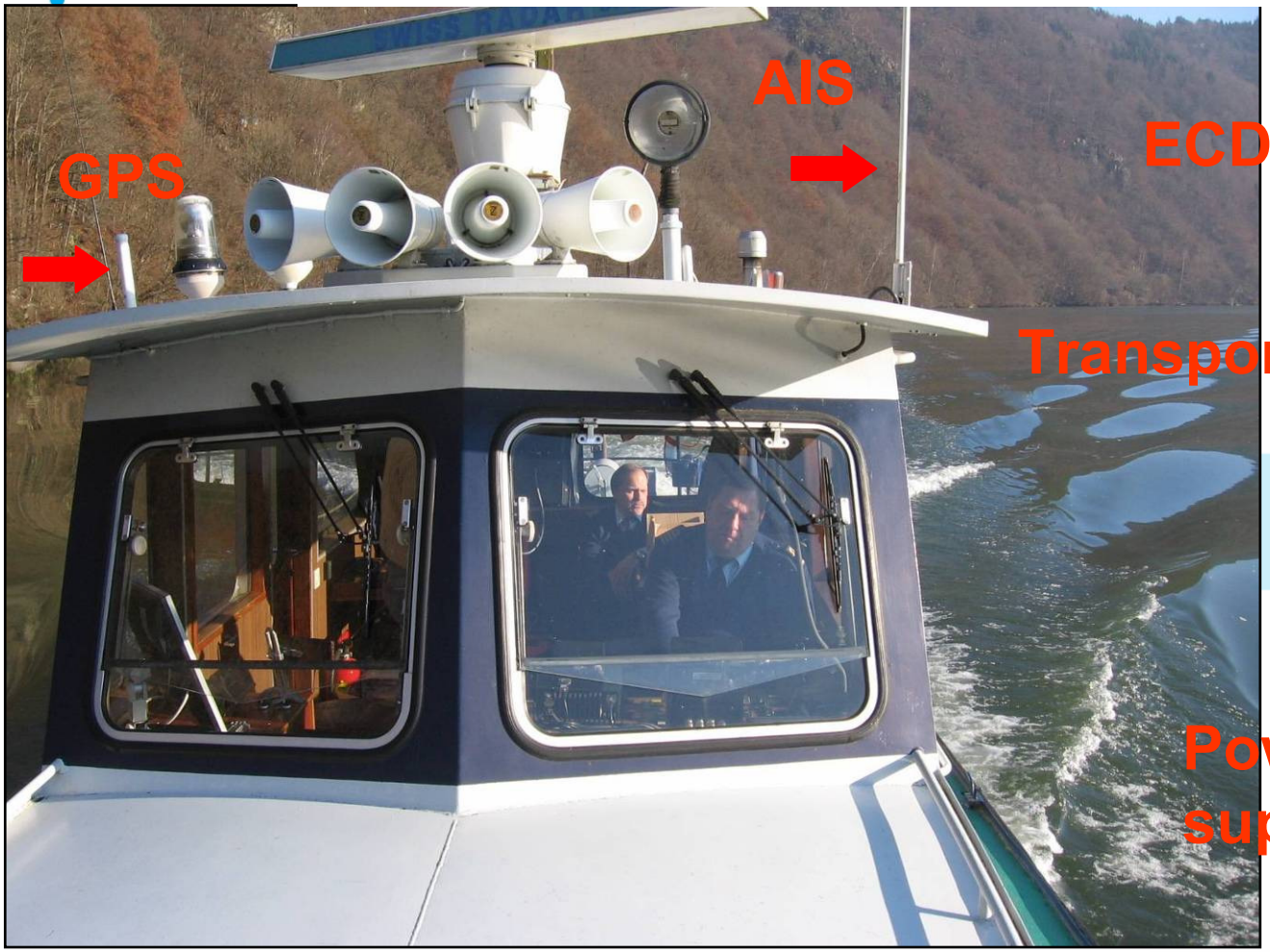


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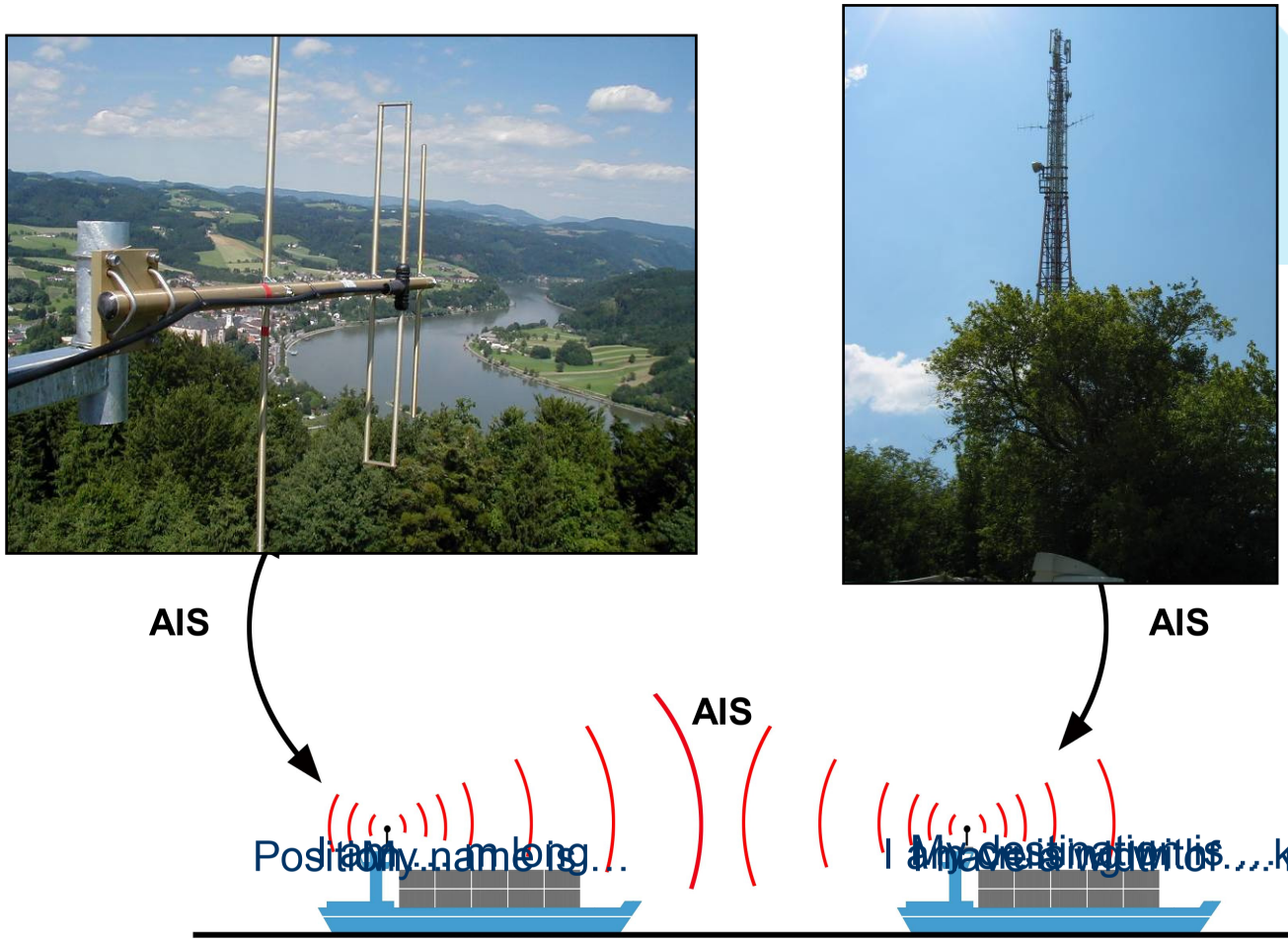
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Transponder installation

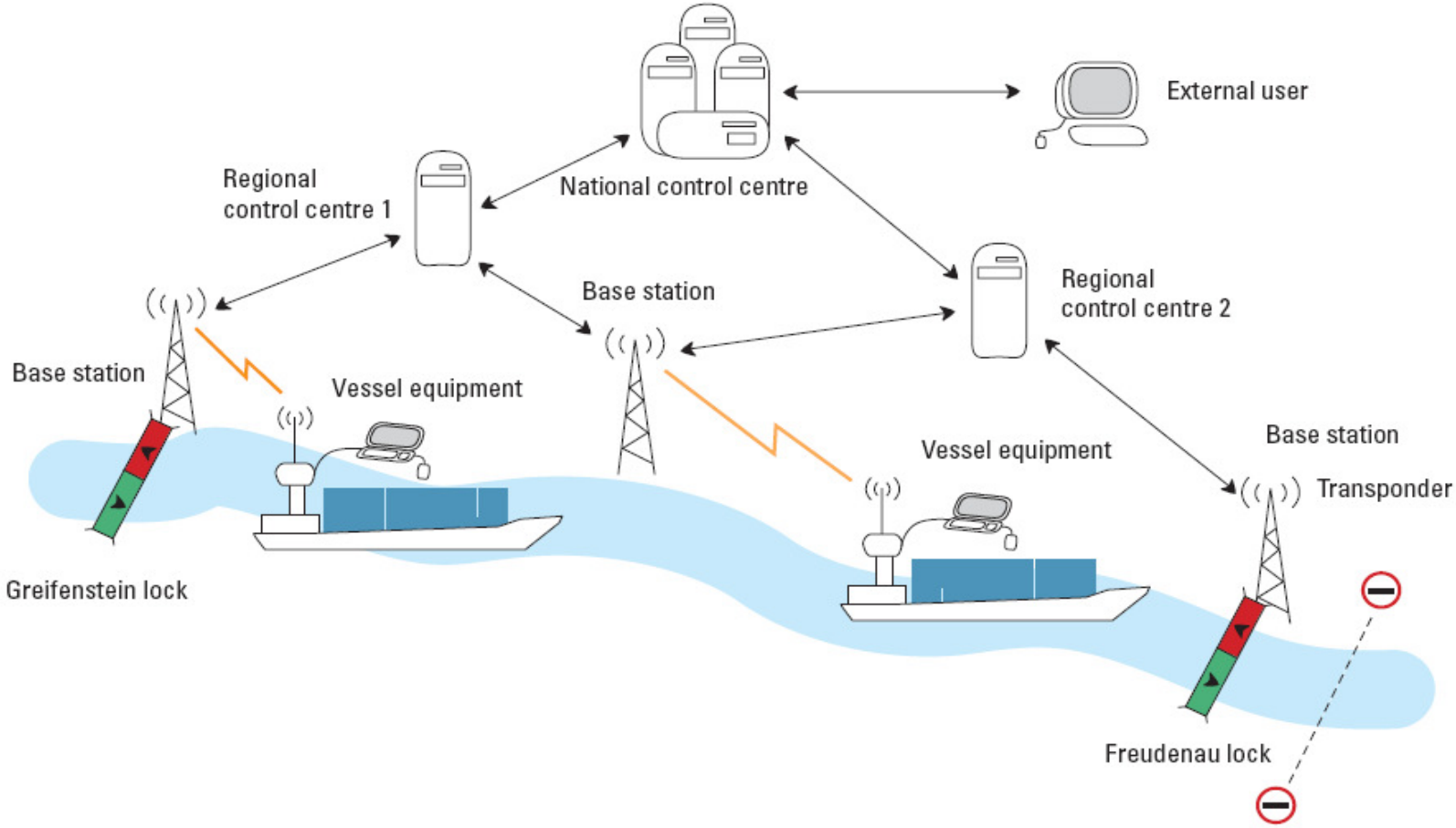




Data exchange ship to shore



Infrastructure System for Tracking &Tracing



Source: via donau

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Tracking & Tracing







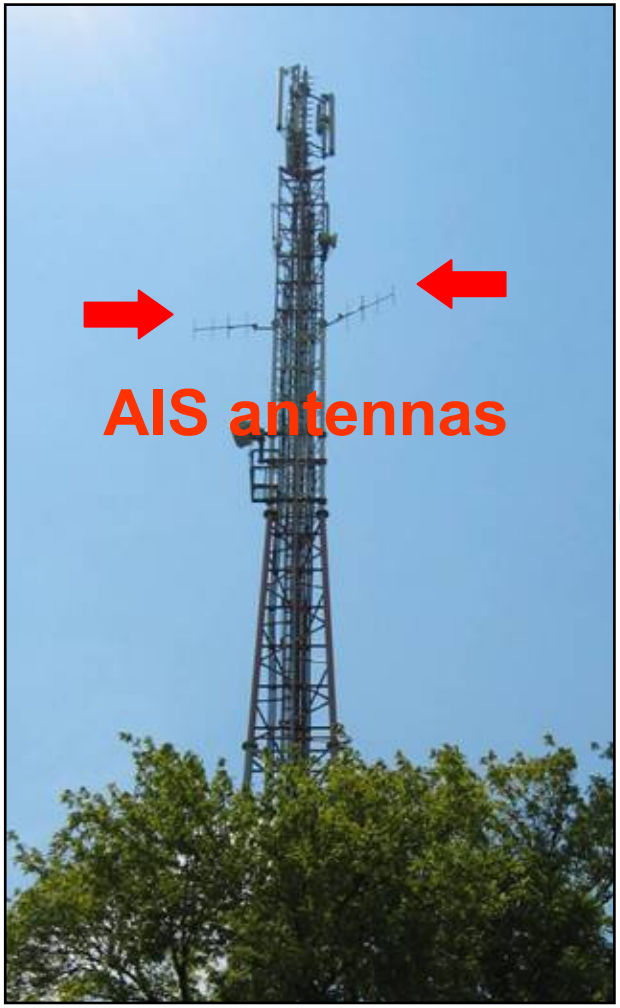
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Shore infrastructure







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Inland AIS Transponder

- Internationally exchange of vessel tracking and tracing data
  - Dynamic data (position, speed, etc)
  - Voyage data (destination, dangerous cargo, etc.)
  - Static data (dimensions, name, ship type, etc.)
- Standardised onboard unit
- No communication costs
- Failsafe technology







CCNR publishes approved AIS equipment and specialised firms for installation of AIS equipment www.ccr-zkr.org

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Information transmitted by Inland AIS

The information transmitted by Inland AIS can be divided into the following categories:

- **Static information**, such as vessel number, call-sign, vessel name, vessel type,
- **Dynamic information**, such as position of the ship with data on accuracy and integrity status,
- **Voyage-related information**, such as length and beam of combinations, dangerous cargo,
- **Information specific to inland navigation** such as Standard European Vessel Number, type of combination, number of blue cones/lights as per ADN/ADNR, estimated time of arrival (ETA) at locks, bridges, terminals, borders and presence of “blue signs”.

Static ship information

- Identification characteristic of the radio (MMSI)
- Ship name
- Call sign
- Type of ship and cargo
- Overall length (dm)
- Overall beam (dm)
- European Vessel Identification Number (ENI)
- Type of ship or combination (ERI)
- Loaded/unloaded vessel

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Dynamic ship information

- Position (WGS 84)
- Speed SOG
- Course COG
- Heading HDG
- Rate of turn ROT
- Position accuracy and integrity information (GNSS/DGNSS)
- Time of position-fixing device
- Navigation status
- Blue sign set
- Quality of speed, course and heading information

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Duties of the shipmaster

The shipmaster shall manually input the following data at the start of the voyage and whenever the data are amended:

- Correct navigation status,
- Type of combination,
- Length/beam of combination,
- Category of dangerous cargo,
- Draught of the ship,
- Loaded/unloaded,
- Port of destination and ETA.

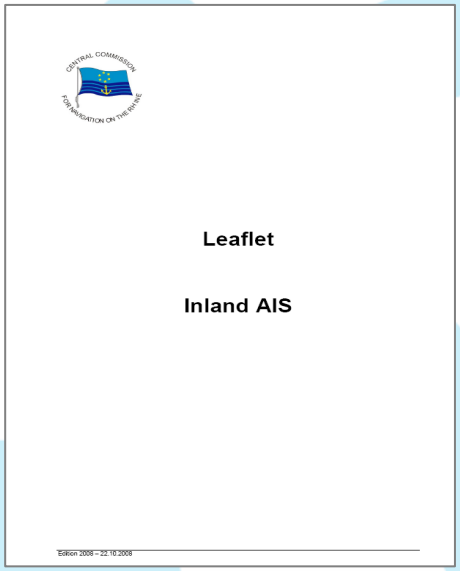
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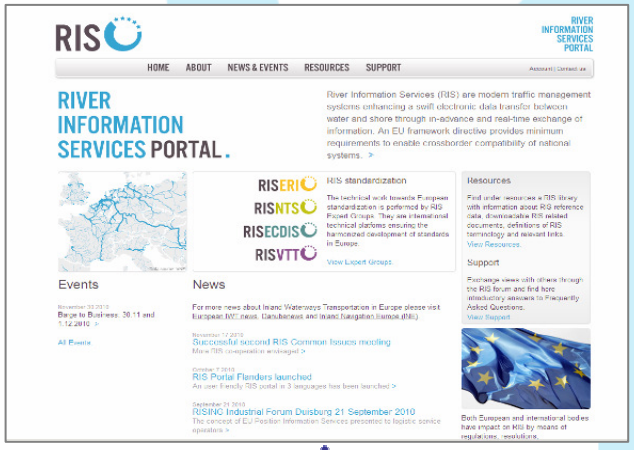
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References, Documents

- CCNR 2008, Leaflet Inland AIS (www.ccr-zkr.org > Documents for downloading > River Information Services) available in English, French, Dutch and German
- River Information Services Portal: www.ris.eu
- Recommendations regarding the use of Inland AIS / Danube Commission – Budapest 2011: www.danubecom-intern.org





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