

ADMINISTRATION DES CHEMINS DE FER

Capacity Strategy

Timetable 2026

Timetabling Redesign (TTR)



Luxembourg, the 10/02/2023



Révision du document

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Introduction

An essential scope of the TTR process is the advanced planning based on the Capacity Strategy. It consists of collecting knowledge of the available capacity and combining it with the general capacity needs in order to optimize the use of the available infrastructure. Infrastructure Managers and Allocation Bodies (hereafter IMs), in consultation with the involved stakeholders, shall prepare a Capacity Strategy, based on the capacity planning and allocation concept.

The Capacity Strategy 2025 for Luxembourg was published in one common document with Infrabel, ProRail, DB Netz AG, SBB Infrastruktur AG, BLS Netz AG, ÖBB Infrastruktur AG and RFI S.p.A on the RNE website.

More information. : Pilots and MVPs – RNE <https://rne.eu/capacity-management/ttr/implementation/pilots-and-mvp/>

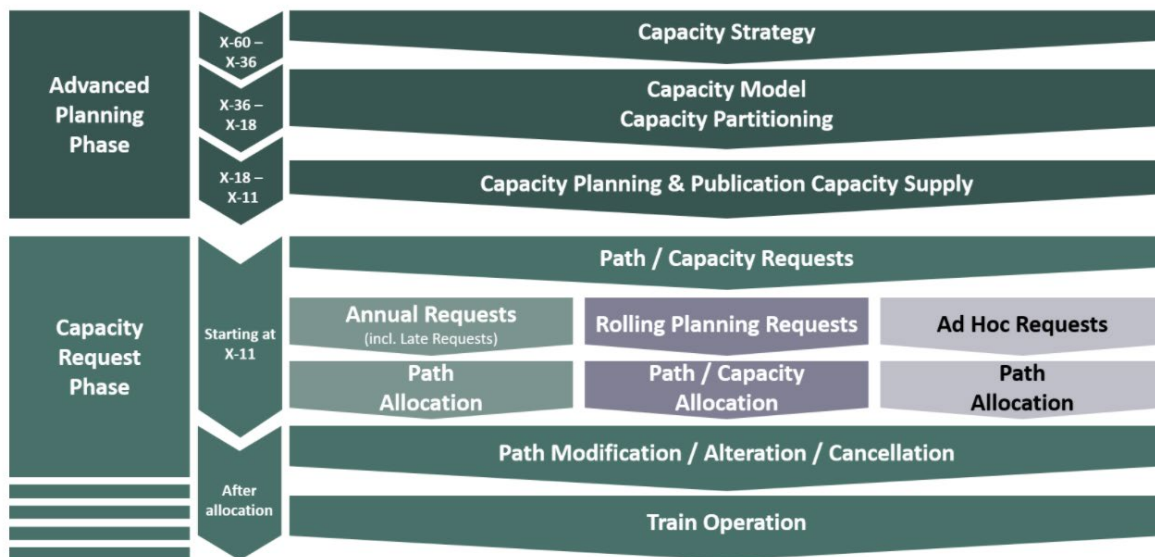


Figure 1: hb_capacity_strategy_1.0_2021-12-07_0.pdf (rne.eu)

As illustrated in Figure 1, the first phase of the Capacity Strategy starts at X-60 (5 years) prior to timetable-change and must be completed by X-36 (3 years). During this phase, the IM should define all connected geographical areas, including those of neighboring



networks, as well as the associated service facilities and terminals. In the second phase, each strategy which might have an impact on other IMs must be harmonized and validated with the concerned IMs between X-54 and X-36.

Finally, TTR expects each Infrastructure Manager (IM) to publish a Capacity Strategy 3 years prior to timetable-change (X-36). Every Capacity Strategy is validated by the IM and/or the AB itself. The general aim of the Capacity Strategy is to provide an indication of the key values of capacity planning, i.e. on changes in the availability of the infrastructure, Temporary Capacity Restrictions (TCRs or “negative capacity”) as well as on commercial capacity (“positive capacity”) for a given timetable.

The Capacity Strategy 2026 is nationally published, and includes four chapters:

- Description of the geographic area
- Expected capacity of infrastructure in TT2026
- Expected Temporary Capacity Restrictions (TCRs) with major impact
- Expected traffic flows, whereby the values displayed apply for Timetable 2026 to relevant border points within the geographical scope.

The present document meets the requirement of RNE’s Capacity Strategy Handbook, version 11.01. It builds on the Capacity Strategy 2025, which was published as a common document with other IMs (see above), but includes extended projects for 2026. The intended audience of the Capacity Strategy includes all applicants and end-customers, as well as all other stakeholders of rail capacity planning and allocation.



Chapter 0: Geographical area

1. National area

The geographical area of Luxembourg currently constitutes of six major lines (1-3-4-5-6-7) and their respective branches. Four lines (1,3,5 and 6) are connected to one of the three neighboring countries.

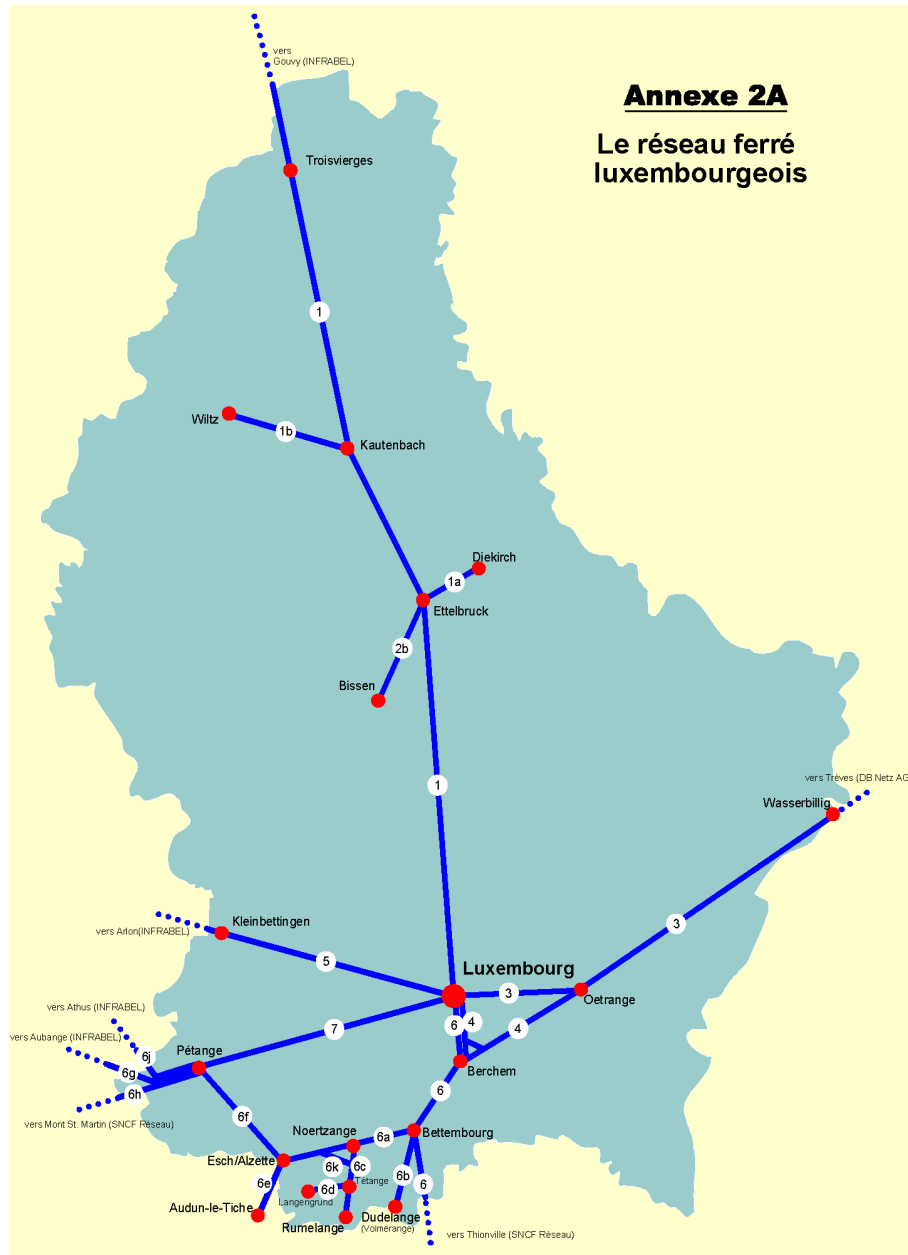


Figure 2: National map of Luxembourg



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2. Relevant border points

BDK	ProRail	InfraBel	DB Netz	PKP PLK	Správa železnic	SNCF Réseau	SBB Infra	RFI	ACF	ÖBB
BDK			Flensburg Weiche/ Padborg							
ProRail		Roosendaal– Essen Meer/ Hazeldonk (HSL), Maastricht/ Visé	Kaldenkirchen / Venlo, Emmerich / Zevenaar, Bad Bentheim / Oldenzaal, Herzogenrath / Heerlen							
InfraBel		Roosendaal/ Essen, Meer/ Hazeldonk (HSL), Maastricht/ Visé	Aachen West / Montzen, Aachen Süd / Hergenrath			Aubange – Mont- St.Martin			Aubange/ Rodange, Kleinbellingen/Ster- penich, Gouvy/ Troisvierges, Athus/Rodange	
DB Netz	Flensburg Weiche/ Padborg	Kaldenkirchen/ Venlo, Emmerich/ Zevenaar, Bad Bentheim/ Oldenzaal, Herzogenrath/ Heerlen	Aachen West / Montzen, Aachen Süd / Hergenrath	Frankfurt (Oder) Brücke/ Slubice/ Rzepin, Horka/ Wegliniec	Bad Schandau/ Decin, Schrinding/ Cheb, Furth im Wald/ Ceska Kubice	Perl/ Apach, Saarbrücken/ Forbach, Kehl/ Strasbourg, Müllheim/ Mulhouse, Wörth/ Lauterbourg	Basel Bad/Basel Bad Rbf / Basel SBB/Basel SBB RB		Trier/ Wasserbillig	Kief- Frei- Pass- Lind- Hört-
PKP PLK			Frankfurt (Oder) Brücke/ Slubice/ Rzepin, Horka/ Wegliniec							
Správa železnic			Bad Schandau/ Decin, Schrinding/ Cheb, Furth im Wald/ Ceska Kubice							
SNCF Réseau		Aubange – Mont-St.Martin	Perl/ Apach, Saarbrücken/ Forbach, Kehl/ Strasbourg,				St. Louis / Basel St. Johann			



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		Müllheim/ Mulhouse, Wörth/ Lauterbourg		
SBB Infra		Basel Bad/Basel Bad Rbf / Basel SBB/Basel SBB RB	St. Louis / Basel St. Johann	Luino, Domodossola, Chiasso
RFI				Luino, Domodossola, Chiasso
ACF	Aubange/ Rodange, Kleinbettingen/St erpenich, Gouvy/ Troisvierges, Athus/Rodange	Trier/ Wasserbillig		
ÖBB Infra		Kiefersfelden/ Kufstein, Freilassing/ Salzburg, Passau/ Schärding, LindauReutin/ Lochau - Hörbranz		Brennero, Tarvisio

The perimeter of Luxembourg is extended in the Capacity Strategy 2026.



3. Borders points Capacity Strategy 2026

The table below lists the borders points included in the Capacity Strategy 2026. The borders included for the first time in 2026 are in bold:

	Infrabel	DB Netz	SNCF Réseau
ACF	Athus/Rodange Aubange/Rodange Kleinbettigen/Sterpenich Gouvy/Troisvierges	Wasserbillig /Trier	Zoufftgen/ Thionville Rodange/Mont- saint-martin



4. International Geographic Scope

5. The MVP Capacity Strategy was initiated by a group of IMs with the objective of publishing a common document that would ensure consistency and coherence beyond borders. This schema below aims to give a geographical scope.

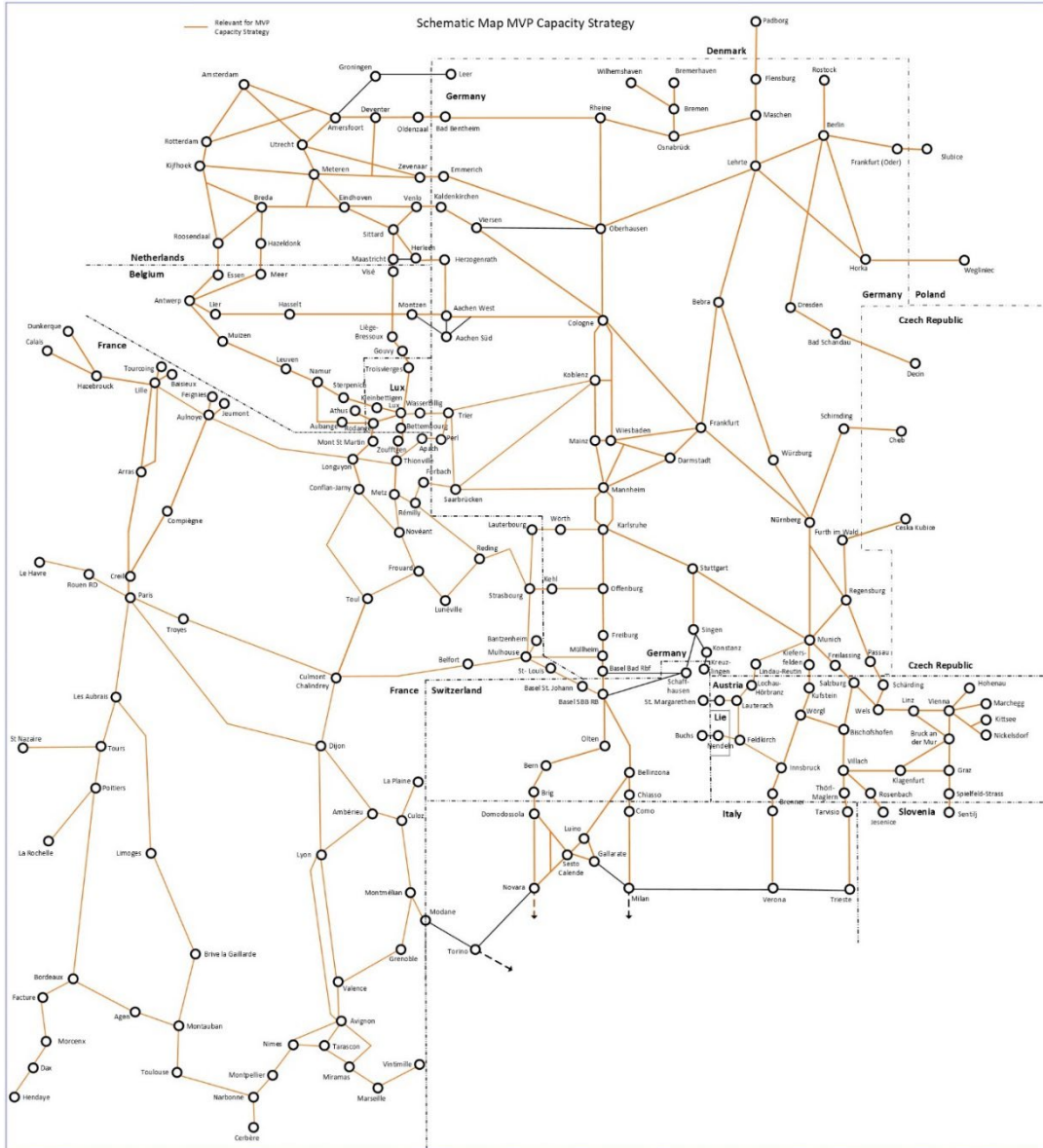


Figure 3: European schematic map - Capacity Strategy 2026



Chapter 1: Expected capacity of infrastructure in TT2026

1. Introduction

The present chapter provides an overview of significant positive and negative changes to the available capacity for Timetable 2026. Unlike TCRs, the projects in this chapter lead to a permanent change of the available infrastructure (positive or negative).

The projects listed in this chapter fulfill the following criteria:

- The project has a permanent impact on the available capacity, unlike TCRs (Chapter2),
- The project unfolds its effect on capacity between Timetable 2023 and Timetable 2026. Subsequent Capacity Strategies will provide annual updates,
- The projects have a significant size and are located on network segments relevant for international traffic, which require an international coordination.



2. Additional available capacity

The table below shows the list of the expected additional capacities for the timetable 2026 in Luxembourg.

Country	Network Segment	Description	Effect	Impact on capacity as of	Remark
LU	Luxembourg Central Station	Track reorganization	Traffic segregation	2025	Definitive
LU	Howald	Track reorganization and additional platform	Increase of the capacity, traffic segregation	2026	Definitive
LU	New line between Luxembourg and Bettembourg	Additional line	(Significant) increase of the capacity, traffic segregation	2026-2028	Definitive
LU	L1 Luxembourg-Ettelbruck	Reorganization of the blocks	Increase of the capacity	2025	Definitive



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Forecast new line Luxembourg - Bettembourg (2026-2028)

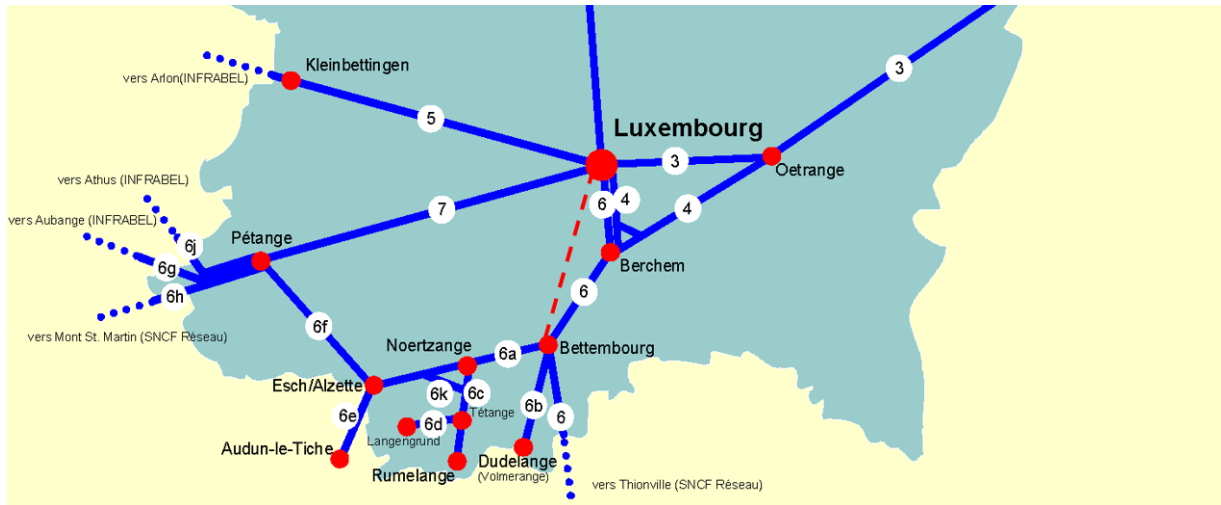


Figure 4: Schematic map new line Luxembourg - Bettembourg

The new line Luxembourg-Bettembourg will be completed by December 2026. After the testing, homologation, certification and training process, the new connection is expected to become fully operational in 2028. The main objective of this project is to increase the service between Thionville and Luxembourg Central Station to eight trains per hour (in addition to the TGV and freight trains), thereby removing a bottleneck on the most congested line in Luxembourg.

Moreover, the second effect will be the increase of national traffic on line six, with more traffic possibilities, a better service for the national towns, and a flexible service offer to local customers and for freight trains.



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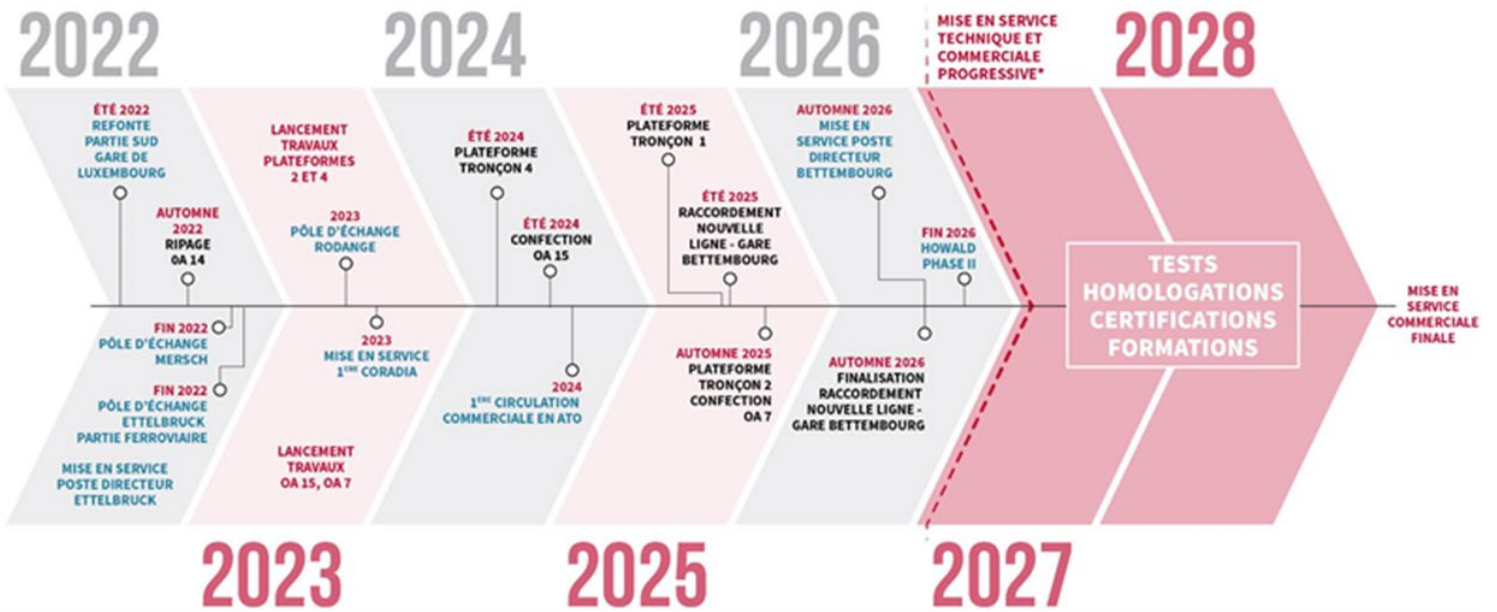


Figure 5: Official communication from CFL – New line Luxembourg – Bettembourg

3. Reduced available capacity

Luxembourg does not have any reduced available capacity without any relation with to the TCRs.



Chapter 2: Temporary Capacity Restrictions (TCRs)

1. TCR planning principles

Infrastructure Managers are required to plan TCRs according to “Annex VII”¹.

Annex VII sets out the framework for TCR-planning, the aim of which is to promote early planning, international coordination among Infrastructure Managers, transparency towards Applicants and planning stability. Ultimately, it pursues the goal of optimizing the planning of TCRs and thereby minimizing their impact on customers in order to improve the performance and competitiveness of rail services.

	Consecutive days	Impact on traffic (estimated traffic cancelled, re-routed or replaced by other modes of transport)
Major impact TCR¹	More than 30 consecutive days	More than 50% of the estimated traffic volume on a railway line per day
High impact TCR¹	More than 7 consecutive days	More than 30% of the estimated traffic volume on a railway line per day
Medium impact TCR¹	7 consecutive days or less	More than 50% of the estimated traffic volume on a railway line per day
Minor impact TCR²	unspecified ³	More than 10% of the estimated traffic volume on a railway line per day

1) Annex VII of Directive 2012/34/EU, article (11);

2) Annex VII of Directive 2012/34/EU, article (12).

3) according to Annex VII of Directive 2012/34/EU, article (12) “7 consecutive days or less”, modified here.

Figure 6: Overview of Annex VII-categories of TCRs (Source: RNE)

The TCRs listed in this Chapter fulfill the following criteria:

The TCRs fall in the category of major TCRs as shown in Figure 3. TCRs with a major impact are defined in Annex VII of the Directive 2012/34/EU as lasting more than 30 consecutive days and impacting more than 50% of the estimated traffic volume on a railway line per day (in terms of estimated traffic cancelled, re-routed or replaced by other modes of transport).

Figure 7: TCR impact cluster - TCR Guidelines by RNE

¹ COMMISSION DELEGATED DECISION (EU) 2017/ 2075 - of 4 September 2017 - replacing Annex VII to Directive 2012/ 34/ EU of the European Parliament and of the Council establishing a single European railway area (europa.eu)



Within this category, a TCR is expected to have a significant impact on international traffic due to its duration, its volume and/or location. Each Infrastructure Manager evaluates the fulfillment of this criteria on its own.

*see TCRs Guidelines: <https://rne.eu/wp-content/uploads/TCR-Guidelines.pdf>

2. National specificities

The infrastructure manager CFL is responsible of the maintenance of the rail network in Luxembourg, with the validation of operations by the entity ACF. All maintenance is validated in jointly in order to ensure the availability of the network.

TCR Windows

Major and high TCRs are planned up to 5 years in advance. Those TCRs are fixed and published internally with the objective of combining as much of the works as possible in one TCR. This allows the IM to minimize the impact on the traffic. The maintenance works on bridges, catenary, tracks, level crossings, inspections and small interventions are usually combined in this way.

In Luxembourg, there is more than one itinerary used by the RFC NSM. In general, the IM plans TCRs in a way so that always one itinerary of the RFC NSM via Luxembourg can be used by RUs. If this is not the case, the TCRs are coordinated in bi- or trilateral consultations with the neighboring IMs. As every combination of TCRs has its own characteristics, these can be evaluated ad-hoc by the IM in collaboration with the concerned RU.

The main periods for TCRs are weekends, school holidays and nights. Generally, the biggest TCRs take place in the summer holidays between July and September. Short total closures are usually preferred to longer partial closures.

The minor maintenance is divided in three categories:

1. Small maintenance: planned when there is no circulation
2. Maintenance during planned TCRs: Some maintenance operations can be combined with planned works without having an additional impact on train circulation.



3. **Planned maintenance:** planned as defined in the TCRs guideline Annex VII deadlines. Enough windows are planned in order to ensure maintenance requirements.

Regular TCRs

TCRs are shared (via a PDF) by the IM to the RUs licensed to operate on the Luxembourg rail network several times a year. Between X-42 and X-37, TCRs are collected and coordinated internally. At X-37, a first draw of TCRs is discussed between CFL and ACF to validate a basis for the discussion with other IMs and RUs. Mainly, the known TCRs at that point are major and high TCRs. Nevertheless, also medium TCRs are treated at this date if known.

At X-25, all the known TCRs are published. Major and high TCRs should stay fixed at this moment. In line with the publication requirement of Annex VII, at this stage meetings are organized between IM (one IM or also neighboring IMs) and RUs, and the TCR-List is distributed to the meeting participants (and all interested RUs) by E-Mail.

If any major or high TCR must be changed after this date, the process requires a validation of the changes from the RUs.

At X-13, the infrastructure manager proceeds to the second publication. At this stage, if known, the medium and minor TCRs are published.

Consultation process

The IM prepares exchange meetings with the RU in order to correctly transmit the TCR's planning information.

After agreement, the planning is validated by ACF. Once the TCR planning is agreed, it will be transmitted to the RUs by the IM, and the planning will be available on the ACF website for consultation.



3. International coordination and consultation

The international coordination and consultation is guaranteed by regular meetings between DB Netz, Infrabel, SNCF Réseau and CFL/ACF.

During RAG Meetings, an overview of the expected TCRs on a middle-term are presented for all participants. (RFC: Rail Freight Corridors)

Infrabel – ACF/ CFL

Infrabel, ACF and CFL coordinate the TCRs with impact on each other's neighboring network. Different entities work together on two levels (starting from X-33).

- ☒ Coordination via the established quadrilateral working group for all TCRs impacting the borders (freight and passenger combined).
- ☒ Coordination of the border point Tv-Gy in order to ensure the electric supply of the national and neighboring networks if works are planned.

In practice, both levels are combined into one process with recurrent meetings. To determine where TCR's must be located on the network in order to have an impact on the neighboring network, an international perimeter has been agreed upon for the three countries concerned.

SNCF Réseau – ACF/CFL

SNCF Réseau, ACF and CFL coordinate the TCRs with impact on each other's neighboring network. Different entities work together on two levels (starting from X-33).

- ☒ Coordination via the established quadrilateral working group for all TCRs impacting the borders (freight and passenger combined).

DB Netz – ACF/CFL

DB Netz, ACF and CFL coordinate the TCRs with impact on each other's neighboring network. Different entities work together on two levels (starting from X-33).

- ☒ Coordination via the established quadrilateral working group for all TCRs impacting the borders (freight and passenger combined).



3. Selected Major Impact TCRs

The list of the major-impact TCRs to include in the Capacity Strategy 2026 is shown in the table below:

Only TCRs with management agreement and secured financing will be integrated into

Country	Network Segment/	Project proposal defined	Project approved by the IM's management	Financing secured	Comments/Explanations
LU	Luxembourg-Bettembourg	yes	yes	yes	Total closure due to Definitive connection between the new line and the train station Howald for 9 weeks from mid-July to mid-September

the capacity strategy.



Chapter 3: Traffic planning principles and traffic flows

1. General Principles

The basic details of the traffic planning principles are detailed below. It can be used in the scope of the Capacity Model (X-30-> X-11) and the Capacity Supplies (X-18->X-12).

- Main principles of the network

Passenger train	Maximum 16 vehicles, 64 axles, 800 tons, 430m
Freight train	Maximum 750m, engine(s) included
Catenary	25kV 50Hz on each line of geographical area
Safety system	ETCS mandatory

- Train's categories

Passenger train	V120 (maximal speed 120km/h)
	V140
Freight train	MA80
	MA90
	ME100
	ME120
Empty loc running	HLP80 (haut-le-pied)
	HLP100
	HLP120

In order to have more details, please consult: *Network Statement, Appendice I of the RGE (IM CFL)*.



2. Traffic flows

ACF

The traffic flows for the “Capacity Strategy” are analyzed at the border points of Luxembourg. The capacity for 2026 has been elaborated using with the historical data, consultation with the neighboring network as well as the strategy team of our main RU.

The figures have also taken into consideration the impact of the transformation of our network. For passenger traffic, the Ministry of Mobility and Public Maintenance defined the forecast until 2035 in the [National Mobility Plan 2035](#). For freight traffic, we predicted the future demand based on discussions with our freight customers. We expect to include more details of it with the tool CAN (capacity Needs Announcements).



3. Traffic flows

Luxembourg – Belgium

Border point	passenger train paths per hour per direction		freight train paths per hour
	long distance	regional	
Athus(BE) – Rodange	0	2	0,5
Aubange (BE) – Rodange	0	0	1
Sterpenich (BE) – Kleinbettingen	1	2	0
Gouvy (BE) – Troisvierges	0	1	0

Luxembourg – Germany

Border point	passenger train paths per hour per direction		freight train paths per hour
	long distance	regional	
Igel (DE) - Wasserbillig	0	2	0,5



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Luxembourg – France

Border point	passenger train paths per hour		freight train paths per hour
	long distance	regional	
Mont St Martin (FR) - Rodange	-	3	0,5
Zoufftgen (FR) - Bettembourg	1	5	1



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Chapter 4: Validation

The validation of this document will be established between the Infrastructure Manager and the Allocation Body, in order to complete the request for the European organism RailNetEurope (RNE).

This document will be published on our national website and on the RNE website, after the validation of the Luxembourg Ministry of Mobility and Public Maintenance.