ermewa

2021
11/05

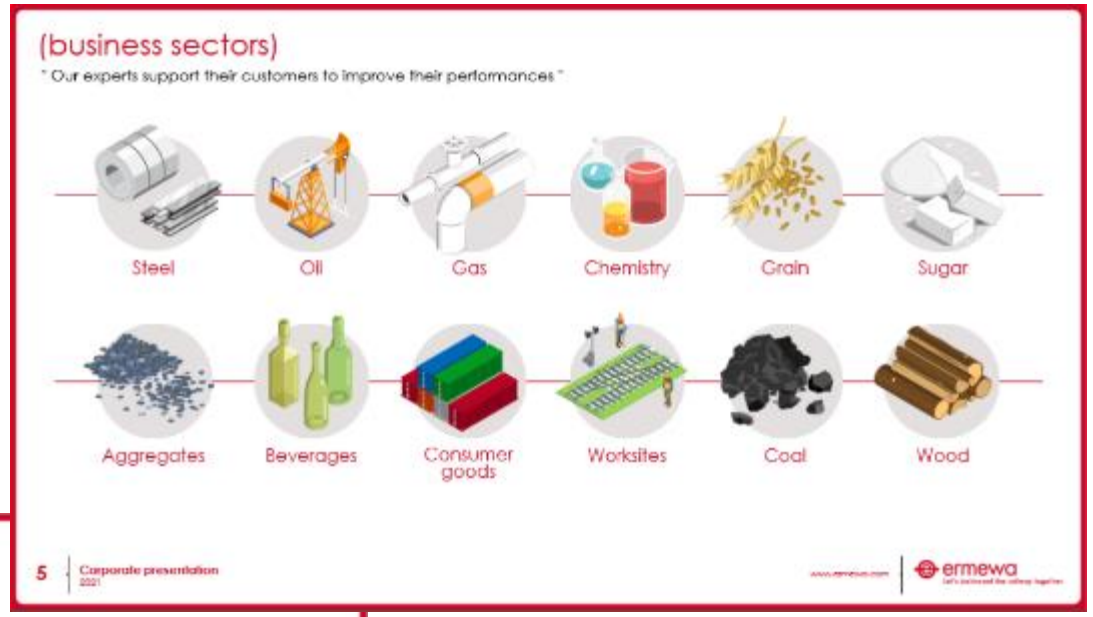
ERA – European safety Days
The future of maintenance

Let´s (re)invent the railway together

A new maintenance organization

The wagon environment and its diversity

- Very various sectors and production organizations
- Commonly used maintenance scheme was meant to covers the whole diversity
- Very conservative approach to limit risks



A global project : DAC

(**DAC4EU** project - **D**igital **A**utomatic **C**oupling **For Eu**rope)

" Pilot project for the demonstration and testing of Digital Automatic Coupling (DAC) for rail freight traffic "

Consortium

DB ermewa GATX

SBB CFF FFS Cargo

Rail Cargo Group Member of ÖBB VTG

DAC4EU

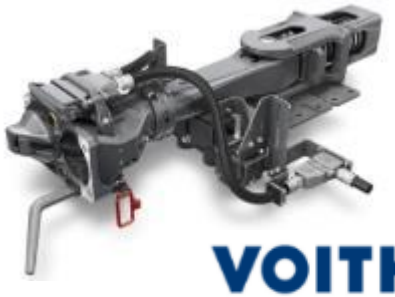
Financed by BMVI (13 Million Euros)

Bundesministerium für Verkehr und digitale Infrastruktur

DAC couplings made by these manufacturers were tested in the DAC test, a **unique** system will become the **standard** for **all the European countries**

DELLNER

Faiveley Transport A Wabtec Company



VOITH

Source: DAC4EU.eu

(**EDDP** project - **E**uropean **D**AC **D**elivery **P**rogramme)

“ Enabled by Shif2Rail ”

EUROPEAN DAC DELIVERY PROGRAMME

Enabled by Shift2Rail

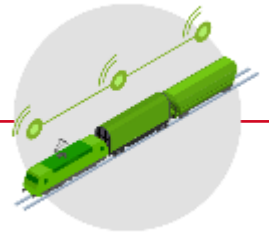
7 working groups for a transparent, unified and effective cooperation between all European actors *:

Technology, Standards and Operation

DAC4EU

Testing, Demonstrating and Pilot projects

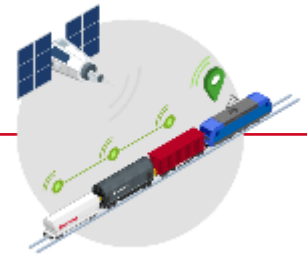
Migration plan



Infrastructure, Rail system capacity and Green Deal

Costs, Business Cases and financing

Communication and Dissemination



Intelligent Freight Train

* European Commission, railway undertakings, infrastructure managers, wagon keepers, rail supply industry, entities in charge of maintenance, concerned sector organisations, rail research centres and national and European political institutions

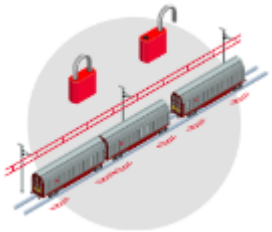
Our projects

(we are working on the Intelligent Freight Train)

" We are developing digital solutions to enhance performance and safety for a sustainable rail freight supply chain management "

Rail freight Operations 4.0: Automatisation and Productivity

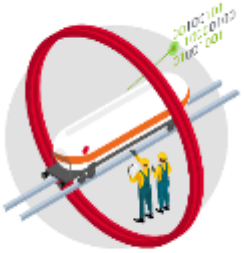
Focus on **DAC** (Digital Automatic Coupling)



Key benefits:

- Safety improvement, time and resources saving, train operations management optimised: automated train coupling and uncoupling operations:
- Increase railway traffic, better infrastructure capacity: introduce electric braking systems, leading to longer and heavier trains
- Train operations are automated and their management is optimised
- Electric and data connections allowing unlimited digitalisation of railway operations and wagon monitoring

Performance



Safety

Environment

Rail based Supply Chain 4.0: Optimisation and Visibility

Focus on **ETA** (Estimated Time of Arrival) and **cargo monitoring**

Key benefits:

- Visibility on cargo status
- Flows optimisation
- Freight train transport management is easier and brings value-added experiences

Rail freight Maintenance 4.0: Availability and Anticipation

Focus on **CBM** (Condition Based Maintenance) and **Digital maintenance supply chain with workshops**

Key benefits:

- Railcar condition: better monitoring
- Immobilisation in workshops digitally connected: optimisation and anticipation of railcar maintenance operations
- Railcar asset availability: increasing
- Safety monitoring: Improvement

(maintenance 4.0: 3 key objectives)

Performance in maintenance supply chain

Disruption in workflow with workshops:
excellence of the Maintenance Supply Chain

- **Develop and deploy the VPI08 standard** within Ermewa
- **Deploy supportive telematics solutions** such as but not limited to ETA workshop, remote diagnosis…

Objective is to **gain performance** in our workflow and **reduce considerably dwell time** in workshop

Condition-Based Maintenance (CBM)

Deploy a CBM system in ERM maintenance strategy leading to **increase safety and supports costs management**

This will support **improving railway overall performance**

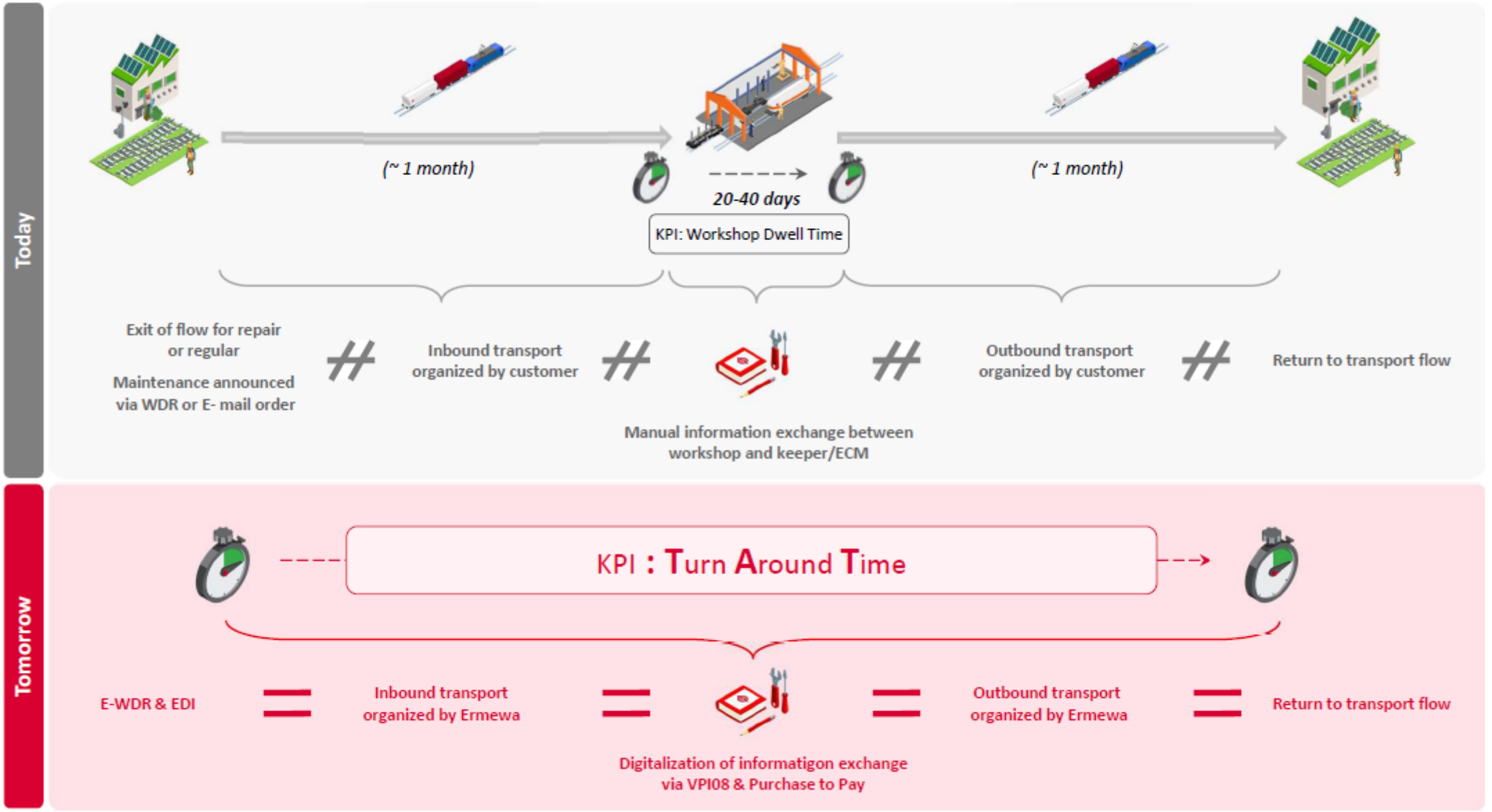
- **Individualized maintenance plans** per wagon over life cycle

Ermewa, a railway partner 4.0

Make Ermewa **the Digital Partner** in Railway 4.0 with:

- Railway undertaking
- Maintenance workshops
- Shippers
- Freight forwarders
- Safety authorities

The Maintenance Supply Chain & Turn Around Time



LAZARD

(5 key projects to support the objective of maintenance 4.0)

" When future and maintenance are meeting "

KB Brake Monitoring

To get accurate and real time data of damages on bearings and wheels and predict damages in advance

2 Mio€ EU subsidies

SKF – Wheelset health monitoring

To get accurate and real time data of damages on bearings and wheels and predict damages in advance

WagonIQ & BogieIQ

Disruptive innovation

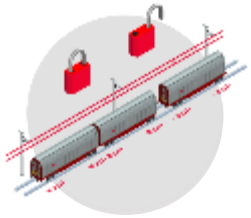
To get real time loading and condition monitoring of wheel, bearing and bogie from the unique CMU (GPS)

Amsted CMU yearly roll-out : 8,000 devices

Obj.: 100% of Ermewa fleet by 2023

Digital Automatic Coupling

- Increase power supply
- Increase Data collection capacity
- Unlock e-braking constraints: smooth braking power decreasing wheelset damages



VPI08: digital communication Flow with workshops

Develop and deploy a standardized digitalized data exchange protocol all over EU, including technical data and purchase-to-pay

ermewa

Visit our digital platform

www.ermewa.com

Follow us on

LinkedIn

Follow us on

YouTube

Let's (re)invent the railway together

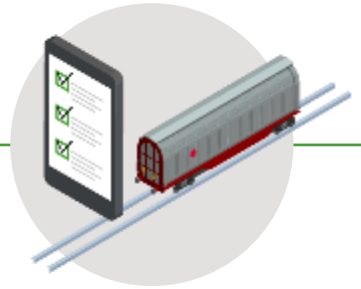
Valérie NICAISE
Head of safety and performance dpt
Valerie.nicaise@ermewa.com

(circular economy)

" In our DNA since 1956, this regenerative system has economic, environmental and social benefits "

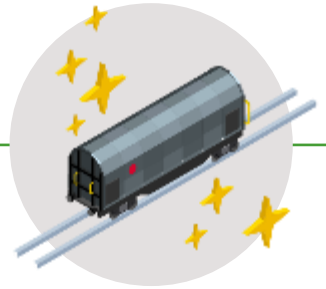
MAINTAIN

58,000 maintenance operations every year to ensure availability and reliability of our fleet



REUSE

Our dedicated teams redeploy railcars nearing end of lease for new use



REFURBISH

1,300+ railcars every year*, extending their lifetime by at least another 10 years

RECYCLE

2,000 railcars every year* to recover high-quality parts and materials: steel, wood and tarpaulins

* 3 years average

(A sample of recycled objects)

Accessories and tables made of wood's floor of our wagons !

Bags made of tarpaulins of our wagons !