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Digitalization in Rail Freight Traffic: Research Project in „Digital Automatic Coupling“

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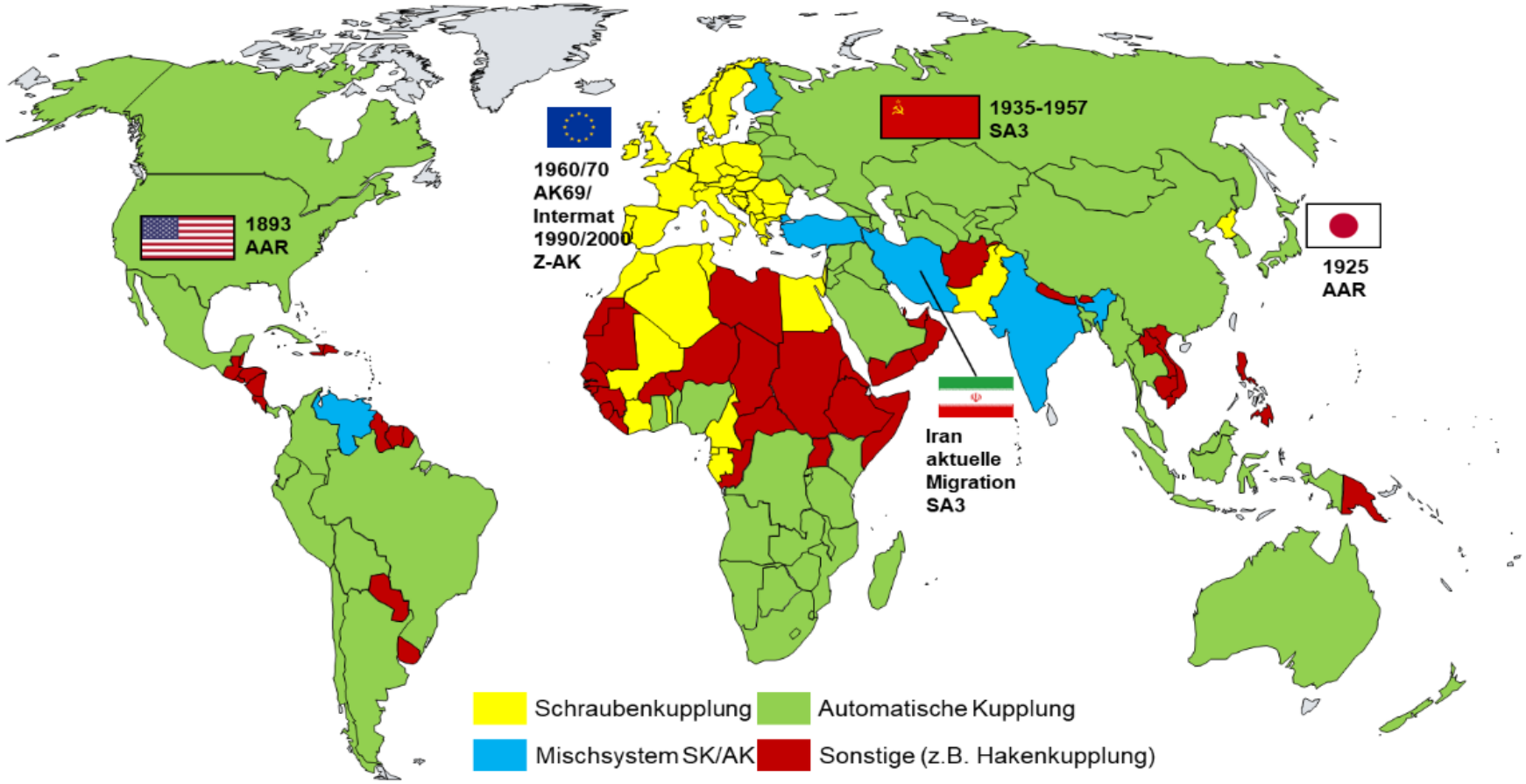
DAC4EU Interim Results‘ Presentation
Frankfurt am Main, November 30, 2022

Status Quo

Screw-type Coupling is still the commonly used Coupling System in European Rail Freight Traffic



Source: B. Sünderhauf, 2009, Die Automatische Mittelpufferkupplung, Köln.

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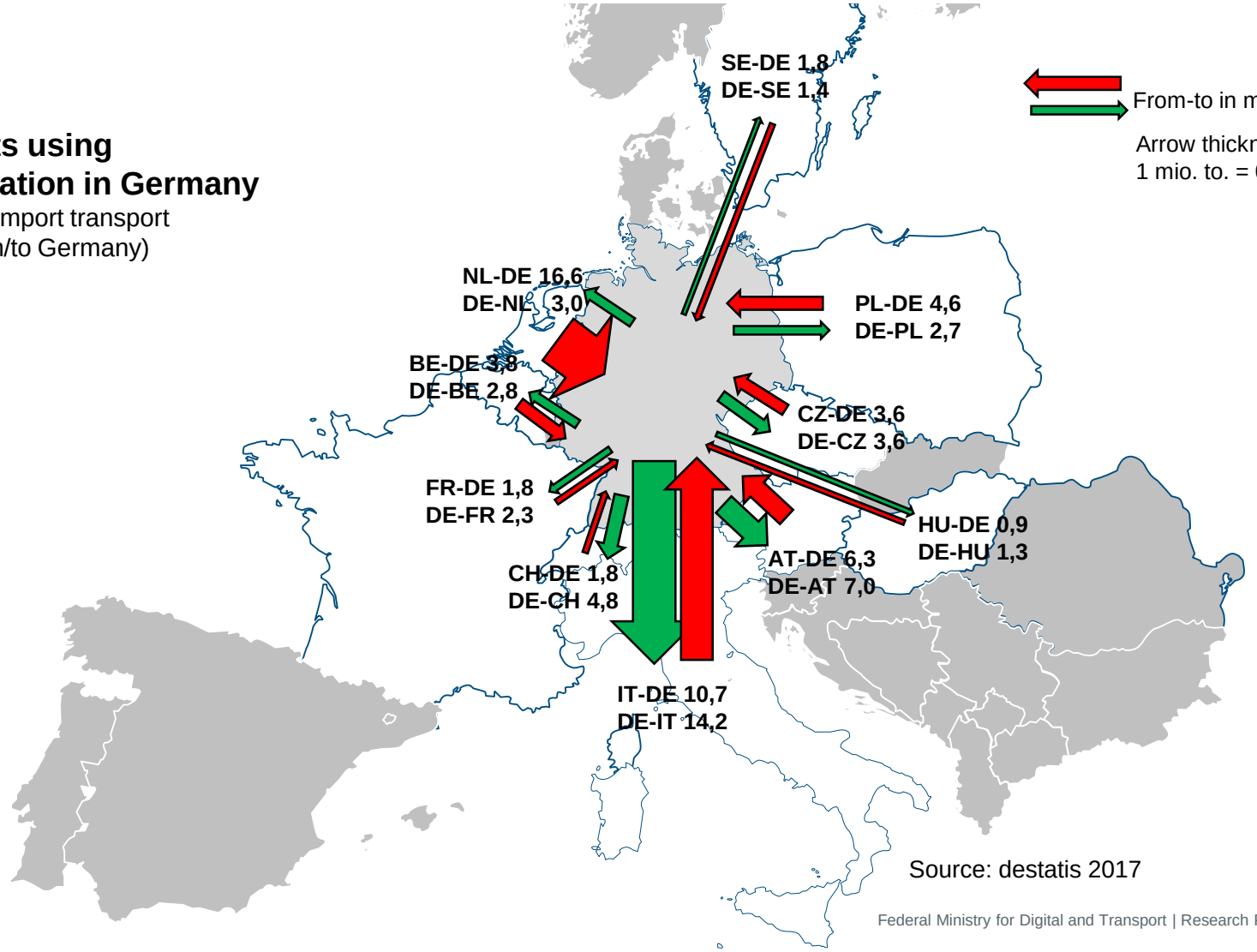
Relevance

Rail Freight Traffic with major European Transport Relations

TOP 10
Export-/Import markets using
Rail Freight Transportation in Germany
(= approx. 94% of all Export-/Import transport relations using rail freight from/to Germany)



Source: destatis 2017

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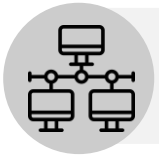
Objective

Digital Automatic Coupling has the potential to increase Productivity, Attractiveness and Competitiveness of Rail Freight Traffic in Europe

Increasing productivity und improving competitiveness

Reducing shunting yard accidents



Preparing the **digitalization** of rail freight traffic

Increasing the **modal split** of rail freight traffic

Reaching the **climate goals** set in Germany and the European Union by **reducing traffic-related emissions**

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The Transport Ministry promotes Railway Research

Research Projects and Studies addressing the Digitalization and System Innovation of Rail Freight Traffic

2016 – 2019

Development and Testing of the Intelligent Freight Wagon („IGW“)

2019 – 2020

Development of an EU-wide Migration Concept

2020 – 2024

Pilot Project for the Demonstration, Testing and Approval of Digital Automatic Coupling (DAC-Demonstrator Project)

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From the Migration Concept to the DAC System

Recommendations developed in the Migration Concept Study

Operations:

- Ensuring a coordinated migration strategy
- Organizing a parallel operating system with wagons in different retrofitting/conversion phases within the migration phase

Financing:

- Developing an EU-wide financing and funding program
- Developing possible (re-)financing structures for wagon keepers

Organization:

- Developing EU-wide technical standards (TSI)

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Research Project DAC-Demonstrator

The Transport Ministry awarded the contract for the „Pilot Project for the Demonstration, Testing and Approval of Digital Automatic Coupling (DAC) for Rail Freight Traffic“ to „DAC4EU“

- **Contract awarded** in June 2020
- **Project implementation period** until June 2024
- **Consortium DAC4EU**:
  - DB Cargo AG, SBB Cargo AG, Rail Cargo Group,
  - Ermewa SA, GATX Rail Europe and VTG AG
- DB AG as **Lead Partner**
- Project volume: **approx. 20 mio. Euro**
- **Cooperation** with the **European DAC Delivery Programme** (EDDP)

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Research Project DAC-Demonstrator

Project Phases: From Demonstrator to Functional and In-service Testing

2020

Configuration of Wagons and Demonstrator

2020 – 2021

Implementing technical test scenarios and climate chamber tests in Görlitz and Minden

2021

Decision made by EDDP for Scharfenberg/Latch-Type Coupler Design

2021 – 2024

DAC-Demonstrator Train for in-service operational testing in Germany and Europe

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Summary and Outlook

Digital Automatic Coupling drives Automatization and Digitalization in Rail Freight Traffic in Europe

- The DAC can only **work as a European Project**.
- An **EU-wide financing concept** is the economic **prerequisite** for successful migration in Europe
- Conformity with **operational and safety standards** in Europe is the technical requirement for migration
- **Status I**: the original test phase and the operational tests with the Scharfenberg/Latch-Type Design demonstrated that there are **technical challenges to be addressed by the railway industry**
- **Status II**: **additional tests** are necessary to further assess electric couplers, the decoupling mechanisms as well as the buffer position

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Thank you for your attention!

Contact Information

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