



# The Governance of Rail Freight Corridors

What role can digitalisation play in the management and operation of RFCs?

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# RailNetEurope (RNE) - Full Members:



#### RailNetEurope

- was established in 2004
- currently has 36 Full Members and 11 Associate Members
- is an umbrella organisation of Infrastructure Managers (IMs)/Allocation Bodies (ABs)
- facilitates international rail traffic
- delivers solutions and tools for international infrastructure management

9 FREIGHT CORRIDOR

 provides information on the European railway infrastructure

Rail Freight Corridor

#### **Associate Members:**







Railway is the backbone for the transport sector to achieve the objectives of the green deal

#### Digitalisation is one of the main enablers for a more competitive railway and harmonised Europe processes

Increasing railway capacity and efficiency is possible via

Building new Railway Tracks/Stations

- Solving capacity issues
- Long Term development
- High financial needs

Optimisation and digital Solutions

- Optimising capacity
- Short term development
- Less financial needs





# Digital Roadmap 2021 to 2025 - Digital enablers for a better railway

#### Digital Infrastructure Information

To check interdependence between European Reference Files as RINF, TAF and TAP TSI and Rail Facility Portal.

One common digital rail infrastructure platform. From planning to operation From building to maintaining.

#### **#Digital Train** Information

Real-Time information about the position of the train, locomotion and wagon (container) with reliable forecast information.

Combination with train composition and first and last mile information.

## Digitalisation of Capacity Management

European wide capacity strategy and a digital capacity model including already capacity restrictions (TCRs).

Available capacity should be offered on short term European wide. Based on the **Timetable Redesign Project** (**TTR**) project



# Digital Infrastructure Information (must be ..)

- > Availability: Have to be made available to all partners in railway business
- Detailed: Have to include a description of the railway infrastructure in a detail needed to be able to plan and run a transport
- Complete: Must include stations, lines and railway facilities
- Unique: The same data should be used for all business processes from planning to operation and must be unique.
- > **Up-to-date:** Must be up to date and should (if possible) include real time information
- Steered: There has to be a clear steering board defined.



# Digital Infrastructure Information

Infrastructure **Common Data Business Data Information Sources** (Path Information, TimeTable, Train Run, (Infrastructure Information including Points, TCRs, Charging Information, RFC) Segments) (IMs, RFC, ERA, RUs, ...) **CRD** (Common **Reference Data**) GEO-Editor PCS Corridor CIS Definition **Rail Facility** TCR Portal CIP RINF **BIG DATA** Completed by the end of 2020 Other **Infrastructure Data** 



## #Digital Train Information: Tracking and Tracing

- > Train Tracking and Tracing: Already possible for "nearly all" European trains
- > Train Composition: Including information about locomotion, wagon and container for pilot companies
- First and Last Mile Information: Technical possibility for data exchange between IMs and terminals is already developed. First Terminal are connected and the translation is based on EDIGES and TAF TSI.
- Estimated time of arrival: Message is defined in TAF TSI and used by several partners. The quality is improving but there is still a long ways to go.
- Using GPS information: Using GPS data from locomotion, wagons and other sources to track transport (trains)



# #Digital Train Information: Tracking and Tracing (TIS)

All international European freight and passenger trains (and most national freight trains) can be followed via the European Train Information System. <u>tis.rne.eu</u>

Facts and Figures:

- $\geq$  20.000 trains per day
- ➢ 600 Railway Companies
- ➢ More than 2.250 regular Users
- > 10 Millions TAF/TAP messages per day
- Real time data exchange between 70 rail companies





# #Digital Train Information: Train Composition & Train Run





#### Digitalisation of Capacity Management

- Capacity Model: National and international harmonised capacity model to secure reliability, consistency and stability capacity planning.
- Temporary Capacity Restrictions: TCRs are important to keep rail infrastructure in the best possible shape and allow safe operation. However, badly coordinated TCRs are a destabilising factor when planning capacities and timetables. TCRs have to be coordinated and published.
- Annual Capacity/Path Request: Early annual path request for stabile traffic. Train requested during the annual path request are good harmonized. Nevertheless, the big majority of the freight trains are re-planned or cancelled later.
- Short Term Capacity/Path Request: There is a high demand to request harmonised international capacity on short notices. International short-term requests are very common in freight transport but unfortunately not well coordinated between the IMs.



# Digital Sortitions for Rail Corridors



Query Price I	nformation		Q Initial Parameters	Train Path	Train Parameters	Uiew Resul
Step 2: Specify Tr	ain Path					
Origin	Austria	• Graz-Köflacher Bahn und •	Search for Station		•	
Destination	Austria	• Graz-Köflacher Bahn und •	Search for Station		↓ ↑	
+ ADD VIA STAT	ION 2 RESET	Load Test Locations: Please selec	t •			
< BACK						NEXT >









# Key Findings and Lessons Learned

- Governance and Agreements: Governance and Agreements are necessary but have to be driven by the railway sector. Nevertheless, <u>political support is essential</u> to set up the agreements.
- Standards: Based on the governance <u>common standards have to be applied</u>. The standards have to be developed by the railways and steered in a "to be defined governance" The standards have to be driven by the business.
- Common Systems based on the standards: Based on the standards digital solutions have to be build. In Europe must of the "<u>common digital systems</u>" are developed and operated by RailNetEurope. <u>https://rne.eu/it/rne-it-tools/</u>)
- Funding and Financing: The railway sector is underfunded for the implementation of digital solutions. Funding is therefore essential for the implementation of common digital solutions. The European Union has introduced several funding schemes for the rail sector.
- → The year 2021 is the European year of railways and digitalization



#### Questions and Answers

# Thank you for your attention



## European Major Applications – operated by RNE



A platform for handling harmonised international path requests, path studies, path offers and path allocations

#### https://pcs-online.rne.eu



Supports international train management by delivering real-time train data concerning international passenger and freight trains

https://tis-online.rne.eu



The Common Components System consists of three different components: The Common Interface (CI), the Central Reference File Database (CRD) and the Certification Authority (CA)

https://ccs.rne.eu https://crd.rne.eu



An internet-based information tool with a Graphical User Interface that provides precise information on the routing, terminals, infrastructure investment projects as well as basic track properties of the participating RFCs

#### http://cip.rne.eu



Provides fast information on charges related to the use of European rail infrastructure and estimates the price for the use of international train paths within minutes

https://cis-online.rne.eu



A platform for coordination and publication of TCR (Temporary Capacity Restrictions). The platform is under development and shall be available from the end of 2017 on.

https://tcr-online.rne.eu