

Scope of TTR for Timetables 2025-2028 Update 2026

(Version 2.0)



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Version history

VERSION	RESPONSIBLE	DATE	CHANGES
1.0	Josef Zitzler & National Project Implementation Managers	22.06.2022	None; as approved by RNE GA on 31 May 2022
1.1	RNE JO IMPL Team	04.09.2023	Not fully updated draft proposal for Subgroup/ImBo
1.2	RNE JO (IMPL/IT Team)	18.09.2023	Finalised proposal for Subgroup/ImBo
1.3	RNE JO IMPL Team	29.09.2023	Finalised proposal for ImBo incl. changes suggested by IMs
1.3.1	RNE JO IMPL Team	2.10.2023	Minor adjustments in finalized proposal for ImBo
1.4	RNE JO IMPL Team	3.10.2023	As agreed in Implementation Board (3.10.2023) + adjusted table, referring to Cap. Model HB v.3.0 for TT 2026 in Annex 9
2.0	RNE JO IMPL Team	11.12.2023	Document approved by RNE GA on 05 December 2023; inclusion of ADIF in ch. 4.2 (p. 14)

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1. TTR Components Implemented in Full Roll-Out (Summary)

The following chart and table display TTR core elements as covered in the TTR Process Description or the Fact Sheets, both approved by RNE GA in December 2021.

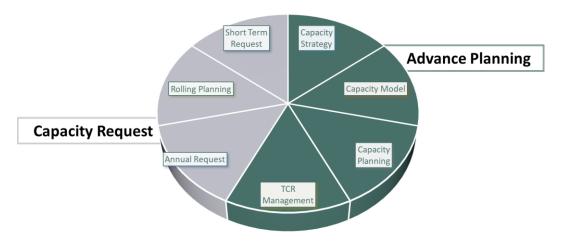


Figure 1: TTR components

Advance Planning	Capacity Request
Capacity Strategy Definition of » Geographical area » Expected capacity of infrastructure in TT20xx » Temporary Capacity Restrictions (TCRs) » Traffic planning principles and traffic flows	Annual Request » Partwise feasibility study » Full feasibility study request » Annual requests placed on time » Subsequent changes (Path Modification, Path Cancellation, Path Alteration, Path Optimisation) » Annual requests placed after the path request deadline
Capacity Model » Input for traffic part » Input for TCR part » Capacity Partitioning	Rolling Planning » Safeguarded capacity for Rolling Planning requests in Capacity Model » Capacity for Rolling Planning requests in Capacity Supply » Rolling Planning path request » Multi-annual Rolling Planning request » Subsequent changes (Path Modification, Path Cancellation, Path Alteration, Path Optimisation)



Capacity Planning

- » Commercial Share
- » TCRs
- » Capacity Planning
- » Updates after X-11

Short Term Request

To be applied for both, single and recurrent train runs

- » Safeguarded capacity for Ad hoc requests in Capacity Model
- » Ad hoc path request
- » Subsequent changes (Path Modification, Path Cancellation, Path Alteration, Path Optimisation)

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TCR Management

Continuous activity overarching the entire TTR process (X-60 to X+12):

- "To ensure that the applicants can provide reliable and competitive railway transportation services to the end customers, the negative effects of TCRs have to be reduced to a minimum. Therefore, the following goals must be achieved:
- Highest possible availability of infrastructure options to connect origins to destinations: Shortest possible timeframe for TCRs to reduce production costs
- Shortest possible transport time to account for customers' needs and reduce production cost"

Table 1: Summarized description of TTR components

2. Blocking Points for Full TTR Implementation in Timetable 2025 & 2026

- The current legal framework (European and national frameworks) in place is insufficient for full TTR implementation, but a comprehensive legal proposal addressing a standardized approach of European Capacity Management has been introduced recently (First publication 11th of July 2023), to overcome identified barriers, as exemplified below.
 - Some TTR elements are incompatible with or unclear in current existing EU and/or national legislation. (e.g. shortening of observation phase, multi-annual dimension of RP)
 - Apparently different national transposition of existing EU law (e.g. preplanning of capacity; applying priority rules in absence of declaration of congestion)
 - The currently used in daily business deadlines of timetabling need to be introduced in EU law and/or national law in a comprehensive way
 - TCR advance planning (secured financing as one precondition) needs to have a binding legal background based on Annex VII to Dir. (EU) 2012/34
 - Legal definition of escalation processes and parties concerned (ILE)
 - The proposal for a legal framework published on 11th of July 2023 addresses existing blocking points (including the ones pointed out above) and plans a full TTR implementation in Timetable 2030.
- » Consequently, investment timelines in IT developments on national and central sides must be adapted (no use of implementing IT systems without using them after deployment)
 - Any process, which is currently not defined or not fully harmonised, cannot be
 incorporated in developing IT landscape. Any IT development needs to be based on a
 defined and agreed process (via existing or future Handbooks), in order to generate
 added value for members.
 - Capacity Supply will not provide for added value if central IT and national interfaces cannot be used adequately: there is an unlikeliness that – based on mentioned



shortcomings – the tool will lead to added value for stakeholders without relevant legal framework in place.

- Consequently, this will also influence methodology of capacity requests.
- TAF/TAP Messages need to be adapted according to TTR requirements.
- National and central (IT) developments always need to be coordinated in matters of time and content and need to follow shared objectives (better provision of capacity by improved planning)

Allocating dedicated resources to TTR Programme is a crucial condition to move forward jointly.

3. By When Can the Full Roll-Out of TTR Be Expected?

TTR has been and will be implemented in a gradual manner. A draft legislative proposal backing the roll-out of TTR has been published for member states by the European Commission on 11th July 2023. While some of the blocking points mentioned in chapter 2 will still be evident for implementation in timetable 2026 (i.e. stability of investment timelines, particularly for IT developments; allocation of resources), some others should be considered as (legally) overcome given the provisions in the draft regulation, hence expected to be deployed in 2026.

Depending on the actual course of legislative negotiations, the European Commission anticipates the regulation's entry into force by **January 2026** with its provisions being fully implemented on European level in **timetable 2030** (i.e. by 8th December 2029). Given that the process of TTR covers a period of at least six years per timetable period (X-60 until X+12 [X+36 for Rolling Planning]), some of the elements described in the draft regulation are linked to a more differentiated – and earlier – implementation timeline, such as (indicative dates, depending on regulation's actual entry into force) ¹:

- Capacity allocation via digital tools and digital services, including full interoperability via standardized interfaces or common systems: 1st March 2026
- Exchange of information on traffic management and full digitalization of capacity and traffic management: 13th December 2026
- Provision of accurate and up-to-date information on the availability of infrastructure capacity throughout the entire capacity management process via digital tools and services: 1st
 January 2028
- Elements of Strategic Capacity Management:
 - Publication of First Elements of the Capacity Strategy at X-60 [not applicable for timetables 2030 and 2031, applicable for timetable 2032 onwards (**December** 2026)]
 - Publication of the Draft Capacity Strategy at X-38 (October 2026)
 - Publication of Final Capacity Strategy at X-36 [Timetables 2030 (December 2026) and 2031 (December 2027)]
 - Publication of Draft Capacity Model at X-21 (March 2028)
 - Publication of Final Capacity Model at X-18 (June 2028)
 - Publication of Final Capacity Supply Plan at X-11 (January 2029)
 - First and second publication of TCRs lasting more than 7 consecutive days and affecting at least 30% of traffic at X-24 (December 2027) and X-12 (December 2028) with coordination in between

¹ Timeline/proposal extracted from the first draft of the legal proposal, which might be subject to negotiations.



- Elements of Annual Capacity Requests by Applicants
 - Deadline for annual requests: X-8.5 (mid March 2029)
 - Deadline for draft capacity offer: X-6.5 (mid May 2029)
 - o Deadline for final capacity offer: X-5.5 (mid June 2029)
 - o Deadline for annual capacity allocation: X-5.25 (mid-end June 2029)
- Indicative outlook on legislative procedures on EU level:Negotiations in European Parliament via Committees, Transport Council via Land Transport Working Party
- Trilogue (European Parliament / European Commission / Council)
- Adoption of regulation
- Entry into force upon publication in the European Journal
- Application from January 2026 (immediate application in EU Member States without transposition)

These steps and respective developments will be closely tracked by RNE JO experts and National Project Implementation Managers, allowing a continuous and timely exchange of information, especially if further action on either side needs to be tackled. The communication and discussion of 'legal checkpoints' with other sector stakeholders is ensured via various TTR Groups, particularly including the TTR Legal Task Force and the Implementation Board.

Notwithstanding above-mentioned explanations, the originally planned roll-out in timetable 2028 by at least some first wave implementers remains untouched. This approach does not only allow for a certain time reserve regarding the final deadline stipulated in the draft regulation (e.g. testing and refining processes etc.), but also enables proactive Infrastructure Managers to efficiently continue their efforts already put into the implementation of TTR.

4. Minimum Scope Scenario Timetable 2025

4.1. Agreed Minimum Scope Scenario Timetable 2025 Underlying elements

	Proposed Minimum Scope for Timetable 2025		
Component	National Processes And DCM Usage	Central Processes And DCM Usage	
Commercial Conditions	1.1 Harmonization of lead times will be further tackled by CC Task Force – in force by Timetable 25 at least among first wave implementers	Centrally no IT solution is needed.	
Digital Capacity Management	2.1 National IT ecosystems will not fully match TAF/TAP TSI standard.	TAF/TAP TSI requires no additional development in central IT	



(DCM)	2.2 PCS Mandatory Interface done and ready for Timetable 25;	All three major tools of central DCM (TCR Tool, ECMT, Capacity Broker/PCS) will be provided for Timetable 25, including relevant Messages between IMs and TCR Tool & Capacity Broker/PCS, as well as between Applicants and Capacity Broker/PCS. Commercially available ("positive") and commercially unavailable ("negative") capacity will be shared with the ECMT. Messages and/or interfaces to/from ECMT will not be possible by Timetable 25, except between ECMT
		•
		Please also refer to explaining illustration below this table.

Table 2: Underlying elements of Timetable 2025 Minimum Scope – As agreed by GA May 2022

TTR Core elements

Component	Proposed Minimum Scope for Timetable 2025		
	National Processes And DCM Usage	Central Processes And DCM Usage	
3. Capacity Strategy	3.1 Agreement on which border lines to be tackled will be done bilaterally between IMs (not on full networks) and national lines within IMs with recommended criteria in the Capacity Strategy Handbook		
	3.2 At least first-wave implementers will implement this phase by the production and harmonisation of Capacity Strategies by end of June 2022 (Note: The resulting document has no legally binding character)	Collecting the links to the Capacity Strategies and publish them on a single page (e.g. RNE website)	



4. Capacity Model	 4.1 At least first-wave implementers will elaborate Capacity Models for Timetable 25, possibly covering limited geographical scope and exchange still taking place manually (via the common Excel template): » Displayed as network, line or section overview diagram (see example on the right) differentiating between traffic types (passenger/freight/other) » Representation of 24 hours on a representative standard non-TCR day with no variants » TCRs (major and high impact) can be visualized in the same format to allow comparison between the standard Capacity Models and TCR periods 	ECMT available to cover Minimum Scope by Timetable 25: Upload via Import forms of CMs possible in 2022, automatic import of TCRs from TCR Tool in 2023, interfacing communication CMs and CS in 2023. TCR (major and high impact) can be imported via an interface (TCR Tool) or manually (via GUI and Excel).
	4.2 Lines which shall be covered with Capacity Models shall be defined in the Capacity Strategy phase	
	4.3 Capacity Needs Announcements (CNAs) will not be commonly used, but will be available on voluntary basis tackled with central IT.	Detailed CNA process description available in Capacity Model Handbook. CNA function available in central IT by mid-2022.
	5.1 Option 1 will not be considered any more since required European legal framework is highly unlikely to be in force by mid-2023. ²	
5. Capacity Planning / Supply	5.2 Option 2: European legal framework allowing capacity dedication in Capacity Supply not available. Following items are applicable at least for first-wave implementers, covering the same limited geographical scope as the Capacity Models (point 4.1): » Provision of catalogues only in countries with supporting legal framework by January 2024 » In countries without legally binding catalogues, Capacity Models shall be updated instead	Capacity Model Handbook available, describing all mandatory and optional processes of the Capacity Model (including updating process after X-18). ECMT ready for limited use of capacity selection function (mid-2023).

² During discussion, option 1 was considered to be improbable, therefore it has been removed from initial scope.



	of provision of Capacity Supplies. The updates shall consider the volumes planned after X-18 (e.g. additional ad hoc volumes). In case the final Capacity Model (published at X-18) reflects to the business needs properly, then the creation of updated versions would not be mandatory. The Applicants can submit Feasibility Study requests from X-15. The consistency with neighbouring catalogues will be supported through Feasibility Studies and will be used before X-8 (i.e. before April 2024). Capacity products are provided as incentive and support to RUs to request capacity as pre-defined. TCRs (major, high) are visualized in a way that RUs can easily see which parts of the Capacity Supply are affected, or TCRs (major and high impact) can be visualized in the same format to allow comparison between the standard updated Capacity Models and TCR periods PaPs and Reserve Capacity available on RFCs according to Regulation 913/2010	
6. Annual Requests	6.1 Option 1 will not be considered any more since required European legal framework is highly unlikely to be in force by mid-2023.3	

³ During discussion, option 1 was considered to be improbable, therefore it has been removed from initial scope.



T	1
6.2 Option 2 (without European legal framework available) Following items are applicable at least for first-wave implementers, possibly covering limited geographical scope and/or using Feasibility Studies: Capacity products are available as support for applicants to request capacity to reduce conflict potential with Major/High/Medium impact TCRs known by the applicant at the time of booking	feasibility studies according to 6.2. ECMT can display comparison between available capacity and
6.3 Annual requests can be placed by the second Monday of April of 2024 – late requests can be placed between April and October 2024 (unchanged to today's annual and late process). Requests can be placed and answered in PCS via automated interfaces.	
6.4 Draft offer provided by all IMs at the same moment (beginning of July 2024)	Annual request can be done in PCS (Note: Potentially, the Capacity Broker might be already available by that time)
6.5 At least within first-wave implementers: Draft offers are in principle stable (including rerouting options due to TCRs as far as possible), i.e. not just a preview with elaboration still going on, but as representation of the actual offer with the possibility for applicants to provide feedback/comments	done in PCS (Note: Potentially, the Capacity Broker might be already available by
6.6 Major/High impact TCRs are considered ⁴ in the draft and final offer in accordance with Annex VII (Directive 2012/34/EU), also the concept of time windows could be applied.	

⁴ Considered means: An RU knows that the allocated path it gets in AT is on certain days in conflict with TCRs, OR on these days it does not get a path OR on these days it gets an alternative path OR it requests already an alternative path.



	7.1 Ad hoc requests, path modification, and alteration processes including required national IT and interfaces to central IT (PCS/Capacity Broker) fully implemented in a harmonised way by the beginning of October 2024 with IT available and in full use. ⁵	Connecting HBs (ad hoc, path modification, path alteration) will be available containing all relevant
7. Short Term Requests	7.2 Shorter (but harmonised) answering times for ad hoc requests (for single train runs) with utilization of central IT implemented; Preconstructed paths on border sections will reduce the answering time	containing all relevant updates Ad hoc request can be done in PCS
and Rolling Planning	7.3 Most TCRs known at the time of (single) Short Term Request are considered in the offers (Note: Depending on the lead time between allocation and operation days, late TCRs might still happen, which must be tackled by the alteration process)	
	7.4 Rolling Planning will not yet be available in Timetable 25; based on experienced already gained, the concept of RP will be jointly updated and refined, first activities beginning after RNE GA approval on Timetable 25 Minimum Scope.	
Tabl	e 3: TTR Core elements for Timetable 2025 –	As agreed by CA May 2022

Table 3: TTR Core elements for Timetable 2025 – As agreed by GA May 2022

NOTE: The scope indicated in Table 3 has been approved by RNE's General Assembly (GA) in May 2022. Further clarifications and adjustments emerged during actual implementation. Information on this can be found in chapter 4.2. To clarify, capacity broker means the PCS Capacity Broker, as the new updated version of PCS.

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 $^{^{\}rm 5}$ Also depending on the progress of MVP Short Term Ad Hoc Request.



DCM –System Architecture (API Data Flow) for TT25

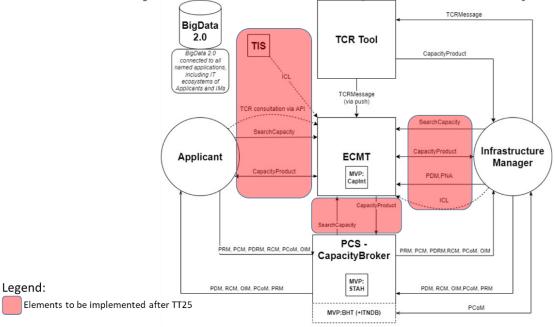


Figure 2: DCM System Architecture in Timetable 2025 – As agreed by GA May 2022

The DCM System Architecture has been updated in the meanwhile, the current roadmap, also related to timetable 2026 can be found in chapter 6.4.

Glossary of abbreviations:

Glossary	
CapacityProduct	Message for exchange of Capacity Need Announcements (CNAs), Capacity Models (CMs) and published TCRs
ECMT	European Capacity Management Tool
ICL	Intended Capacity Line
ITNDB	International Train Number Database
MVP3	Short Term Ad-Hoc
MVP6	Capacity Intelligence
MVP8	Border Harmonization Tool
OIM	ObjectInfoMessage:This message serves to request an information about the object, to update an information in an object, and to inform about the content of the object
PCM	PathConfirmedMessage:This message is used by the RU to confirm the proposed path of the IM (PathDetailsMessage) in response to an RUs Original Request
PCoM	PathCoordinationMessage:This message is used for exchange of information between RUs and between IMs for coordination and data synchronization purposes
PCS-CapacityBroker	The next major version of PCS
PDM	PathDetailsMessage:This message is used by the IM to the RU confirmaing details of the path in response to an RU request
PDRM	PathDetailsRefusedMessage:This message is used by the RU to inform the IM that the PathDetails (with changed values to the request or to earlier booked path) are not acceptable
PNA	PathNotAvailableMessage: Path Not Available message according to Short Term Path Request specification (WG5)
PRM	PathRequestMessage:This message serves to request a train path. The message is sent from the RU to each IM involved.
RCM	ReceiptConfirmationMessage:This message is sent from the recipient of a message to the original sender of the message when the required response cannot be made available within 5 minutes as defined by the TAF TSI chapter 4.4.
SearchCapacity	Message used to search Capacity Models and TCRs
TCR Tool	Temporary Capacity Restricitons Tool
TCRMessage	Message to request the import of a TCR into the TCR Tool. The Message must define the import mode and the TCR which shall be imported
TIS	Train Information System
	Dataflow which is planned/active
	Dataflow which do not have definite state to be deployed

Table 4: Glossary of DCM abbreviations



4.2. Status Quo of Implementation for Timetable 2025

Based on the GA approval of the agreed minimum scope for Timetable 2025, as indicated in table 3 and table 4 which remain unchanged to enable tracking of necessary adjustments from the initial ambitions, the actual implementation of TTR elements had been launched as followed:

Actual implementation of Underlying elements

Commercial Conditions

Legal and technical national characteristics limit the planned harmonisation of the timelines for RU path cancellations. Therefore, some of these constrictions might cause changes to the initially agreed scope. More information on this will be provided in upcoming updates of the document. Further discussions on these topics will be tackled in the Commercial Conditions Task Force in late 2023 and 2024, additionally it is also planned to include implications of the legal proposal in these discussions.

Digital Capacity Management

TTR IT consists of three main components, the TCR Tool (Temporary Capacity Restrictions), the European Capacity Management Tool (ECMT), and the PCS Capacity Broker (Path Coordination System). Through the course of 2023, the first two tools have already been in active use for the publication of TCR-s and Capacity Models, respectively. The development of these tools continues to enable an increased scope for the upcoming timetable years, such as coordination and harmonization processes, an import from TIS to ECMT to use historical data to be the basis for the initial population of ECMT, amongst others. Other improvements are targeted at the ease of use, and further enhancing technical compliance to European standards. Furthermore, RNE is laying a solid foundation for the next major iteration of PCS, the Capacity Broker version, by an increased involvement of the whole sector throughout the entire development process. The PCS Capacity Broker is planned to be in operation by the end of 2024.

Actual Implementation of TTR Core elements Capacity Strategy

For Timetable 2025 nine Capacity Strategies on a national level have been published as well as the MVP Common Capacity Strategy and a joint Scandinavian Capacity Strategy:

- » Germany (DB Netz AG)
- » Croatia (HZ-I)
- » Belgium (Infrabel)
- » Netherlands (ProRail)
- » Slovenia (SŽ-I)
- » Italy (RFI)
- » Spain (ADIF)
- » Hungary (GYSEF, MÁV, VPE)
- » Switzerland (SBB I, BLS Netz AG)
- » Scandinavian Joint Document (BDK, Trafikverket, BaneNOR)

The Common document has been prepared by: Infrabel, ProRail, ACF, DB Netz AG, SBB Infrastruktur AG, BLS Netz AG, ÖBB Infrastruktur AG and RFI S.p.A In total the Capacity Strategies published cover IMs in 14 European Countries and (parts) of their network for Timetable 2025.

Alongside the publication of Capacity Strategies, evaluation workshops involving sector stakeholders (including FTE, applicants, RUs, IMs, ...) took place to gather feedback and



additional input to provide further means to improve the documents for the upcoming timetable years.

Capacity Model

The Capacity Model phase was kickstarted by a cross sector pilot on market involvement for Capacity Needs Announcements (CNAs) which identified certain areas for improvement and existing blocking points within the newly developed IT systems. Some of those were already resolved alongside the pilot activities while others illustrated needs for process refinements.

ECMT has been used for the first time and after a stabilization period the actual implementation period of Capacity Models TT 2025 was started.

Subsequently, some of IMs published Capacity Models with a limited geographical scope for a standard non TCR day.

For Timetable 2025 the following IMs published their first Capacity Models:

- » Austria (ÖBB Infrastruktur)⁶
- » Germany (DB Netz AG)
- » Belgium (Infrabel)
- » Netherlands (ProRail)
- » Italy (RFI)
- » Hungary (MÁV)
- » Switzerland (SBB I, BLS Netz AG)
- » France (SNCF-R)
- » Denmark (Banedanmark)
- » Finland (Finnish Transport Agency)⁷
- » Spain (ADIF)

Capacity Planning/Supply

As agreed previously, only activities of a limited extent or scope are undertaken in this timetable year. Details on actual implementation of these aspects can only be provided at a later stage. (E.g. updated Capacity Models, individual IM activities such as pilot projects, etc.) As the Capacity Supply is out of scope for TT 2025, the extent of pilot activities is depending on individual IM projects and plans.

Actual implementation of requesting elements

Regarding the different request methods being part of TTR, due to the involved timelines, these phases did not start yet, therefore information on actual implementation can be only provided after the timetable year terminated.

⁶ Due to technical issues with ECMT, the Austrian IM prepared a Capacity Model outside ECMT and published it as PDF document.

⁷ Currently, no official TTR project has been started by the Finnish IM, therefore the Capacity Model is only published in draft status.



5. Communication Principles of Timetable 2025 & 2026 Minimum Scope

5.1. Benefits to be Achieved for Infrastructure Managers and Applicants on Core TTR Elements

Capacity Strategy

The Capacity Strategies for Timetable 2025 (due on 30 June 2022) and Timetable 2026 (due on 31 December 2022) gave a comprehensive overview of expected capacity of infrastructure, TCRs known, and traffic flows expected by European Infrastructure Managers. By further harmonizing national Capacity Strategies at the borders, it will firstly give an indication of infrastructure development accessible for all stakeholders while secondly being an important first step towards process coordination and harmonization particularly essential for subsequent process steps of implementing TTR.

Major pioneering works in this context such as the MVP Capacity Strategy (DB Netz, ACF/CFL, Infrabel, ÖBB Infrastruktur, ProRail, RFI, SBB & BLS) as well as the Scandinavian Pilot for Capacity Strategy 2025 (BaneDanmark, BaneNOR, Trafikverket) are already well known within the sector and provide for promising results in terms of cross-border coordination of infrastructure development. The additional preparation of a common Capacity Strategy was continued by DB Netz, Infrabel, ÖBB Infrastruktur, ProRail, ACF/CFL, SNCF-R, RFI, SBB & BLS for Timetable 2026. For timetable 2027 it was agreed to prepare another common Capacity Strategy and an additional IM (SŽ-Infrastruktura) joined the process. While most IMs prepare the common Capacity Strategy in addition to their national document, some of the involved IMs (DB Netz & ProRail) decided to pilot a new approach for this timetable year. They are only participating in the preparation of a Common Capacity Strategy for timetable 2027 without preparing a national document. For Timetable 2027 also BaneDanmark, BaneNOR and Trafikverket are planning to publish a common Nordic Capacity Strategy.

Capacity Model

For Timetable 2025, Capacity Models were provided by most first-wave implementers in a reduced geographical scope (not always coherent with lines selected for the Capacity Strategy, but roughly based within the scope of Capacity Strategies) for a non TCR standard day. As the relevant central IT Tool was in place and used by IMs for the first time, certain limitations have been identified alongside and have been addressed. Generally, t is possible to stakeholders to display expected traffic volumes on a certain network, line or section via ECMT. Although, the present Capacity Models did not include TCR variants as agreed, in theory based on the interface between TCR Tool and ECMT also TCRs of major and high impact could be included in future models in some form. Moreover, within pilot activities also CNAs have been submitted, to provide additional input on a voluntary basis tackled by central IT. For Timetable 2026 it is planned to test or to use the present learning of Timetable 2025 to further improve the involved processes overall and to stepwise increase the scope within the preparation of Capacity Models for Timetable 2026.

Capacity Supply

Since there will be no legal framework in place allowing for capacity dedication, Capacity Planning and Supply as such will not be covered in Timetable 2025 and 2026. However, in order to enable stakeholders to view and request first Capacity Products, at least some first-wave implementers are expected to update their Capacity Models (in geographical coherence with Capacity Strategy and Capacity Model) by adding volumes planned after X-18 including the visualization of major and high impact TCRs. ECMT is ready for limited use for pilot activities on the Capacity Supply.

In this context, it is important to underline that the ongoing Pilot between Amsterdam and Brussels has been and continuously is gathering practical experiences regarding the usage of Capacity Supplies.



Annual Requests

Annual Requests on Time and Late Path Requests for the Annual Timetable can be carried out unchanged to today's existing process via PCS; in Envelope Concept (EC) version for TT 2025 while the Capacity Broker (CB) version is planned to be in production in Q4 2024 in time for TT 2026 requests. Draft Offers for Annual Requests for TT 2025 can be done in PCS EC and will be provided widely stable by all IMs at the same deadline (beginning of July 2024). At least some first-wave implementers are likely to provide Capacity Products as support and first indication for Applicants coherent in geographical scope and possibly using Feasibility Studies. Major and high impact TCRs are taken into account in the Draft and Final Offers according to Annex VII, while also the concept of TCR windows may be applied.

Ad Hoc Requests

Currently, Ad Hoc requests are mainly done in national systems even though available in PCS EC, too. The introduction of the PCS Capacity Broker will improve the usability. Therefore, as soon as a new version of PCS will be deployed, Ad Hoc requests will be supported. Partially from TTP 2025 and for the entire timetable 2026 an increased coverage of the international Ad Hoc process centrally is expected through the central IT tool.

Short Term Ad Hoc Requests

PCS Capacity Broker is expected to enable Applicants to request (single and recurring) short term ad hoc paths by the end of calendar year 2024 including processes for path modification and alteration as well as national interfaces to central IT implemented. In this context, also answering times for single ad-hoc requests will be harmonized via usage of central IT, while TCRs known at time of request will also be considered in the Offers (Note: Depending on the lead time between allocation and operation days, late TCRs might still happen, which must be tackled by the alteration process).

Pioneering MVP Short Term Ad Hoc (DB Netz, SBB; scope expected to be extended) is already tackling the central and national developments required for enabling this kind of request and will be available by mid of 2024.

Rolling Planning

Since legal framework allowing for safeguarding capacity and multiannual requests will not be in place for Timetable 2025 and 2026, this element will not be comprehensively rolled out for these Timetables. However, based on experience already gained in this context (e.g. coming from the Pilot Amsterdam-Brussels), first discussions on this concept have already started and will continue and are supposed to be intensified in 2024. (Based on current information a first introduction of Rolling Planning amongst some first wave implementers seems likely only once the legal basis for this is set. It remains unclear when it will be implemented, right now Timetable 2028 or even 2029 could be possible.)

Nevertheless, IMs are encouraged to pilot activities in this regard considering actual possibilities responding to market needs and flexibility requirements.



5.2. Benefits of stepwise implementation

- » No big bang implementation learning curve by stepwise introduction until legal obligations for TTR implementation are binding.
- » First cross-border harmonization providing better planning parameters for requests
- » Resulting in better availability of capacity already
- » Offering better and harmonised capacity products
- » Using infrastructure more efficiently
- » Increased harmonization level for capacity offers
- » Increased transparency of correlation between capacity relevant elements (e.g. TCRs and path offers)
- » Reduced workload for international coordination with reduced manual process steps

5.3. What First-Wave Implementers⁸ (Without Excluding Other IMs In General) Already Can Do On Top of the Minimum Scope:

- 1. To continue ongoing activities e.g. in Austria, Belgium, Denmark, France, Germany, Italy, Luxemburg, Netherlands, Norway, Sweden or Switzerland.
- 2. To continue with MVPs (based on dedicated project plans, Milestones and KPIs), particularly those related to IT landscape: Short Term Ad Hoc Request, Capacity Intelligence and Border Harmonization.
- 3. To continue with ongoing TTR Pilots (such as Amsterdam-Paris) and contribute to new ones (such as CNA Pilot, later Rolling Planning).
- 4. To continue being part of working structures dedicated to further enforce international use of processes (e.g. Capacity Strategy, TCR Tool Usage, Commercial Conditions).

6. Development of Milestones and Scopes for Timetables Beyond 2025 & 2026

6.1. Legal Matters

As mentioned previously, a first proposal for a legal framework has been published in July 2023.

In general, it is very difficult to estimate the exact timeline for the adoption of new EU legislation covering TTR core elements. Not to forget that non-EU Member States also have to adapt their legislation first, which can take up to an additional 4 years. However, for comprehensive overview it is strongly advised to consult the TTR Legal Task Force, whose mandate is to monitor the legal developments impacting on TTR, for an update on the state of play of those initiatives in light of TTR full roll-out amongst (some) first wave implementers up to Timetable 2028 at the earliest, prior the planned introduction of TTR across Europe in Timetable 2030.

More information can be found in Chapter 3.

⁸ As of February 2022 in alphabetical order: ACF/CFL, Banedanmark, Bane NOR, DB Netz, Infrabel, ÖBB Infrastruktur, ProRail, RFI, SBB Infra/BLS Netz/TVS, SNCF Reseau, SŽCZ, Trafikverket



6.2. Methodology of Scoping

Indicative Milestones listed in chapter 7 tare representing the latest point in time to have certain components implemented to be operational in a certain Timetable.

In addition to the checkpoint of legal framework, there will be "planning checkpoints", when it will be decided which central and national TTR elements will be implemented for a certain Timetable. Once there is a decision on which elements to implement in a certain Timetable, the respective project plan will be filled in with detailed substance including deadlines.

Table 5 below shows indicative Milestones for project implementation in order to achieve full roll-out in Timetable 2028. They will turn into deadlines once there is the decision to definitely implement certain TTR elements in a certain Timetable. The colour coding indicates the status of each Milestone:

- » Green: Milestone has been met already (at least by some IMs and/or to a limited scope)
- » Orange: Milestone needs to be discussed (also reflecting the "living" nature of the table)
- » Red: Milestone is not feasible to be met and needs to be re-scheduled
- » White: Milestone is required at a certain time in order to meet the scoping agreements or an update needs to be carried out.
- » Blue: Milestone indicates an optional Process or IT update

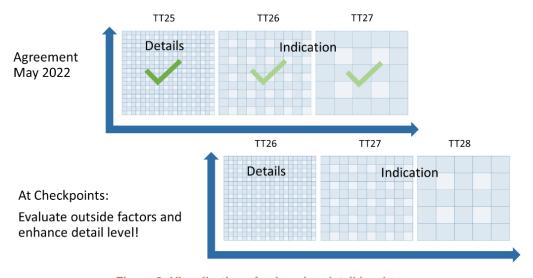


Figure 3: Visualization of enhancing detail level

6.3. Scoping the Timetables Beyond 2026

Basis for project plans is the agreed Minimum Scope of Timetable 2026 including its timeline and deadlines. For development of project plans beyond, there are four streams:

- » Geographical enlargement of implementation
 - Number of implementing IMs
 - Within implementing IMs, scopes are increasing as well (e.g. network/line coverage in TTR)
- » Increasing complexity and content of involved TTR deliverables (e.g. potential introduction of TCR variants in Capacity Models, etc.)
- » Incremental implementation of additional TTR components driven by DCM and further implementation of DCM components
- » Coherence with stipulations of the draft regulation as overarching objective



The development of project plans for Timetables beyond 2026 is generally based on agreed timelines including the delivery of certain milestones, but is dynamic/living to some extent considering information available at respective time horizons. This circumstance is reflected in the proposed methodology.

Sufficient lead times for national implementation of Processes and IT systems will be scheduled accordingly.

6.4. Central IT Developments

The intended timeline for implementing central IT elements is ambitious, though not unrealistic. RNE strives for providing relevant Tools including interfaces on central side as well as technical specifications necessary for building national counterparts and interfaces during 2023-2024, enabling increasing usage for Timetables 2026, 2027 and – if the case – 2028. TAF/TAP TSI Messages (including new Message types) were defined and published in the JSG schema. Messages will be incorporated into the central tools (ECMT, TCR Tool) by end of Q1/2024. To support system-to-system data exchange related to the CMO creation, the CapacityModel message shall be implemented on the central side. Searching for capacity becomes important for all stakeholders, therefore, messages for searching capacities will be implemented first. For the TCR Tool, it is planned to be integrated by the end of 2023, while for the ECMT it will be done by end of Q1/2024. CapacityModel message shall be implemented after implementation of the search messages.

After IMs create capacity model objects (CMOs), they need to be harmonized on the borders. A harmonization functionality should be implemented by the end of 2023.

, it needs to be emphasized that vagueness is increasing with Timetables lying in farther future – also from a developing point of view – which is why an overall iterative approach should be chosen also in this context

The initial data of the Capacity Model for TT2026 will be populated from the history data of the TIS (Train Information System). This will be done via export/import functionality (no interface implementation). This data import is related just to CMO objects, and will be done for those IMs who will ask for this support.



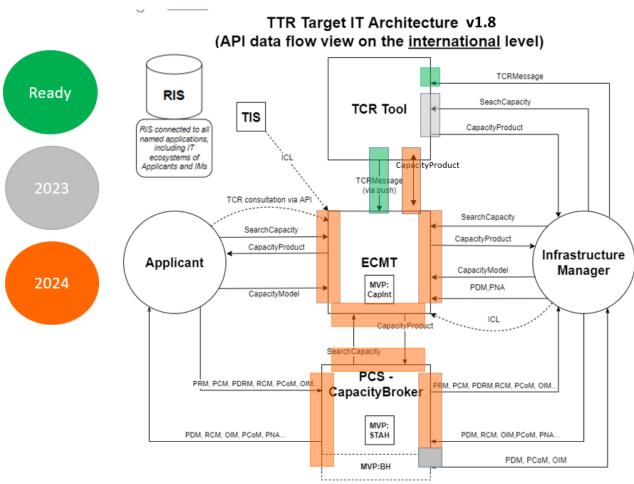


Figure 4: Updated DCM System Architecture for Timetables 2026 and beyond



7. Minimum Scope of Timetable 2026

Scope of Timetable 2025 plus:

- » Extended geographical scope (more members implementing TTR elements, larger scope within)
- » Increasing complexity and content of involved TTR deliverables (e.g. potential introduction of TCR variants in Capacity Models, etc.)
- » Incremental implementation of additional TTR components driven by DCM and further implementation of DCM components
- » Extended DCM functionalities (all central interfaces to ECMT, TCR Tool and PCS/CB is planned to be available)
- » Coherence with stipulations of the draft regulation as overarching objective
- » IMs are encouraged and invited to go beyond this scope.

	Proposed Minimum Scope for Timetable 2026		
Component	National processes and DCM usage	Central processes and DCM usage	
Commercial Conditions	» Same planned scope as Timetable 2025, considering some adjustments in actual implementation likely (as identified in actual implementation Timetable 2025)		
Digital Capacity Management (DCM)	 A new TCR & ECMT fusion tool is planned to be in operation RIS (Railway Informational System) (including a new common interface)⁹ All relevant TAF/TAP TSI messages to be implemented on central side Potential update of Capacity messages might be required (depending on the exact process definition) Synchronization of the central tools with RIS 		

Table 5: Underlying elements of Timetable 2026

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⁹ "Big Data 2.0": Central database of infrastructure parameters connected to ECMT (providing for one-way data flow DRIIS -> ECMT) allowing mesoscopic display and processing. This will enable ECMT to show and handle data in better granularity.



	Proposed Minimum Scope for Timetable 2026						
Component	National Processes and DCM usage	Central Processes and DCM usage					
3. Capacity Strategy	Minimum Scope as agreed Scope for Timetable 2025 plus Capacity Strategies were published by the end of 2022. Overall, more lines were tackled compared to Timetable 2025 and some additional TTR members provided capacity strategies for TT 2026. Increased level of detail compared to first round of Capacity Strategies and better alignment with the agreed structure.	Evaluation and Feedback on published Capacity Strategies has been provided by RNE and FTE after publication in early 2023.					
4. Capacity Model	Minimum Scope as agreed Scope for Timetable 2025 plus More lines to be tackled compared to Timetable 2025 (depending on workload involved – IT functionality under ongoing improvement and additional development); more TTR members provide capacity models via ECMT. Increased use of IT with interfaces between national and central tools; Further processing of data from Timetable 2025 Market Input should be considered to a higher extent than in model creation for Timetable 2025 Further pilot activities of the CNA Process are planned to be continued in fall 2023, focussing on "new and/or changing needs".	Provision of interface national IM to ECMT (CapacityModelMessage, CapacityProductSearchMessage, CapacityProductMessage, Intended Capacity Usage Line) – likely to be started in 2024. Cross Border Harmonization functionality planned to be introduced in late 2023. Optional functionality for initial population of Capacity Models by using historic data from TIS is planned to be introduced.					



	Cross Border Harmonization of Capacity Models presents a priority for Timetable 2026 (first round of Capacity Models in TT 2025 were not harmonized); IMs are likely to attempt/trial different approaches to harmonize their Models Inclusion of TCRs should be tackled in preparation of Capacity Models in Timetable 2026 as far as possible by making use of the interface between					
	TCR Tool and ECMT.					
5. Capacity Planning / Supply	Minimum Scope as agreed Scope for Timetable 2025 plus	Continuous improvement based on pilot activities and via approved change requests is likely.				
	Updated Capacity Models	approved and general actions.				
6. Annual Requests	Minimum Scope as agreed Scope for Timetable 2025 plus					
	Increased use of Feasibility Studies Faster communication of annual request processes, including late PR via PCS	Introduction of PCS Capacity Broker use is planned for timetable 2026.				
	Further harmonization of international deadlines (not yet with shifted path request deadline)					
	Aim to stepwise align with deadlines included in legal proposal					
7. Short Term Requests and	Minimum Scope as agreed Scope for Timetable 2025 plus	MVP Short Term Ad hoc is expected to be fully operational and likely to be integrated in the Capacity Broker by Timetable 2026				
Rolling Planning	 » More ad hoc via IT » Faster communication of path modification/alteration/optimisation/cancellation 	Concept of Rolling Planning is not expected to be applicable for this Timetable period.				

Table 6: TTR Core elements in Timetable 2026



8. Indicative Main Milestones for Timetables 2025-2028

- External communication on the Handbook Formalisation and IT Requirement and Rollout Phase milestones takes place on a regular basis via the TTR Sounding Board.
- The milestones indicated in the development phase provide guidance for internal monitoring.



to be discussed/partially met to be re-scheduled optional updates/outlook required Milestone

			FORMALISATION PHASE (HANDBOOK - approvals and updates -				DEVELOPMENT PHASE (IT AND PROCESS DEPLOYMENT							
COMPONENT	SUB-PROJECT	· v			and updates - DEVELOP IVIE				-	ROLLOUT PHASE (PUBLICATIONS/ REALISATION)				
		LEVEL	TT 2025	TT 2026	TT 2027	TT 2028	TT 2025	TT 2026	TT 2027	TT 2028	TT 2025	TT 2026	TT 2027	TT 2028
		Central (C)	07.12.2021	-	31.05.2023	31.05.2024		N	.A			N.A		
Capacity Strategy	Business Process	National (2) (1)		N.A ->			12.07.2021	30.06.2022	30.06.2023	30.06.2024	30.06.2022	31.12.2022	31.12.2023	31.12.2024
Capacity Model	Business Process	Central (G)	07.12.2021	31.05.2022	31.12.2022	31.05.2024		N	.A			N	.A	
		National (5) (3)		N.A ->			30.06.2022	31.12.2022	31.12.2023	31.12.2024	30.06.2023	30.06.2024	30.06.2025	30.06.2026
	IT	Central (N)		N.A ->			31.05.2022	30.11.2022	02.07.2023	30.11.2024		N	.А	
		National (7)		N.A ->			30.06.2022	31.05.2023	31.12.2023	31.05.2024		N	.А	
	Business Breess	Central (I)	31.12.2022	-	31.12.2024	31.12.2025		N	.А			N	.А	
TCR Coordination and	Business Process	National (6) (4)		N.A ->			-	31.12.2023	31.12.2024	31.12.2025	-			
Allocation	IT	Central (H)		N.A ->			-	30.11.2022	03.07.2025	03.07.2026		N	.А	
	111	National (20)		N.A ->			31.05.2022	31.03.2024	31.03.2025	31.03.2026		N	.A	
	Business Process	Central (K)	-	-	31.05.2024	31.05.2025		N	.А			N	.А	
Canadia Diamina/Condu	Business Process	National (10) (8)		N.A ->			-	-	30.06.2025	30.06.2026	-	-	10.01.2026	10.01.2027
Capacity Planning/Supply	IT	Central (V.1)		N.A ->			-	-	30.06.2025	30.06.2026		N	.A	
	11	National (11)		N.A ->			-	-	30.06.2025	30.06.2026		N		
DIC.		Central (T)		N.A ->			-	-	-	-		N	.A	
RIS	IT	National (9)		N.A ->			-	-	30.06.2024	30.06.2025		N	.A	
	D	Central (L)	-	31.05.2023	31.05.2024	31.05.2025		N	.А			N	.A	
	Business Process	National (14) (13)		N.A ->			-	31.08.2024	31.08.2025	31.08.2026	-	31.01.2025	31.01.2026	31.01.2027
Annual TT		Central (V.2)		N.A ->			31.05.2022	30.09.2024	30.09.2025	30.09.2026		N	.A	
	IT	National (11.2)		N.A ->			31.12.2023	31.12.2024	31.12.2025	31.12.2026		N	.A	
	Business Process	Central (W)	07.12.2021	-	31.05.2024	31.05.2025		N.A	\ ->			N	.А	
Feasibility Studies		National (14.1) (12)		N.A ->			-	31.08.2024	31.08.2025	31.08.2026	-	30.09.2024	30.09.2025	30.09.2026
	IT	National (11.3)		N.A ->			-	31.07.2024	31.07.2025	31.07.2026		N	.A	
	Di.a.a.a. Danasaa	Central (M)	-	-	31.12.2024	31.12.2025		N				N		
Dalling Dlagging	Business Process	National (17) (16)		N.A ->			-	-	31.07.2026	31.07.2027	-	-		
Rolling Planning		Central (V.3)		N.A ->			-	-	30.06.2025	30.06.2026		N		
	IT	National (11.4)		N.A ->			-	-	31.07.2026	31.07.2027		N	.A	
	Business Process	Central (P)	-	-	31.05.2024	31.05.2025		N				N		
Ad Has Dlanning		National (18) (21)		N.A ->			-	31.03.2025	31.03.2026	31.03.2027	-	30.09.2025	30.09.2026	30.09.2027
Ad-Hoc Planning	IT	Central (V.4)		N.A ->			-	31.07.2025	31.07.2026	31.07.2027		N	.A	
		National (11.5)		N.A ->			-	30.09.2025	30.09.2026	30.09.2027		N	.A	
	Business Process	Central (Q)	-	31.05.2023	31.05.2024	31.05.2025		N	.A			N	.A	
Path Modification and		National (19) (22)		N.A ->			30.06.2024	30.06.2025	30.06.2026	30.06.2027	-	30.09.2025	30.09.2026	30.09.2027
Alteration	IT	Central (V.5)		N.A ->			31.12.2022	30.09.2025	31.07.2026	31.07.2027		N	.A	
	"	National (11.6)		N.A ->			-	30.09.2025	30.09.2026	30.09.2027		N	.A	
Allocation Principles	Business Process	Central (S)	-	-	31.05.2024	31.05.2025		N	.А			N	.A	
Allocation Frinciples		National (15)		N.A ->			-	30.06.2025	30.06.2026	30.06.2027				
Commercial Conditions	Business Process	Central (R) National (24)					Part of TTR subproject with deviating timelines							
ILE definitions (O)	n.a	n.a	Aspect is covered in legal negotiations (see draft legal framework)											
	IT input E)	Central	15.12.2022	15.12.2023	15.12.2024	15.12.2025		N					.A	
Network Statements	Process Input (J)	Central	15.12.2022	15.12.2023	15.12.2024	15.12.2025	N.A				N.A			
	Common Structure (F)		31.05.2023	31.05.2024	31.05.2025	31.05.2026	N.A				N.A			
	Publication (23)	National		N.A ->			N.A				09.12.2023	31.12.2024	31.12.2025	31.12.2026
				Figure 5:		Milester	oo for Ti	m otobles	2025 20	20				

Figure 5: Indicative Milestones for Timetables 2025-2028



9. ANNEX: Overview Timetable Years and applicable Process Handbooks

Overview Timetable Years and applicable Process Handbooks (Version 02.10.2023) Timetable-Years (*Stepwise TTR Implementation started; **first TT year applicable in EC regulation) TBA=To be announced; n.a.= not applicable TT 2025* Title (HB= Handbook) TT 2022 TT 2023 TT 2024 TT 2026 TT 2027 TT 2028 TT 2029 TT 2030** Capacity Strategy HB 1.0 2.0 3.0 TBA TBA ndication of the Version applicable for each Timetable year TBA n.a. n.a. n.a. Capacity Model HB 3.0 3.0 **TBA** TBA TBA TBA n.a. n.a. n.a. Capacity Supply HB **TBA** TBA TBA TBA n.a. n.a. n.a. n.a. n.a. Ad-Hoc Request Management HB 2.1 3.0 3.0 TBA **TBA TBA** TBA TBA **TBA** Procedures for Modification of Allocated International Paths 2.0 2.0 2.0 3.0 3.0 TBA TBA TBA **TBA** Procedures for Alteration of Allocated International Paths 2.0 2.0 2.0 3.0 3.0 TBA TBA **TBA** TBA Harmonised Process in Case of Delays HB 1.0 1.0 1.0 1.0 1.0 TBA TBA TBA **TBA Procedures for Temporary Capacity Restriction** Management HB 2.0 2.0 TBA TBA TBA TBA n.a. n.a. n.a. Procedures for Feasibility Studies HB n.a. 1.0 1.0 1.0 **TBA** TBA TBA **TBA** n.a. RNE Process Handbook for International Path Allocation for Infrastructure Managers 2.0 2.0 2.0 Procedures for International Late Path Request Management HB 1.0 1.0 1.0 Procedures for designing the annual timetable HB 1.0 1.0 TBA TBA n.a. n.a. n.a. TBA TBA Procedures for Cancellation of Allocated International Paths triggered by applicants HB 1.0 1.0 TBA TBA **TBA** TBA n.a. n.a. n.a.

The Handbooks and the indication of the relevant timetable years can be found at: https://rne.eu/downloads/#downloads capacity process¹⁰

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¹⁰ A Rolling Planning HB will be added to the table in the next update.



10. ANNEX: Description of Proposed Scopes for Timetables Beyond 2026

10.1. Scope of Timetables 2027 / 2028 / 2029

Depending on internal and external factors and development of national IT and law (to be evaluated at checkpoints), the full roll-out of TTR will be carried out in 2028 at the earliest. The methodology explained in chapter 6 applies.

10.2. Scope of Timetable 2030

Full implementation of TTR on European scale for all States affected by European legislation based on legal proposal initially presented as a draft by DG Move on 11th of July 2023.