Cargo

DB Cargo: Sustainable finished vehicles distribution

ECG Conference 2021

15.10.2021 | Pierre Timmermans | Member of the Board Sales

Contents

We are green. We deliver the goods.

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-80%[2]
2021

Compared to road transport, **rail transport saves over 80% CO_2[1].**

We are constantly working to further improve this **environmental benefit.**

Use of carbon neutral **propulsion systems**

Conversion to „**whispering brakes**“

Brake **energy recovery systems**

Driver assistance system Leader

Training of train drivers

Fleet **modernisation**

-90%[2]
2030

(1) Quelle: TREMOD 6.16 (2) less CO2 compared to the transport by lorry

Our Automotive RailNet supports the carbon-neutral transport of cars and components.

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The Automotive RailNet – connecting automotive clusters in Europe

We are the logistics service provider for the automotive industry

Network Capabilities

- Intelligent combination of Inbound and Outbound flows
- Connecting suppliers and OEMs
- Using bundling effects for short lead times and high frequencies

Network expansion

- Corridor-based extension, also for battery manufacturers
- Creation of new network access points

Eco-friendly

- Significant CO_2 savings through the network

We will extend rail share in finished vehicle distribution by providing network capacities instead of block trains.

Focus

Development of a shared-user network

- Realisation with scientific support and simulation models (Objective: Define preconditions and requirements for the network)
- Transition **from pay per train to pay per car**

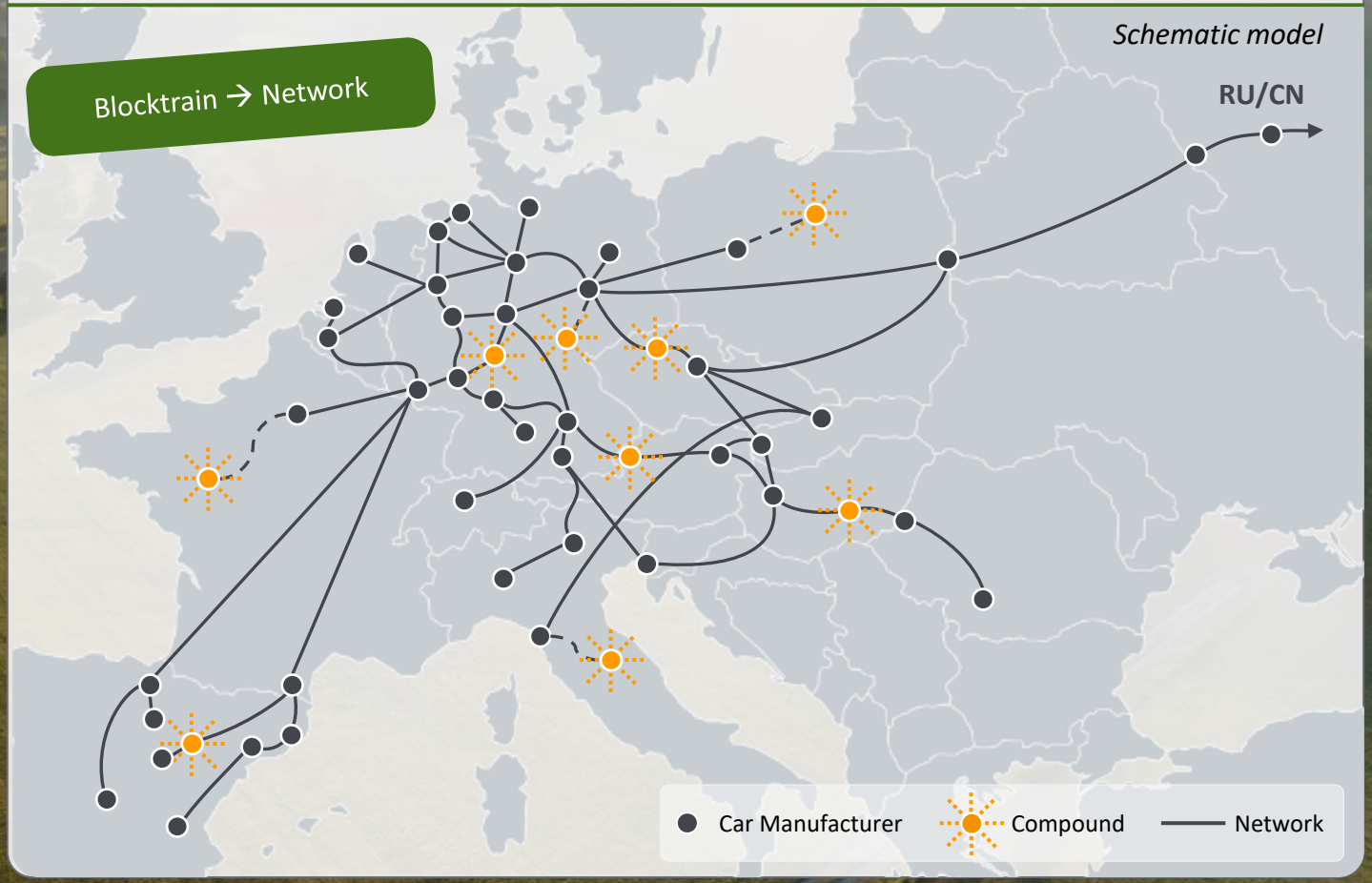
Focus on end2end-processes

- Development of **comprehensive, integrated models**
- **Reduction of interfaces** and optimisation of the control of transport chains through cooperations

Integration of European distribution compounds

- Thereby we increase the intra-European rail share and the frequency in our network

Extension of the Automotive RailNet



In order to meet the efficiency and sustainability needs of our customers, we invest in new equipment.

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Double-decker BA 560/BA 561

- **Characteristics:**
  - **High payload** for electric vehicles
  - **High flexibility** due to an adjustable upper loading deck
  - Ideal for carriage of a wide range of passenger car segments
  - **Simple** and **safe** handling
  - **Tracking & Tracing** for higher efficiency
  - **Quiet brakes** to protect people and the environment

Modular Logistics Wagon (m^2)

- **Characteristics:**
  - **High flexibility and utilisation** due to modular concept (m^2)
  - **Industry-optimised** superstructures
  - **Life cycle optimised** concept

Electric (terminal-)**tractor units**

- **Characteristics:**
  - **No local CO_2-emissions**
  - **Reduced noise** emissions
  - Better operating point and thus more **energy-saving during shunting activities**

Hydro-treated Vegetable Oil (HVO) locomotives

- **Characteristics:**
  - **Reducing the consumption of conventional fuel** on non-electrified lines
  - Reduction of nitrogen oxides and soot
  - **Saving up to 88% of CO_2-emissions**

What we at DB Cargo mean by resilient logistics concepts.

Definition of resilience

Resilience is the ability of a system to react to an event that temporarily changes it and then return to the initial state of operation.

These events can be characterised

	Endogenous events	Exogenous events
Unintentional (error)	accident resulting from technical failures or operational error actions	natural hazards, accidents at level crossings, failures of dependent infrastructures
Intended (attacks)	strikes, sabotage	terrorism, crime, IT attacks

Resilience areas in the rail sector

- Railroad safety technology
- Timetable construction
- Consideration of buffers
- Railroad operation
- Network structure
- Fallback options (rail/lorry)

Experience has shown that complete protection or absolute security against hazards and impairments of systems is not possible. High resilience as a system property is therefore particularly necessary for critical infrastructure such as the railroad.

Digitalisation and automation help to make railway systems even more sustainable, efficient and resilient.

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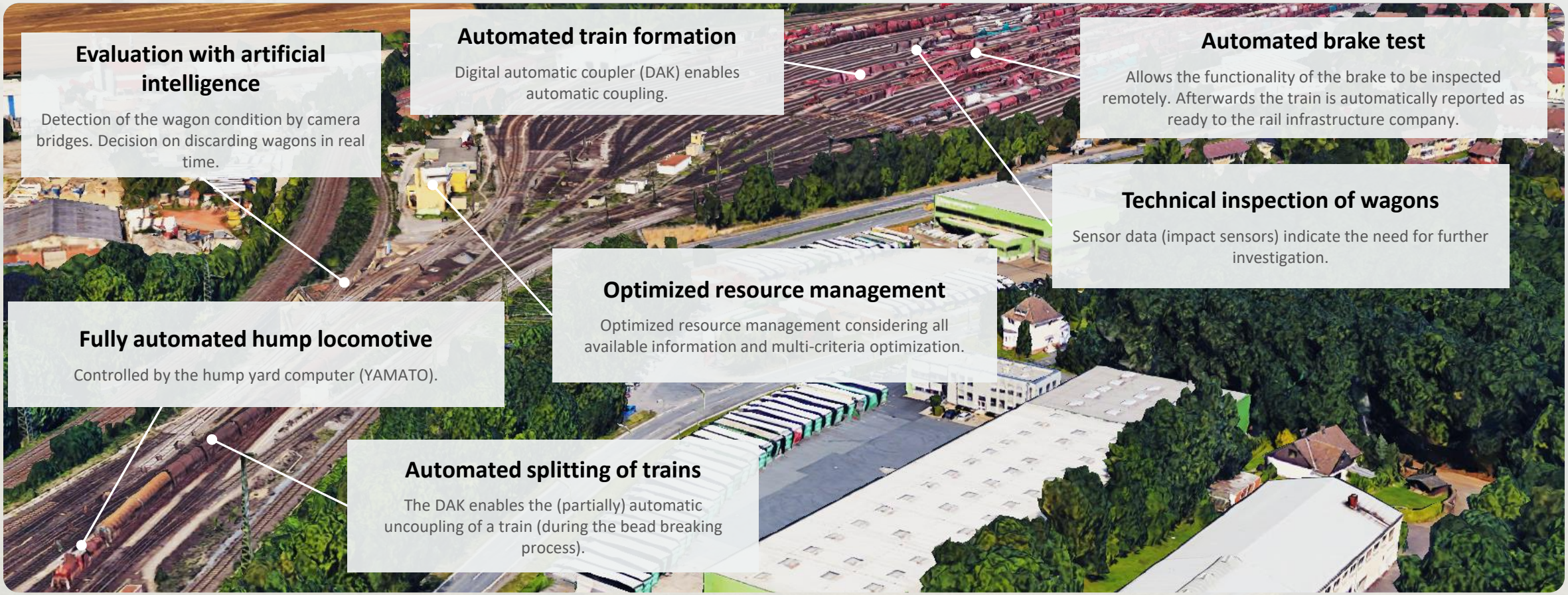
Example: Automated train formation & splitting



Evaluation with artificial intelligence

Detection of the wagon condition by camera bridges. Decision on discarding wagons in real time.

Automated train formation

Digital automatic coupler (DAK) enables automatic coupling.

Automated brake test

Allows the functionality of the brake to be inspected remotely. Afterwards the train is automatically reported as ready to the rail infrastructure company.

Technical inspection of wagons

Sensor data (impact sensors) indicate the need for further investigation.

Optimized resource management

Optimized resource management considering all available information and multi-criteria optimization.

Fully automated hump locomotive

Controlled by the hump yard computer (YAMATO).

Automated splitting of trains

The DAK enables the (partially) automatic uncoupling of a train (during the bead breaking process).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