CCNR RIS workshop
13th November 2008

Inland AIS

Requirements and Potential

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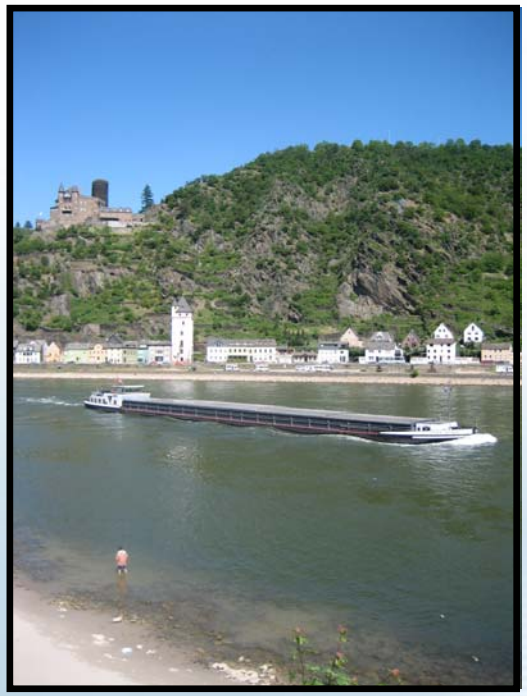
Scope

- AIS Idea
- Inland AIS features
- System overview
- Inland AIS – information
- Application of Inland AIS
- Standardisation
- Summary



The AIS Idea

The Automatic Identification System was developed by IMO to enhance:

- safety of life at sea,
- safety and efficiency of navigation
- the protection of the environment

by exchanging relevant information automatically and continuously

- between equipped vessels
- between vessels and shore-based facilities.

Requirements for Inland AIS

- serves specific requirements for Inland Navigation
- based on the maritime AIS
- interoperable to maritime AIS by maintaining its functionality
- direct data exchange between seagoing and inland vessels in mixed traffic areas
- specific requirements for inland navigation are complementary or additional to maritime AIS

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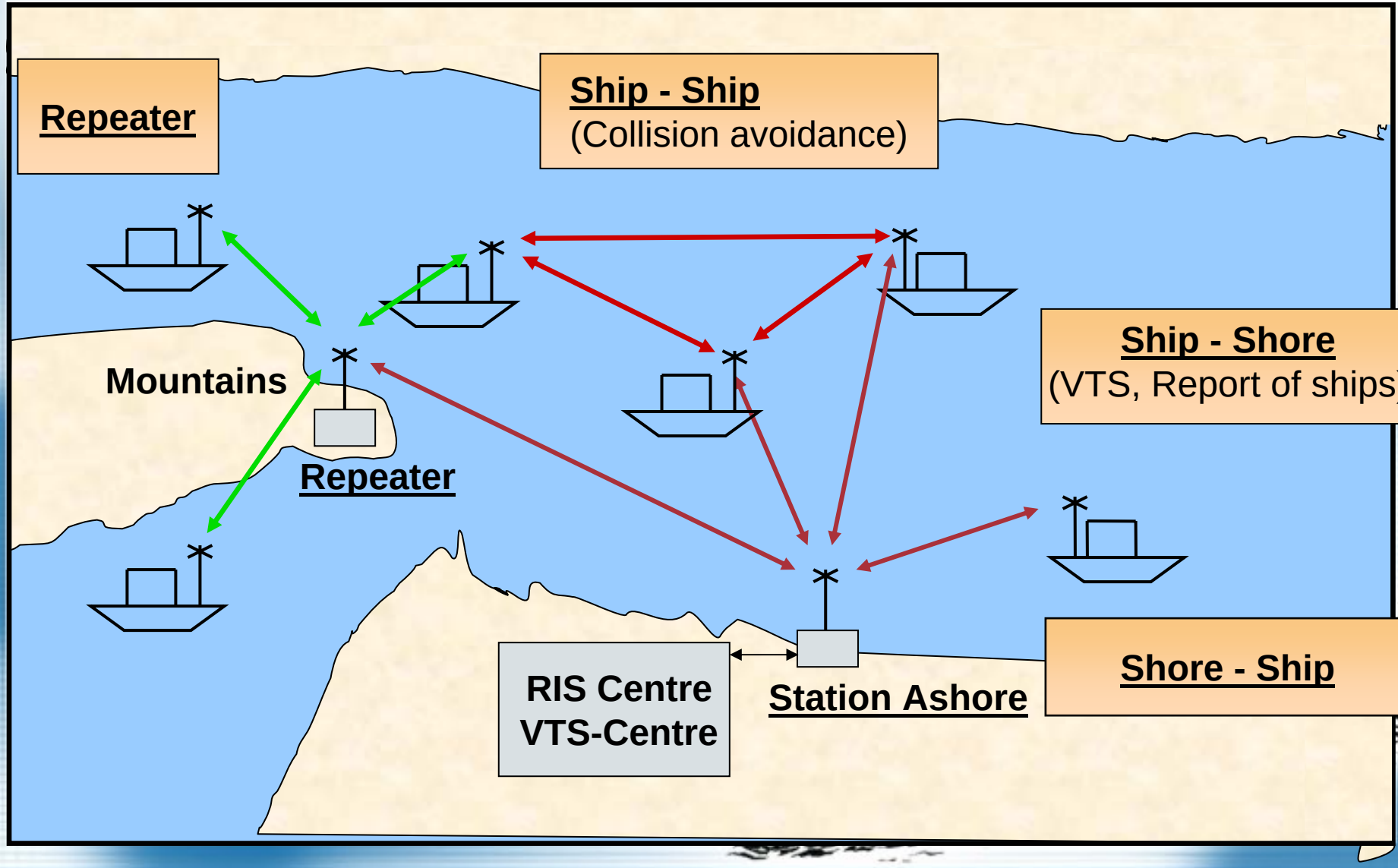
AIS System Overview



Reporting Interval

Ships dynamic information

Reporting Interval for dynamic ship information	
Ship status "at anchor" and speed not above 3 knots	3 min
Ship status "at anchor" and speed exceeding 3 knots	10 sec
Ship with speed 0 -14 knots	10 sec
Ship with speed 0 -14 knots and changing course	3 1/3 sec
Ship with speed 14 -23 knots	6 sec
Ship with speed 14 -23 knots and changing course	2 sec
Ship with speed exceeding 23 knots	2 sec
Ship with speed exceeding 23 knots and changing course	2 sec
Ship with inland navigation reporting rate	assigned beetween 2 -10 sec

Static and voyage related information **6 minutes**

Safety related information **as required**

Application specific information **as required**

Inland AIS - Information

Static Ship Data

- Name of ship
- Type of ship *
- Call sign
- Navigational status
- Length *, Beam *
- IMO number
- MMSI
- Official ship number
- Type of combination
- Length and beam of combination

Dynamic Ship Data

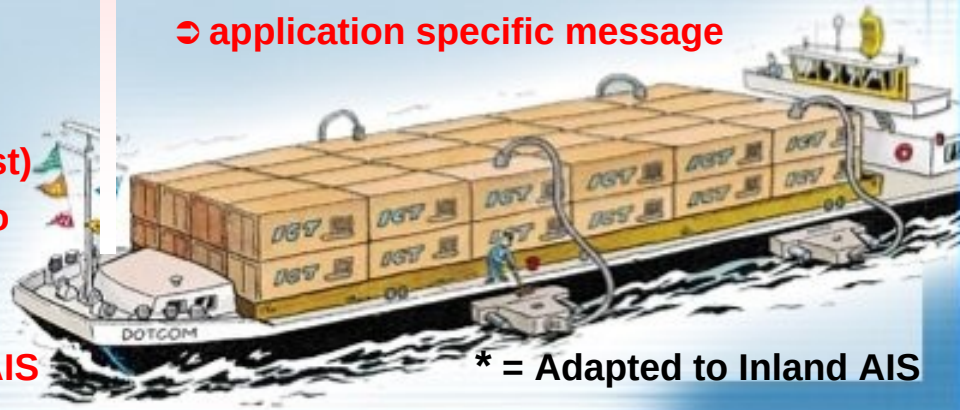
- Position
- Speed SOG
- Course COG
- Heading HDG
- Rate of turn ROT
- Position accuracy (GPS/DGPS)
- Blue Board set

Voyage Related Data

- Destination
- ETA
- Draught
- Persons on board (on request)
- Category of dangerous cargo
- Loaded/unloaded

Safety Related Information

- Addressed or broadcast
- Safety related text message
- application specific message



Red = Additional for Inland AIS

* = Adapted to Inland AIS

Inland AIS - Information

Application Specific Inland AIS Messages

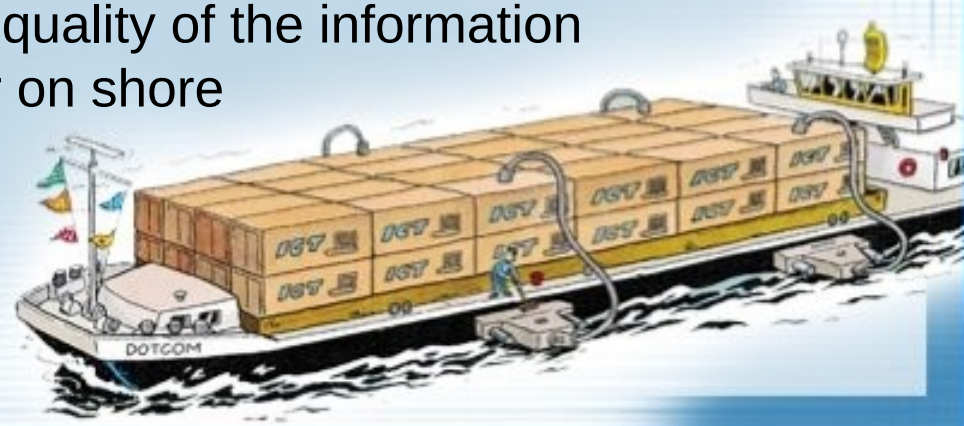
- Inland ship static and voyage related data
- Inland number of persons on board
- ETA at lock/bridge/terminal
- RTA at lock/bridge/terminal
- Water level
- Signal status
- EMMA weather warning

Use of Inland AIS

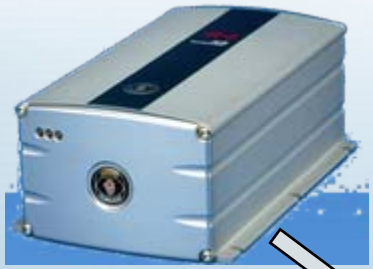
- Improves the tactical and strategic traffic image
- Identifies ships unambiguously
- Supplements radar by complementary information
- Provides dynamic, static and voyage related data
- Provides additional information as

  dangerous cargo, blue board set

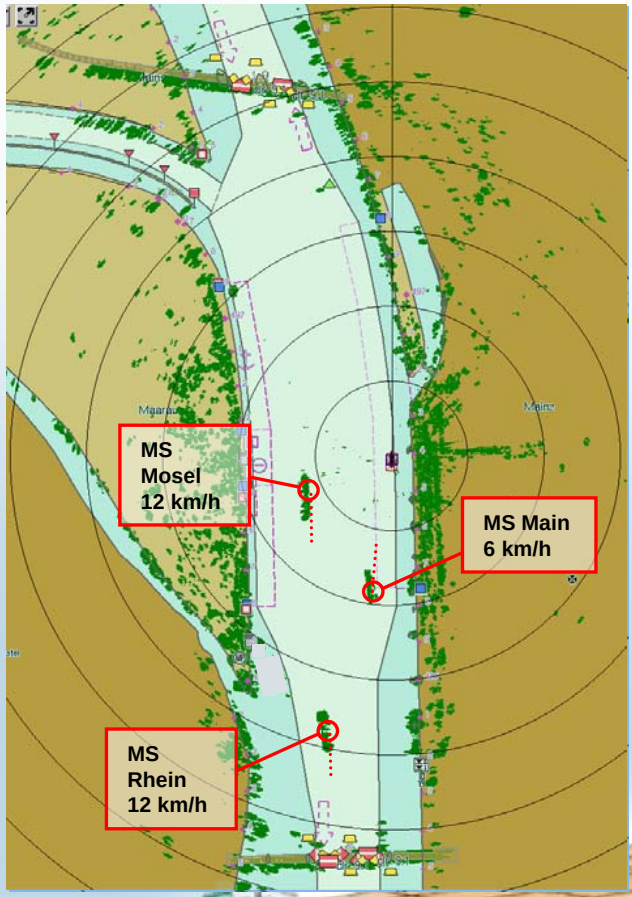
AIS will enhance the quality of the information available on board or on shore

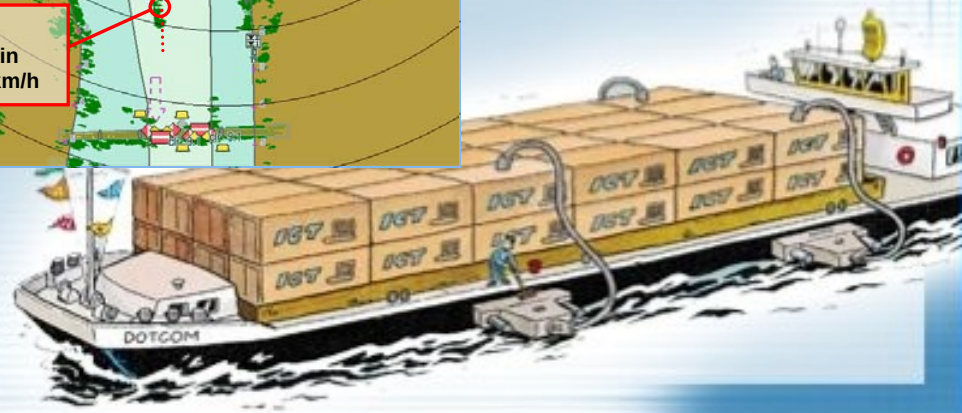


Navigational Ship Equipment

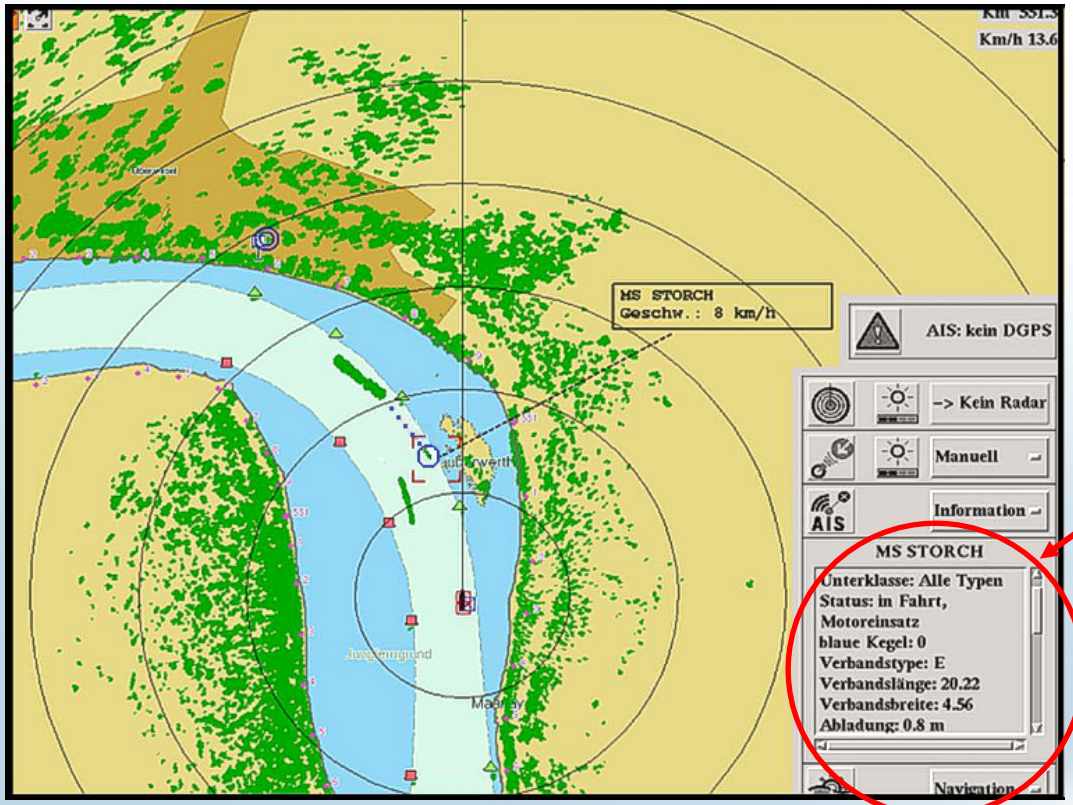


From Radar to AIS

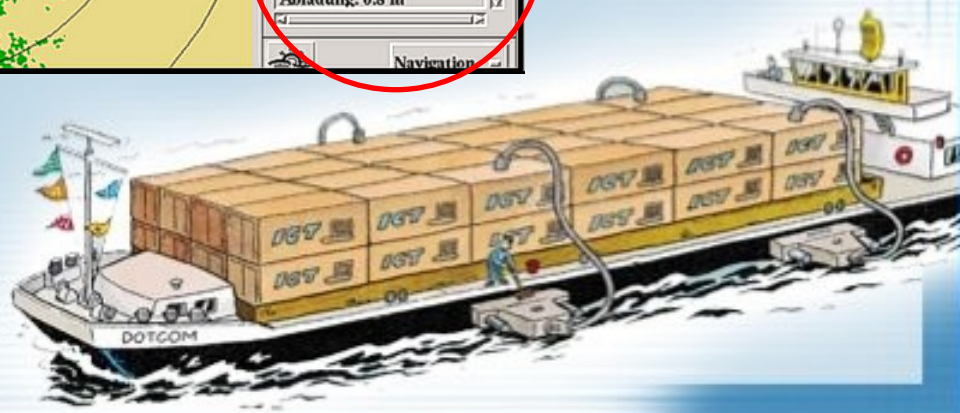




Inland AIS on Inland ECDIS in Navigation Mode



AIS Data



Inland AIS on Inland ECDIS in Information Mode

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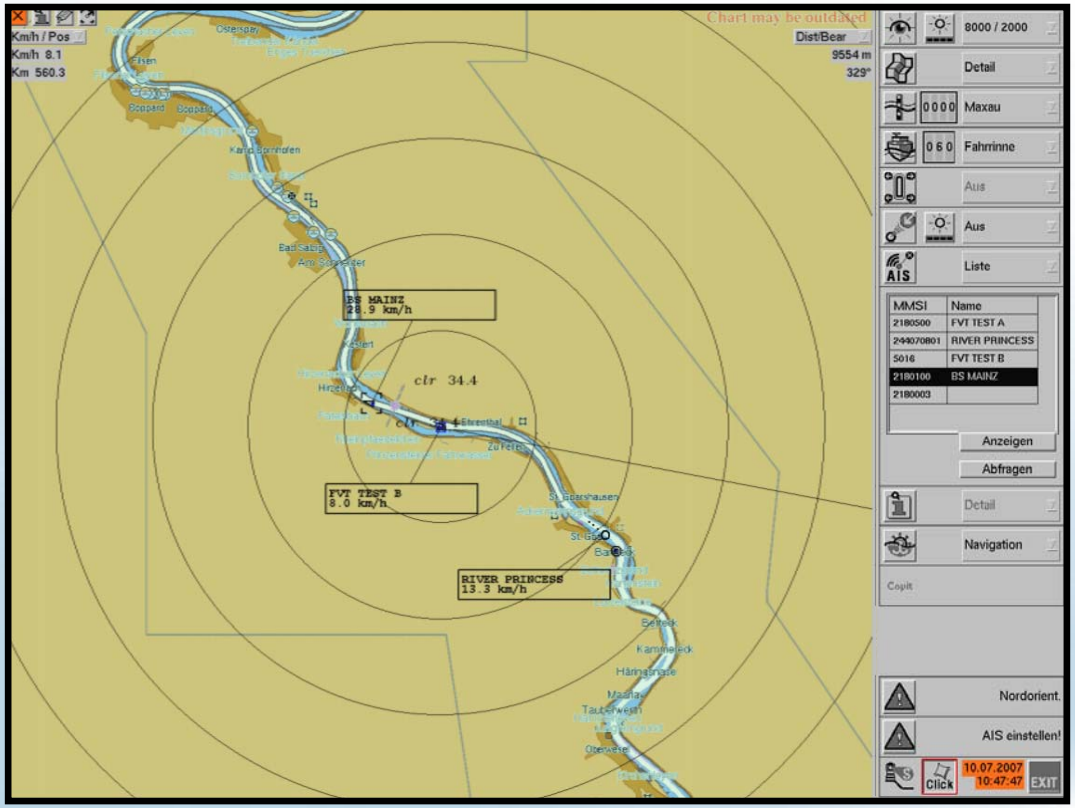

Range 8 km / 2km

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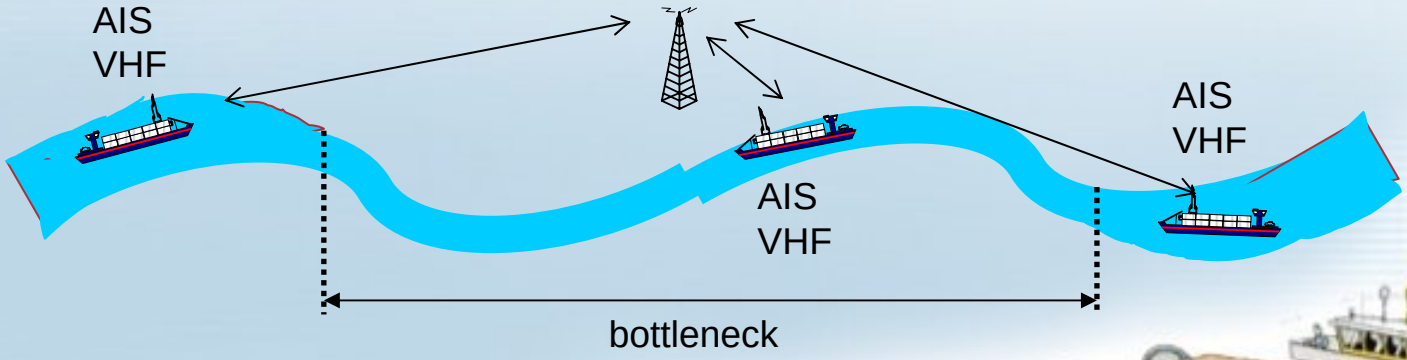
Traffic Regulations in Narrow Fairway Sections

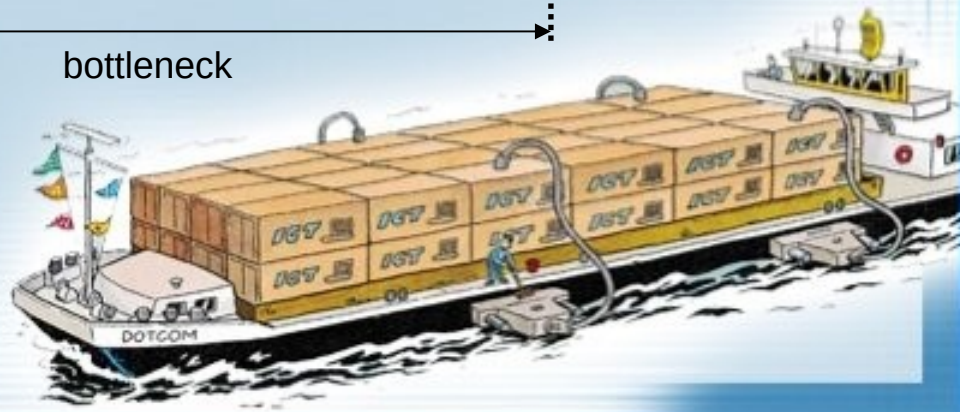
Critical bottlenecks can only be passed in one way traffic after arrangement via VHF voice communication (Selbstwahrschau)

AIS benefits:

- exact position information of oncoming ships
- clear identification of oncoming ships
- automatic data transfer between ships



AIS : ship - ship (data)
VHF : ship - ship (voice)



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Vessle Traffic Centre for Inland Navigation

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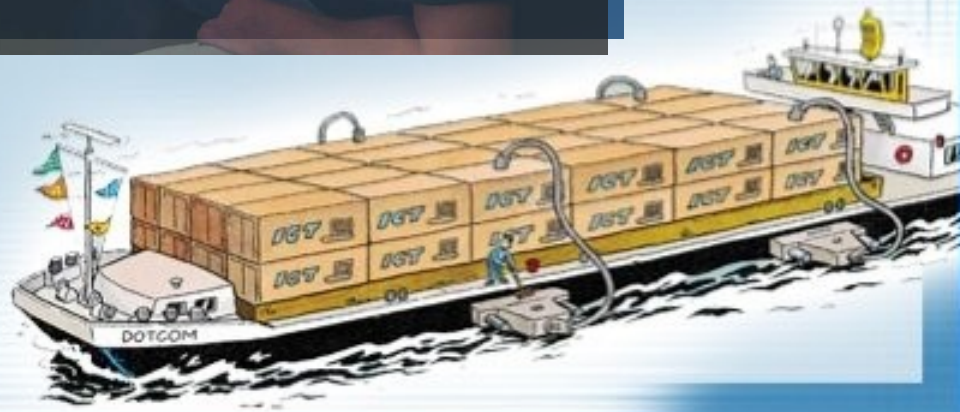
Revierzentrale Oberwesel



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Inland AIS derived Data in VTS

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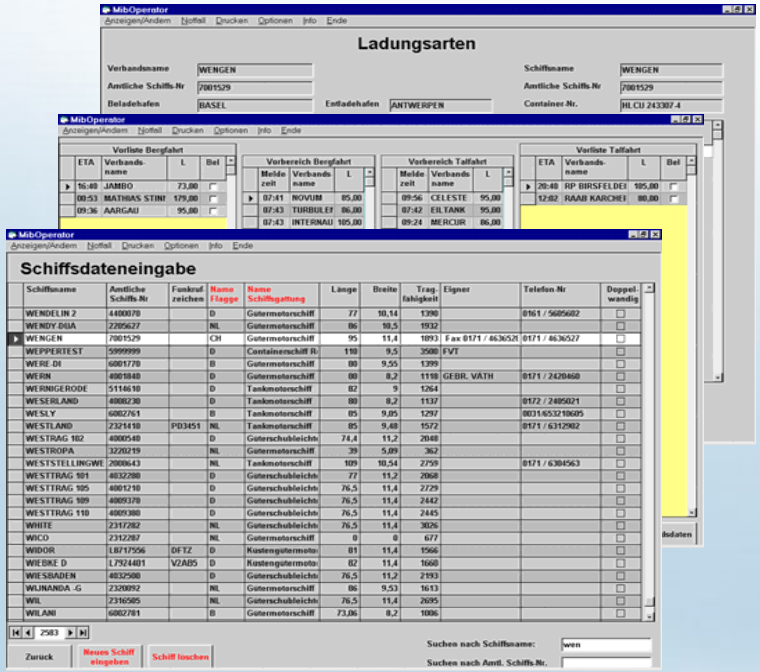
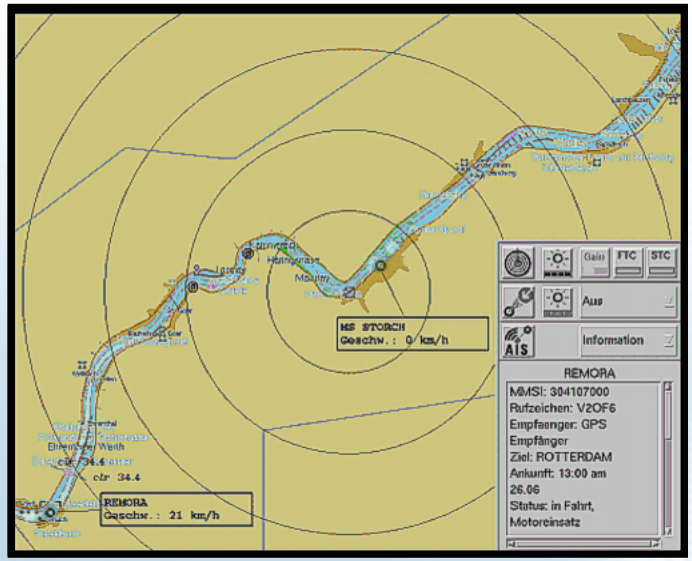
Ship reporting system



Traffic display



Signal Status via Inland AIS

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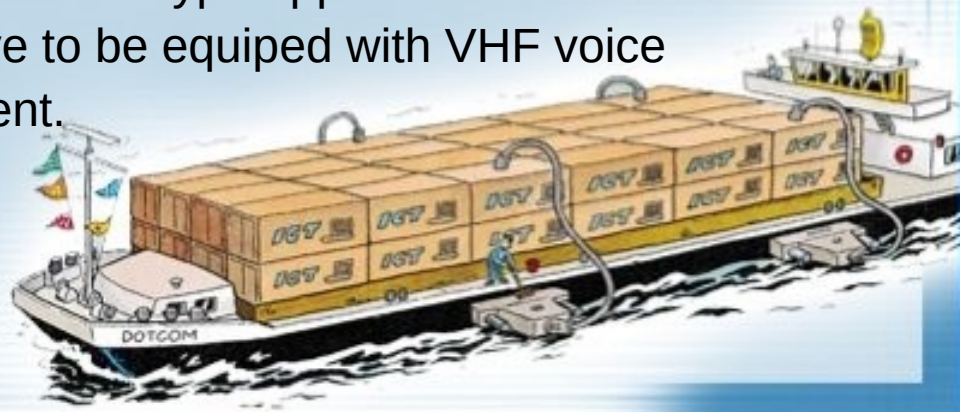
European Standardisation

Vessel Tracking and Tracing in Inland Navigation - Inland AIS Standard -

- approval of Inland AIS Standards by CCNR
  May 2006 *(protocol 2006-I-21)*
- approval of Inland AIS Standards by EC
  March 2007 *(Directive (EG) Nr. 415/2007)*
- approval of Test Standards for Inland AIS by CCNR
  May 2007 *(protocol 2007-I-15)*
- approval of modification of RheinSchPV and RheinSchUO regarding Inland AIS by CCNR in December 2007
  (protocol 2007-II-24)

CCNR Regulations regarding Inland AIS

- From 1. October 2008: vessels on the river Rhine, with the exception of seagoing vessels, may use AIS only, if they are equipped with a type approved Inland AIS mobile station.
- IMO Class A Mobile Stations installed on inland vessels before 31. March 2008 are approved until December 31th 2011.
- Installation or replacement of Inland AIS equipment are allowed by approved specialised firms only.
- Statement of installation and functional test and type approval certificate of the Inland AIS equipment needed.
- Small crafts are allowed to use type approved Inland AIS equipment only and have to be equiped with VHF voice communication equipment.



CCNR Regulations regarding Inland AIS

CCNR web site (www.ccr-zkr.org)

- List of competent authorities for type approval of Inland equipment
  - Fachstelle der WSV für Verkehrstechniken, Germany
- List of approved Inland AIS equipment
  - R4 IAIS Transponder System; Saab TransponderTech AB
  - ProTec Inland AIS; L-3 Communications Aviation Recorders
- List of approved specialised firms for installation or replacement of Inland AIS equipment

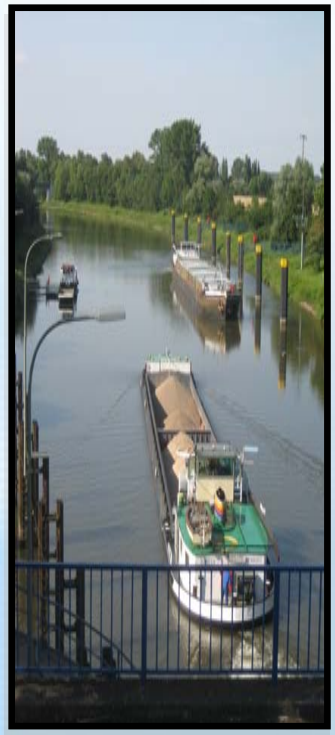
Summary

Approved technical standards for Inland AIS by CCNR and EC

Type approved Inland AIS equipment is available

Diversity of applications of Inland AIS

Inland AIS increases safety and efficiency in Inland Navigation



Thank you very much for your attention!