

RFID & logistic information in the rail freight sector



RFID keeping track of wagons entries and exits of industrial sites

Lionel Duclay, Stockholm, 16 February 2011



Traceability

Current methods

→ *Manual data capture in Data capture centres*

- Away from the event
- Human errors (bad capture)
- Low rate of reliability of the information
- Transmission errors

→ *Communication delays*

→ *Oral communication*

- No official information
- No integration in the IS

→ *Different information formats*

- Depending on the country, the Railway Undertaking...
- Difficulty of integration in a unique IS
- Difficult end-to-end traceability of the transport

Typical issues created by the current system

→ *Lack of reliability of the information*

- Customer dissatisfaction : customers moving to other transportation modes
- Decisions made on the basis of false or nonexistent information : Organisational issues = cost (1 cancelled train = 20,000€)

→ *Delays in the invoicing process*

- Lack of invoicing efficiency

→ *Subjectivity of the information*

- Disputes over parking fees create both customer dissatisfaction and cost

A relevant technology

RFID

Reliable & automated information

- 99% reliability
- Objective information

Real-time information

Adapted to the specific rail freight sector constraints

- Harsh environment in terms of:
 - Electromagnetic fields (electric catenaries & locomotives)
 - Dust
 - Shocks
 - Climate (outdoor)
 - Speed (up to 150 km/h in the freight sector)

RFID Alliance

Getting together to promote an interoperability framework

→ 3 Railways Undertakings

→ Key success factor : large adoption of the system

→ Easy adoption of the framework

- Liberty to select the equipment provider and the reading mode (fixed reader, handheld reader...)
- Data stored on the tag kept as simple as possible in order to:
 - Ensure the reliability of the transmitted data
 - Allow the transmitted data to be translated into pertinent business information: this simple data (tag id, reader id, time and date) can be associated to other specific information in databases



**Interoperability framework
promoted by the RFID Alliance**



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RFID system as a mean to improve customer information

- Upon renewing its contract with Fret SNCF, a major client asked for the implementation of a system aiming at making the transmitted information more reliable

- The following benefits are expected from the improvement of a more reliable site entrance / exit information:
 - Automatic proof of transfer of responsibility
 - Reliable and objective calculation of the on-site parking times
 - Real-time availability of the site entrance / exit information

- Fret SNCF, within the framework of the RFID Alliance, asked Edifret to:
 - Write the specifications of a RFID system fulfilling this client's needs
 - Implement a pilot project on a selection of wagons and industrial sites of this clients

Edifret

A specialist in logistics IS & traceability
business solutions



Environmental IS



Fleet management

Wagon fleet monitoring web interface



Tracking & Tracing

GPS solutions (3000+ vehicles)
RFID solutions



Railway Undertakings IS solutions

Dematerialisation of 100% of Fret
SNCF's transport contracts
B2B internet portals management

Innovative RFID Solution in accordance with the RFID Alliance's framework

Solar.IDpack

Interoperable solution compliant with:

- The recommendations of the EIM (European Rail Infrastructure Managers)
- The framework promoted by the RFID alliance

Reliable positioning

- Automatic vehicle identification
- Detection of the vehicle's direction

Easy Implementation

- Wireless solution
- Vehicle equipment time < ½ hour
- Reader post installation time : around 2 hours

Cost-efficient solution

- Vehicle equipment cost : <15€
- Vehicle equipment time < 15 minutes
- Reader post cost : around 7,000€
- Reader post installation time : 2 h
- Open RFID standard (EPC Class 1 Gen 2)
- Equipment's lifetime: 15 years

Questions ?

Thank you for your attention