



Procedures for Capacity Strategy

Complementary document (handbook) to Description of the Timetabling and Capacity Redesign Process

Version 3.0

RailNetEurope
Austria Campus 3
Jakov-Lind-Straße 5
AT-1020 Vienna

Phone: +43 1 907 62 72 00
mailbox@rne.eu
www.rne.eu



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Version history

VERSION	RESPONSIBLE	DATE	CHANGES
0.1	Floraine Stauffer TTR Process Task Force assistant	2021-02-17	Creation of the document structure. Alignment with the “Description of the Timetabling and Capacity Redesign Process v1.02”.
0.2	Daniel Haltner TTR Process Task Force leader	2021-04-12	Inclusion of the remarks from the TTR Process Task Force.
0.3	Sebastián Čarek Senior Capacity Manager	2021-04-15	Alignment with the “Description of the Timetabling and Capacity Redesign Process v2.00” and other RNE documents. Inclusion of remarks of the TTR project leaders.
0.4	Sebastián Čarek Senior Capacity Manager	2021-05-05	Inclusion of the remarks from the TTR Process Task Force and MVP Capacity Strategy.
0.5	Sebastián Čarek Senior Capacity Manager	2021-06-14	Completion of the transitional period chapter based on the TTR NPIMs suggestions.
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2.3	Zsolt Ungvári Capacity Manager	2022-12-12	Document aligned to the outcomes of TTR Process Group of 12 December 2022
2.3.1	Zsolt Ungvári Capacity Manager	2023-02-21	Annex A – Standardised template was enriched with design elements to be followed
2.4	Zsolt Ungvári Advance Capacity Planning Manager	2023-03-22	Document aligned to the outcomes of Advance Capacity Planning Working Group meeting of 22 March 2023

VERSION	RESPONSIBLE	DATE	CHANGES
3.0	RNE General Assembly	2023-05-31	Document approved by the RNE GA

Disclaimer, application, and transition period

This document is intended as a handbook for the implementation of the so-called Capacity Strategy of the TTR Process as described by RNE. As neither legislation nor IT-systems are currently adapted to enable all the elements of TTR, individual TTR elements can only be implemented by the infrastructure managers to a limited extent for the upcoming timetable periods, starting in December 2024. If and when the legislation and IT-systems fully enable the implementation of all the elements of TTR, the different RNE handbooks on those elements should be adapted and applied to the process. The exact details for the transitional period are defined in the “Scope of TTR for Timetables 2025-2028”¹.

Infrastructure Managers and Allocation Bodies should adapt their internal processes and the Network Statement in line with the Procedures for Capacity Strategies from X-60, where X denotes the first timetable referring to the complete roll-out of TTR. The deadlines defined in sub-chapter 3.2 shall be applied after the complete roll-out of the TTR Capacity Strategy.

Note that the process described in the Handbook does not yet fully reflect the targeted TTR elements, it is expected that the handbook will be subject to update or refinement.

The “Scope of TTR for Timetables 2025-2028”¹ contains the description of the geographical scope, which might be defined differently for the first years of implementation.

¹ Accesible via: https://rne.eu/wp-content/uploads/2022/10/scope_of_ttr_for_timetables_2025-2028_v1.0_1.pdf

1. Introduction and scope of this document

An essential part of the TTR process is the advanced planning, of which the first element is Capacity Strategy. In order to be able to make optimum effective use of the available infrastructure capacity in an efficient manner, it is important to have early knowledge of the capacity available for a given timetable period and the general capacity needs. The Capacity Strategy process should help to collect and organise this information and set down the general principles to be used further in the capacity planning and capacity allocation process. This knowledge has to be also shared and aligned with the concerned stakeholders.

This document describes the process by which Infrastructure Managers and Allocation Bodies (hereafter IMs) have to prepare the Capacity Strategies in line with the TTR principles. IMs shall follow these procedures and by this promote internationally harmonised capacity management processes over the single European railway area.

2. Reference documents

This handbook follows and is based on the principles set down in the:

- **Description of the Timetabling and Capacity Redesign Process** version 3.0², which includes further description and glossary of terms used in this document.
- **Directive 2012/34/EU**, especially:
 - Article 7(e) on coordination mechanisms.
 - Article 7(f) on the European network of infrastructure managers.
 - Article 8, according to which 5-year strategies for railway infrastructure development shall be drawn up by EU Member States (taking into account need to cooperate with neighbouring IMs), as well as business plans of IMs to ensure optimal and efficient use, provision, and development of the infrastructure while ensuring financial balance and providing means for these objectives to be achieved.
 - Article 30 and Annex V, describing the basic principles and parameters of the multi-annual (covering at least 5 years) contractual agreements between competent authorities and IMs including all aspects of infrastructure management: maintenance and renewal of the infrastructure already in operation and construction of new infrastructure.
 - Article 50 on capacity analysis.
- **Regulation (EU) 913/2010**, especially:
 - Article 9(3) on Transport market studies,
 - Article 11 on Investment plans.

² Accessible via https://cms.rne.eu/system/files/long_description_of_the_ttr_process_v3.0_2021-12-07_0.pdf

3. Capacity Strategy creation process

3.1 List of involved stakeholders

Stakeholder	Roles and involvement
Applicant	<p>A railway undertaking or an international grouping of railway undertakings or other persons or legal entities, such as competent authorities under Regulation (EC) No 1370/2007 and shippers, freight forwarders and combined transport operators, with a public-service or commercial interest in procuring infrastructure capacity.</p> <p>In line with the above definition the possible Applicants are the following:</p> <ul style="list-style-type: none"> • RU Applicants: A railway undertaking (RU) or an international grouping of railway undertakings. • Non-RU Applicants, for example: <ul style="list-style-type: none"> ○ Shippers / Freight forwarders ○ End customers
IM	Infrastructure Manager (or Allocation Body) in charge of the Capacity Strategy.
International Leading Entity	To be discussed after the Impact Assessment of the European Commission on the Regulation 913/2010/EU
International Supporting Entity	<p>Besides the provision of tools for supporting cross border alignment the International Supporting Entity facilitates the conflict resolution process and can contribute to the activities of national/international decision-makers, if necessary.</p> <p>The <i>service provider</i> role is realised inter alia with the operation of RNE IT-tools.</p> <p>Concerning the <i>monitoring, process developments and proposing recommendation</i> roles two bodies are involved:</p> <ul style="list-style-type: none"> • Capacity Management Advisory Group (platform for IM-Applicant exchange) • Advance Capacity Planning Working Group
Involved IMs	Infrastructure Manager (or Allocation Body) that is or might be concerned in or affected by the particular Capacity Strategy.
Competent authority	<p>An organisation having a (delegated) power to issue and enforce regulations or instructions and/or interests in the railway capacity planning area. For instance:</p> <ul style="list-style-type: none"> • Ministry in which portfolio is transport and or infrastructure • Local and regional governments
Other involved stakeholders	<p>The organisation, which might be involved in the Capacity Strategy process:</p> <ul style="list-style-type: none"> • National and local infrastructure funds • Transport associations and transport organisers • Relevant supranational institutions

Operator of service facility	Any public or private entity responsible for managing one or more service facilities or supplying one or more services to railway undertakings referred to in points 2 to 4 of Annex II of Directive 2012/34/EU of the European Parliament and of the Council.
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3.2 Timeline for Capacity Strategy

The following table shows the main milestones in the Capacity Strategy phase in a fully implemented TTR process.

Timeline ³	Milestone/Action
X-60	Start of the Capacity Strategy phase
X-60 to X-39	Input collection, creation & harmonisation of Capacity Strategies
X-39	Input gathering based on the mature draft version of Capacity Strategy
X-37	Deadline for Applicants, competent authorities, other involved stakeholders and operators of terminals and service facilities to provide opinions to the mature draft versions of Capacity Strategies
X-36	Validation and publication of Capacity Strategies

3.3 Start of Capacity Strategy phase (X-60)

With the start of the Capacity Strategy phase, the IM should define all connected geographical areas for each individual Capacity Strategy, this also includes detection of involved IMs and relevant service facilities and terminals.⁴

On top of the single Capacity Strategy, which describes the complete network, the IM can create additional Capacity Strategies for various geographical areas (e.g. per corridor, per axis, per region). In the latter case the Capacity Strategies have to contain references to each other, and their contents have to be harmonised.

The Capacity Strategy, which concerns or might have an impact on other IMs must be also harmonised and can be validated with these IMs. Moreover, one or more IMs can decide to create a joint Capacity Strategy for a certain area covering more networks. Nevertheless, each line or line section with international relevance⁵ must be covered by one Capacity Strategy.

3.4 Input collection and creation of draft Capacity Strategy (X-60 to X-39)

Between X-60 and X-39, the IM is responsible for inviting Applicants, competent authorities, operators of service facilities and other involved stakeholders to submit input to the Capacity Strategy. The IM shall also guide these parties through this phase.

3.4.1 Involvement of Applicants, competent authorities, other involved stakeholders and operators of service facilities into the input gathering

In order to ensure the creation of comprehensive Capacity Strategies, it is important to gather inputs from a broad scale of stakeholders, as early as possible. Therefore, the IMs approach Applicants (e.g. via customer events), competent authorities and other involved stakeholders to share their future expectations, which could influence the long-term planning of IMs.

³ X - #: a deadline referring to the annual timetable change (X) and the number of months (#) in advance of this deadline.

⁴ It can be assumed that after the first Capacity Strategies are created for TT2025, the effort for this geographical and stakeholder definition is minimised (only update of existing strategies).

⁵ On minimum level the core network has to be considered during the creation of Capacity Strategies (Core network: Chapter III of Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013)

The competent authorities are recommended to be asked to provide key input to the strategy, especially:

- political requirements on future positive and negative changes in the available capacity,
- intended future development in the public service obligation (PSO) transport.

In addition, each service facility operator for which the particular Capacity Strategy is relevant shall have the opportunity to provide input to the Capacity Strategy⁶.

3.4.2 Creation & Harmonisation of Capacity Strategy

Considering the input received from the Applicants, competent authorities, other involved stakeholders and operators of service facilities the IM drafts the initial version of the Capacity Strategy, which serves as a basis for negotiation and harmonisation between the IM and involved IMs. The international harmonisation is a key aspect of creating Capacity Strategies, therefore, the IMs are expected to closely work together, organise meetings and share the available drafts with each other on a regular basis.

This phase might consist of several iterations, and also Applicants, competent authorities, other involved stakeholders, and operators of service facilities might be again invited to further discussion, especially, if there are conflicting or unharmonised expectations on international lines. All parties should seek the compromises and best solutions.

3.4.3 Structure of Capacity Strategy

The Capacity Strategy is a document describing the main principles of capacity management including all types of capacity needs for the assigned geographical area. The main focus is on:

Expected capacity of infrastructure	The aim is to describe the expected available positive (additional) capacity and also the expected negative non-TCR related capacity (for instance, track removal) at the start of the concerned timetable period (until X) comparing with the (expected) situation at X-36, for instance the Capacity Strategy TT2026 compares the capacity situation between December 2022 (X-36) and December 2025 (X) ⁷ .
TCRs	The aim is to describe the principles for capacity allocation for regular TCR windows and the planning of TCRs (for instance selection of lines where due to not sufficient re-routing capacity only partial closure will be planned, certain lines cannot be closed at the same time or line A is the diverting route of line B). The description shall include general principles, which are used for defining the way of execution of TCRs (e.g. timeline). The main goal of pre-announcement of Major impact TCRs is to provide an early overview on the most important TCRs, which are planned for the concerned Timetable year.
Traffic flows	The aim is to describe the main principles to be used in the planning of elements in the future Capacity Models (for instance, long-distance passenger train paths, regional passenger paths, bandwidths, ad hoc only as an unplanned capacity, etc.).

In addition, the IM can enclose to the Capacity Strategy (as Annex 2) an outlook on foreseen novelties in connection with upcoming Timetable year(s) (e.g. finalised ETCS deployment, updated border information → possibility to use a border station in run-through operation).

⁶ The details of involvement will be defined within the “Terminals & Service Facilities in TTR” subproject

⁷ The modifications comparing with the previous Capacity Strategy have to be highlighted to facilitate traceability.

The complete overview of the expected structure and the standardised template is in Annex A. The compliance with the standardised template shall be monitored in each year after the publication of final Capacity Strategies at X-36.

3.5 Input gathering and clarification on open questions regarding mature version of draft Capacity Strategy (X-39 to X-37)

In order to ensure that the Applicants, competent authorities, other involved stakeholders and operators of service facilities can contribute to the finalisation of Capacity Strategies in a standardised way, the IM grants access to the mature draft version of the document by X-39 via the website of the IM and RNE, as well. The involved parties are invited to submit their inputs and open questions to the IM by X-37. Feedback can be submitted in relation to the complete document, however, the pre-announcement of major impact TCRs does not mean that the Applicants are consulted on these TCRs, therefore, the Capacity Strategy input gathering phase is not an official consultation of the pre-announced TCRs.

The parties, involved into the input gathering phase, can request additional information on particular traffic flows, which are not fully covered by the geographical scope of the Capacity Strategy (origin and/or destination are/is outside the covered network). If the information is available at the IM then the IM should provide targeted support to the concerned stakeholder(s) and can extend also the final Capacity Strategy with additional information, if necessary.

The inputs, which were submitted by X-37, should be considered as far as possible during the finalisation of the published Capacity Strategy. The input gathering phase can be extended with customer events (possibly at X-38) to gather inputs and able to discuss open questions on broader level.

The IM is encouraged to utilise already existing communication channels (e.g. customer events) and if needed establish new forums and channels to involve Applicants, competent authorities, other involved stakeholders and operators of service facilities to the input gathering regarding Capacity Strategy.

3.6 Finalisation, validation and publication of Capacity Strategy (X-37 to X-36)

The IM finalises the Capacity Strategy and can invite involved IMs for a final harmonisation round, if necessary.

At X-36 the final Capacity Strategy shall be published in the standardised format (see Annex A). Every Capacity Strategy is validated by the IM itself, but in case of necessity also the other involved IMs take note of it by signing it. The signed Capacity Strategies will be published transparently on the IM`s and RNE`s website, as well.

The document should be available at least in one national language and in English⁸. This applies not only to the final version of the document (X-36) but already to the draft, to allow wider and smoother harmonisation and involvement of the relevant international audience.

Annex A: Standardised template

In order to ensure the comparability and highest possible utilisation of Capacity Strategy the IM shall follow the unified structure, use standardised design and strive to condense the content by using tables, charts and minimum amount of text.

⁸ Specifically from the perspective of the market opening.

Insert your
company logo
here



Capacity Strategy TT 20XX

Company Name

Version XX

Date of Publishing

Content

0. Introduction	Error! Bookmark not defined.
0.1 Contact Details	Error! Bookmark not defined.
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0 Introduction

Insert introductory text here

0.1 Contact details

List of contact details for IM functions (email addresses and phone numbers).

Provide an overview on where and how the remarks can be submitted during the input gathering phases.

0.2 Geographical Scope

Describe and visualize the geographical area for which this Capacity Strategy is applicable. The description contains the list of railway lines and border crossings covered by the Capacity Strategy without listing all the infrastructure parameters, as those will be incorporated into the Network Statement. Nevertheless, the sub-chapter can be extended with information on extraordinary traffic requirements or line parameters (e.g. pushing loco needed, only ETCS operation, DAC status etc.).

Map to be added to this chapter⁹:

- Aim:
 - To highlight the parts of railway network(s), which are covered by the Capacity Strategy
- Level:
 - National Strategies: Geographical railway map on national level (at least the internationally relevant lines are visible)
 - Multinational Strategies: Geographical railway map of concerned IMs (at least the internationally relevant lines are visible)
- Legend:
 - Differentiation between the lines fall in and out of geographical scope:
 - Lines within the scope: TTR green (RGB 56/188/175), above the scope: TTR grey (RGB 191/191/201).

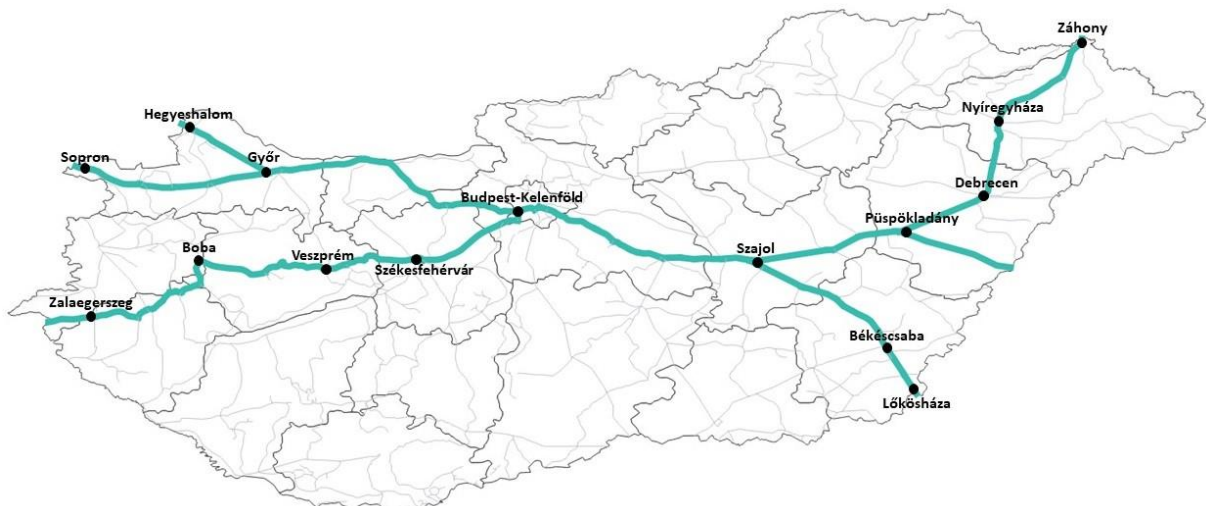


Figure 1: Example how the geographical scope of National Strategies can be displayed on a network map

⁹ In order to provide a standardised outlook, the maps incorporated into the Capacity Strategy are recommended to be created with the usage of freeware QGIS: <https://www.qgis.org/en/site/>

0.3 List of involved IMs

Overview on all involved IMs:

Involved Infrastructure Manager(s)
<ul style="list-style-type: none"> Name of IM “A”
<ul style="list-style-type: none"> Name of IM “B”
<ul style="list-style-type: none"> Name of IM “C”

0.4 List of service facilities

Overview on the detected relevant service facilities (as defined in point 3.3 of Capacity Strategy Handbook):

Service facility	Role & involvement
Terminal	Name of Terminal “A”
Service facility	Depot track “A”

1 Expected Capacity of Infrastructure in TT 20XX

This chapter should include any available information on the expected usable permanent positive (additional) and also the expected permanent negative capacity impact.

1.1 Additional Available Capacity

Provide a list of projects with a positive impact on the infrastructure, which will have an impact on the capacity at the start of the concerned timetable period (until X) comparing with the (expected) situation at X-36, for instance the Capacity Strategy TT2026 compares the capacity situation between December 2022 (X-36) and December 2025 (X) ¹⁰. The list shall contain the description of the intended benefits (e.g. increase of capacity, increase of speed, more parking capacity) as well as information on the maturity and certainty of the projects, once available.

The list shall follow the below structure and could for example contain the below information:

Network segment	Description	Effect	Rough quantifications of the effect ¹¹	Project approved by the IM’s management	Financing secured
Station A – Station B	Rehabilitation of tracks	Increased permitted speed	X more paths with characteristic abc	Yes / No	Yes / No
Station C – Station D etc.	electrification	possibility to operate with electric trains	Y more paths with characteristic abc	Yes / No	Yes / No

¹⁰ In case of changes regarding a positive capacity, which was already announced in previous Capacity Strategies, the modifications have to be highlighted to facilitate traceability.

¹¹ If the information on rough quantification of the effect is not available during the creation of Capacity Strategy, then the field to be filled by “not available” or “N/A”

1.2 Reduced Available Capacity

Provide information on expected negative non-TCR-related capacity (for instance, intended permanent track/siding removal) comparing the (expected) situation at X-36 and X, for instance the Capacity Strategy TT2026 compares the capacity situation between December 2022 (X-36) and December 2025 (X) ¹².

2 Temporary Capacity Restrictions

2.1 Principles for TCR Planning

Describe the principles and typology for the planning of TCRs. The below listed sub-chapters have to be considered in this chapter:

2.1.1 Clustering of TCRs to minimize the gravity of impact and duration

2.1.2 Description of connected areas where TCRs due to shortage of capacity shall not be planned simultaneously

Map to be added to this sub-chapter¹³:

- Aim:
 - To visualise the connected areas, where TCRs due to shortage of capacity shall not be planned simultaneously.
- Level:
 - Network map: Geographical railway map on national level → basis is the Chapter 0 map.
 - Regional map: Geographical railway map of concerned parts of network(s) (e.g. relevant border sections: Border 1 & 2 cannot be closed in parallel)
- Legend:
 - Network map: Highlighting the railway lines, which are depending on each other:
 - Colours could be used to identify connected lines, which cannot be closed in parallel:
 1. Győr – Hegyeshalom & Győr – Sopron lines are marked with red (RGB 227/26/28)
 2. Püspökladány – Biharkeresztes & Szajol – Lőkösháza lines are marked with orange (RGB 255/127/0)
 - Further lines:
 1. within the scope: TTR green (RGB 56/188/175),
 2. above the scope: TTR grey (RGB 191/191/201).
 - Regional map:
 - Connected lines are marked with red (RGB 227/26/28)
 - Further lines:
 1. within the scope: TTR green (RGB 56/188/175),
 2. above the scope: TTR grey (RGB 191/191/201)

¹² In case of changes regarding a negative capacity, which was already announced in previous Capacity Strategies, the modifications have to be highlighted to facilitate traceability.

¹³ In order to provide a standardised outlook, the maps incorporated into the Capacity Strategy are recommended to be created with the usage of freeware QGIS: <https://www.qgis.org/en/site/>

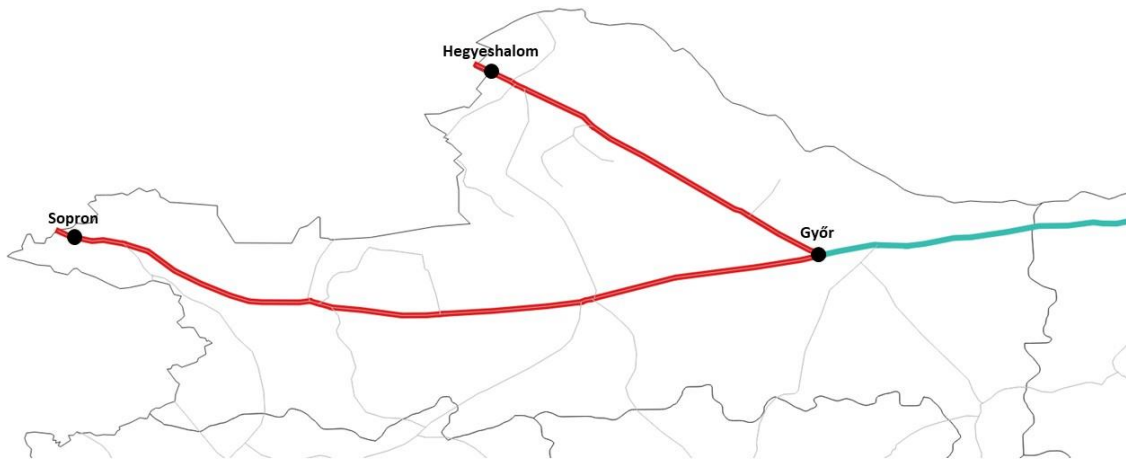


Figure 2: Example how can be highlighted when TCRs due to shortage of capacity shall not be planned simultaneously on a regional map

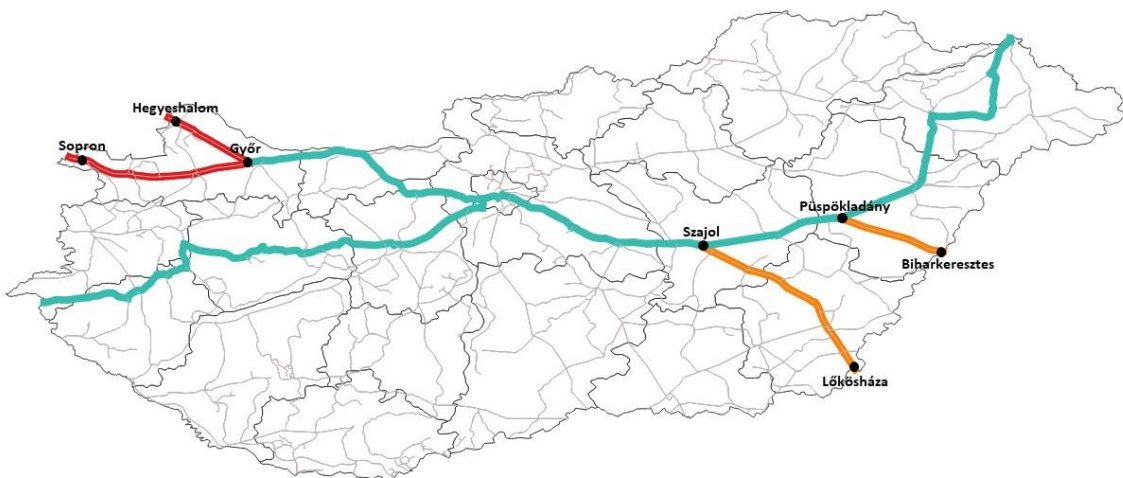


Figure 3: Example how can be highlighted when TCRs due to shortage of capacity shall not be planned simultaneously on a network map

2.1.3 Description of the periods when TCRs will be executed if their nature makes it possible (nights, weekends)

2.1.4 Description of the periods when regular TCR windows will be planned (nights, weekends)

2.1.5 Description of how the TCR allocation process will look like, how the coordination and consultation will be ensured

The sub-chapter contains information, in particular:

- How the consultation process will be conducted for each Major and High impact TCR
- How and until when can the Applicants ask for two alternatives concerning Major impact TCRs

2.1.6 Description of currently existing (national, bi-, trilateral) escalation process(es) in case of disagreement of the involved stakeholders.

2.2 Pre-Announcement of Major Impact TCRs

Describe available details about the expected Major TCRs. The overview summarises the information on maturity, specifics and possible impact to passenger and freight traffic flows, once available. The below structure has to be followed:

Network segment	Purpose	Time of execution	Start (quarterly basis)	Impact (total closure/single track operation/speed restriction)	Impact to passenger & freight traffic	Project approved by the IM's management	Financing secured
Station A – Station B	Electrification	Apr 2025 – May 2026	Q2/2025	Single track operation	Passenger traffic re-routed via Station E, only freight trains can run	Yes / No	Yes / No
Station C – Station D	track rehabilitation	Sept 2025 – Dec 2025	Q3/2025	Total closure	Passenger traffic is replaced by buses, freight traffic re-routed via Station F	Yes / No	Yes / No
etc.							

The pre-announced TCRs have to be visualised also on a network map to provide a general overview about the planned closures:

- Aim:
 - To provide a general overview of the planned major closures.
- Level:
 - Network map: Railway map on national level → basis is the Chapter 0 map.

¹⁴ If the information on “Time of execution” and “Impact to passenger & freight traffic” is not available during the creation of Capacity Strategy, then the field to be filled by “not available” or “N/A”

- Legend:
 - Network map: Marking the sections affected by pre-announced Major impact TCRs with red (RGB 227/26/28).

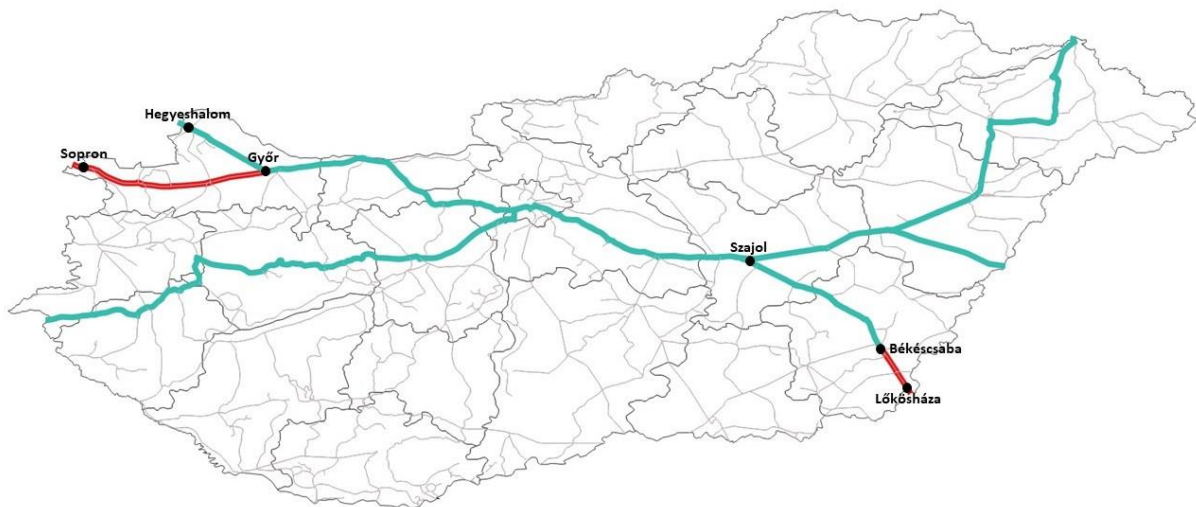


Figure 3: Example how can be highlighted when TCRs due to shortage of capacity shall not be planned simultaneously on a network map

3 Traffic Planning Principles and Traffic Flows

3.1 Traffic Planning Principles

Describe the main principles for each railway line, which will be used later in the planning of elements in the Capacity Models (X-30 – X-11¹⁵) and the Capacity Supplies (X-18 – X+12).

Cross-border sections shall be defined as separate line sections. The concerned IMs agree on which of them is coordinating the creation of the Capacity Models and Capacity Supplies for the cross-border section and define the handover point at each covered border section. The responsibilities should be set for each border section. The International Leading Entity and the relevant IT tool should facilitate this process.

This Chapter describes also how the consultation process of Capacity Model variants for TCR periods will be conducted (e.g. which tool will be used etc.).

In the Capacity Strategy, the parameters of the basic categories and parameters which will be used in the Capacity Model should be defined according to the Procedures for Capacity Model.

Basic categories for passenger trains:

- high-speed trains
- long-distance trains
- express regional trains
- regional trains

¹⁵ After the full implementation of TTR the Capacity Model timeline will end at X-18, therefore, the Capacity Model extensions will be phased out and the preparation of Capacity Supply will begin at the same time.

Basic categories for freight trains:

- wagonload trains
- block trains
- combined transport trains

The IMs should keep only the above-mentioned categories, however with the help of the basic parameters it is possible to define additional groups within one category (e.g. 4 subgroups within the high-speed train category).

Basic parameters for passenger trains:

- stopping pattern (according to point 6.1.2 of Capacity Model Handbook)
- Acceleration (m/s²)
- planned speed
- maximum train length

Basic parameters for freight trains:

- average maximum standard train weight,
- average maximum standard train length,
- expected speed,
- dangerous goods or extraordinary consignments (allowed or not),
- profile.

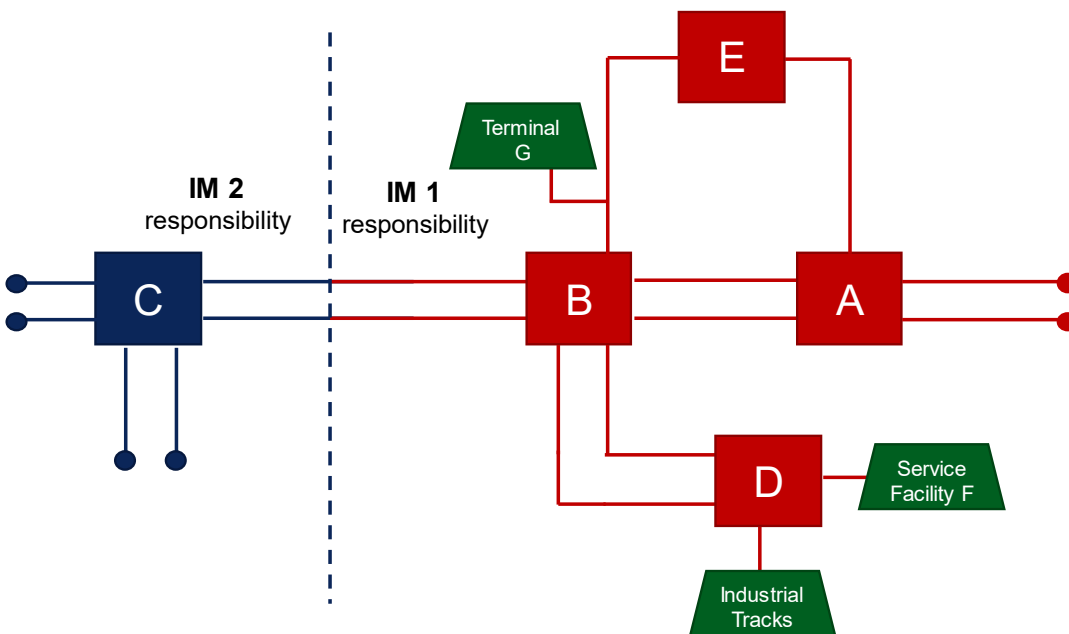
The parameters of the basic categories can vary between the different railway lines. (For example, the same volume can belong to different categories during the train run (A → B, long-distance passenger, B → C high-speed passenger).

The part should also include the principles for cooperation with service facilities same as any other strategical principles in the future timetable constructions.

Potential example:

IM	Section	Principle and elements
IM1	A↔B	International line with a high level of capacity saturation. Publication of pre-planned paths for both passenger and freight trains.
IM2	B↔C	International line with a medium level of capacity saturation. Publication of pre-planned paths for passenger trains and annual timetable freight trains. Rolling Planning and ad hoc capacity published in the form of bandwidths. Freight operation should be possible also in the peak periods and the stop duration at B for running A-B-C and vice versa should not exceed 30 mins.
IM1	D↔B	Regional line with a medium level of capacity saturation. Publication of pre-planned paths for regional passenger trains. The rest of the capacity was published as unplanned (no Rolling Planning capacity). Request for a path to access Service Facility F and capacity in service facility F should always be submitted as an ad hoc request, and allocation will

		be subject to confirmation of both entities.
IM1	B ↔ E ↔ A	Regional line with a low level of saturation, no pre-planning in the Capacity Supply phase needed, all capacity to be published as unplanned. Request for a path to access Terminal G and capacity in Terminal G should always be submitted as ATT or ad hoc request, and allocation will be subject to confirmation of both entities.



3.2 Traffic Flows

The available timetable concepts in connection with the defined geographical scope in Chapter 0 have to be visualised in a graphical overview. The incorporated information on the already available timetable concepts serves as input to the creation of Capacity Models and can be aligned to the enhanced knowledge on transport needs in later phases. The main aim is to present the rail stakeholders with an as best as possible indication of the expected traffic flows. Possible examples to the visualisation can be found in Annex B.

Furthermore, the expected capacity demand is recommended to be visualised on a network map. This calculation can be based on one hand on past experiences (e.g. allocated paths in previous TT years) and on

the other hand on predictions on future needs (e.g. results of input gatherings). The following categorisation has to be followed:

- Green: All requests might be met
- Yellow: Changes might be necessary¹⁶
- Orange: High demand expected: possible rejections

In next step a short explanation on the reasons why the concerned section was categorised as “High demand expected” one has to be added to this sub-chapter, as well.

Considering the TCR planning timeline this map should not consider the effects of planned TCRs.

Description of map to be added to this sub-chapter¹⁷:

- Aim:
 - To provide an overview of the expected traffic capacity demand.
- Level:
 - Network map: Geographical railway map, covering the geographical scope of Chapter 0.
- Legend:
 - The colours of segments are dependent on the expected capacity utilisation:
 - Green (RGB 0/255/26): All requests might be met,
 - Yellow (RGB 255/234/0): Changes might be necessary,
 - Orange (RGB 255/164/0): High demand expected: possible rejections.

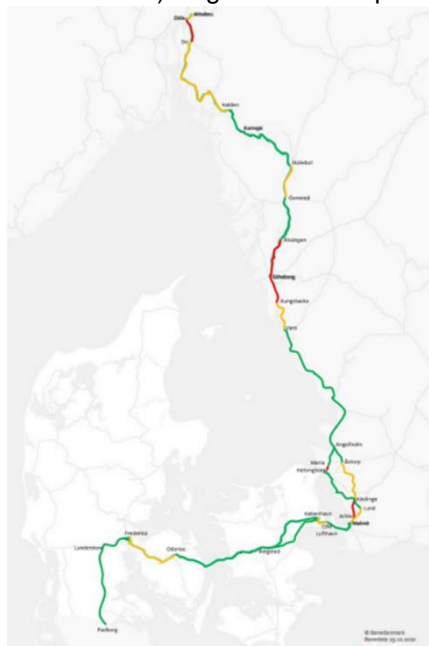


Figure 5: Example of overview of the expected traffic capacity demand on multinetwork level

¹⁶ Some changes in the paths applied for might be necessary to accommodate all the requests

¹⁷ In order to provide a standardised outlook, the maps incorporated into the Capacity Strategy are recommended to be created with the usage of freeware QGIS: <https://www.qgis.org/en/site/>

For the purpose of multi-network harmonisation, an overview of the expected traffic flows at the common border points of the IM and involved IMs have to be provided.

A potential example is below, note that train brands or RU names shall not be used:

Network IM 1	Network IM 2
Border point 1	
Hourly long-distance passenger trains	Sporadic operating national freight trains Hourly long-distance passenger trains
Border point 2	
Half-hourly regional service 4 Bandwidths of 3 hours for up 6 national or international freight trains per bandwidth	Hourly regional service (additional services in rush hour) 4 Bandwidths of 3 hours for up 6 national or international freight trains per bandwidth
Border point 3	
Regular high-speed service (4 - 6 times a day) 2-hourly long-distance passenger trains Up to 10 international freight trains per day	Regular high-speed service (4 - 6 times a day) Long-distance passenger trains operating sporadically Up to 10 international freight trains per day

In case the flows are not identical, make sure the reason is clearly explained, for instance, that a certain flow is only a national service with the destination at the border point. The information on traffic flows has to clearly indicate if it is to be applied for both directions of it is different for e.g. Northbound vs Southbound.

Based on own plans or information from Member State level the IM can enrich the Capacity Strategy with figures on the amount of trains at certain border sections. In this case to ensure comparability the same format is recommended to be used by the IM and involved IMs.

4 Validation

Provide the date and signatures of the higher-level representatives of the IM and, in case of necessity, involved IMs (for instance, heads of capacity management departments) to take note of the final Capacity Strategy.

Annex 1: Information on market involvement and opinion gathering

Describe how the market involvement was implemented during the preparation of the Capacity Strategy:

- Customer events: List of occasions (if relevant)
- Written consultation: Dates when opinions were requested (if relevant)

Annex 2: Outlook to the upcoming TT years (optional annex)

IM can provide information on the planned changes in connection with upcoming TT years (e.g. finalised ECTS deployment, updated border information → possibility to use a border station in run-through operation).

Annex B: Examples of reference timetables and frequency diagrams

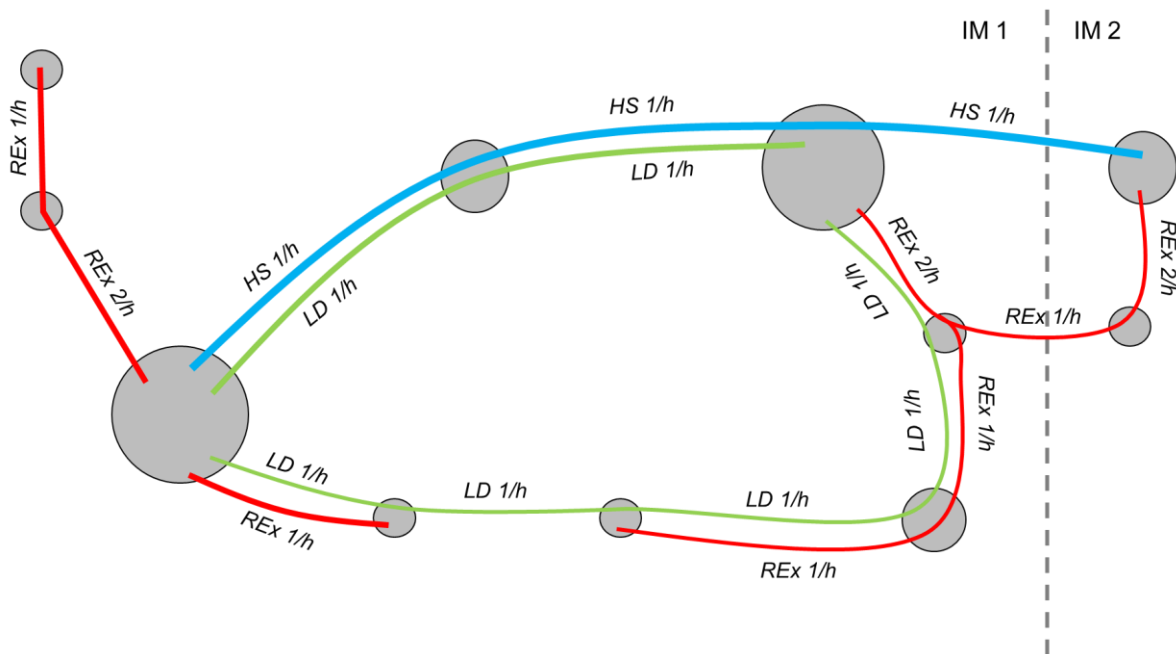


Figure 1: Example of frequency diagram – high-speed, long-distance, regional express traffic between major stations

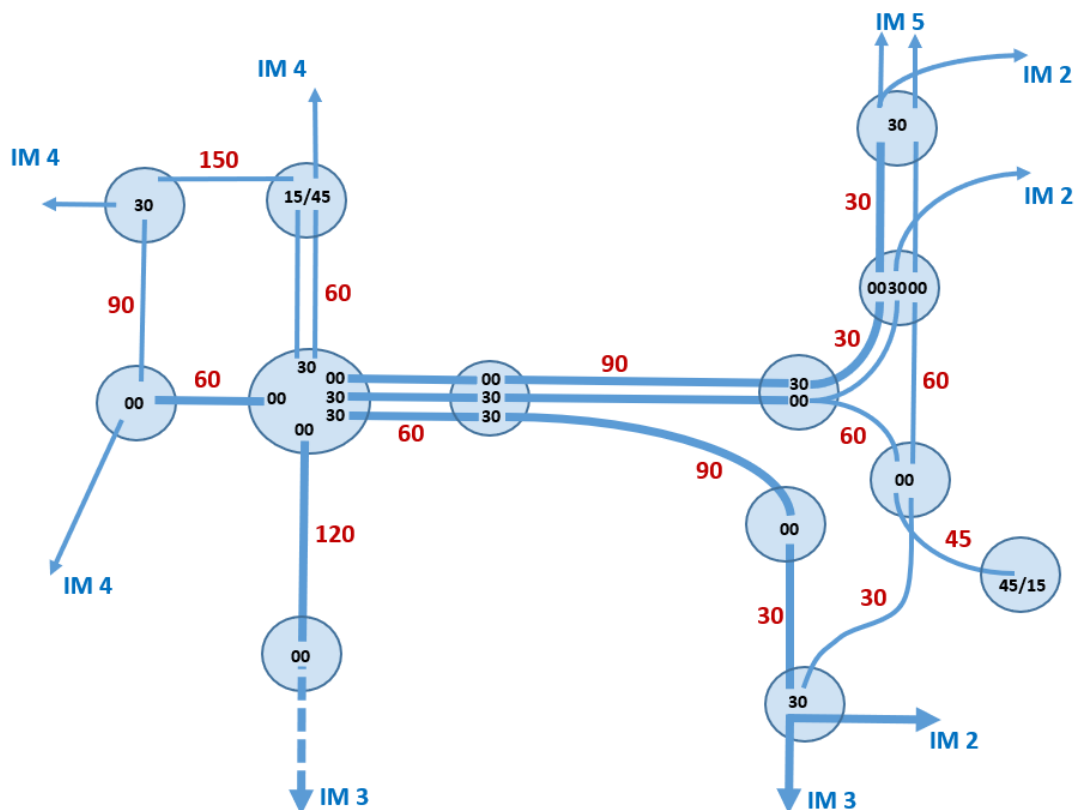


Figure 1: Example of a rough reference timetable – long-distance PSO passenger traffic

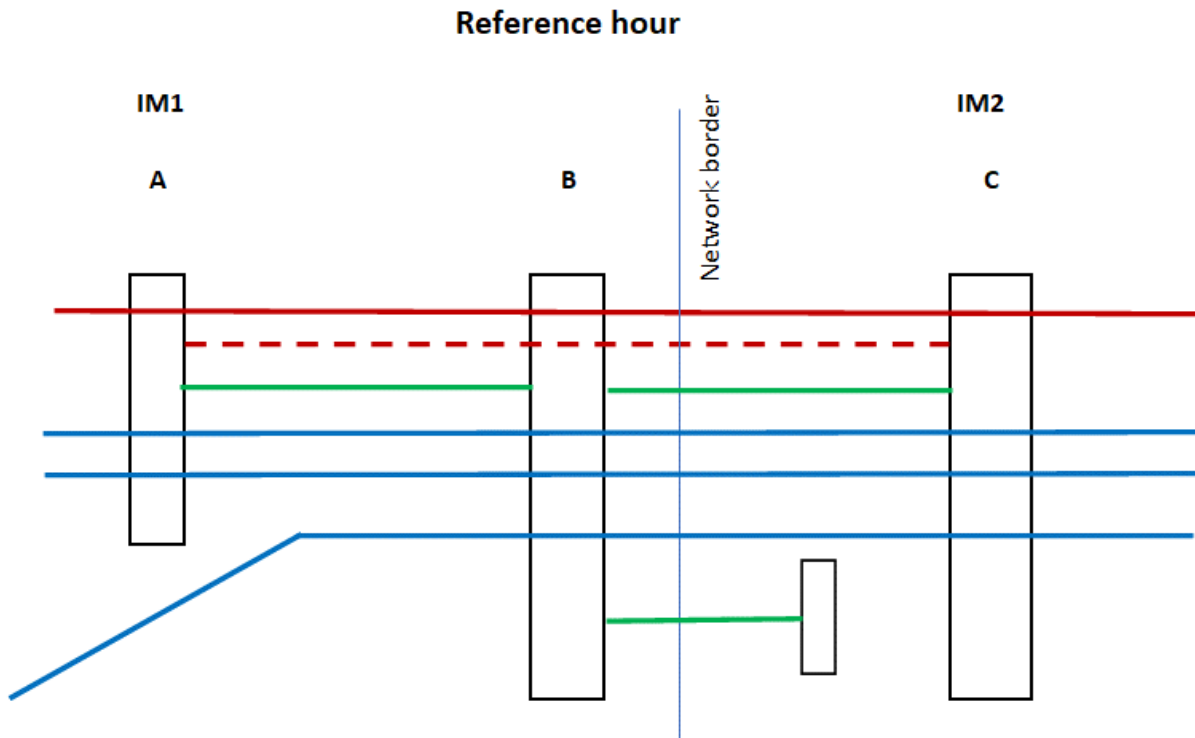


Figure 3: Example of a network graphic with a reference hour showing the regularly scheduled traffic categories

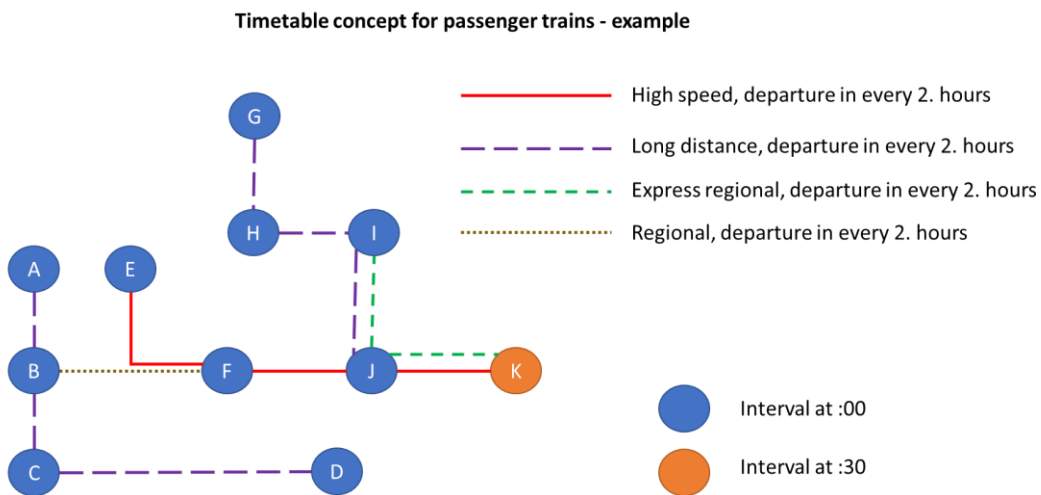


Figure 4: Example of visual representation of timetable concept

Annex C: Capacity Strategy process diagram

