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# ICT in multimodal transport and logistics (Best practices)

Gerhard Schilk, 27.09.2012 (Zagreb, HR)

# Course of the presentation

- eFreight
- ICT in transport planning and monitoring
- eDocuments, eReporting,…
- ITS for transport and logistics
- Conclusions and future trends
- (References)

# E-FREIGHT

# eFreight: Today's problems

- **Complexity of freight transport information exchange** in the context of multimodal transport:

    - **lack of interoperability** along the supply chain => inefficiencies, costs, reduced visibility of freight

    - **operators provide information several times for different purposes** => administrative costs + perceived complexity for multimodal transport

    - **lack of information** on intermodal availabilities => no full exploitation of multimodal transport / non-optimization of use of existing transport infrastructure

    => Need for interoperable interfaces for information on freight in the various transport modes .
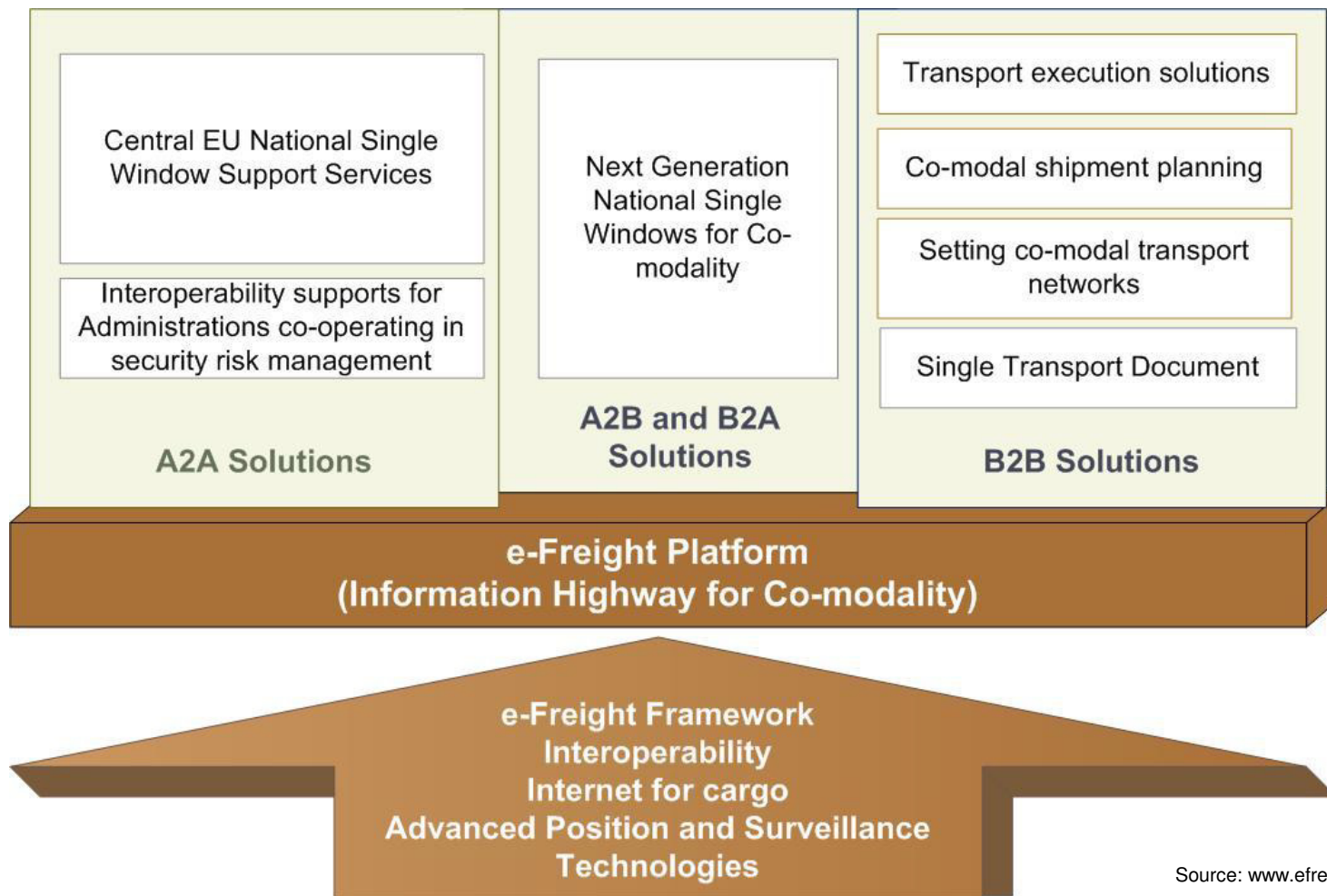
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# eFreight: The vision

- **Interoperability** between paperless freight information systems

- **Zero paper documents** needed for planning, executing and completing any transport operation within the EU

- **Reduced waiting time** at hubs related to administrative procedures

- **Standard framework** for intermodal information exchange

- **Harmonised** border crossings
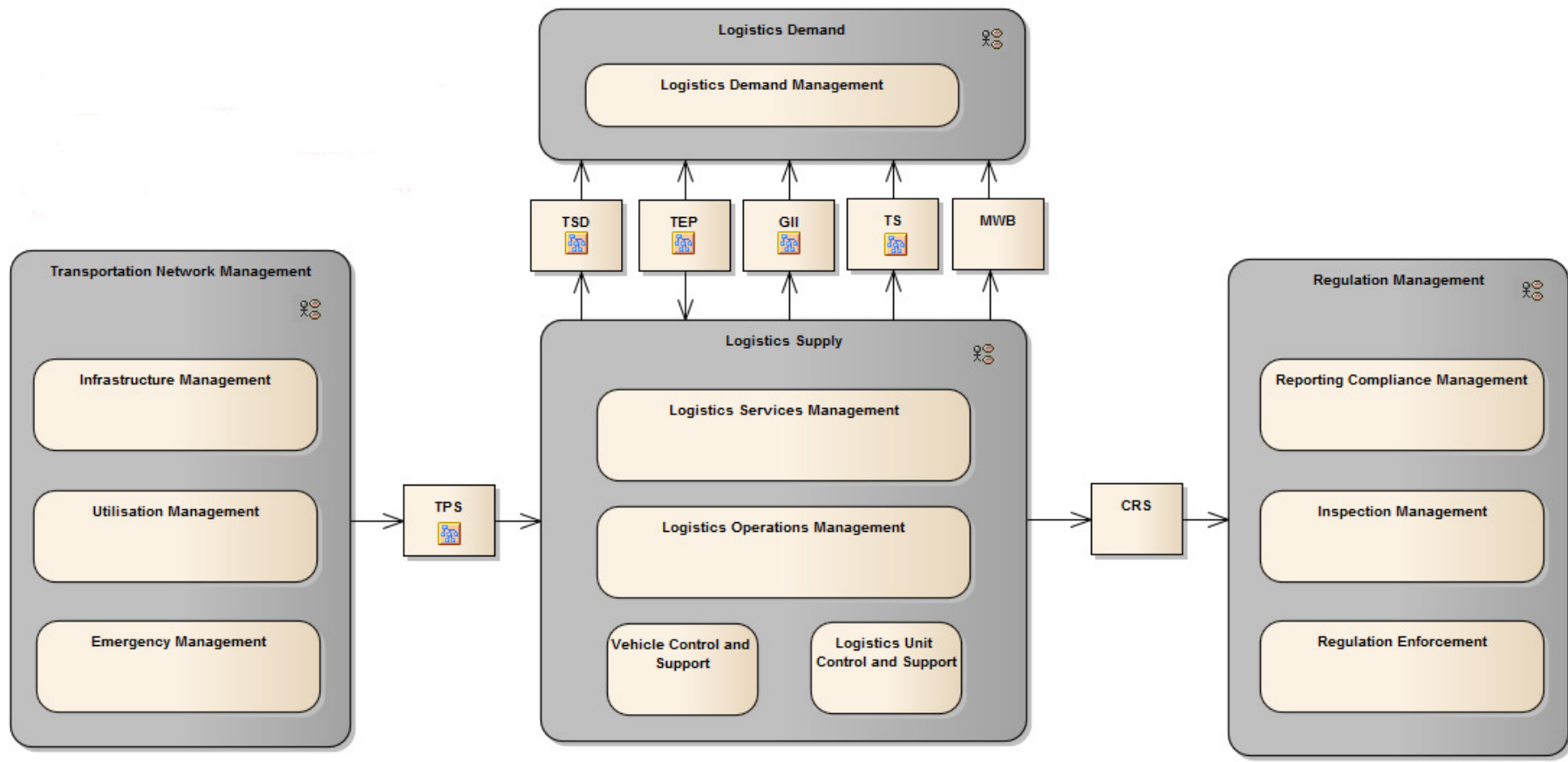
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# eFreight: The challenges

- **Technology is available** but implementations on a large scale are slow to appear

- How to ensure **market uptake?**

- **Co-operation between stakeholders** requires interoperability

- **Standardisation**

- **It is not only about technologies**, but about change in organisation and behaviour

- **Sharing of information requires trust** and, where needed the appropriate legal framework, data security and data protection

- The **fragmented structure of the business sector**, major players and thousands of **SMEs** and micro companies

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# eFreight – EU project



Central EU National Single Window Support Services

Interoperability supports for Administrations co-operating in security risk management

**A2A Solutions**

Next Generation National Single Windows for Co-modality

**A2B and B2A Solutions**

Transport execution solutions

Co-modal shipment planning

Setting co-modal transport networks

Single Transport Document

**B2B Solutions**

e-Freight Platform
(Information Highway for Co-modality)

e-Freight Framework
Interoperability
Internet for cargo
Advanced Position and Surveillance Technologies

Source: www.efreightproject.eu

# eFreight – EU project (Interoperability)

# ICT IN TRANSPORT PLANNING AND MONITORING

# ICT in transport planning





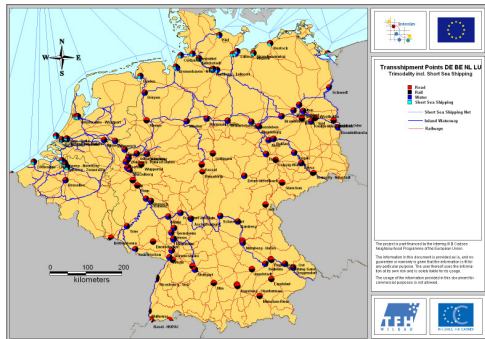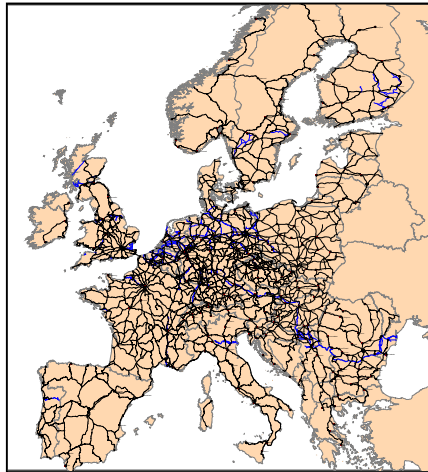Sources: SONORA project, BE LOGIC project

**Projects/ Demos**:

- SONORA, BELOGIC,…
- eFreight, SPIN-ALP,..
- GET Service platform etc.

**ICT services:**

- IT-based intermodal route planning,
- Intermodal transport scheduling,
- Future: Integration into existing ERP systems

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# ICT in transport planning



Sources: SONORA project

# ICT in transport monitoring
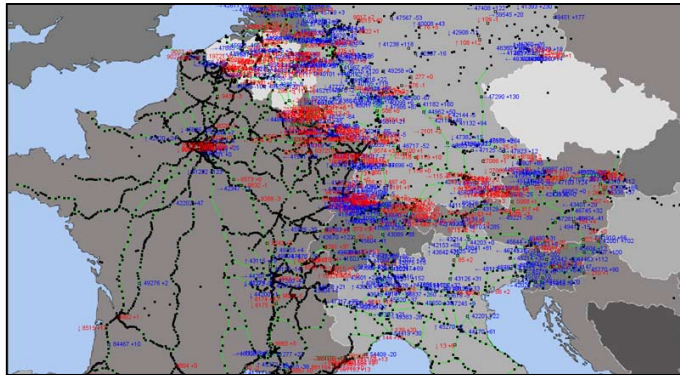




- **Telematic (ITS) Applications for Freight:**
    - Rail: TAF-TSI
    - Road: ITS
    - Maritime: VTMIS, SSN
    - Inland water: RIS

- **Tracking and Tracing:**
    - Of cargoes (not vehicles),
    - Cross-mode (multimodal),
    - Cross-border (transnational).
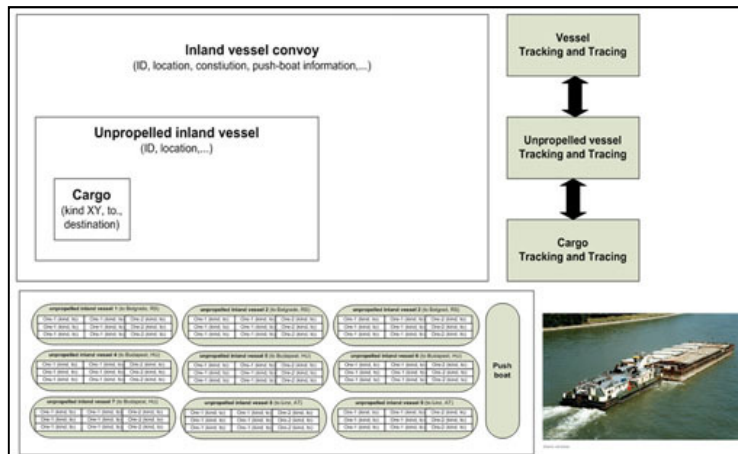
Sources: RISING project, http://www.railneteurope.com/tis_real-time-information.html

# E-DOCUMENTS, E-REPORTING,…

# Single Transport Document

**House Waybills**

**CIM**

**CMR**

**Sea Waybill**

**BIMCO**

**FIATA**

**IATA**

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# Single Transport Document

Carrier            Carrier            Carrier

MTO / FF

Internet

Source: www.efreightproject.eu
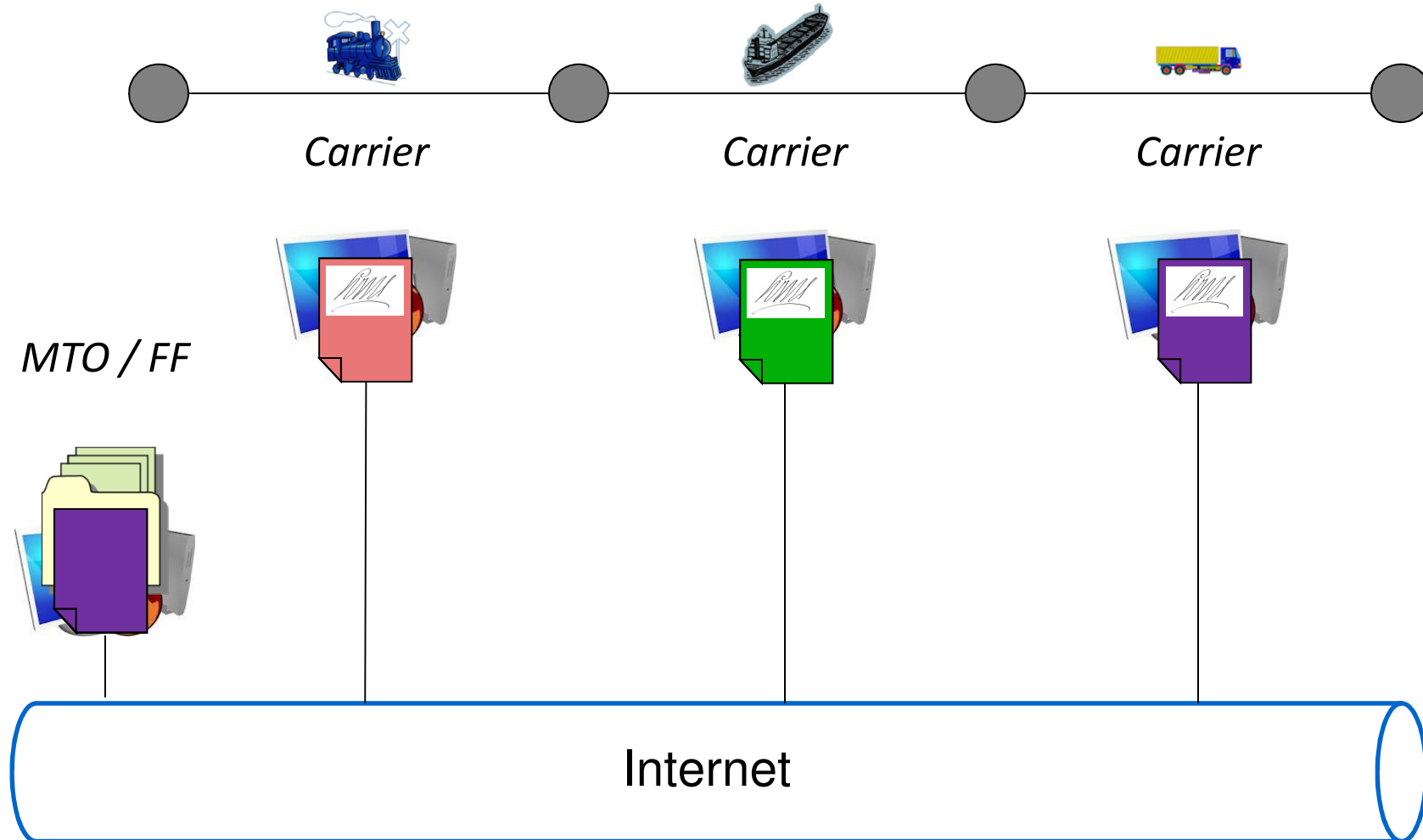
# Next Generation Single Window
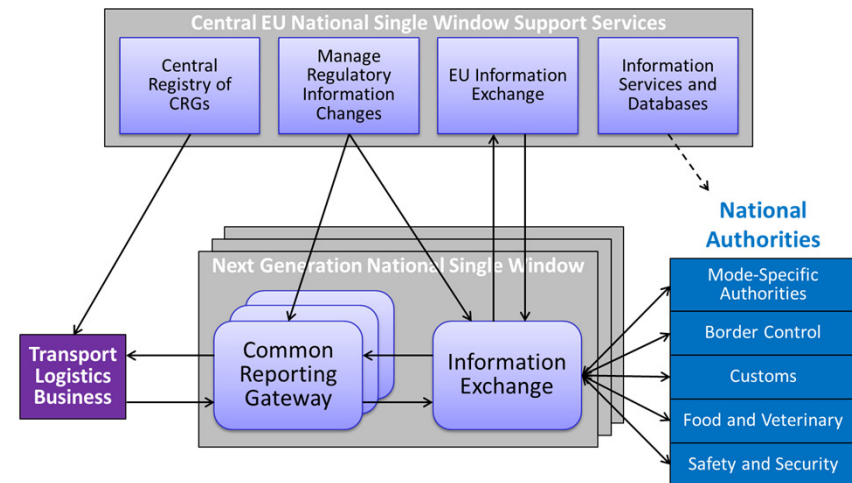




eFreight – Single Window:

- Reporting to authorities (easier, automated,….)
- Reporting to other transport modes (e.g. IWT-RIS to maritime-VTMIS)
- Latest and future ICT and standards (XML,…)

# ITS FOR TRANSPORT AND LOGISTICS

# ITS in the field of transport

- **Intelligent Transport Systems (ITS)**
  - **Providing real-time traffic** information,
  - **Supporting** traffic safety and **transport operations** etc.
- **ITS in the field of transport:**
  - Road intelligent transport systems (ITS),
  - Air traffic management system (SESAR),
  - European rail traffic management system (i.e. ERTMS) and rail information systems (i.e. TAF-TSI),
  - Maritime surveillance systems (SafeSeaNet et al.), VTMIS (Vessel Traffic Management and Information System and
  - Inland navigation (River Information Services [RIS]).

Source: COM 2011 (144)

# eFreight – Internet for the cargo

| Transport modes and ITS | | Maritime (VTMIS,…) | Rail (ERTMS, TAF-TSI,…) | Inland navigation (RIS) | Road (ITS) | Air (ATM,...) |

**INTERNET FOR THE CARGO**

**Cargo flow**
(raw materials till final customer)

**Logistics flows**
(and sub-processes)

| Planning | Management | Conclusion |
|---|---|---|
| 1) Inquiry/ Booking<br>2) Transport planning<br>3) Voyage planning<br>… | 0) Physical transport flow<br>1) Tracking and Tracing<br>2) eDocuments<br>…. | 1) eInvoicing<br>2) eInsurance<br>…. |

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# Example: RIS for transport & logistics
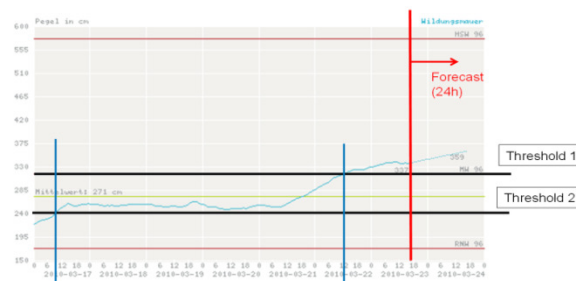


## Traffic infrastructure-based T&L services:

- Water level (prognosis) information,
- Vertical clearance info.,
- Lock info./ reservation,
- Traffic information

→ **Optimal transport planning (incl. loading)**

Source: RISING

# Example: RIS for transport & logistics
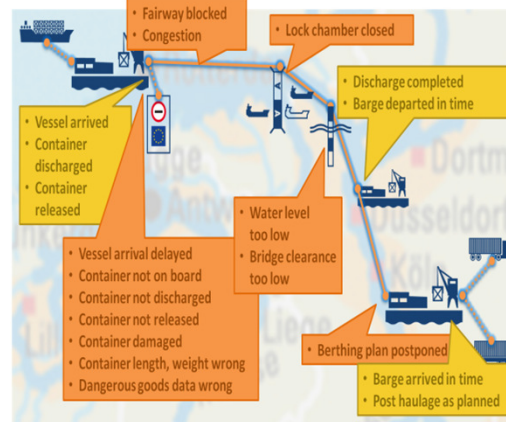


## Transport services:

- Position data (incl. Event Management),
- ETA info./ support,
- Tracking and Tracing,
- RIS for port/ terminal/ berth management

→ **Optimal transport monitoring**

Source: RISING

# CONCLUSIONS AND FUTURE TRENDS

# Conclusions and future trends

Future topics:

- Integrated planning and management for improving mobility of freight,

- Decarbonisation of transport/ green transport,

- Integration of traffic (information services) into transport logistics processes,

- Interoperability (IT interfaces/ standards) between transport modes for seamless door-to-door mobility.

Sources:

- Strategic Intermodal Research Agenda 2020 of EIRAC and EIA
- Horizon 2020, White Paper,…

# References (A-Z)

- BELOGIC EU project: http://www.be-logic.info/
- eFreight EU project: http://www.efreightproject.eu/
- European Commission (DG MOVE): ICT for transport logistics in the White Paper context, ECITL 2011 (14 October 2011, Thessaloniki).
- Freight Transport Logistics Action Plan - COM (2007) 607
- Get service platform: To be started in Oct. 2012.
- Horizon 2020 (2014 – 2020)
- ITS Action Plan ( DIRECTIVE 2010/40/EU)
- http://www.railneteurope.com/tis_real-time-information.html
- RISING EU project: http://www.rising.eu/web/guest;jsessionid=73E0BFE8488F7FF97C2A0D7334FBFAE3
- SONORA EU project: http://www.sonoraproject.eu/
- SPIN-ALP (Scanning the Potential of Intermodal Transport on Alpine Corridors) EU project: http://www.spinalp.ptv.de/index.html
- Strategic Intermodal Research Agenda 2020 of EIRAC and EIA (http://www.eia-ngo.com/eirac.html)
- WHITE PAPER Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, Brussels, 28.3.2011, COM(2011) 144 final
- Telematic Applications for Freight - Technical Specification for Interoperability (TAF – TSI)

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