IMPROVEMENT OF BORDER CROSSINGS AND REDUCING STOPS AT BORDERS
Operational measures: use case on braking harmonisation
There are several border stations at ME Corridors where additional efforts for border procedures can be avoided.
Why do we strive to minimize border stops?

Additional Efforts

- Costs for
  - Staff
  - Locomotives
  - Infrastructure (special sidings for examination and buffering of trains)

Time losses

- Our customer expect short delivery times
- We earn money only when trains are running, not when they stop at borders

Competitive Disadvantages

Our competitors ship and truck don’t have to stop at borders to make technical examinations, switch their brakes or calculate and print new braking sheets

Provision of staff in unsuitable locations

Border stations are often far away from the rest of stations where staff is provided. This makes the allocation of staff difficult and expensive.
Why do we stop at borders and are there already solutions?

**Different Infrastructure Systems**
In Europe there are
- 5 different electrification systems
- 3 different gauges and
- about 20 train protection systems

**No trust in previous examinations**
- Every RU is responsible for the safe conduct of the train
- Rules for examination are very similar or the same (GCU App. 9)

**Drivers are not allowed to drive on other infrastructure**
Issues: Signalling, Language, Rules

**Different braking rules**
- Almost each country/RU has own rules
- Same train has different brake performances
- Change G/P positions at the border
- Create new brake sheet at border

- Multi-system locomotive (except gauges)

- ATTI (Agreement on freight Train Transfer Inspections)
https://uic.org/special-groups/atti/

- European Driver License

- We need to develop an interoperable braking scheme
DB Cargo Use Case 1: Common Braking Rules on Rail Freight Corridor (RFC) 1

The main objective is to develop pilot projects along the Rhine-Alpine Corridor. These pilots will overcome the issue of the current different national braking sheets and braking performance calculations, which hinder today interoperable seamless freight train operations on the corridor Rhine-Alpine (Rail Freight Corridor 1 (RFC1)).

A first study concerning „Braking“ has already being carried out

1. National specifications
   Identified and analyzed

2. Needs for changes
   Defined and agreed

3. Responsibilities
   Analyzed and defined

Result

Requirement for changes along the corridor RFC 1 have been handed over to RUs, IMs and Ministries

5 Trains already done under new rules. More to come

The RFC 1 connects key North Sea ports of Belgium and the Netherlands with the Mediterranean port of Genoa with about 3,900 km of corridor lines, seven sea ports and more than 100 terminals.
DB Cargo Use Case 2: Common Braking Rules on Rail Freight Corridor (RFC) 3

The main objective is to develop pilot projects along the Scandinavian-Mediterranean Corridor. Sweden, Denmark, Germany, Austria, Italy and also Hungary in focus. These pilots will overcome the issue of the current different national braking sheets and braking performance calculations, which hinder today interoperable seamless freight train operations on the corridor Scandinavian-Mediterranean (Rail Freight Corridor 3 (RFC3)).

A first study concerning „Braking“ is currently being carried out

1. National specifications
   Identification and analysis in progress

2. Needs for changes
   To identified

3. Responsibilities
   To identified

Result

The RFC 3 connects Norway and Sweden with the coast of Italy with about 7,527 km of corridor lines.
DB Cargo as trendsetter to Unified Braking Scheme (UBS) in Europe – developed by X-Rail/UIC Working Group

The plan is to roll out the UBS solution beyond the Rhine-Alpine Corridor and to ensure a continuously improving process, which could lead to the adoption of the solutions on other rail freight sections and other rail freight corridors.
What did the working groups achieve so far?

The new international brake sheet covers all requirements. The information in the boxes are clear for the driver anyway which language he speaks.

➢ Brake position rules for P trains mainly aligned
➢ No issues for G train brake position alignment beyond allowance of non-braking vehicles
➢ The majority of requirement adaptations can be made by purely mathematical means
➢ The proposed approach would enable Austria and Switzerland to be integrated without any major obstacles
➢ The proposed approach is viable for France
➢ The proposed approach would enable a full harmonization