

Redesign of the International Timetabling Process (TTR)

TTR Results - Annex I: Basic IT analysis

6 March 2017



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Description of deliverable

The document shows the major IT impact of the new processes defined in the TTR project.

It is analyzing the

- **current situation, the proposed target situation and draws conclusions.**
- **assessment of requirements for each phase of the timetabling process including**
 - Gaps between current and target situation have been detected
 - List of elements that need to be technically defined

Current state

- Most of the new TTR process steps are new and therefore not supported by companies or central IT systems.
 - A system to manage capacity is not available (some IMs have individually started to implement capacity systems).
 - A system (PCS) is available for path request and path harmonisation
 - A system for temporary capacity restriction shall be available by the end of 2017
- Some Reference Files are defined and already in use (TAF TSI, PCS). Up-to-date information for reference files (location and segments) are not in place.
 - Some initiatives to improve the situation are ongoing (RNE Big Data, RINF, TAF/TAP TSI, UIC IRS)
- Connection between company systems and central systems are (partly) missing
 - Some IMs and RUs are connected to PCS
 - IMs and RUs must have online connection to central system in order to support the process.
 - Connection to capacity system is an open point.
- TAF TSI is not implemented by most IMs/RUs for Short Term Path Request

Target state

- All TTR processes are supported by company and central systems
 - A central system to manage capacity is available
 - National planning systems are available and able to deal with capacity
 - A planning and coordination system is available
 - A system for temporary capacity restriction is available
- Up-to-date Reference Files are in place and used
- Company systems and central systems are connected
- TAF TSI is implemented and the new IT elements (messages, models) are defined and included into the TAF TSI schema

Top findings and conclusion

- The IT elements, listed in ANNEX I, have to be commonly agreed and shall be implemented and used in the company systems.
- The IT systems, listed in ANNEX II have to be specified and developed nationally and centrally.
- TAF TSI is a corner stone and shall be used. New IT elements (messages, models) may be included into the TAF TSI framework.
- Up-to-date Reference Files for the network (locations, segments, attributes) are essential for the project
- Company systems and central systems have to be connected to support the process in an efficient way.

Deliverables in the next TTR phase 'Implementation'

- **High and detailed level IT landscape of RUs and IMs: Technical architecture**
 - Description of all tools to be connected
 - Plan: Migration plan from „today’s“ to “TTR landscape“
- **Technical requirements specification**
 - Detailed technical specification: what the tools need to work in the future TTR landscape
 - Specifications for data exchange and interfaces
- **Definition of the Technical definition of 'Capacity'**
 - Clear definition of business, information and technical object “Capacity” and all items related to it
 - Possibilities to display positive and/or negative capacities
 - Agreement on common data standard by the Sector
- **Migration plan, taking into account:**
 - The TTR implementation plan
 - Different speed of stakeholders when connecting to a centralised tool
 - Legal obligations

Annex I

List of IT elements

List of IT elements

Short Name	Description	existing	TAF TSI
Capacity Definition	Definition of Capacity and a capacity model based on a network approach. Capacity model has to be implemented nationally and a model for digital exchange (synchronisation) of capacity has to be designed. A simplified international capacity model is needed.	No	No
Temporary Capacity Restriction Definition	Definition of negative capacity (TCR) and positive capacity (new lines). Negative capacity has to be considered in the capacity model. Connection between company systems and central TCR system is necessary.	No	No
Reference Files	Reference Files for locations and companies are available. A network model is required for the capacity model and TCR. RNE Big Data, RINF and TAF TSI shall be used.	Yes, partly	Yes, partly
Capacity Partitioning	The commercially available part of the capacity model is partitioned, according to market needs, axis by axis, for use through two operative modes. Capacity for Annual requests and Capacity for Rolling Planning requests	No	No
Capacity Products, Capacity Bands	Definition of Capacity Products and the overview of the available and unavailable capacity (in space and time). Capacity Products have to be harmonised internationally therefore a model for digital exchanging (synchronising) of Capacity Products has to be designed.	Yes, partly	No
Offered Capacity	Definition of offered Capacity. Offered capacity can be requested as <u>Rolling Planning or Annual requests</u> . National systems have to be able to deal with annual and rolling planning requests and online connected to a central component is required.	Yes	Yes, partially
Requested Capacity	Definition of requested Capacity.	Yes	Yes, partially

Annex II

List of IT systems

List of IT systems

Short Name	Description	TAF TSI
Capacity Management System	The system needs to provide the overview of the capacity model. The overview of the available and unavailable capacity (in space and time) is necessary for coordination between IMs and/or RFCs. The system needs to be intelligent enough to propose optimal and harmonised shaping of the international capacity products. Connection between national systems and central component is essential.	No
Temporary Capacity Restriction	The system is required for coordinating and publishing of TCR. A first version shall be available from October 2017 on. The system shall support the Consultation phase for TCRs. Connection between national systems and central component is planned in a second phase	No
Reference Files	The Big Data concept has to be implemented and used to make a reference between location, lines, segments etc. and to make the link between the different national and international systems. Big Data, RINF and TAF/TAP have to be used as reference files.	Yes, partly
National/company capacity planning & partitioning	National/company system have to be able to plan and partitioning capacity. This has to be used as baseline in a capacity system and the capacity offer and request system.	No
Customer Management System (like for PCS)	It is seen as beneficial from the aspect of RUs/Applicants to have a system similar to currently used CMS for PCS Change Management, for introducing the observations of RUs/Applicants and follow-up of their treatment on one single place. It can maybe serve for Capacity Announcements as well.	No
Offer and Capacity Request System (PCS?)	System for offering and requesting capacity. Offered capacity can be requested as <u>Rolling Planning or Annual requests</u> . National systems have to be able to deal with annual and rolling planning requests and have to be connected to a central component. It can serve as the capacity product definition and coordination system.	Yes, partly

Annex III

Glossary

Glossary

Short Name	Description
Capacity band	Time frame up to some hours which includes capacity for at least one path for Rolling planning requests. Publication in form of a number of 'slots' per defined capacity band.
Capacity commitment	In form of a slot with a status similar to a 'contract'
Initial path request	First request for a path (at the beginning of path requesting and allocation process)
Non pre-planned capacity	Capacity on a line that is still available after pre-planned capacity for traffic, maintenance and TCRs is assigned
Pre-planned path	Path pre-constructed by the IMs based on the outcome of the capacity partitioning, to be used primarily for Annual requests
Safeguarded capacity	Capacity reservation by IM for expected demands for Rolling Planning requests
Slot	'Capacity usage possibility' within a capacity band which will be converted in a path year by year
System path	Path based on parameters of standard trains
TCR	Planned temporary capacity restriction. It indicates that the restrictions are planned (no force majeure) and temporary (no long lasting bottlenecks).
TCR with major, medium and minor impacts	See annex 3