



Bundesministerium
für Digitales
und Verkehr

Testing the DAC Current Status

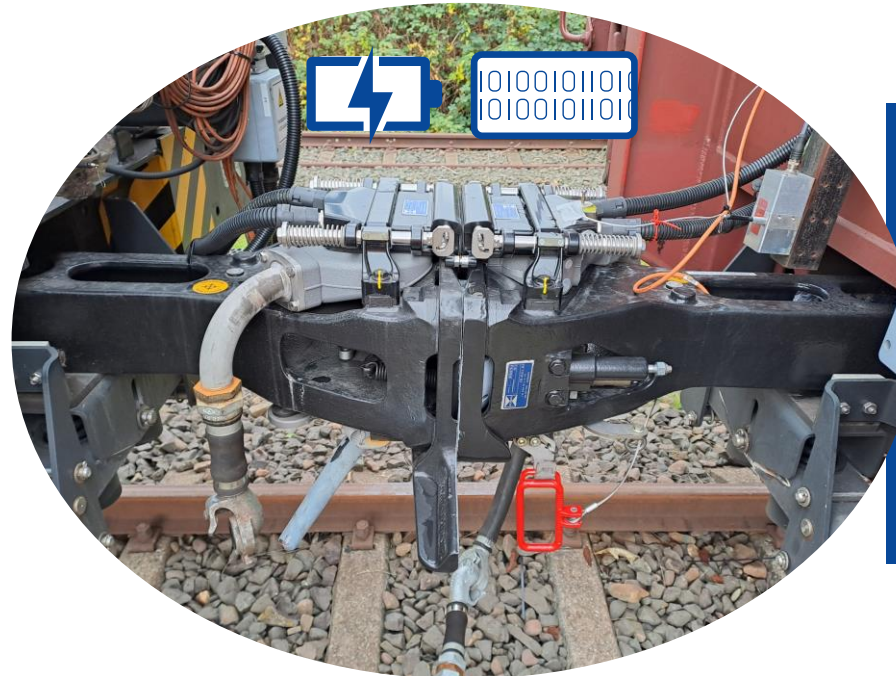
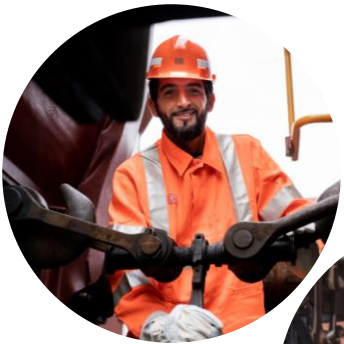
Dr. Fabian Wartzek
Deutsche Bahn AG

Status Quo vs. The New World

Enabler to make rail freight digital and automatic: The DAC

today

our vision: the DAC in freight operation



Automatic coupling of
**pneumatic,
mechanical,
electrical**
connection

Which benefits can be achieved?

Looking at some of the use cases

Use cases for shunting and train preparation

- easy, fast efficient -



Wagon identification, **wagon sequence** + orientation, train length and other information

Automated brake probe - sensors detect brake functionality



System-supported and permanent monitoring **of train integrity**

Sensors collect information on **wagon condition** and to digitize technical wagon inspection



Use cases for train run

- heavier, faster, longer -



Brake position P allows **higher speeds**

Continuous monitoring, e.g. by derailment sensors, further increases safety



Higher strength in the DAC allow longer and heavier freight trains

Braking systems as the **electropneumatic brake** allow longer, heavier trains and/or higher speeds



Who is working on the topics?

The European Project Landscape



DAC4EU



Extensive test program to evaluate the first prototypes



06/2020 – 06/2024 (12/2022)

EDDP / EDDP neo



Central program with involvement of the entire sector; focus on migration and financing



2020 – 2022
→ EDDP neo 2023 - 2025

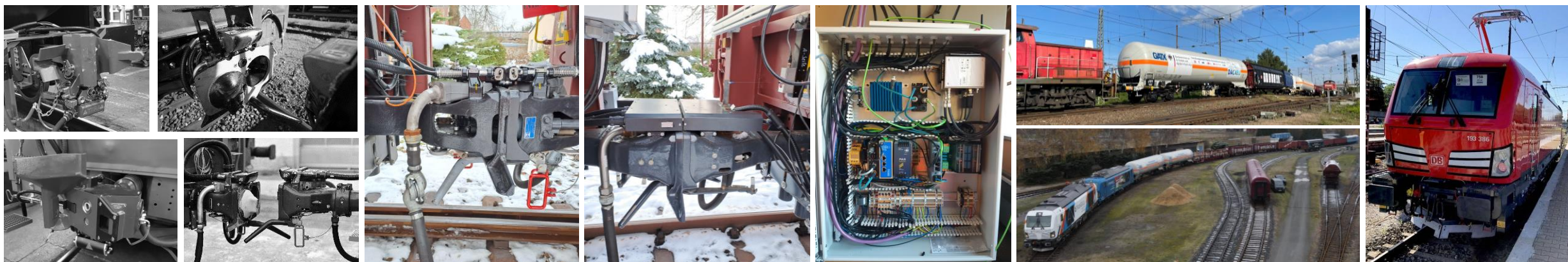
Europe's Rail FP5



Implementation of digital, automated rail freight transport based on the intelligent freight train.



2022 – 2031




DAC4EU – Digital Automatic Coupling for Europe

Testing the DAC all over Europe




DAC4EU






Extensive test program to evaluate the first prototypes



06/2020 – 06/2024 (12/2022)

Federal Ministry for Digital and Transport (BMDV)



Federal Ministry for Digital and Transport

financed with over 20M € since mid 2020



Consortium DAC4EU
(Digital Automatic Coupling for Europe)



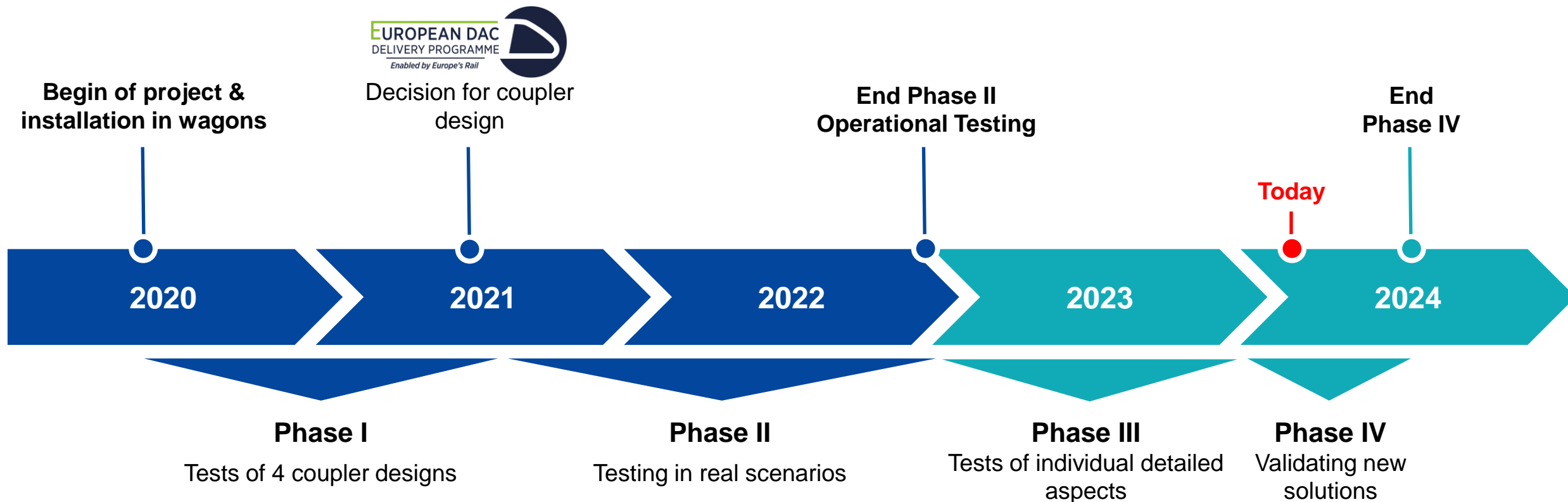






Where do we stand in the Project?

Project Time Plan



Testing in DAC4EU

What does work?



Testing in DAC4EU

Some things we did in 2023 – Going into the details

Draft gear rig tests



Track scale tests



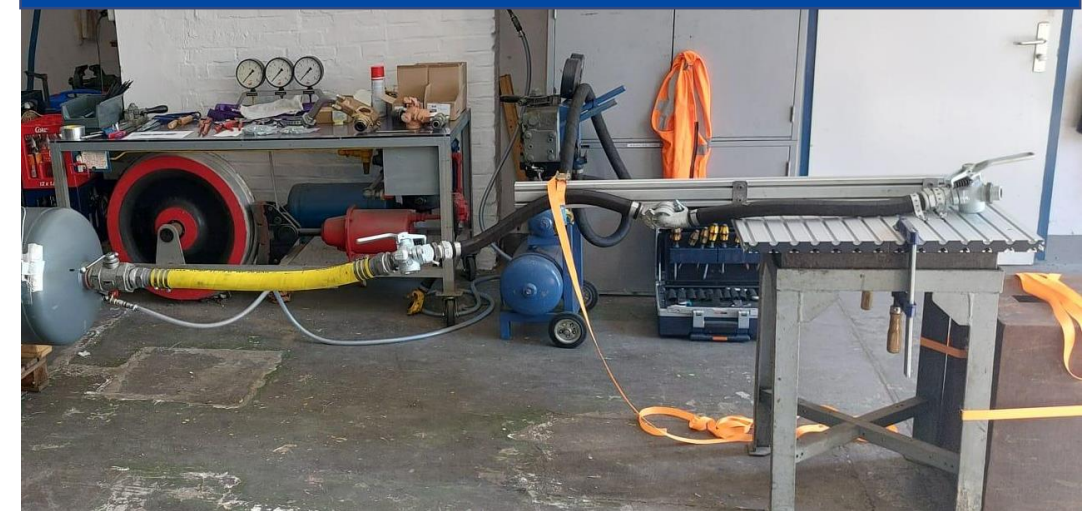
Noise measurements



Corrosion tests

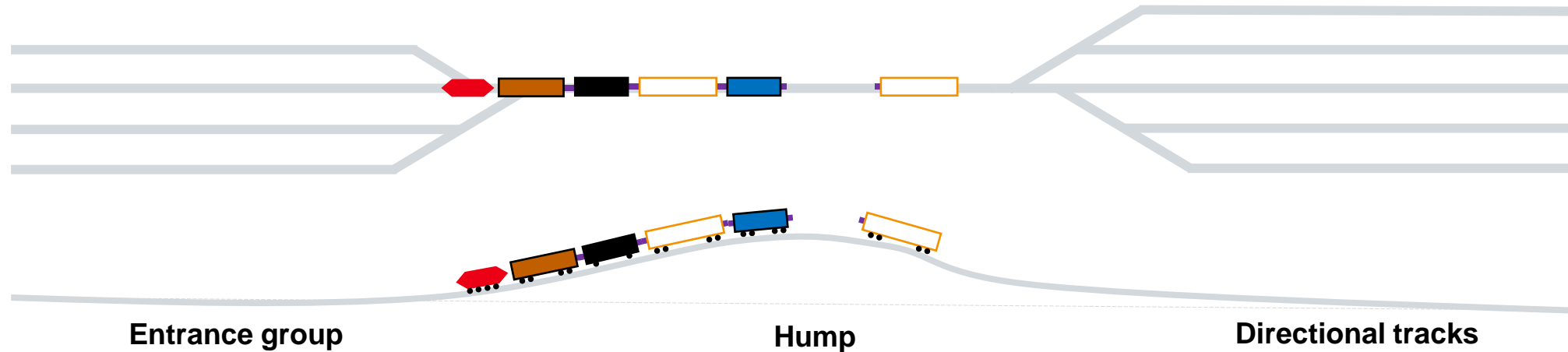


Flow measurements



Testing in DAC4EU

What needs to be optimized?



Depending on grade of automation, infrastructural design, national rules etc.,
uncoupling takes place either on hump or in entrance group

Testing in DAC4EU

Using the demonstrator train as ambassador



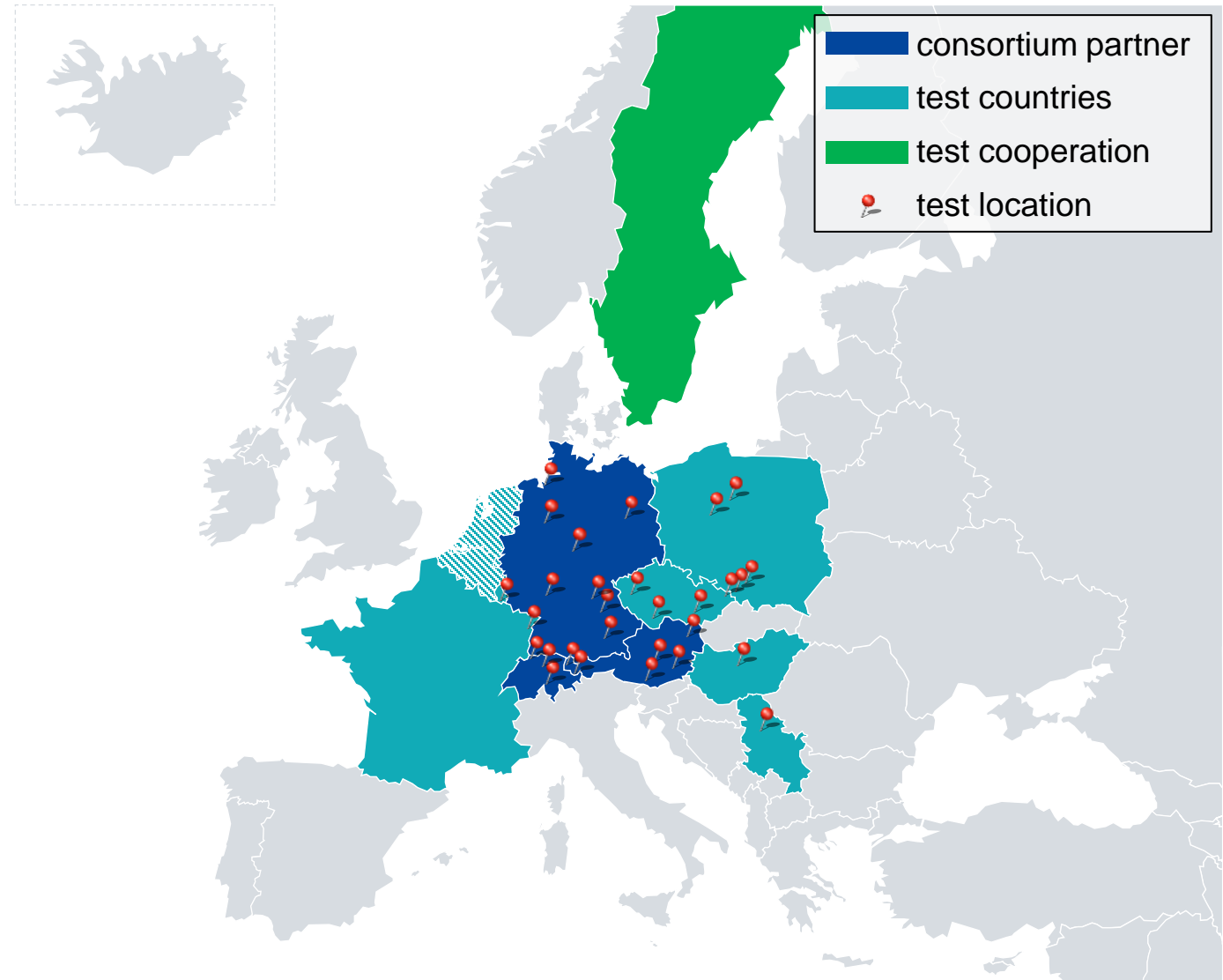
Testing in DAC4EU

Testing all over Europe

DAC4EU

- over 29 test locations in 9 countries
- visits to Belgium and Netherlands planned
- close exchange with Trafikverket (Sweden)
 - winter tests
 - high mileage testing

→ **Operational requirements for the DAC from all over Europe**



What to come in 2024?

Making the picture further European

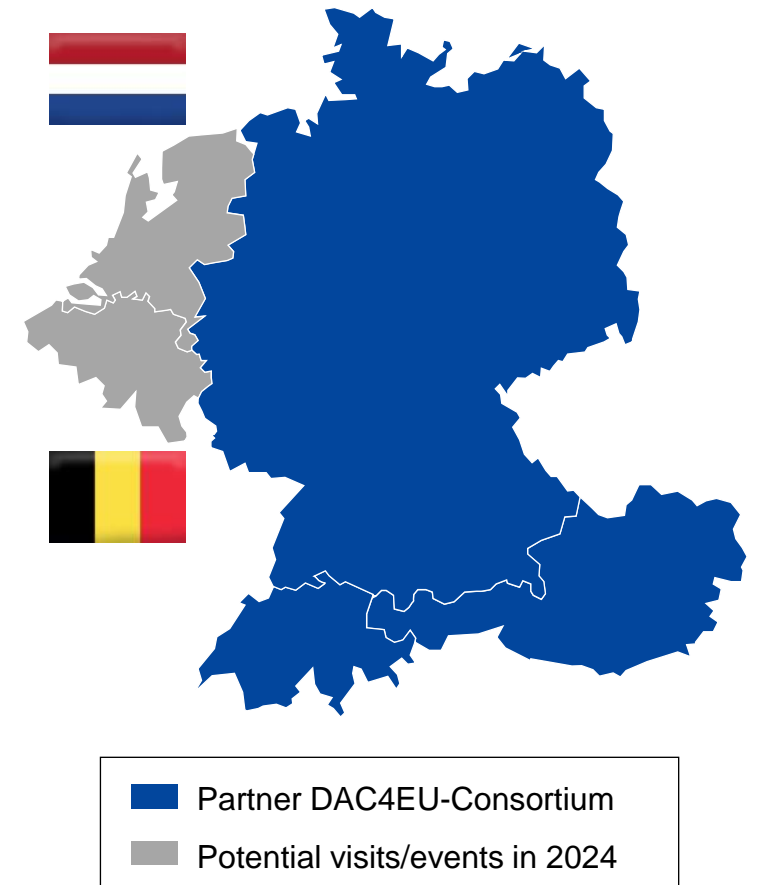
Belgium:

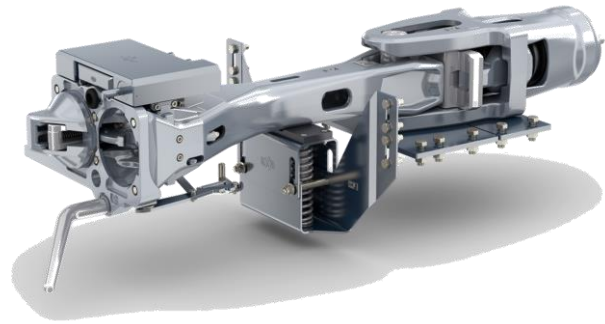
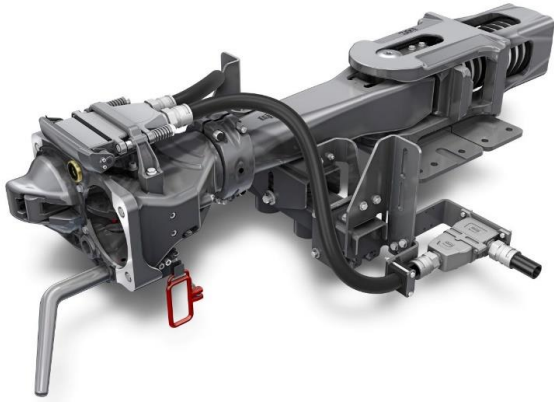
- show the train in Brussel on **April 2nd**
- **Connecting Europe Days**
- special event in **Train World Schaerbeek**
- business lunch character
- speeches and presentation of the DAC



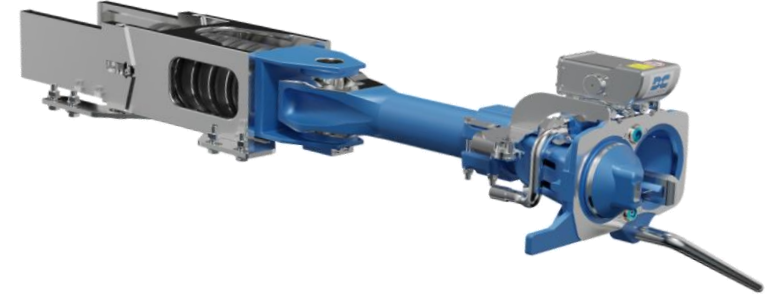
Netherlands:

- currently an event is under discussion
- DB Cargo NL as RU
- second half of April from 8th on





Bundesministerium
für Digitales
und Verkehr



Questions?

Dr. Fabian Wartzek

Deutsche Bahn AG - Programm TecEX
Project lead DAC: Technology and Testing
Head Consortium DAC4EU

fabian.wartzek@deutschebahn.com



SBB CFF FFS Cargo

