

REDESIGN OF THE INTERNATIONAL TIMETABLING PROCESS (TTR)



Overall Presentation



The TTR Process

— TTR Approach: Detecting Requirements

The TTR concept is based on the market needs:

- A request method for later requests (especially required by freight traffic)
- The current timetabling process, but improved (especially required by passenger traffic)

Provide adequate capacity request methods

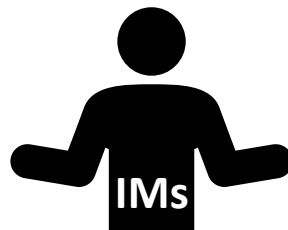
Plan capacity in advance and take into consideration:

- **Market requirements**
- **Available capacity**

But we also have capacity restrictions!

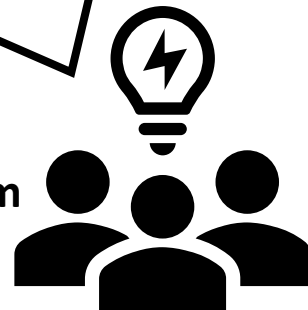


RUs



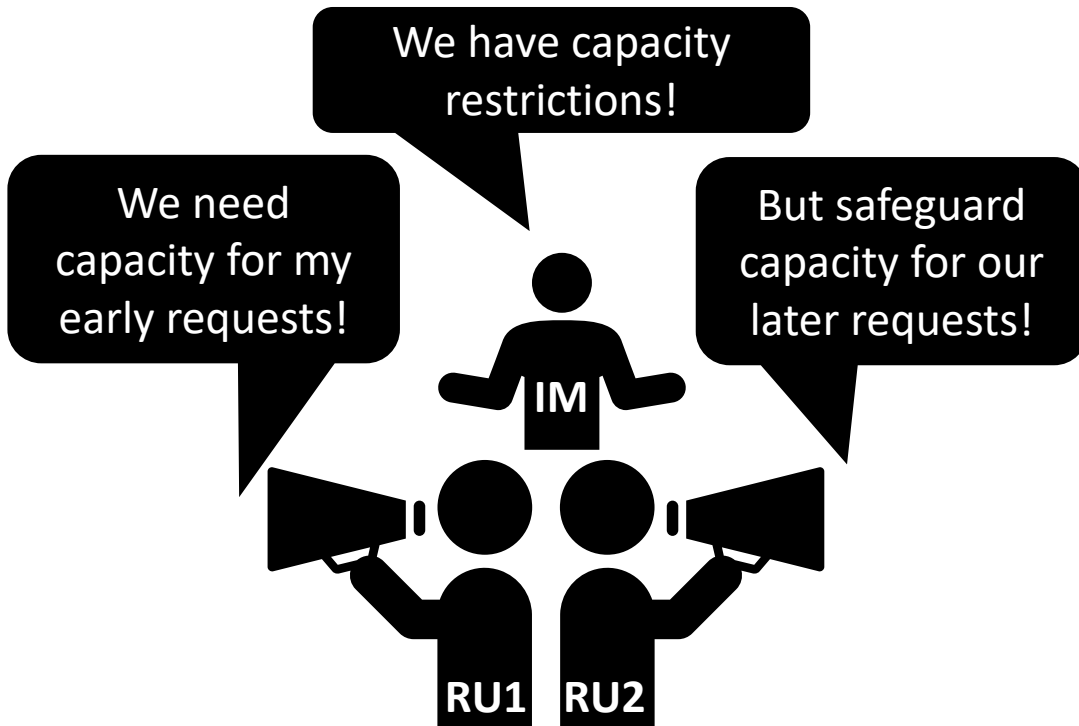
IMs

TTR Team



— Need for Advanced Planning

In order to support both approaches, capacity needs to be planned and partitioned, before the start of the request phase ('Advanced Planning').



- Capacity Models must be created to ensure the inclusion of all market requirements
- Construction works and other Temporary Capacity Restrictions (TCRs) must be taken into consideration
- Capacity Models must be created for each line and for every year
- Advanced Planning must focus on origin to destination approach

— The TTR Process: From Rough to Detailed Information

The redesigned timetabling process consists of several components to cover advance as well as short-term planning and provides products for stable as well as variable market needs.



From rough information...



...to building blocks...

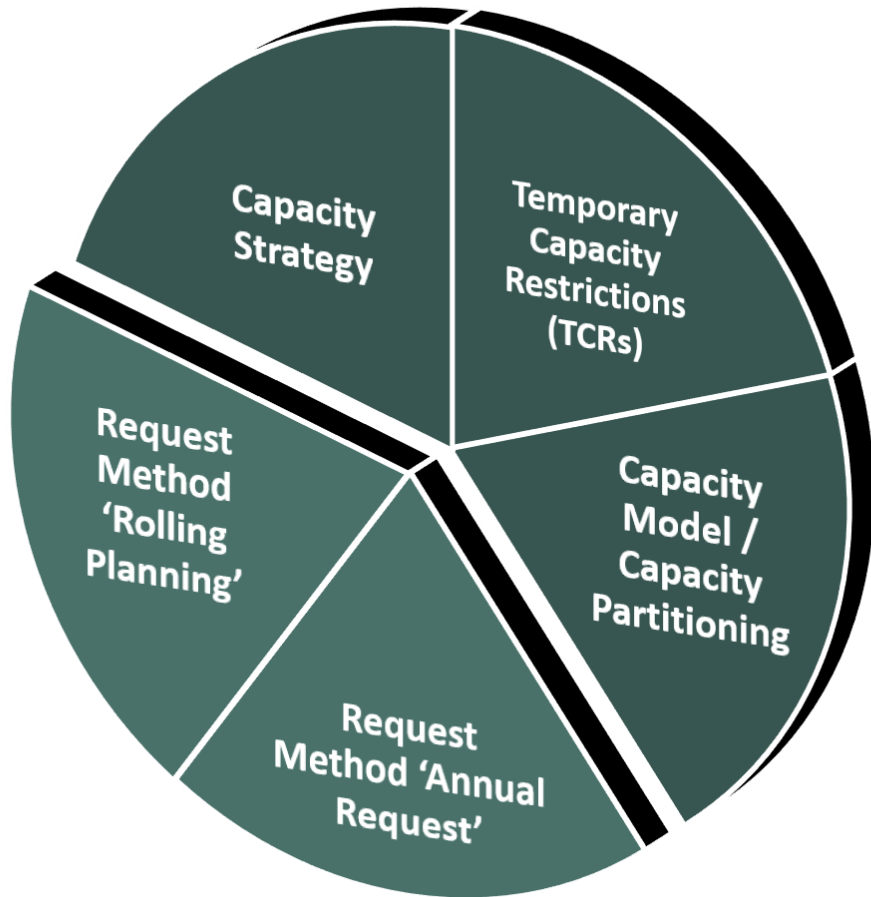


...to a complete picture!

Internationally
aligned cross-border
process

— Components of the TTR Process

Main components are:

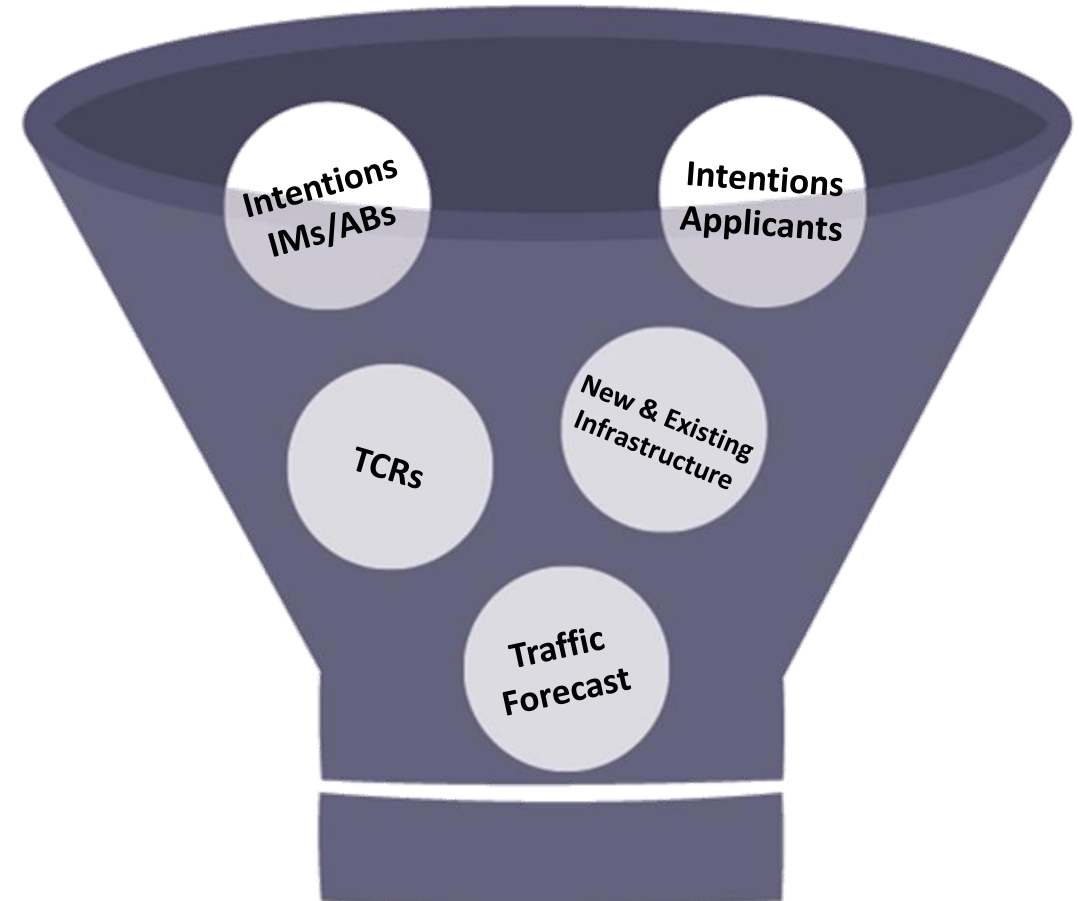


Additional process components:

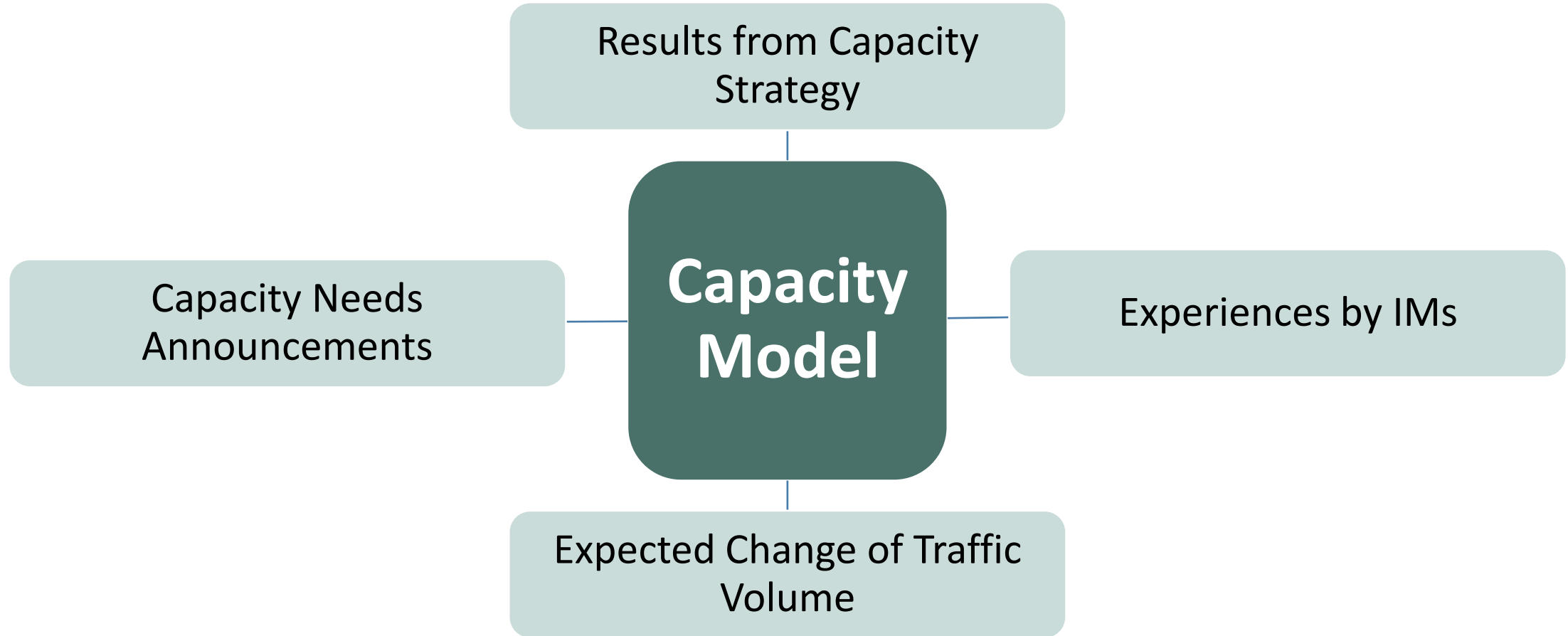
- Leading entities
- Allocation rules
- Key Performance Indicators (KPIs)

— Capacity Strategy

The creation of the capacity strategy starts five years before the timetable change and allows all stakeholders to announce and pre-coordinate these influencing factors at an early planning stage.



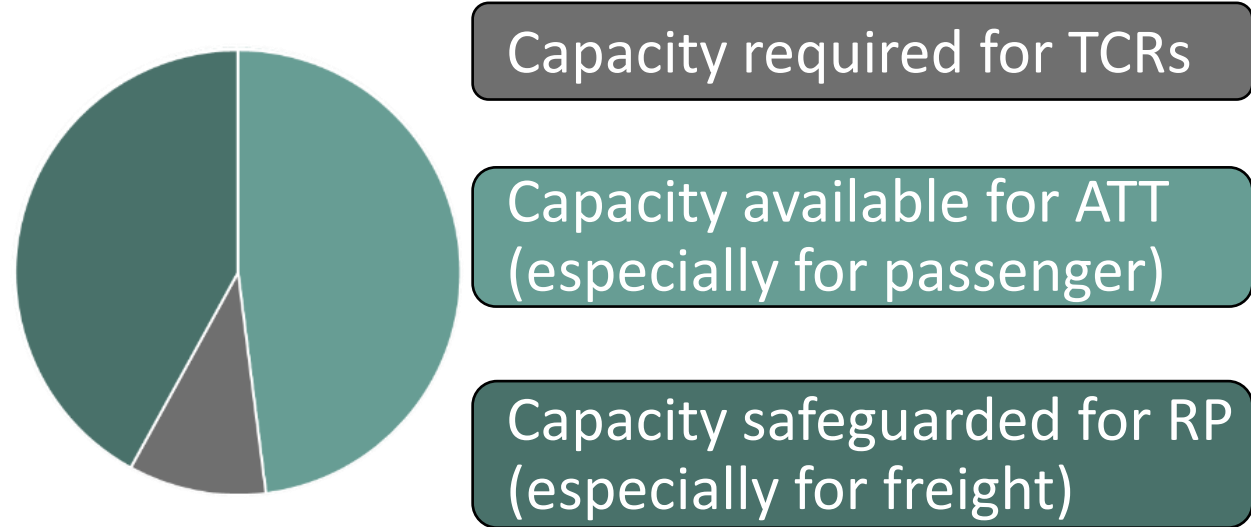
— Capacity Model and Partitioning: Sources



Capacity Model and Partitioning: Principles

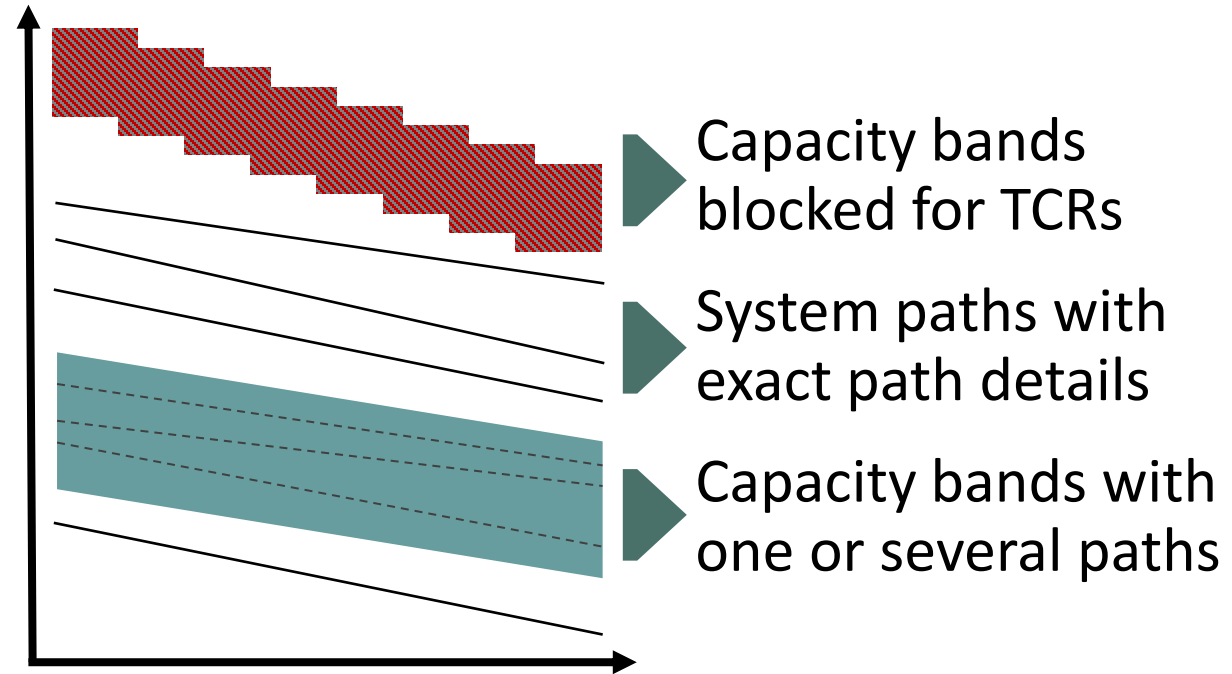
The Capacity Partitioning follows two principles:

1) Partitioning by market needs:



Note: If required, ATT can be planned for freight and RP for passenger traffic as well

2) Inclusion as path or band:



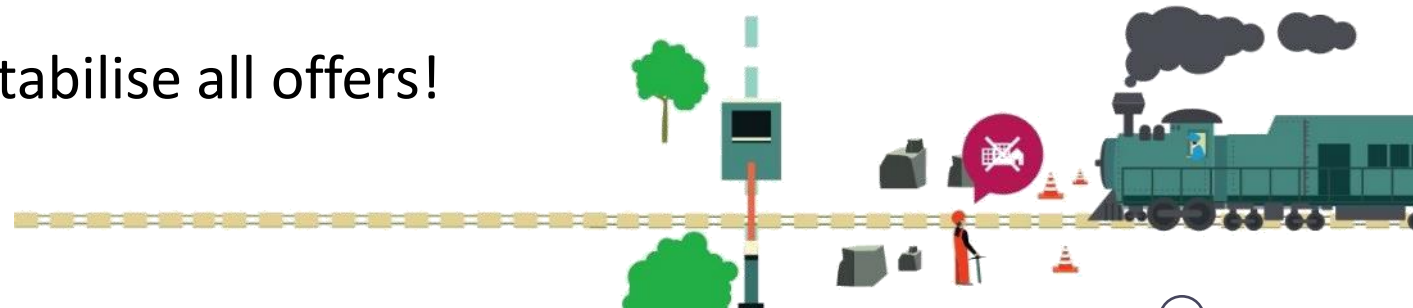
Temporary Capacity Restrictions (TCRs)

TCRs are defined in the latest recast Annex VII of Directive 2012/34/EU and in the TCR Guidelines [issued by RNE](#):

	Consecutive days	Impact on traffic*	Deadline for final publication
Major impact TCR	> 30	> 50%	X-18
High impact TCR	> 7	> 30%	X-13,5
Medium impact TCR	7 ≤	> 50%	X-12
Minor impact TCR	7 ≤	> 10%	X-4

*) Percentage of estimated traffic volume on a railway line per day cancelled, rerouted or replaced by other modes of transport

TCRs must become predictable to stabilise all offers!



— Current TCR Developments

Process

- [TCR Guidelines](#) were created, covering all provisions of Annex VII of Directive 2012/34/EU
- To further serve the needs of the market, and improve the process with a realistic approach, RNE has started the project 'TCRs in Timetabling Process'.
- Together with FTE, use cases and best practice examples have been created (shared with RU Dialogue)

IT

RNE has provided a first version of the TCR Tool, firstly deployed on RFC Rhine-Alpine in December 2019 for limited real-life usage (major/high/medium impact TCRs).

Further improvements are underway:

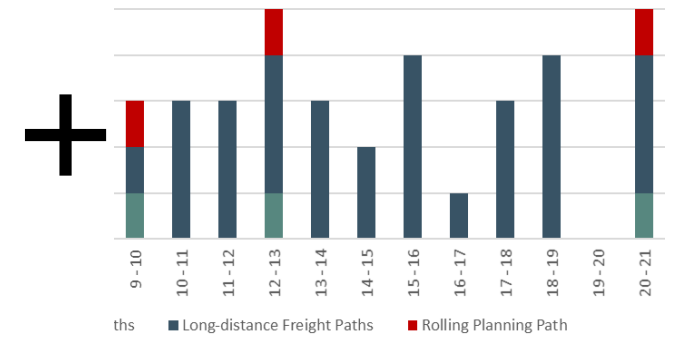
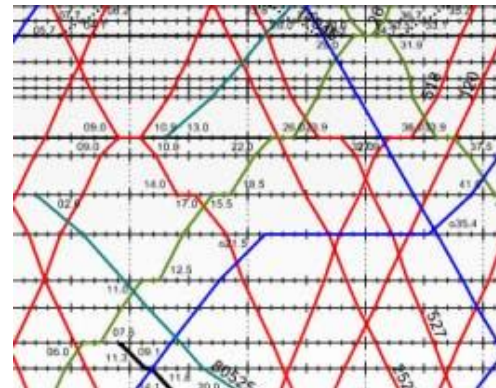
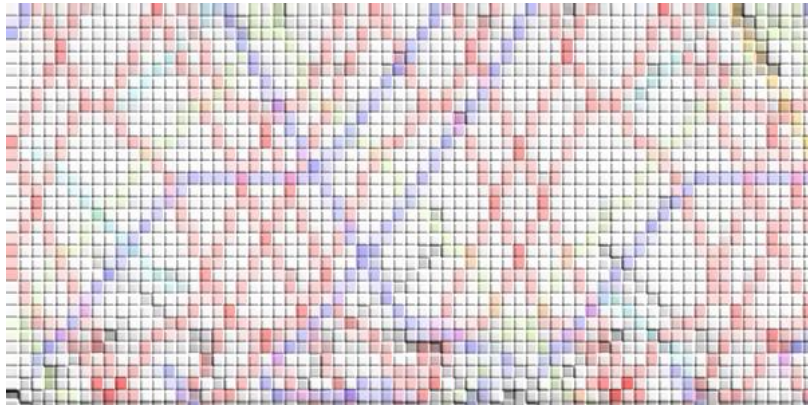
- Provision of interfaces
- Functional improvements and simplifications in the tool

Expected full rollout in December 2020

Note: Most TCR developments are steered via and conducted by the RNE TCR Working Group

— Provision of Capacity Supply

To ensure quick and efficient answers to path requests, it must be clear which capacity is available. Note: This is not to be confused with the Capacity Model!



Until X-18: Capacity Model:

- Representation of a model time period (e.g. working day, week)
- Allows pre-planning of capacity, including harmonisation, detection of pressure points/creation of alternatives and inclusion of all market needs.

Starting X-11: Capacity Supply:

- Actual available capacity expressed in capacity products (paths + bandwidths)
- Enables quick access to capacity and provides an overview of available capacity to the applicants.

— Request Method ‘Annual Request’

The ‘Annual Request’ option offers the possibility of an early request and early response.

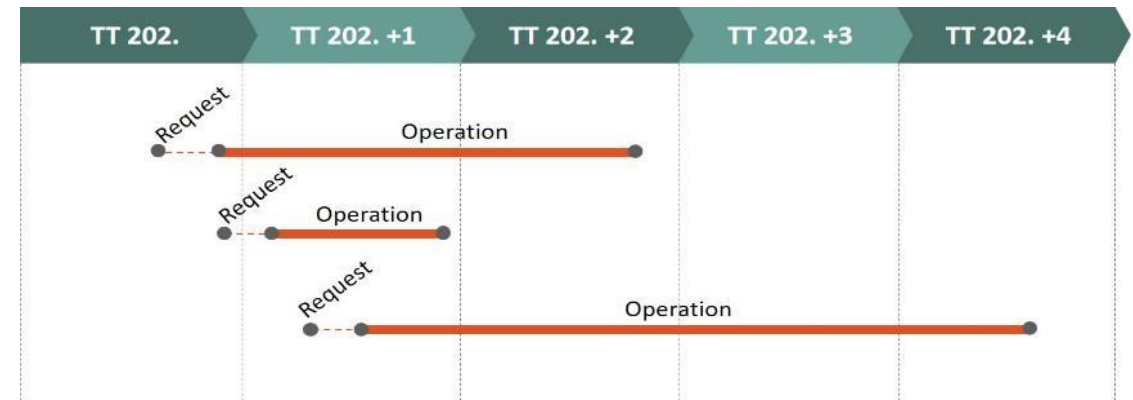
Benefit: Booking systems can be opened earlier (aim: 6 months prior to the timetable change).



Request Method 'Rolling Planning Request'

This method will draw from capacity already assigned in the capacity model and safeguarded for the specific purpose of short-notice requests.

Benefit: Quick response times provide the flexibility needed to react to fluctuating market needs as they occur.



— Goals of Rolling Planning Request

Reduce the number of annual ‘phantom’ requests

- Remove obligation to request based on best guesses
- Remove unnecessary (non-existing) conflicts

Provide alternative request method to the annual request

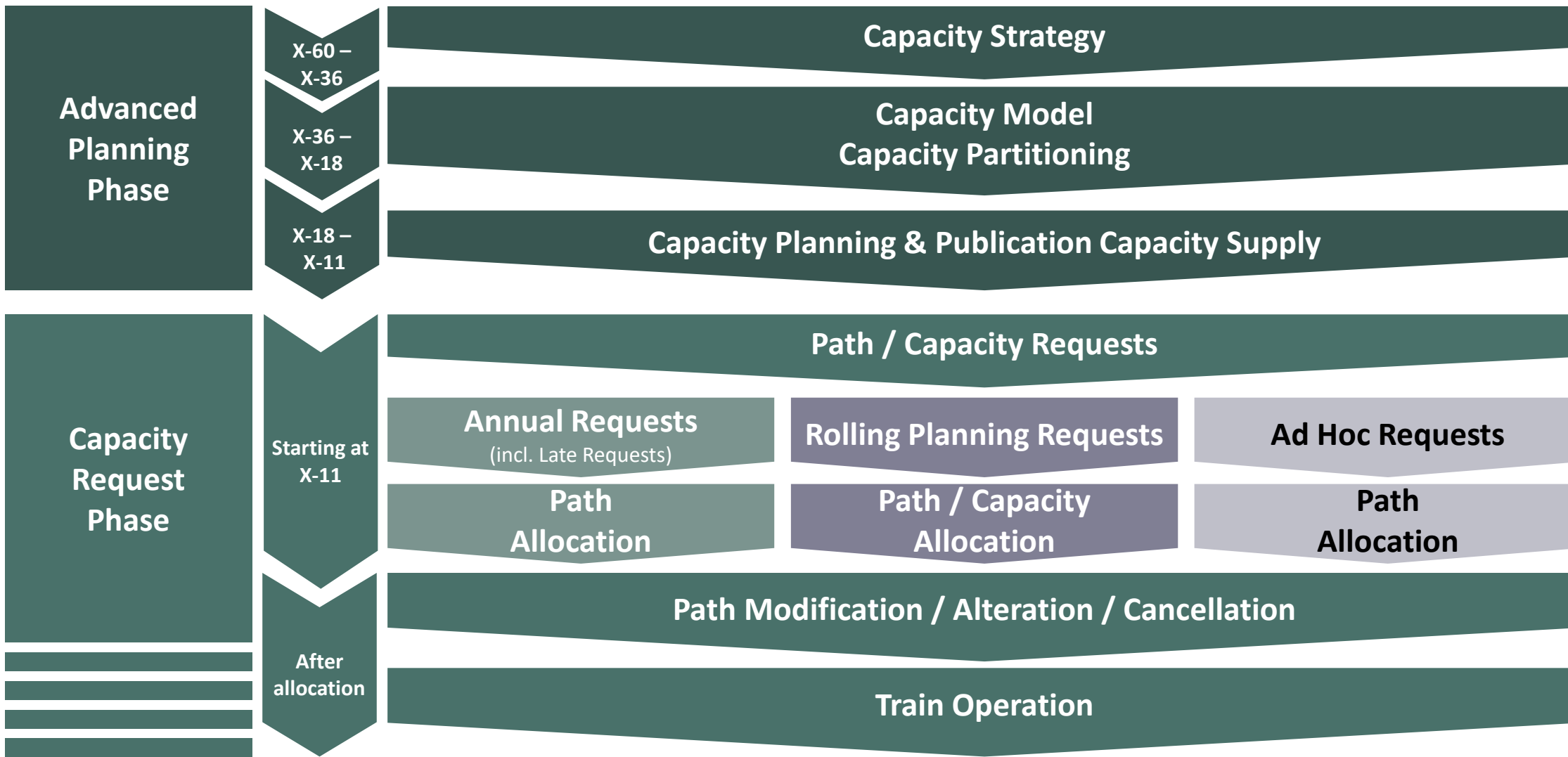
- Designed based on freight RUs’ needs but also available for passenger traffic
- Balance the need for stability (creation of capacity models, reduce request period) and flexibility (shift of the path request deadline, quick answers)
- Note: Rolling Planning is not intended as alternative to the ad hoc request

Ensure high quality capacity offers

- Based on dedicated (‘safeguarded’) capacity
- Answers in short period of time

Support applicants in their long-term planning and thus in their investments

TTR Process Timeline



— Differentiation of Path Request Types

		When?	Which capacity?
Annual Requests	Annual Request Placed on Time	X-11 – X-8.5	Pre-planned or non-pre-planned capacity
	Late Requests	X-8.5 – X-2	Residual capacity from annual requests (pre-planned and non-pre-planned capacity)
Short-Term Requests	Rolling Planning Request	M-4 – M-1	Pre-planned (safeguarded) capacity
	Ad Hoc Request	X-2 – X+12	Residual capacity from annual and rolling planning (<M-1) requests and dedicated safeguarded capacity
	Path Modification ¹ /Alteration ²	After allocation until X+12	Depending on original request: residual capacity OR alternative rolling planning capacity

1) Requested by applicant

2) Request by IM

— Positive Effects of All Components Implemented

Freight RUs

can request shortly before the train run knowing all path details and being assured to receive high-quality paths

Passenger RUs

can plan early and open their booking system 6 months prior to the timetable change

IMs

can stabilise their plans, reduce redundancies in the timetabling process, make better use of the available infrastructure capacity and provide **harmonised high-quality offers**

— Pre-conditions for the TTR Process

The TTR process requires some framework conditions to be adapted, improved or created. They must ensure that...

... all stakeholders implement the process in the same way

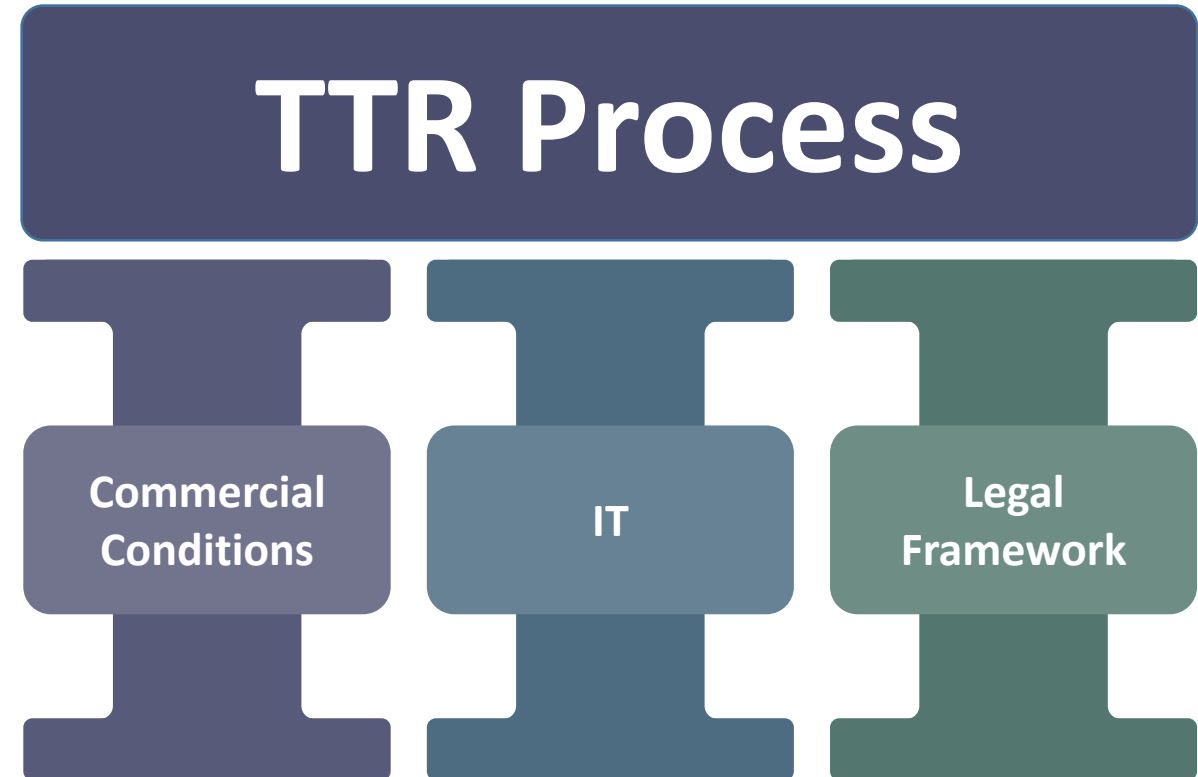
-> **Legal Framework**

... all stakeholders behave in accordance with the process components' intention

-> **Commercial Conditions**

... all stakeholders can access the process and receive information real-time and in high quality

-> **IT Landscape**



— Useful Links (TTR Process)

- Summarised TTR process description:
<http://ttr.rne.eu/process/>
- Further information and downloads on activities regarding TCRs:
<http://rne.eu/sales-timetabling/temporary-capacity-restrictions/>
- Full TTR process description:
<https://cms.rne.eu/ttr-documents/content/process-description>

— Contacts TTR Process

If you have further questions regarding the TTR process, please do not hesitate to contact the leader of the task force TTR Process, **Mr Daniel Haltner**, or the deputy leader, **Mr Philipp Koiser**.



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