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)
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

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

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

eFreight – EU project

A2A Solutions
Central EU National Single Window Support Services
Interoperability supports for Administrations co-operating in security risk management

A2B and B2A Solutions
Next Generation National Single Windows for Co-modality

B2B Solutions
Transport execution solutions
Co-modal shipment planning
Setting co-modal transport networks
Single Transport Document

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)

Source: www.efreightproject.eu
ICT IN TRANSPORT PLANNING AND MONITORING
ICT in transport planning

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
ICT in transport planning

Sources: SONORA project

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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).

E-DOCUMENTS, E-REPORTING, ...
Single Transport Document

BIMCO

FIATA

House Waybills

CIM

CMR

Sea Waybill
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]).
eFreight – Internet for the cargo

INTERNET FOR THE CARGO

Transport modes and ITS

Cargo flow (raw materials till final customer)

Logistics flows (and sub-processes)

Maritime (VTMIS, …)
Rail (ERTMS, TAF-TSI, …)
Inland navigation (RIS)
Road (ITS)
Air (ATM, …)

Planning
1) Inquiry/Booking
2) Transport planning
3) Voyage planning
...

Management
0) Physical transport flow
1) Tracking and Tracing
2) eDocuments
...

Conclusion
1) eInvoicing
2) eInsurance
...

Source: via donau / www.efreightproject.eu
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)
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/
- Get service platform: To be started in Oct. 2012.
- Horizon 2020 (2014 – 2020)
- ITS Action Plan ( DIRECTIVE 2010/40/EU)
- 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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