Sharing information between actors – case study for the intelligent freight wagon

Peter Boom
Business Development
RailWatch GmbH & Co.KG
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Background

EU rail freight is failing to respond to the market
24 May 2016 (source Railway Gazette)

EUROPE: The rail freight sector in the European Union has failed to respond effectively to road competition, according to a report issued by the European Court of Auditors on May 24.

‘Extra funding will not resolve the problem by itself’ if strategic and regulatory issues are not addressed, according to Ladislav Balko, Member of the Court of Auditors responsible for the report. ‘The Commission and the member states need to help train and track managers improve rail freight’s reliability, frequency, flexibility, customer focus, transport time and price’, the main factors that influence shippers when choosing transport modes.
The idea
...condition-based maintenance
The solution  
... intelligent detection of key components on freight wagons  

... for example automated analysis of brake blocks:  
- The system identifies the **UIC wagon number**, **QR code** or **RFID tag** of the wagon when it passes  
- The camera creates photos of the brake blocks per wheel and identifies the best photo based on features.  
- The brake block is then evaluated based on **surface integrals and irregularities in the surface**.
The service
A system for automatic vehicle diagnostics of freight wagons

Multi-Measurement sites on strategic locations in Europe

Train Operating Company/ RU
Freight wagon owner
Infrastructure manager

RailWatch Server

Michael Breuer, 12.12.2019
www.rail-watch.com
Added value
for freight wagon owners

- Prevention of additional costs through preventative maintenance management. *Makes it possible to act instead of react.*
- Consequent avoidance of unscheduled downtime and increased availability of the wagon. Productivity increases with simultaneous reduction in number of wagons required.
- Evidence in GCU of operational defects or quality defects possible in respect of rail operators, freight wagon workshops and component manufacturers.
- Cost savings through expansion of maintenance cycles on the basis of operational live data which are stochastically compressed.
- Redefinition or further development of the maintenance guidelines possible. Know-how advantage for the construction of freight wagons, improved components.

... extract a product catalogue for .....
The RailWatch concept
... using digitalisation
... Evolution instead of Revolution

Information service:
- description, missing/damaged
- graffiti
- temperature
- deformation
- brake blocks
- wheel profile & Diameter
- axle bearing rings
- wheelflats, polygone
- shelling or flaking
- burrs
- load and distribution
Conclusion

RailWatch ...

- will introduce a new service
- will make it accessible to all stakeholders
- will use available technology for WTMS and vehicle identification
- will expand into strongholds at all major freight corridors
- will add to the competitive position of rail freight and therefore support a modal shift
- is open to discuss partnerships
- questions?

... Welcome at our booth !!!

And many thanks for your attention