Capacity Strategy 2029

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CHAPTER 0 – INTRODUCTION

Rail transport in the coming years has among its main objectives to capture a larger share of the transport market, and to achieve this, it must implement competitive and agile planning and production processes. In this regard, and as part of the improvement of these processes, RailNetEurope (RNE), in collaboration with Forum Train Europe (FTE), developed the Timetabling and Capacity Redesign (TTR) project.

The creation of this document, called **"Capacity Strategy 2029",** is part of the TTR project in which ADIF and ADIF AV participate, with the general aim of carrying out a harmonized redesign of the timetabling process. This project has gained greater relevance following the proposal presented by the **European Commission COM (2023) 443 in July 2023 on capacity management**. This proposal, whose main objective is to establish a new regulation for the railway capacity framework in the EU, is currently in the approval process.

The Capacity Strategy should be considered the foundation for more accurate timetable planning. In this respect, it should provide early-stage information on the intentions of Infrastructure Managers (IMs) and capacity applicants (Candidates) for the coming years, such as future new traffic flows, new infrastructure availability, or even information on Temporary Capacity Restrictions (TCRs), among others.

The elements influencing the Capacity Strategy should be communicated with the highest level of detail available, even if this level is not high, as this information is considered necessary both for the Infrastructure Manager's planning and for its communication at the European level with the aim of creating a common strategy. However, the level of detail of the Capacity Strategy is aligned with what is currently established regarding the concept of a capacity strategy at the European level. Likewise, it is important to note that its nature is primarily informative and non-binding.

Throughout the document, various data (infrastructure, projects, capacity, traffic flows, etc.) are presented to provide context to the reader; however, due to the dynamic and changing nature of these data, they should not be considered as a reference, and readers are encouraged to consult the official documents published by the IM, mainly the Network Statement.

To this end, and following the standardized template proposed by RNE in its document *"Procedures for Capacity Strategy – Complementary document (handbook) to Description of the Timetabling and Capacity Redesign Process"- Version 3.0*, it is structured in the following chapters:

0- Introduction
1- Expected Infrastructure Capacity for 2029
2- Temporary Capacity Restrictions (TCRs)
3- Traffic Planning Principles and Traffic Flows
4- Validation

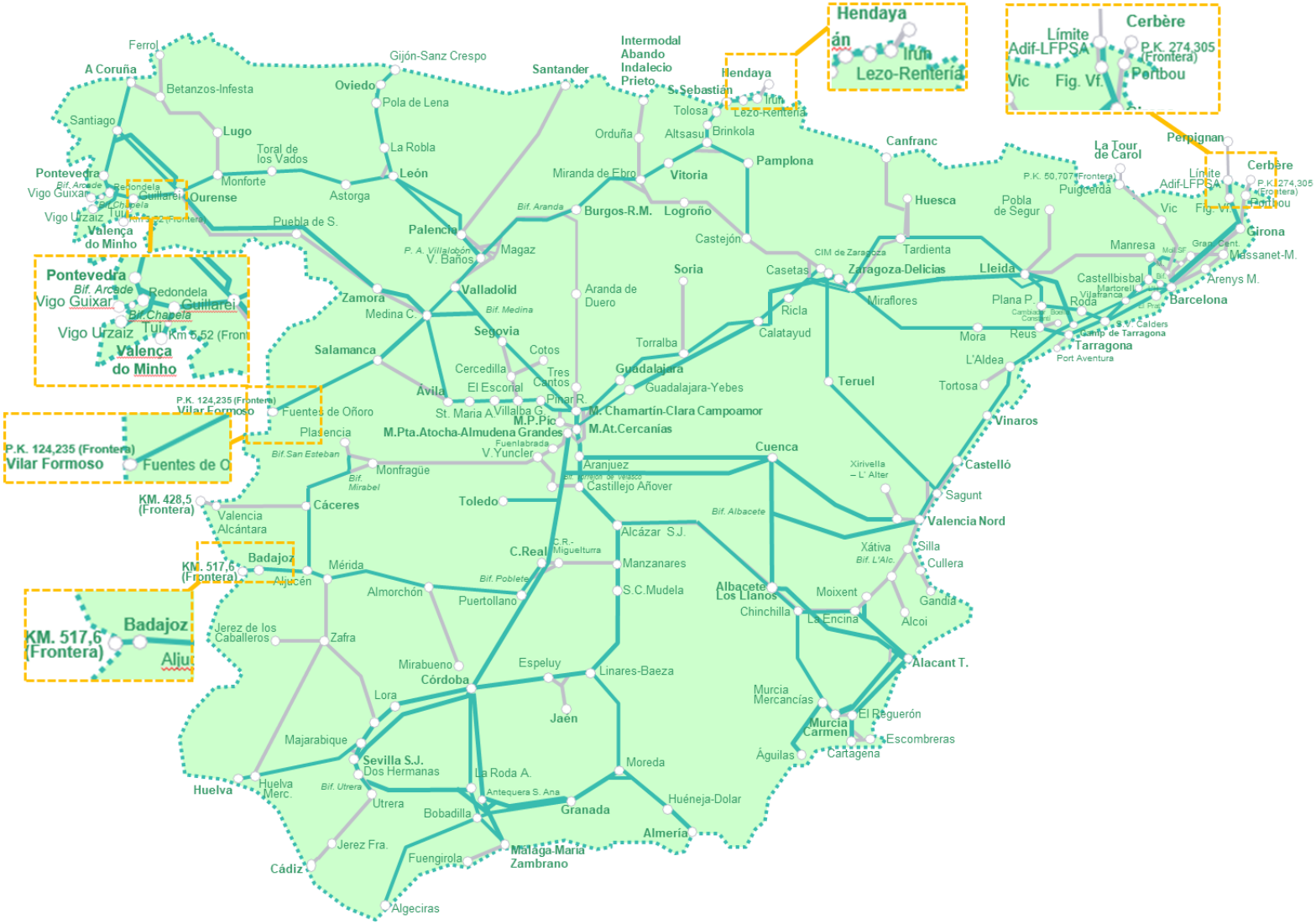
0.1.- Contact Details

For questions regarding the Capacity Strategy please write to the following address: gestion.capacidad@adif.es

0.2.- Geographical Area

Capacity Strategy 2029 applies to the lines conforming the TEN-T core:

These lines are shown in greenish blue on the following map of the ADIF and ADIF-AV Rail Network. Border sections are not included in the Capacity Strategy.



Map 1: geographical area of the lines that make up the core TEN-T network.

0.3.-List of involved IMs.

Involved Infrastructure Managers
SNCF Réseau
Infraestruturas de Portugal, S.A. (IP)
Línea Figueres Perpignan, S.A. (LFP)

Table 1: related Infrastructure Managers.

0.4.- List of service facilities

The PISERVI service facilities portal facilitates access to information on the technical characteristics and allows access to the DESCRIPTION SHEETS of the service facilities: freight terminals, passenger stations, maintenance facilities, private loading bays, gauge changers, etc., through selective searches based on criteria such as: geographical location, type of facility, type of service, etc., which facilitates the planning of rail services by railway companies and other logistics operators.

It also has an interactive map of the General Interest Railway Network (RFIG) with the possibility to combine different search criteria. In this case, the facilities resulting from the searches will be shown on the map viewer and their Descriptive Sheet can be selected and displayed.

On the other hand, Adif makes available to railway companies and other applicants, the SYACIS application, through which it is possible to request and allocate capacity at Adif Service Facilities. The regulated process for such capacity request and allocation is included in section 7 of the Adif and Adif AV Network Statement.

PISERVI service facilities portal can be accessed by clicking on the following link: PISERVI

CHAPTER 1 – EXPECTED INFRASTRUCTURE CAPACITY FOR 2029

1.1.- Additional available capacity:

Among the actions that ADIF is implementing to increase the network's capacity are the duplication of tracks, the installation of a third rail, the improvement of facilities, the deployment of the ERTMS system on several lines, and the development of rail motorways.

In addition, the construction of sidings for trains up to 750 meters in length is underway, which will facilitate the circulation of longer freight trains and contribute to increasing the modal share of rail freight transport. Furthermore, work is being carried out to implement the UIC gauge—either through mixed-gauge sections or sections exclusively with UIC gauge—both along the Mediterranean Corridor, from the border with limit LFP SA to Almería, and on line L100, from Alsasua to the border with Hendaya.

Many of these actions have a positive impact on the available capacity, as shown in the following table:

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
120	F. OÑORO - FRONTERA-SALAMANCA *	Electrification.	Operation with electric locomotives. Increased versatility of the line. Possible use of trains with higher maximum speed.	LOW	YES	YES
36	BIF ARCHIDONA - BIF CHANA	Track duplication.	Track duplication.	HIGH	YES	YES
36	VARIANTE DE LOJA - VALLE DEL GENIL	Construction of the bypass platform.	Reduction of travel times on rail connections with Granada.	HIGH	YES	YES
42	ESTACIÓN ALACANT-TERMINAL	Remodeling the track yard and electrification.	Conversion from station with 2 tracks of 1668 mm gauge to a new station with 8 tracks of 1435 mm gauge and 8 tracks of 1668 mm gauge.	HIGH	YES	YES
50	ESTACIÓN LA SAGRERA	Track and electrification of the new station.	New station with 8 tracks of 1435 mm gauge and 8 tracks of 1668 mm gauge.	HIGH	YES	YES
50	FIGUERES - BARCELONA	Deployment of ERTMS Level 2.	Increased safety, reliability and capacity.	LOW	YES	YES
80	VALLADOLID CAMPO GRANDE - NUDO NORTE VALLADOLID	Track duplication.	Track duplication.	HIGH	YES	YES
84	BIF. LAS ARENAS - BIF. VILECHA	Track duplication.	Track duplication.	HIGH	YES	YES

***International border.**

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
84	VILLADA - LEÓN	Track duplication.	Track duplication.	HIGH	YES	YES
100	PINAR DE LAS ROZAS-LAS MATAS	Construction of platform to increase capacity.	This section corresponds to a major project that will lead to quadrupling the track between Villalba and Pinar, so the expected benefits will not be achieved until it is 100% completed. This section improves the fluidity between trains with and without stops.	LOW	YES	YES
100	COMPLEJO FERROVIARIO VALLADOLID	Freight yard and connection to the network.	Improves the fluidity of freight traffic.	MEDIUM/HIGH (in conjunction with the commissioning of the Eastern bypass)	YES	YES
100	VARIANTE ESTE VALLADOLID	Construction of freight bypass.	Separation of freight and passenger traffic. Elimination of the single track in the Valladolid area.	MEDIUM/HIGH	YES	YES
100	VENTA DE BAÑOS - MEDINA	Removal of 3 level crossings.	Safety measure with possible speed increase.	LOW	YES	YES
130	PALENCIA-POLA DE LENA	Removal of level crossings.	Safety measure with possible speed increase. Removal of 3 level crossings with speed limits of 140/155/155 in sections with max speed 140/160/160.	LOW	YES	YES
200	CALATAYUD - GRISÉN	Extension of stations to 750 m and renovation of Grisén station.	Increase in special freight train length to 750 m and versatility in movements Grisén – Cabañas de Ebro. Improved capacity for crossings for standard and special length trains.	SUBJECT TO STUDY	YES	YES

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
200	AGUJA MIRAFLORES - PLANA PICAMOIXONS	Extension of 5 stations to 750 m.	Increase in special freight train length to 750 m. Improved capacity for crossings for standard and special length trains.	SUBJECT TO STUDY	YES	YES
210	LA CARTUJA - REUS	Extension of 5 stations to 750 m.	Increase in special freight train length to 750 m. Improved capacity for crossings for standard and special-length trains.	SUBJECT TO STUDY	YES	YES
240	LA GRANADA - SUBIRATS - SANT SADURNÍ D'ANOIA	Removal of level crossings.	Safety measure with possible speed increase.	LOW	YES	YES
254	ACCESO NUEVA TERMINAL AEROPUERTO DE BARCELONA	Implementation of double track.	Double track L254 – El Prat – Aeroport T1.	HIGH	YES	YES
300	LA ENCINA - XÁTIVA	Track duplication and stations with 750-meter sidings.	Capacity increase and improved regularity.	HIGH	YES	NO
NEW LINE	LA ENCINA - VALENCIA	Deployment of ERTMS Level 2 + ASFA + GSM-R.	Capacity increase through improved onboard train systems.	HIGH	YES	NO
NEW LINE	FUENTE DE SAN LUIS - ALMUSSAFES	New line. Single track with mixed gauge for freight and passenger service.	Track almost parallel to the existing high-speed line. Additional tracks in the Valencia–Silla section with planned use of freight bypass.	HIGH	YES	NO
NEW LINE	MURCIA-LORCA	Murcia–Lorca becomes a new 1435 mm line. The Murcia Freight–Lorca section has been closed since October 2021.	New line.	HIGH	YES	YES
NEW LINE	MURCIA - ALMERÍA	New line.	New line.	HIGH	YES	YES

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
336	EL REG. AG. 525.3-ALACANT-TERMINAL	Bypass for connection to Elche AV station.	New line with 1435 mm gauge.	HIGH	YES	YES
336	BENIEL - MURCIA	Control, command, and signaling for Beniel–Murcia duplication.	Track duplication.	HIGH		
352	EL REGUERÓN - CARTAGENA	HSL – Platform.	Possibility of 1435 mm gauge access to Cartagena station.	HIGH	YES	YES
400	LA NEGRILLA - LA SALUD	Signaling and ERTMS.	Improved reliability and optimization of travel times.	LOW	YES	YES
400	SEVILLA	New access to the Port of Seville.	Elimination of freight train maneuvers in Utrera.	LOW	YES	YES
420	BOBADILLA - RONDA	Suspension of Telephone Block.	Improved reliability of installations and increased line capacity.	LOW	YES	YES
420	RONDA-ALGECIRAS	Electrification.	Operation with electric locomotives. Increased versatility of the line. Possible use of trains with higher maximum speed.	LOW	YES	YES
422	VALCHILLÓN-TORRES CABRERA - FUENTE DE PIEDRA	Deployment of Automatic Block for Single Track.	Capacity increase by allowing more than one train to be dispatched between two stations.	LOW	YES	YES
520	MERIDA-ALJUCEN	Track duplication.	Capacity increase and optimization of travel times.	LOW	YES	YES
920/500	HUMANES- MÓSTOLES EL SOTO	Comprehensive remodeling of the C5 commuter line and implementation of ERTMS Level 2.	Improved reliability and optimization of travel times. Increased capacity is focused on commuter traffic.	LOW	YES	YES
300/100	ARANJUEZ - VILLALBA	Implementation of ERTMS Level 2.	Improved reliability and optimization of travel times. Increased capacity is focused on commuter traffic.	LOW	YES	YES

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
400	HERRERA DE LA MANCHA - MANZANARES	Deployment of Bidirectional Automatic Block, re-blocking with intermediate block post, and speed increase.	Increase in speed from 140–160 to 200–220 km/h.	MEDIUM	YES	YES
520	VILLANUEVA DE LA SERENA - BRAZATORTAS	Suspension of Telephone Block.	Improved reliability of installations and increased line capacity.	MEDIUM	YES	YES
520	BIF. POBLETE a PK 296,4	Rail Motorway Manzanares–Badajoz.	Improved track lengths and catenary height. Possibility of increasing capacity by introducing longer trains with higher frequency.	LOW	YES	YES
522	MANZANARES-MIGUELTURRA	Rail Motorway Manzanares–Badajoz.	Improved track lengths and catenary height. Possibility of increasing capacity by introducing longer trains with higher frequency.	LOW	YES	YES
600/300	CANAL DE ACCESO A VALENCIA	Underground access to Valencia Joaquín Sorolla and Valencia Nord stations.	Improved capacity by eliminating conflicts in entry/exit movements at both stations.	MEDIUM	YES	YES
40	ESTACIÓN VALENCIA JOAQUÍN SOROLLA	Track yard remodeling.	Creation of 5 new tracks (increasing from 5 to 10 tracks) of 1435 mm gauge at the station.	HIGH	YES	YES
600	CASTELLÓN - CAMBIADOR DE LA BOELLA	Installation of UIC gauge.	New section in 1435 mm and removal of the 1668 mm section (increase in paths >100% in 1435 mm gauge and total elimination of capacity in 1668 mm).	MEDIUM	YES	YES
600	L'AMETLLA - CAMBIADOR LA BOELLA	Safety installations project. ERTMS Level 2.	Capacity increase through improved onboard train systems.	LOW	YES	YES
610	SAGUNTO -MONREAL	Deployment of Automatic Block for Single Track.	Capacity increase by allowing more than one train to be dispatched between two stations.	LOW	YES	YES

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM	Funding secured
610	BIF TERUEL - CAMIN REAL	Deployment of Automatic Block for Single Track.	Capacity increase by allowing more than one train to be dispatched between two stations.	MEDIUM	YES	YES
610	BIF. TERUEL - SAGUNTO	Electrification.	Operation with electric locomotives. Increased versatility of the line. Possible use of trains with higher maximum speed.	LOW	YES	YES
800	LUGO - LEÓN	Removal of level crossings.	Safety measure with possible speed increase. Removal of one level crossing with speed limits of 155/155/155 in a section with max speed 160/160/160.	LOW	YES	YES
810	REDONDELA	Redondela bypass.	Avoid reversal maneuvers in Redondela.	MEDIUM	YES	YES

Table 2: works Involving Capacity Increase.

1.2.- Reduced available Capacity:

Line	Section	Description of the action	Effect of the action	Rough quantification of the effect	Project approved by the IM Management	Secured funding
600	CASTELLÓN - CAMBIADOR DE LA BOELLA	Rail Motorway Guadalajara–Zaragoza.	Increase in clearance for freight traffic. Change from BAD to BAB/BAU. Reduction in capacity due to conversion from double track to single track between Alhama and Calatayud.	HIGH	YES	YES
822	A CORUÑA	Access to the port at Punta Langosteira.	Installation of a turnout on a section that was main track so trains can take the diverging route.	LOW	YES	YES

Table 3: works Involving Capacity Reduction.

CHAPTER 2- TEMPORARY CAPACITY RESTRICTIONS (TCRs)

2.1.- Principles for TCR planning.

The continuous conservation and investment work that ADIF is entrusted with on all its managed lines, either through maintenance works on the infrastructures in service, or by conducting improvement and expansion works on its network, may inevitably lead to capacity restrictions.

Additionally, in accordance with the provisions of Delegated Decision 2017/2075 replacing Annex VII of Directive 2012/34/EU, and following the ***"Guidelines for Coordination/Publication of Planned Temporary Capacity Restrictions for the European Railway Network"*** published by RailNet Europe, ADIF makes the following classification of TCRs:

- **Minimal impact:** unspecified days – less than 10 % of traffic affected.
- **Minor impact:** 7 consecutive days or less – more than 10% of traffic affected.
- **Medium impact:** 7 consecutive days or less – more than 50% of traffic affected.
- **High Impact:** more than 7 consecutive days – more than 30% of traffic affected.
- **Major Impact:** more than 30 consecutive days – more than 50% of traffic affected.

In order to calculate the percentage of affected traffic that allows a homogeneous classification of the TCRs, the unit of reference measurement shall be a full day, as a general rule, a Thursday, which is representative, that is, with a high volume of traffic only on the entire section of the line on which the respective TCR is located, without taking into account the collateral effects of the TCR on other sections of the line.

For such purposes, the formula to be applied shall be the following:

$$\textbf{Impact of TCR on the traffic} = \frac{\textbf{Number of paths affected by TCR}}{\textbf{Number of paths on the representative day}} * 100$$

Likewise, in "intermediate" cases where a TCR does not meet both the criteria of number of consecutive days and % of traffic cancelled, diverted or substituted to be classified by impact as minimum – minor – medium – high – large, the TCR will be classified by its immediately lower impact.

The ADIF Capacity Manual includes, among other information, the characteristics and equipment of each line or the maintenance band interval, any traffic restrictions that may exist for accessing each of the lines comprising the ADIF and ADIF-AV network.

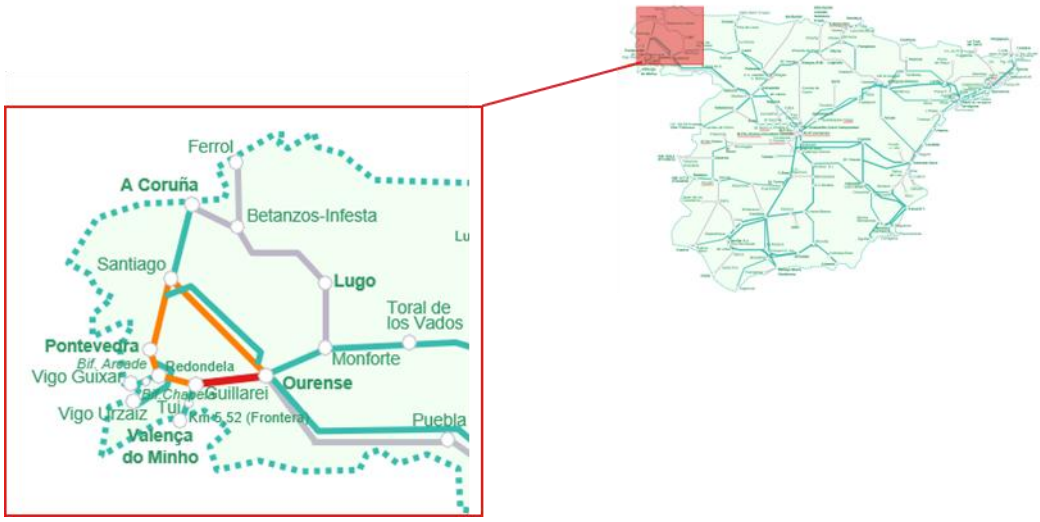
2.1.1 Clustering of TCRs to minimize the gravity of impact and duration.

In accordance with the specific procedure *Scheduling of Intervals for Extraordinary Works* (ADIF-PE-402-001-005-SC-524), whenever possible and when conditions are adequate, efforts will be made to coincide the extraordinary works on a line or route, thus benefiting from traffic suspension and alternative plans.

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

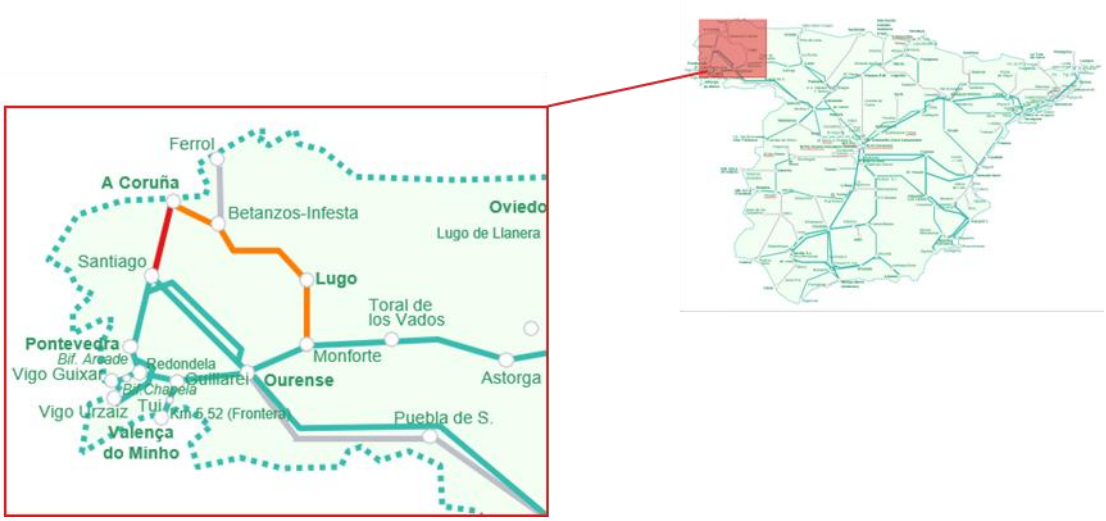
High- or major-impact TCRs will not be scheduled simultaneously (either due to limited capacity or because they involve alternative routes) on the following sections:

- Guillarei – Ourense section, line 810, and sections Santiago – Ourense, line 822, and Guillarei – Santiago, line 824:



Map 2: sections of lines 810, 822 and 824 where TCRs cannot be scheduled simultaneously.

- A Coruña – Santiago section, line 822, and Monforte – A Coruña section, line 800:



Map 9: sections of lines 822 and 800 where TCRs cannot be scheduled simultaneously.

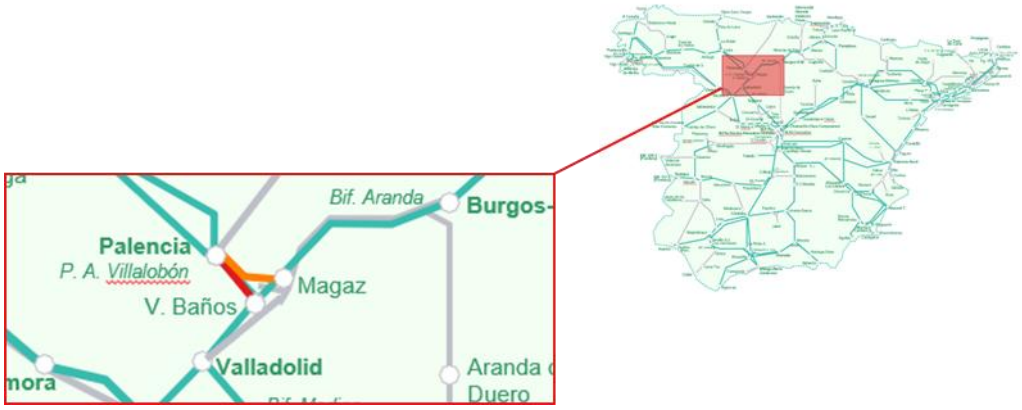
- Ourense – Monforte section, line 810, and sections A Coruña – Monforte, line 800, and A Coruña – Santiago, line 822:

Map 4: sections of lines 810, 800 and 822 where TCRs cannot be scheduled simultaneously.

- Bif. Tudela Veguín – Lugo de Llanera section, line 130, and sections Bif. Tudela Veguín – Tudela Veguín, line 140, and Tudela Veguín – Lugo de Llanera, line 154:

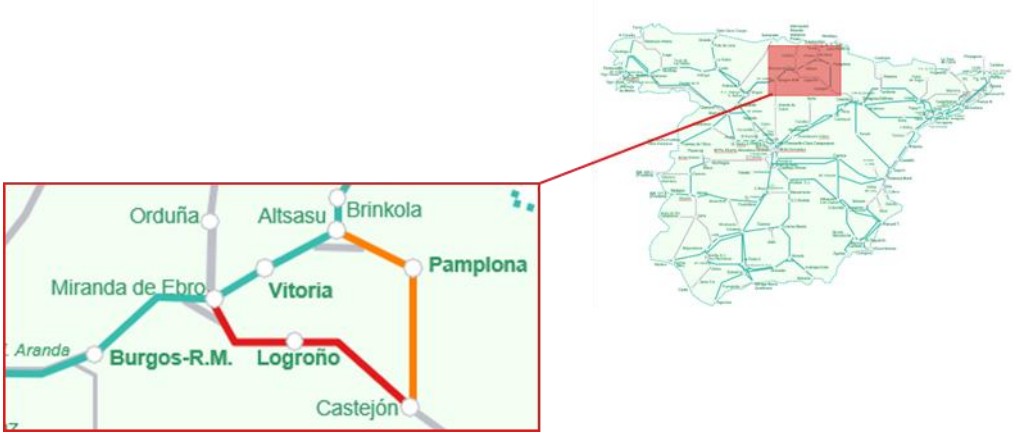
Map 5: sections of lines 130, 140 and 154 where TCRs cannot be scheduled simultaneously.

- Venta de Baños – Palencia section, line 130, and Magaz – Palencia section, line 164:



Map 6: sections of lines 130 and 164 where TCRs cannot be scheduled simultaneously.

- Miranda de Ebro – Castejón de Ebro section, line 700, and Altsasu – Castejón de Ebro section, line 710:

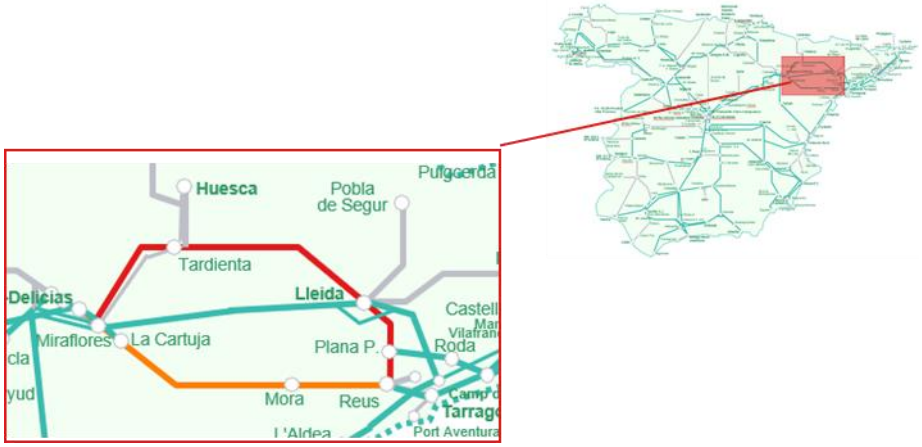


Map 7: sections of lines 700 and 710 where TCRs cannot be scheduled simultaneously.

- Urban tunnel of Zaragoza on line 200 versus the Southern Ring of Zaragoza on line 214, between Zaragoza CIM and La Cartuja:

Map 8: sections of lines 200 and 214 where TCRs cannot be scheduled simultaneously.

- <u>Section from Miraflores Switch to Plana Picamoixons on line 200, section from Plana to Reus on line 230, and section from La Cartuja to Reus on line 210:</u>



Map 9: sections of lines 200, 230 and 210 where TCRs cannot be scheduled simultaneously.

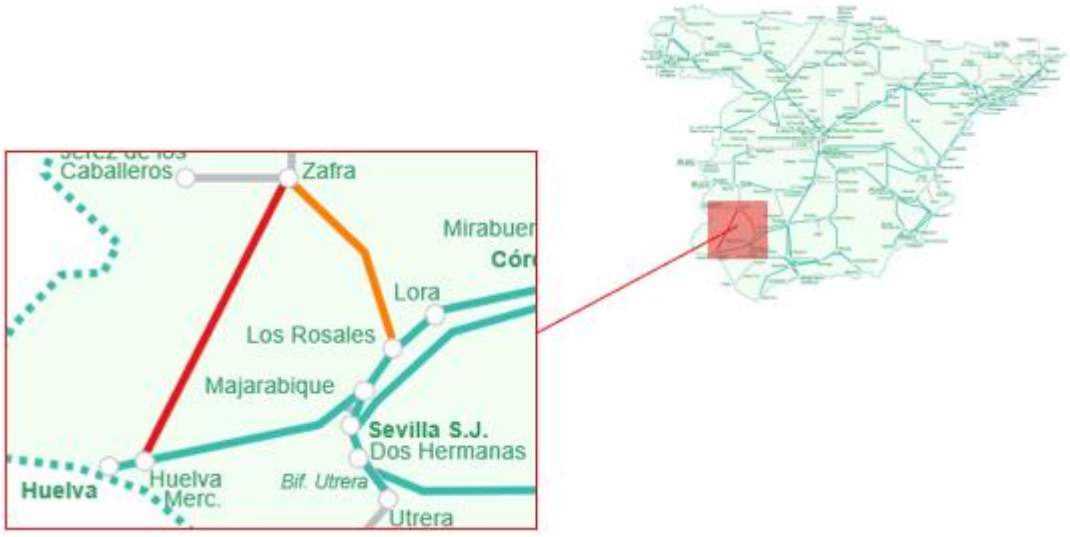
- <u>Plana Picamoixons to Sant Vicenç de Calders section on line 200 and section from Reus to Sant Vicenç de Calders on line 210</u>:

Map 10: sections of lines 200 and 210 where TCRs cannot be scheduled simultaneously.

- Section from Sant Vicenç de Calders to Castellbisbal on line 240, section from Sant Vicenç de Calders to Bellvitge-Gornal Switch on line 250, section from Bellvitge-Gornal Switch to L'Hospitalet de Llobregat on line 250, and section from L'Hospitalet de Llobregat to Castellbisbal on line 240:

Map 11: sections of lines 240 and 250 where TCRs cannot be scheduled simultaneously.

- Section from Huelva Freight to Zafra on line 512 and section from Los Rosales to Zafra on line 516:

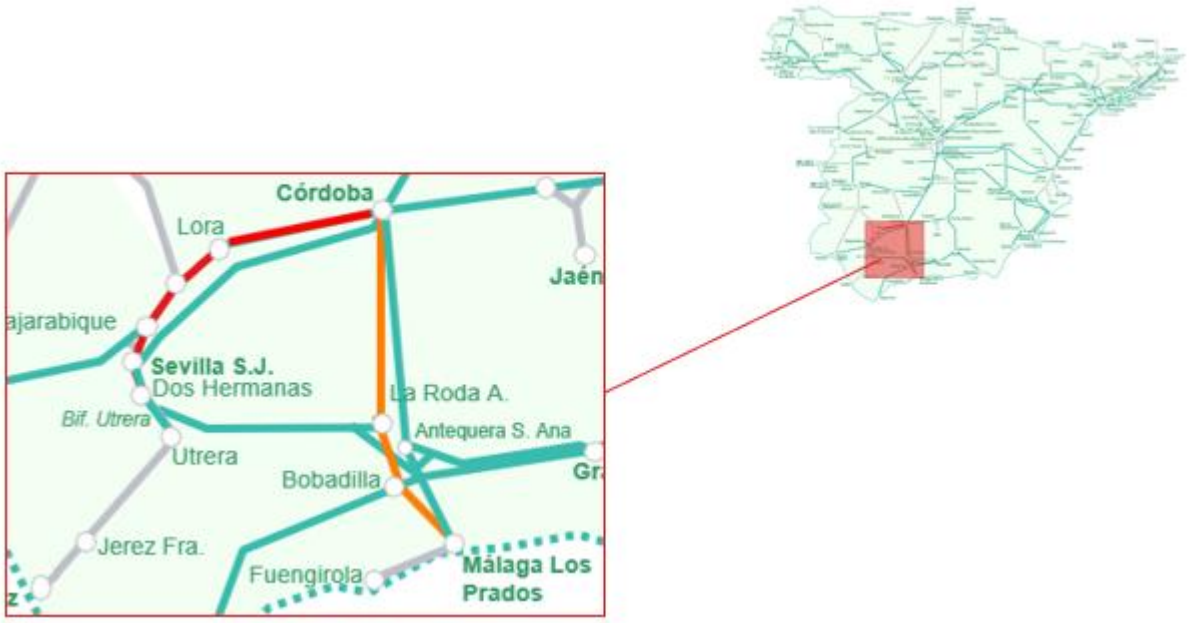


Map 12: sections of lines 541 and 516 where TCRs cannot be scheduled simultaneously.

- Section from Casa de la Torre Junction to Planetario Junction on line 500 and section from Planetario Junction to Badajoz on line 520:

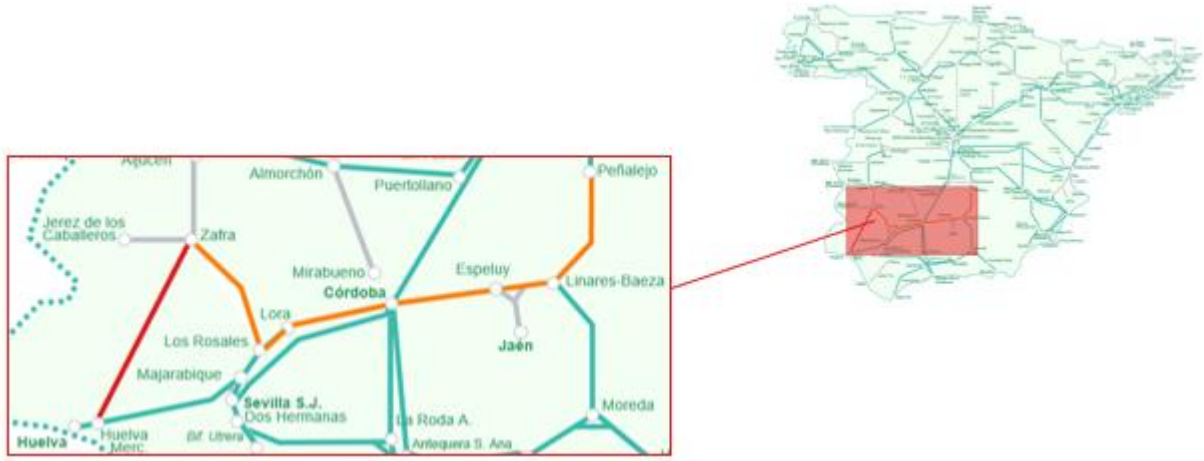
Map 13: sections of lines 500 and 520 where TCRs cannot be scheduled simultaneously.

- Section from Bif. Córdoba Freight to Sevilla Santa Justa on line 400 and section Bif. Córdoba Freight to Los Prados on line 430:



Map 14: sections of lines 400 and 430 where TCRs cannot be scheduled simultaneously.

- Section Peñalajo – Los Rosales / Zafra of line 400 and sections Zafra – Los Rosales / Zafra – Huelva Freight of lines 512/516:



Map 15: sections of lines 400 and 512/516 where TCRs cannot be scheduled simultaneously.

Likewise, whenever possible, simultaneous planning of RTCs on lines crossing the same border should be avoided.

2.1.3 Description of the periods during which regular TCR windows will be scheduled (nights, weekends).

With respect to the general principles to be considered for the planning of the TCRs, the actions will involve, in most cases, works in the maintenance band, in order to not affect the traffic. Those actions that require a cut in traffic will be conducted as far as possible on weekends when the effect on traffic is less. As a last option, they will involve traffic cuts on working days, preferably on one lane, so that the total cut of both lanes will only be conducted in strictly necessary cases. Likewise, the most severe restrictions are preferably planned for seasons with lower traffic volumes, such as the summer season.

2.1.4 Description of the TCR allocation, coordination and consultation process.

In the Network Statement of ADIF and ADIF-AV, an Annex document is published containing the catalog of RTCs with high and major impact on the General Interest Railway Network, which is available by clicking on:

- ADIF TCRs Catalogue
- ADIF-AV TCRs Catalogue

The information contained in the catalogs is presented in a table which, together with the reason for the restriction, highlights the type of impact on traffic (total closure, track availability restriction, speed restriction, weight, etc.), also explaining the expected impact in as much detail as possible. Additionally, maps are included to identify the different actions more easily, distinguishing them by geographical areas. These catalogs and maps are periodically updated with information from the TOC Commissions, which define and agree on the scheduling of actions and works on the infrastructure to provide information on future capacity restrictions agreed with the applicants, enabling them to adapt their operations and transport needs.

However, the coordination and communication process between ADIF and ADIF-AV and railway companies when RTCs exist is not limited solely to the TOC Commissions—with their central and territorial sessions, ordinary and extraordinary—nor to the publication of the Catalogs in the Network Statement.

In this regard, there are other instruments through which communication of possible closures and their dates are conducted, such as specific or monographic meetings to discuss the works, the schedules of affected trains, and even alternative routes.

To finalize the operation of an RTC that exceeds the capacity reserved for maintenance and conservation (known as Maintenance Bands), ADIF and ADIF-AV inform Railway Companies of the details in the so-called Scheduled/Authorized Work Files (TBP/TBA). These include, in addition to general information and schedules, aspects related to traffic safety. These files are usually sent as soon as they are available, and traceability is maintained in the notices and communications between ADIF and the Railway Companies.

2.1.5 Description of the existing escalation process or processes (national, bi- or trilateral) in case of disagreement between the parties involved.

In accordance with ADIF's specific procedure, Scheduling of Intervals for Extraordinary Works, whenever the Deputy Traffic Directorate notifies railway companies and authorized applicants of the execution of works within the established notice period, they must assume the repercussions thereof. Even if, for extraordinary reasons, the notice period is shorter, they must also assume the consequences without any right to financial compensation.

However, any objections raised by railway companies and authorized applicants will be reviewed to determine whether they can be considered before the approval of the works, and an alternative transport plan will be agreed upon with them.

2.2 Expected TCR with high and major impact.

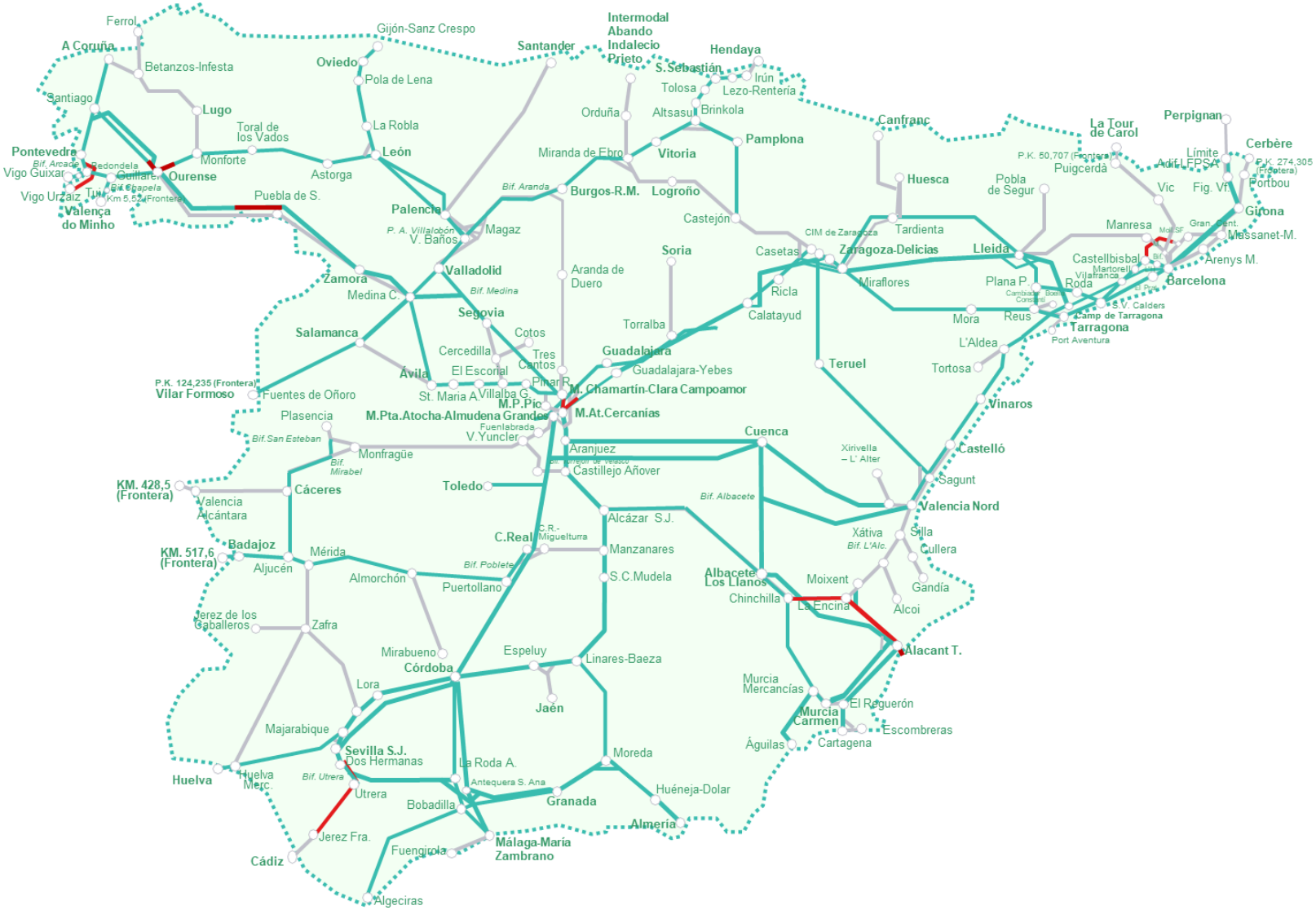
Due to the significant impact, they may have on allocated capacity and with a view to their consideration by railway companies for the planning of their transport plans, the following RTCs with high and major impact are indicated. These are those whose duration is expected to exceed 7 consecutive days, and which result in a cancellation, rerouting, or substitution by other modes of transport of more than 30% of the estimated daily traffic volume on a railway line, for **2029** and exclusively for the selected geographical area.

Detailed information on these restrictions, as well as those affecting the rest of the railway network, is available in the Network Statement of ADIF and ADIF-AV.

RTC Section	Purpose	Execution time	Start (quarter)	Impact (total closure/single track/speed restriction)	Impact on Passenger and freight traffic	Project approved by Adif	Funding secured
SANT GABRIEL - ALACANT)	New bridge over Barranco de las Ovejas, PK 1/662 of former Line 334 (between entry signals of Sant Gabriel station).	2 months	Q1 2029	Total closure of access to Sant Gabriel station, and therefore to the Port of Alicante.	Interruption of freight and passenger traffic.	YES	YES

RTC Section	Purpose	Execution time	Start (quarter)	Impact (total closure/single track/speed restriction)	Impact on Passenger and freight traffic	Project approved by Adif	Funding secured
LA ENCINA - ALACANT	Works for the implementation of a third rail, including restrictions contained in the following projects: · Track and Electrification between La Encina and Alicante · CMS between La Encina and Alicante · Installation of third rail in tunnel No. 1 of La Encina and connection with the 1435 mm line between Xàtiva and La Encina.	44 months	Q1 2026	Night closure of 7 hours every day until UIC connection exists between Valencia and Alicante. From January 2028, total closure of the line for 20 months.	Interruption of freight and passenger traffic.	YES	YES
XÁTIVA-LA ENCINA	Rehabilitation of tunnel No. 1 of La Encina.	6 months	Q4 2028	Total closure of the line between Bif. Túnel La Encina and La Encina.	Interruption of freight and passenger traffic.	YES	YES
MONTCADA I REIXAC - LA LLAGOSTA	Works for the construction project of the underground section of the R2 commuter line in Barcelona through the urban area of Montcada i Reixac (Barcelona) and the new Montcada i Reixac station. Execution of southern diversion parallel to the existing eastern one.	8 months	Q4 2028	Total closure and speed restrictions.	Impact on freight and passenger traffic.	YES	YES
CHAMARTÍN - HORTALEZA	Remodeling of conventional gauge tracks at the northern end of Madrid-Chamartín-Clara Campoamor station.	4 months	Q4 2028	Total closure.	Interruption of freight and passenger traffic.	YES	YES
ORENSE-SANTIAGO DE COMPOSTELA ORENSE - BIF. CHAPELA	Construction works for the new Orense intermodal station, pedestrian walkway, track covering, structure, and urban development.	73 months	Q3 2024	Periods of total closure and speed restrictions.	Impact on freight and passenger traffic.	YES	YES
PEDRALBA - LUBIÁN	Adaptation of the Padornelo tunnel.	67 months	Q1 2027	Total closure of single track.	Impact on freight and passenger traffic.	YES	YES
VIGO URZÁIZ. REDONDELA AV	Waterproofing of Vigo Das Maceiras tunnel, Line 850 Bif Arcade - Vigo Urzaiz, PK 0+658 to 8+937.	16 months	Q3 2027	Alternate closure of one tube for 16 months (8 months each).	Impact on freight and passenger traffic.	YES	YES
JEREZ DE LA FRONTERA - LEBRIJA	Construction of the new Jerez commuter station and modification of the track yard at Jerez Airport station.	24 months	Q2 2028	Total closures on weekends and extension of maintenance band.	Impact on freight and passenger traffic.	YES	YES

Table 4: High and Major impact TCRs.



Map 13: representation of the Adif network with the High and Major impact RTCs planned for 2029 highlighted in red.

CHAPTER 3 – TRAFFIC PLANNING PRINCIPLES AND TRAFFIC FLOWS

3.1.- Principles for traffic planning

This section describes the main principles for traffic planning (hereinafter TPP) for each railway line. These principles will be used later in the planning of the elements of the Capacity Model and Capacity Allocation

The data of train paths quotas offered are presented. It must be considered that the figures are indicative data since the final capacity of the infrastructure is influenced by the technical characteristics of the traffic running on it: stops, loads, material, etc.

For this reason, the process of creating the grids itself, and the track occupancy graph (GOV) of the stations determine the ultimate capacity in each particular situation. The effective capacity may differ slightly from the train path quotas foreseen as a result of the effective configuration in each case.

Likewise, the train path quotas include maintenance bands, but not extraordinary works.

3.1.1. Planning principles per line and section

The following table shows the principles and elements of traffic planning, except for the maximum lengths allowed in each section, which are shown in separate tables below. Saturation is indicated using a color code according to the following equivalences:

- Green: Less than 25%. The section has a low amount of traffic. No saturation issues.
- Yellow: Between 25% and 50%. The section has a normal level of traffic. No saturation issues.
- Orange: Between 50% and 75%. The section has high traffic levels. Occasional saturation issues.
- Red: More than 75%. Traffic is close to the maximum capacity of the section. Systematic saturation issues, occasionally reaching congestion.

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
10	MADRID P. ATOCHA A.G.-SEVILLA S. JUSTA	MADRID P. ATOCHA A.G.-BIF. TORREJÓN V.	→	X			From 0:00h to 5:00h.	292
			←					
		BIF. TORREJÓN V.-LA SAGRA	→	X			From 0:00h to 5:00h.	292
			←					
		LA SAGRA-PUERTOLLANO	→	X			From 0:00h to 5:00h.	292
			←					
		PUERTOLLANO-CÓRDOBA	→	X			From 0:00h to 5:00h.	292
			←					
		CÓRDOBA-SEVILLA S. JUSTA	→	X			From 0:00h to 5:00h.	292
			←					
14	BIF. GOBANTES-BIF. BOBADILLA	BIF. GOBANTES-BIF. BOBADILLA	→		X		From 0:00h to 5:00h.	292
			←					
20	LA SAGRA-TOLEDO	LA SAGRA-TOLEDO	→	X			From 0:00h to 5:00h.	304
			←					
26	PLASENCIA-BIF. SAN NICOLÁS	BIF. SAN ESTEBAN-ARROYO DE LA H.	→		X		From 2:00h to 5:00h	78
			←					
		ARROYO DE LA H.-BIF. CASA DE LA TORRE	→		X		From 2:00h to 5:00h	60
			←					
		BIF. CASA DE LA TORRE-CÁCERES	→		X		From 2:00h to 5:00h	88
			←					
		CÁCERES-BIF. GRANJA LAS ENCINAS	→		X		From Cáceres to Peñas Blancas: from 00:30h to 03:30h	106
			←					
		BIF. GRANJA LAS ENCINAS-BIF. SAN NICOLÁS	→		X		From Bif. Isla to Bif. San Nicolás: from 2:00h to 5:00h	40

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←					
30	BIF. MÁLAGA-A.V.-MÁLAGA M. ZAMBRANO	BIF. MÁLAGA-A.V.-ANTEQUERA-STA ANA	→		X		From 0:00h to 5:00h.	292
			←					
		ANTEQUERA-STA ANA-MÁLAGA M. ZAMBRANO	→		X		From 0:00h to 5:00h.	292
			←					
36	ANTEQUERA-STA ANA-GRANADA	ANTEQUERA-STA ANA-GRANADA	→		X		From 0:00h to 5:00h.	28
			←					
40	MADRID CHAM. C. C.-VALENCIA-J. S.	MADRID CHAM. C. C.-BIF. TORREJÓN V.	→	X			From 0:00h to 5:00h.	148
			←					
		BIF. TORREJÓN V.-CUENCA-F. ZOBEL	→	X			From 0:00h to 5:00h.	184
			←					
		CUENCA-F. ZOBEL-BIF. ALBACETE	→	X			From 0:00h to 5:00h.	184
			←					
		BIF. ALBACETE-VALENCIA-J. S.	→	X			From 0:00h to 5:00h.	184
			←					
42	BIF. ALBACETE-ALACANT-TERMINAL	ALBACETE-LOS LLANOS-ALACANT-TERMINAL	→	X			From 0:00h to 5:00h.	274
			←					
46	BIF. MURCIA-EL REG. KM 522.1	BIF. MURCIA-EL REG. KM 522.1	→		X		From 0:00h to 5:00	36
			←					
50	MADRID P. ATOCHA A.G.-LÍMITE ADIF-LFPSA	MADRID P. ATOCHA A.G.-CALATAYUD	→	X			From 0:00h to 5:00h.	184
			←					
		CALATAYUD-BIF. MONCASI	→	X			From 0:00h to 5:00h.	184
			←					
		BIF. MONCASI-BIF. ARTESA DE LLEIDA	→	X			From 0:00h to 5:00h.	184
			←					
			→	X			From 0:00h to 5:00h.	184

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
		BIF. ARTESA DE LLEIDA-CAMP DE TARRAGONA	←					
		CAMP DE TARRAGONA-BARCELONA SANTS	→ ←	X			From 0:00h to 5:00h.	184
		BARCELONA SANTS-LÍMITE ADIF-LFPSA	→ ←		X		From 0:00h to 5:00h. From Tuesday to Saturday	152
54	BIF. MONCASI-BIF. CANAL IMPERIAL	BIF. MONCASI-ZARAGOZA-DELICIAS	→ ←		X		From 0:00h to 5:00h.	184
		ZARAGOZA-DELICIAS-BIF. CANAL IMPERIAL	→ ←		X		From 0:00h to 5:00h.	94
56	BIF. ARTESA DE LLEIDA-BIF. LES TORRES DE S.	BIF. ARTESA DE LLEIDA-LLEIDA-PIRINEUS	→ ←		X		From 0:00h to 5:00h.	114
		LLEIDA-PIRINEUS-BIF. LES TORRES DE S.	→ ←		X		From 0:00h to 5:00h.	88
80	MADRID CHAM. C. C.-BURGOS ROSA M.	MADRID CHAM. C. C.-SEGOVIA-GUIOMAR	→ ←		X		From 0:00h to 5:00h.	304
		SEGOVIA-GUIOMAR-BIF. MEDINA	→ ←		X		From 0:00h to 5:00h.	304
		BIF. MEDINA-VALLADOLID-C.G.	→ ←		X		From 0:00h to 5:00h.	250
		VALLADOLID-C.G.-BIF. VENTA DE BAÑOS	→ ←		X		From 0:00h to 5:00h.	126
		BIF. VENTA DE BAÑOS-BURGOS ROSA M.	→ ←		X		From 0:00h to 5:00h.	62
82	BIF. COTO DA TORRE-BIF. A GRAN. AG.KM.85.0	BIF. COTO DA TORRE-BIF. A GRAN. AG.KM.85.0	→ ←		X		From 0:00h to 5:00h.	180

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
84	BIF. VENTA DE BAÑOS-LEÓN	BIF. VENTA DE BAÑOS-BIF. CERRATO	→ ←		X		From 0:00h to 5:00h.	125
		BIF. CERRATO-LEÓN	→ ←		X		From 0:00h to 5:00h.	38
100	MADRID CHAM. C. C.-P.K. 641.181 (FRONTERA)	MADRID CHAM. C. C.-PINAR DE L ROZAS	→ ←	X			From 00:30h to 5:30h between Madrid Chamartín and Pitis. From 1:00h to 5:00h between Pitis and Pinar de las Rozas.	358
		PINAR DE L ROZAS-VILLALBA GUADARR.	→ ←	X			From 1:00h to 5:00h	362
		VILLALBA GUADARR. -EL ESCORIAL	→ ←	X			From 1:00h to 5:00h	302
		EL ESCORIAL-ST. MARÍA ALAMEDA	→ ←		X		From 0:00h to 5:00h direction Sta. María de la Alameda. From 23:30h to 4:30h direction El Escorial.	216
		ST. MARÍA ALAMEDA-ÁVILA	→ ←		X		From 0:00h to 5:00h direction Ávila. From 23:30h to 4:30h direction Santa María de la Alameda.	212
		ÁVILA-MEDINA DEL CAMPO	→ ←		X		From Ávila to Sanchidrián from 23:30h to 4:30h. From Sanchidrián to Medina del Campo from 23:00h to 4:00h.	248
		MEDINA DEL CAMPO-VALLADOLID-C.G.	→ ←		X		From 0:00h to 5:00h. BM Condicional Arcas Reales P.B. - Valladolid C.G.	109
		VALLADOLID-C.G.-VENTA DE BAÑOS	→ ←		X		From Valladolid to Corcos: from 0:00h to 5:00h. From Corcos to Venta Baños: from 0:30h to 5:30h. BM Condicional Valladolid - Río Pisuerga.	99
		VENTA DE BAÑOS-BURGOS ROSA M.	→ ←			X	From 8:00h to 13:00h. BM Condicional Quintanilleja - Burgos-Rosa Manzano.	88

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
		BURGOS ROSA M.-MIRANDA DE EBRO	→			X	From 7:00h to 12:00h.	200
			←					
		MIRANDA DE EBRO-VITORIA GASTEIZ	→		X		From 8:30h to 13:30h	138
			←					
		ALTSASU-BRINKOLA	→		X		From 0:00h to 5:00h.	203
			←					
		BRINKOLA-TOLOSA	→	X			From 0:00h to 5:00h.	266
			←					
		TOLOSA-HERNANI (SAN SEBASTIÁN)	→	X			From 0:00h to 5:00h.	316
			←					
		HERNANI (SAN SEBASTIÁN)-LEZO-RENTERÍA	→	X			From 0:00h to 5:00h.	260
			←					
		LEZO-RENTERÍA-P.K. 641.181 (FRONTERA)	→	X			From 0:00h to 5:00h.	52
			←					
120	F. OÑORO - FRONTERA-MEDINA DEL CAMPO	F. OÑORO - FRONTERA-SALAMANCA	→		X		From 16:10h to 19:10h in Salamanca. From 15:30h to 18:30h in F. Oñoro-Frontera.	33
			←					
		SALAMANCA-MEDINA DEL CAMPO	→		X		Salamanca from 01:15h to 04:15 h / Medina del Campo from 00:30 to 03:30 h.	55
			←					
130	VENTA DE BAÑOS-GIJÓN-SANZ CRESPO	VENTA DE BAÑOS-PALENCIA	→		X		From 23:15h to 4:15h direction Venta de Baños. From 1:45h to 6:45h direction Palencia. BM Condicional P.A. Villalobón - Palencia.	106
			←					
		PALENCIA-LEÓN	→		X		VIA I: from 9:05h to 12:05h in B. Grijota and from 9:50h to 12:50h in B. Onzonilla. VIA II: from 9:50h to 12:50 in B. Onzonilla and from 10:40h to 13:40h in B. Grijota.BM Condicional Palencia-Bif. Grijota and B. Onzonilla-León	114
			←					

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
		LEÓN-BIF. PAJARES	→ ←		X		From 9:15h to 12:15h. Between B. Galicia and Bif. Pajares	320
		BIF. PAJARES-LA ROBLA	→ ←		X		From 11:00h to 16:00h.	320
		LA ROBLA-PTE. LOS FIERROS	→ ←		X		In La Robla from 11:00h to 16:00h. In Puente de los Fierros from 11:00h to 15:40h.	80
		PTE. LOS FIERROS-POLA DE LENA	→ ←		X		From 1:30h to 4:30h	94
		POLA DE LENA-SOTO DE REY	→ ←	X			From 0:30h to 3:30h.	201
		SOTO DE REY-OVIEDO	→ ←	X			From 0:30h to 3:30h.	297
		OVIEDO-VILLABONA DE AST.	→ ←	X			From 0:30h to 3:30h.	441
		VILLABONA DE AST. -GIJÓN-SANZ CRESPO	→ ←	X			From 0:30h to 3:30h.	342
200	MADRID CHAM. C. C.-BARNA-FRANÇA	MADRID CHAM. C. C.-S. FERNANDO HEN.	→ ←	X			From 1:00h to 4:30h.	220
		S. FERNANDO HEN. -ALCALÁ HENARES	→ ←	X			From 1:00h to 4:30h.	663
		ALCALÁ HENARES-GUADALAJARA	→ ←	X			From 1:10h to 4:10h.	322
		GUADALAJARA-TORRALBA	→ ←		X		From Guadalajara to Sigüenza: from 1:00h to 4:00h direction Sigüenza, from 23:00h to 2:00h direction Guadalajara. Sigüenza->Torralba: 0:30h-3:30h->0:40h-3:40h. Torralba->Sigüenza: 22:55h-1:55h->23:00h-2:00h	123
		TORRALBA-CALATAYUD	→		X			117

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			→				In Torralba from 0:40h to 3:40h direction Calatayud, from 22:55h to 1:55h direction Torralba. In Calatayud from 1:30h to 4:30h direction Calatayud, from 22:30h to 1:30h direction Torralba.	
		CALATAYUD-RICLA-LA ALMUNIA	→ ←		X		From 4:10h to 7:10h in Ricla-La Almunia. From 4:40h to 7:40h in Calatayud.	102
		RICLA-LA ALMUNIA-CASETAS	→ ←		X		From 4:00h to 7:00h in Ricla-La Almunia. From 4:20h to 7:20h in Casetas.	131
		CASETAS-ZARAGOZA-DELICIAS	→ ←		X		From 10:30h to 13:30h. Between C.I.M. Zaragoza and Zaragoza-Delicias will be scheduled as extraordinary works.	202
		ZARAGOZA-DELICIAS-MIRAFLORES	→ ←		X		From 10:30h to 13:30h. Will be scheduled as extraordinary works.	134
		MIRAFLORES-TARDIENTA	→ ←			X	From 9:00h to 12:00h in Miraflores. From 9:40h to12:40h in Tardienta.	81
		TARDIENTA-MONZÓN-RÍO CINCA	→ ←			X	From 9:40h to 12:40h in Monzón-Río Cinca. From 9:00h to 12:00h in Tardienta.	81
		MONZÓN-RÍO CINCA-LLEIDA-PIRINEUS	→ ←			X	From 10:10h to 13:10h in Lleida Pirineus. From 9:40h to 12:40h in Monzón-Río Cinca.	81
		LLEIDA-PIRINEUS-PLANA-PICAMOIXONS	→ ←			X	From 10:10h to 13:10h in Lleida-Pirineus. From 10:30h to 13:30h in La Plana-Picamoixons.	87
		PLANA-PICAMOIXON-S. VICENÇ CALDERS	→			X		86

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←				From 10:30h to 13:30h in La Plana-Picamoixons. From 10:50h to 13:50h in Sant Vicenç de Calders.	
210	MIRAFLORES-S. VICENÇ CALDERS	MIRAFLORES-SAMPER	→ ←			X	From Miraflores to La Cartuja BM Condicional. From 1:00h to 4:00h in La Cartuja and from 00:25h to 3:25h in Samper.	86
		SAMPER-MORA LA NOVA	→ ←			X	From 00:25h to 3:25h in Samper. From 23:20h to 2:20h in Mora la Nova.	86
		MORA LA NOVA-REUS	→ ←			X	From 23:20h to 2:20h in Mora la Nova. From 22:10h to 1:10h in Reus.	89
		REUS-TARRAGONA	→ ←		X		From 0:00h in 5:00h.	280
		TARRAGONA-S. VICENÇ CALDERS	→ ←		X		From 0:00h in 5:00h.	362
214	C.I.M. DE ZARAGOZA-LA CARTUJA	C.I.M. DE ZARAGOZA-BIF. TERUEL	→ ←		X		BM Condicional.	264
		BIF. TERUEL-LA CARTUJA	→ ←		X		BM Condicional	113
230	PLANA-PICAMOIXON-REUS	PLANA-PICAMOIXON-REUS	→ ←		X		From 10:00h to 13:00h in La Plana-Picamoixons. From 9:40h to 12:40h in Reus.	79
238	CASTELLBISBAL-AG. LLOBR. -BARNA MORROT	CASTELLBISBAL-AG. LLOBR. -BARNA MORROT	→ ←		X		From 0:30h to 3:30h.	280
240	S. VICENÇ CALDERS-L'HOSPITALET-LLOBR.	S. VICENÇ CALDERS-VILAFRANCA PEN.	→ ←	X			From 0:00h to 5:00h.	392
		VILAFRANCA PEN. -MARTORELL CENTRAL	→	X			From 0:00h to 5:00h.	392

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←					
		MARTORELL CENTRAL-CASTELLBISBAL	→ ←	X			From 0:00h to 5:00h.	464
		CASTELLBISBAL-L'HOSPITALET-LLOBR.	→ ←	X			From 0:00h to 5:00h.	432
246	MOLLET-SANT FOST-CASTELLBISBAL-AG. RUBI	MOLLET-SANT FOST-CERDANYOLA UNIV.	→ ←		X		From 0:00h to 3:00h.	381
		CERDANYOLA UNIV.-CASTELLBISBAL-AG. RUBI	→ ←	X			From 0:00h to 3:00h.	384
254	AEROPORT-EL PRAT DE LLOB.	AEROPORT-EL PRAT DE LLOB.	→ ←	X			From 0:00h to 5:00h.	102
300	MADRID CHAM. C. C.-VALENCIA-NORD	BIF. PLANETARIO-ARANJUEZ	→ ←	X			From Bif. Planetario to S. Cristóbal I.: 0:30h to 4:30h. From S. Cristóbal I. to Aranjuez: 00:50h to 04:50h.	352
		ARANJUEZ-ALCAZAR SAN JUAN	→ ←		X		From 23:15h to 04:15h.	259
		ALCAZAR SAN JUAN-ALBACETE-LOS LLANOS	→ ←		X		From Alcázar de San Juan to Villarobledo and from La Roda to Albacete: 22:30h-3:30h. From Villarobledo to La Roda de Albacete: 22:00h-1:00h.	238
		ALBACETE-LOS LLANOS-CHIN. MONTEARAGÓN	→ ←		X		From 22:30h to 3:30h.	273
		CHIN. MONTEARAGÓN-LA ENCINA	→ ←		X		From 22:30 to 03:30 h.	260
		MURCIA MERC.-MURCIA DEL C.	→ ←		X		From 01:00 to 04:00 h.	118

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
322	MURCIA MERC.-ÁGUILAS	MURCIA MERC.-LORCA-SUTULLENA	→		X		From 1:00h to 4:00h.	40
			←					
		LORCA-SUTULLENA-ÁGUILAS	→		X		From 1:00h to 4:00h.	12
			←					
330	LA ENCINA-ALACANT-TERMINAL	LA ENCINA-S. VICENT CENTRE (APD)	→		X		From 1:00h to 4:00h.	86
			←					
		S. VICENT CENTRE (APD)-ALACANT-TERMINAL	→		X		From 1:00h to 4:00h.	88
			←					
332	LA ENCINA AGUJA KM. 2.963-CAUDETE	LA ENCINA AGUJA KM. 2.963-CAUDETE	→		X		From 1:00h to 4:00h.	124
			←					
336	EL REG. AG. 525.3-ALACANT-TERMINAL	EL REG. AG. 525.3-ALACANT-TERMINAL	→		X		From 1:00h to 4:00h.	74
			←					
352	EL REG. KM 522.1-CARTAGENA	EL REG. KM 522.1-CARTAGENA	→		X		From 1:00h to 4:00h.	52
			←					
354	EL REG. KM 522.1-MURCIA DEL C.	EL REG. KM 522.1-EL REG. AG. 525.3	→		X		From 0:00h to 5:00h.	112
			←					
		EL REG. AG. 525.3-MURCIA DEL C.	→		X		From 0:00h to 5:00h.	112
			←					
400	ALCÁZAR SAN JUAN-CADIZ	ALCAZAR SAN JUAN-MANZANARES	→		X		From Alcázar de San Juan to Herrera de la Mancha: from 23:30h to 4:30h. From Herrera de la Mancha to Manzanares: from 0:00h to 3:00h.	280
			←					
		MANZANARES-STA CRUZ MUDELA	→		X		From 23:30h to 4:30h.	308
			←					
		STA CRUZ MUDELA-LINARES BAEZA	→		X			80

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←				BAU with CTC from Santa Cruz de Mudela to Vadollano. BAB with CTC from Vadollano to Linares-Baeza.	
		LINARES BAEZA-ESPELUY	→ ←		X		From 12:45h to 15:45h.	104
		ESPELUY-ALCOLEA CÓRDOBA	→ ←		X		From 11:30 to 14:30 h.	84
		ALCOLEA CÓRDOBA-CÓRDOBA	→ ←		X		From 11:30 to 14:30 h. During the maintenance window, certain trains will be allowed to pass.	76
		CÓRDOBA-LORA DEL RIO	→ ←		X		From Córdoba to Villarrubia de Córdoba: 0:20h - 3:20h in Córdoba / 0:05h - 3:05h in Villarrubia de C. From Villarrubia de Córdoba to Lora del Río: from 10:30 to 13:30.	82
		LORA DEL RIO-SEVILLA S. JUSTA	→ ←	X			From 1:40h to 4:40h.	276
		SEVILLA S. JUSTA-UTRERA	→ ←	X			From Sevilla-Santa Justa to La Salud from 1:40h to 4:40h. From La Salud to Utrera from 1:00h to 4:00h.	243
		MOREDA-ALMERÍA	→ ←		X		From 1:00h to 4:00h.	84
416	MOREDA-GRANADA	MOREDA-AG. KM 54.289	→ ←		X		From 1:00h to 4:00h.	84
		AG. KM 54.289-GRANADA	→ ←		X		From 1:00h to 4:00h.	84
420	BIF. MARAVILLAS-ALGECIRAS	BIF. MARAVILLAS-BOBADILLA	→ ←		X		From 0:00h to 3:00h.	68
		BOBADILLA-RONDA	→		X		From 0:30h to 3:30h.	26

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←					
		RONDA-ALGECIRAS	→		X		From 0:00h to 3:00h.	46
			←					
422	BIF. UTRERA-FUENTE DE PIEDRA	BIF. UTRERA-FUENTE DE PIEDRA	→		X		From 23:00 to 02:00 h.	38
			←					
430	BIF. CÓRDOBA MERCANCIAS-LOS PRADOS	BIF. CÓRDOBA MERCANCÍAS-BOBADILLA	→		X		Bif. Córdoba M. to Córdoba M.: 10:30-13:30; Córdoba M. to Aguilar F.: 9:00-12:00; 9:30-12:30 in Aguilar F. 10:00-13:00 in La Roda A.; La Roda A. to F. de Piedra: 10:00-13:30; F. de Piedra to Bobadilla: 0:30-3:30	18
			←					
440	BIF. LOS NARANJOS-HUELVA	BIF. LOS NARANJOS-BENACAZÓN	→		X		BAB with CTC from Bif. Los Naranjos to Bif. Cartuja. BAU with CTC from Bif. Cartuja to Benacazón.	100
			←					
		BENACAZON-HUELVA	→		X		BAU with CTC between Benacazón and Aznalcázar-Pilas and between Huelva Freight and Huelva. BLAU with CTC from Aznalcázar-Pilas to Huelva Freight.	50
			←					
444	BIF. TAMARGUILLO-LA SALUD	BIF. TAMARGUILLO-LA SALUD	→		X		From 1:00h to 4:00h.	272
			←					
460	BIF. MARAVILLAS-FUENTE DE PIEDRA	BIF. MARAVILLAS-FUENTE DE PIEDRA	→		X		From 00:00h to 3:00h.	72
			←					
508	BADAJOZ-BADAJOZ-FRONTERA	BADAJOZ-BADAJOZ-FRONTERA	→		X		Badajoz – Logistic Platform SO: from 1:00h to 4:00h. Logistic Platform SO - Badajoz-Frontera: from 2:45h to 5:45h.	38
			←					
518		CACERES AG. KM 82.2-BIF. LOS ROMANOS	→		X		From 00:30h to 03:30h.	62

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
	CÁCERES AG. KM 82.2-BIF. LOS ROMANOS		←					
520	CIUDAD REAL-BADAJOZ	CIUDAD REAL-PUERTOLLANO	→		X		From 23:00h to 2:00h.	51
			←					
		PUERTOLLANO-ALMORCHÓN	→		X		From 02:00 to 05:00.	19
			←					
		ALMORCHÓN-MERIDA	→		X		From 2:00h to 5:00h.	16
			←					
		MÉRIDA-ALJUCÉN	→		X		From 1:00h to 4:00h.	106
			←					
		ALJUCÉN-BADAJOZ	→		X		From 1:00h to 4:00h.	106
			←					
522	MANZANARES-CIUDAD REAL	MANZANARES-CIUDAD REAL	→		X		From 23:00h to 2:00h.	94
			←					
600	VALENCIA-NORD-CAMBIADOR BOELLA	VALENCIA-NORD-SAGUNT	→		X		Direction Valencia Nord, from 0:45h to 5:45h. Direction Sagunt, from 23:30h to 4:30h.	273
			←					
		SAGUNT-CASTELLÓ PLANA	→		X		From Sagunt to Moncófar: from 0:45h to 5:45h direction Sagunt, from 23:30h to 4:30h direction Moncófar. From 0:45h to 5:45h from Moncófar to Castelló de la Plana.	283
			←					
		CASTELLÓ PLANA-VINAROS	→		X		From 0:30h to 5:30h from Castelló de la Plana to Benicarló. From 0:00h to 5:00h from Benicarló to Vinarós.	266
			←					
		VINAROS-L'ALDEA-AMP-TOR.	→		X		From 0:00h to 5:00h.	352
			←					

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
		L'ALDEA-AMP-TOR. -CAMBIADOR BOELLA	→ ←		X		From 0:00h to 5:00h.	246
610	SAGUNT-BIF. TERUEL	SAGUNT-CAUDIEL	→ ←		X		From 2:30h to 5:30h in Sagunto. From 2:00h to 5:00h in Caudiel.	60
		CAUDIEL-TERUEL	→ ←		X		From 2:00h to 5:00h in Caudiel. From 0:45h to 3:45h in Teruel.	40
		TERUEL-BIF. TERUEL	→ ←		X		From 0:45h to 3:45h in Teruel. From 21:15h to 0:15h in Bif. Teruel.	24
640	CAMBIADOR BOELLA-CAMP DE TARRAGONA	CAMBIADOR BOELLA-CAMP DE TARRAGONA	→ ←		X		From 0:00h to 5:00h.	184
700	INTERM. ABANDO I. P.-CASETAS	CASTEJÓN DE EBRO-CASETAS	→ ←		X		CASETAS-CORTES: direction Casetas 09:30h-14:30h; Direction Cortes 07:30h-12:30h. CORTES-CASTEJÓN: direction Cortes 23:00h-04:00h; Direction Castejón 00:00h-05:00h.	238
702	GRISEN-CABAÑAS DE EBRO	GRISEN-CABAÑAS DE EBRO	→ ←		X		From 9:20h to 12:20h	250
710	ALTSASU-CASTEJÓN DE EBRO	ALTSASU-PAMPLONA	→ ←		X		From 1:50h to 4:50h in Pamplona. From 2:20h to 5:20h in Altsasu.	82
		PAMPLONA-CASTEJÓN DE EBRO	→ ←		X		From 2:00h to 5:00h.	68
800	LEÓN AG. KM. 123.6-A CORUÑA	LEÓN AG. KM. 123.6-ASTORGA	→ ←		X		From 8:50h to 11:50h in Astorga. From 9:10h to 12:10h in León Ag. km. 123,6.	52
		ASTORGA-PONFERRADA	→		X			51

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←				Astorga-Brañuelas: 08:40 to 11:40h in Brañuelas, 08:50 to 11:50h in Astorga. From Brañuelas to Ponferrada from 07:30 h to 11:00 h in Ponferrada, from 08:30 h to 11:30 h in Brañuelas.	
		PONFERRADA-MONFORTE LEMOS	→ ←		X		From Ponferrada to Rúa-Petín from 07:15 h to 10:15 h in Ponferrada, from 07:50 h to 10:50 h in Rúa Petín. From Rúa-Petín to Monforte de Lemos from 13:00h to 16:00h.	52
		BETANZOS-INFESTA-A CORUÑA	→ ←		X		From 1:00h to 4:00h.	47
810	MONFORTE LEMOS-BIF. CHAPELA	MONFORTE LEMOS-OURENSE	→ ←		X		From 12:50 to 15:50 h in Monforte de Lemos. From 12:55 to 15:55 h in Ourense.	77
		OURENSE-GUILLAREI	→ ←		X		In Guillarei from 23:30h to 2:30h. In Ourense from 0:30h to 3:30h.	69
		GUILLAREI-REDONDELA	→ ←		X		From 2:00h to 5:00h.	80
		REDONDELA-BIF. CHAPELA	→ ←		X		From 2:00h to 5:00h.	360
812	VIGO-GUIXAR-BIF. CHAPELA	VIGO-GUIXAR-BIF. CHAPELA	→ ←		X		From 2:00h to 5:00h.	96
822	BIF. VALORIO-A CORUÑA	TABOADELA AG. KM 234.0-OURENSE	→ ←		X		From 09:00 to 12:00 h from Taboadela Ag. Km. 234,0 to Taboadela From 23.45 to 04.45 h in Taboadela to Ourense.	44
		OURENSE-SANTIAGO COMPOSTELA	→ ←		X		From 1:50h to 4:50h.	42
		SANTIAGO COMPOSTELA-A CORUÑA	→		X		From 01:00 to 05:00.	220

Line code	Line	Section	Saturation Index	Capacity Estimation Model			Maintenance Window	Offered slots
				Integrated Cadenced Timetable	Free Timetable	Pre-drafted Timetable		
			←					
824	REDONDELA-SANTIAGO COMPOSTELA	BIF. ARCADE-PONTEVEDRA	→ ←		X		From 2:00h to 5:00h.	264
		PONTEVEDRA-SANTIAGO COMPOSTELA	→ ←		X		From 2:00h to 5:00h.	282
850	VIGO URZAIZ-BIF. ARCADE	VIGO URZAIZ-BIF. ARCADE	→ ←		X		From 2:00h to 5:00h	168
902	PITIS-HORTALEZA	PITIS-HORTALEZA	→ ←		X		From 00:45h to 4:30h.	164
908	HORTALEZA-AEROPUERTO-T4	HORTALEZA-AEROPUERTO-T4	→ ←		X		From 1:00h to 5:00h	352
930	MADRID ATOCHA C.-S. FERNANDO HEN.	VALLECAS-IND. -VICÁLVARO	→ ←	X			From 0:30h to 4:45h.	978
		VICÁLVARO-S. FERNANDO HEN.	→ ←	X			From 0:30h to 4:45h.	530
942	VILLAVERDE BAJO-VALLECAS-IND.	VILLAVERDE BAJO-VALLECAS-IND.	→ ←		X		From 0:30h to 4:30h.	264
982	BIF. MEDINA-TABOADELA AG. KM 234.0	BIF. MEDINA-MEDINA DEL CAMPO AV	→ ←		X		From 0:00h to 5:00h.	182
		MEDINA DEL CAMPO AV-ZAMORA	→ ←		X		From 0:00h to 5:00h.	28
		ZAMORA-TABOADELA AG. KM 234.0	→ ←		X		From 0:00h to 5:00h.	50
984	BIF. PAJARES-POLA DE LENA	BIF. PAJARES-POLA DE LENA	→ ←		X		From 0:00h to 5:00h.	136

Table 5: traffic Planning Principles and Traffic Flows.

The following table shows the maximum lengths allowed for freight trains:

Line code	Line	Maximum length for freight trains (m)	
		Basic	Special
26	PLASENCIA-BIF. SAN NICOLAS	350-750	380-750
100	MADRID CHAM. C. C.-P.K. 641.181 (FRONTERA)	450-520	550
120	F. OÑORO - FRONTERA-MEDINA DEL CAMPO	550	600
130	VENTA DE BAÑOS-GIJON-SANZ CRESPO	450-500	550-600
200	MADRID CHAM. C. C.-BARNA-FRANÇA	450-500	550-575
210	MIRAFLORES-S. VICENÇ CALDERS	450-500	550-575
240	S. VICENÇ CALDERS-L'HOSPITALET-LLOBR.	500	575
246	MOLLET-SANT FOST-CASTELLBISBAL-AG. RUBI	500	575
300	MADRID CHAM. C. C.-VALENCIA-NORD	500	575
320	CHINCHILLA.MONT AGKM298.4-MURCIA DEL C.	500	550
330	LA ENCINA-ALACANT-TERMINAL	450	500
332	LA ENCINA AGUJA KM. 2.963-CAUDETE	450	500
336	EL REG. AG. 525.3-ALACANT-TERMINAL	300	350
352	EL REG. KM 522.1-CARTAGENA	440	550
400	ALCAZAR SAN JUAN-CADIZ	450-550	500-600
410	LINARES BAEZA-ALMERIA	430-450	460-500
416	MOREDA-GRANADA	400	450
420	BIF. MARAVILLAS-ALGECIRAS	500	550
422	BIF. UTRERA-FUENTE DE PIEDRA	400	450
430	BIF. CORDOBA MERCANCIAS-LOS PRADOS	450-500	500-600
440	BIF. LOS NARANJOS-HUELVA	500	550
508	BADAJOZ-BADAJOZ-FRONTERA	500	520
520	CIUDAD REAL-BADAJOZ	400-500	460-515
522	MANZANARES-CIUDAD REAL	400	460
600	VALENCIA-NORD-CAMBIADOR BOELLA	500	550-575
610	SAGUNT-BIF. TERUEL	500	750
700	INTERM. ABANDO I. P.-CASETAS	450	500-550
710	ALTSASU-CASTEJON DE EBRO	500	550
800	LEON AG. KM. 123.6-A CORUÑA	425	500
810	MONFORTE LEMOS-BIF. CHAPELA	400	465
822	BIF. VALORIO-A CORUÑA	450-500	500-550
824	REDONDELA-SANTIAGO COMPOSTELA	400	465
984	BIF. PAJARES-POLA DE LENA	450	550

Table 6: maximum lengths allowed for freight trains.

The following table shows the maximum lengths allowed for passenger trains:

Line code	Line	Maximum length for passenger trains
10	MADRID P. ATOCHA A.G.-SEVILLA S. JUSTA	400
14	BIF. GOBANTES-BIF. BOBADILLA	400
20	LA SAGRA-TOLEDO	400
26	PLASENCIA-BIF. SAN NICOLAS	300-420
30	BIF. MALAGA-A.V.-MÁLAGA M. ZAMBRANO	400
36	ANTEQUERA-STA ANA-GRANADA	400
40	MADRID CHAM. C. C.-VALENCIA-J. S.	400
42	BIF. ALBACETE-ALACANT-TERMINAL	400
46	BIF. MURCIA-EL REG. KM 522.1	200
50	MADRID P. ATOCHA A.G.-LÍMITE ADIF-LFPSA	400
54	BIF. MONCASI-BIF. CANAL IMPERIAL	400
56	BIF. ARTESA DE LLEIDA-BIF. LES TORRES DE S.	400
80	MADRID CHAM. C. C.-BURGOS ROSA M.	400
82	BIF. COTO DA TORRE-BIF. A GRAN. AG.KM.85.0	400
84	BIF. VENTA DE BAÑOS-LEON	400
100	MADRID CHAM. C. C.-P.K. 641.181 (FRONTERA)	325-420
120	F. OÑORO - FRONTERA-MEDINA DEL CAMPO	300
130	VENTA DE BAÑOS-GIJON-SANZ CRESPO	300-450
200	MADRID CHAM. C. C.-BARNA-FRANÇA	350-460
210	MIRAFLORES-S. VICENÇ CALDERS	350
300	MADRID CHAM. C. C.-VALENCIA-NORD	300-460
320	CHINCHILLA.MONT AGKM298.4-MURCIA DEL C.	250
330	LA ENCINA-ALACANT-TERMINAL	300
332	LA ENCINA AGUJA KM. 2.963-CAUDETE	300
400	ALCAZAR SAN JUAN-CADIZ	300-460
410	LINARES BAEZA-ALMERIA	200
416	MOREDA-GRANADA	270
420	BIF. MARAVILLAS-ALGECIRAS	386
430	BIF. CORDOBA MERCANCIAS-LOS PRADOS	245
508	BADAJOZ-BADAJOZ-FRONTERA	400
520	CIUDAD REAL-BADAJOZ	400-420
522	MANZANARES-CIUDAD REAL	420
600	VALENCIA-NORD-CAMBIADOR BOELLA	350
700	INTERM. ABANDO I. P.-CASETAS	230-350
710	ALTSASU-CASTEJON DE EBRO	325
800	LEON AG. KM. 123.6-A CORUÑA	290
810	MONFORTE LEMOS-BIF. CHAPELA	190-300
812	VIGO-GUIXAR-BIF. CHAPELA	300
822	BIF. VALORIO-A CORUÑA	300-400
824	REDONDELA-SANTIAGO COMPOSTELA	190
982	BIF. MEDINA-TABOADELA AG. KM 234.0	400
984	BIF. PAJARES-POLA DE LENA	400

Table 7: maximum lengths allowed for passenger trains.

3.1.2. Coordination principles for service facilities

In order to comply with Commission Implementing Regulation (EU) 2017/2177 of 22 November 2017, Adif, as the Railway Infrastructure Manager, has established mechanisms to cooperate with the main operators of service facilities to ensure consistency in the allocation of capacity on railway infrastructure (scheduled train paths) and in service facilities (planned slots). This coordination between Adif, the operators, and the applicants (railway undertakings) ensures efficient train movements to and from these facilities.

In this context, Adif is developing an IT platform so that requests for train path capacity from applicants (railway undertakings) are validated by the operator of the destination service facility prior to the allocation of such capacity, in order to guarantee efficient train movements to and from service facilities.

Furthermore, to comply with Commission Delegated Decision (EU) 2017/2075 of 4 September 2017, Adif has established coordination mechanisms with railway stakeholders and other interest groups regarding temporary capacity restrictions on railway lines. This coordination is carried out by Adif through information and dialogue spaces across various channels:

- Quarterly TOC sessions: every three months, Adif holds a meeting to inform Railway Undertakings, with the participation of the regulatory body (CNMC), about the main planned Temporary Capacity Restrictions (TCRs) on the Network for the next 24 months (TOC Sessions). This information is expanded and updated in each session.

- TCR Catalogue: Adif publishes on its website, as part of the Network Statement, the TCR Catalogue. This document is periodically updated with information from TOC sessions and includes graphical details of the location of the main TCRs.

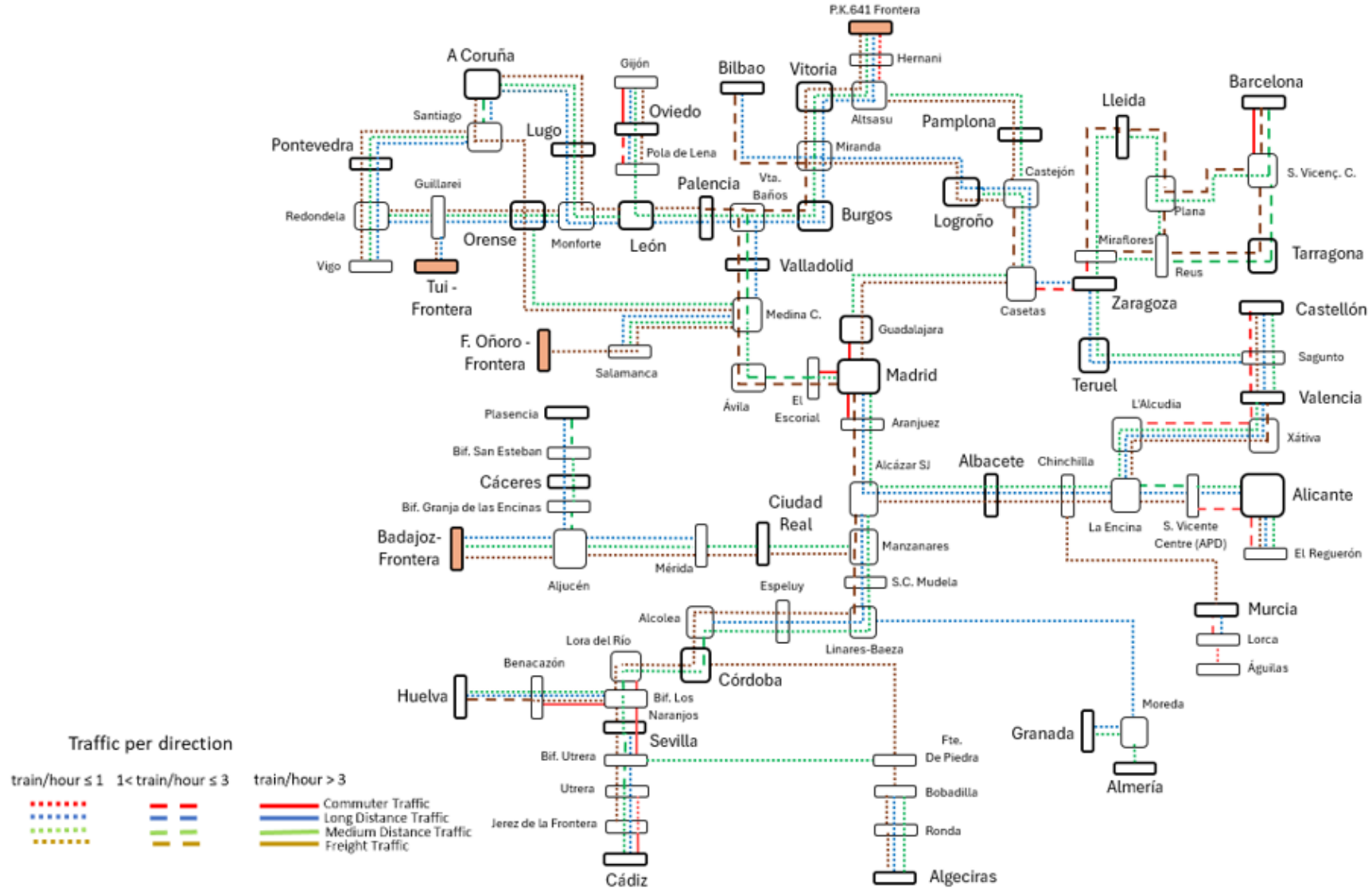
- Periodic communications: every three months, Adif sends a mass email to companies providing services in Service Facilities and privately-owned rail loading points connected to the RFIG, informing them about updates to the catalogue.

- Meetings with Port Authorities: every six months, Adif holds an information session with Port Authorities to communicate the main TCRs planned on the Network for the next 24 months. This allows Port Authorities to share this information with other stakeholders in the Port Community. If it is necessary to provide detailed information on any TCR, specific sessions are held as part of the monitoring of the port connection agreement, attended by Adif and the Port Authority.

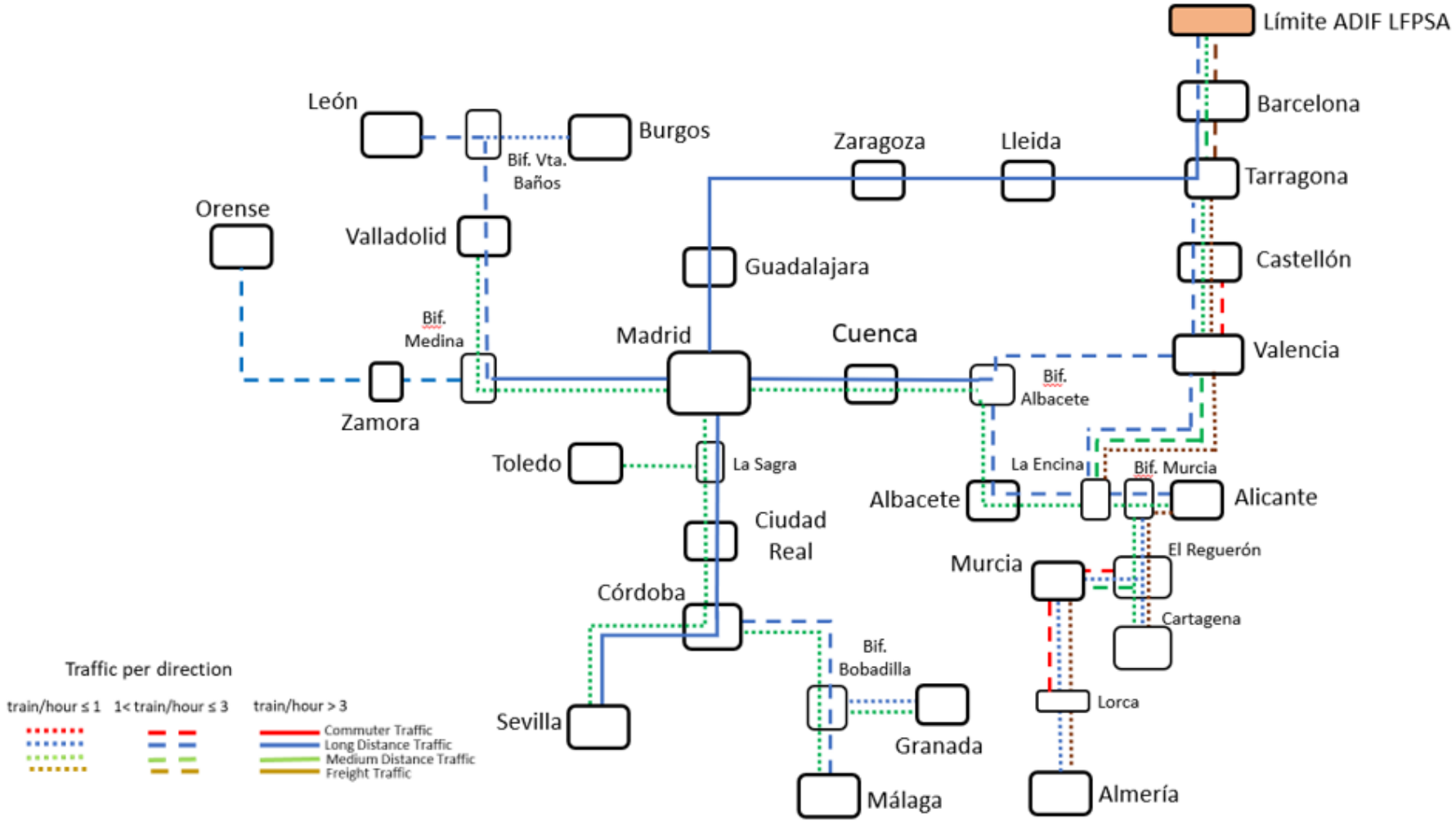
- Meetings with the freight sector: twice a year, Adif meets with representatives of the main groups related to rail freight transport (railway undertakings, logistics operators, shippers' associations, etc.), with the participation of the regulatory body (CNMC). These meetings provide updates on the progress of Adif's main initiatives to improve and increase rail freight transport and their involvement, if any, in the main TCRs. They also aim to identify the main concerns or needs in this sector. All Adif areas involved in the planning, development, and management of rail freight transport are represented in these meetings.

3.2.- Traffic Flows

In this section the traffic flows for the different lines considered are presented schematically. The first scheme is for Iberian gauge lines and the second one for UIC gauge lines.



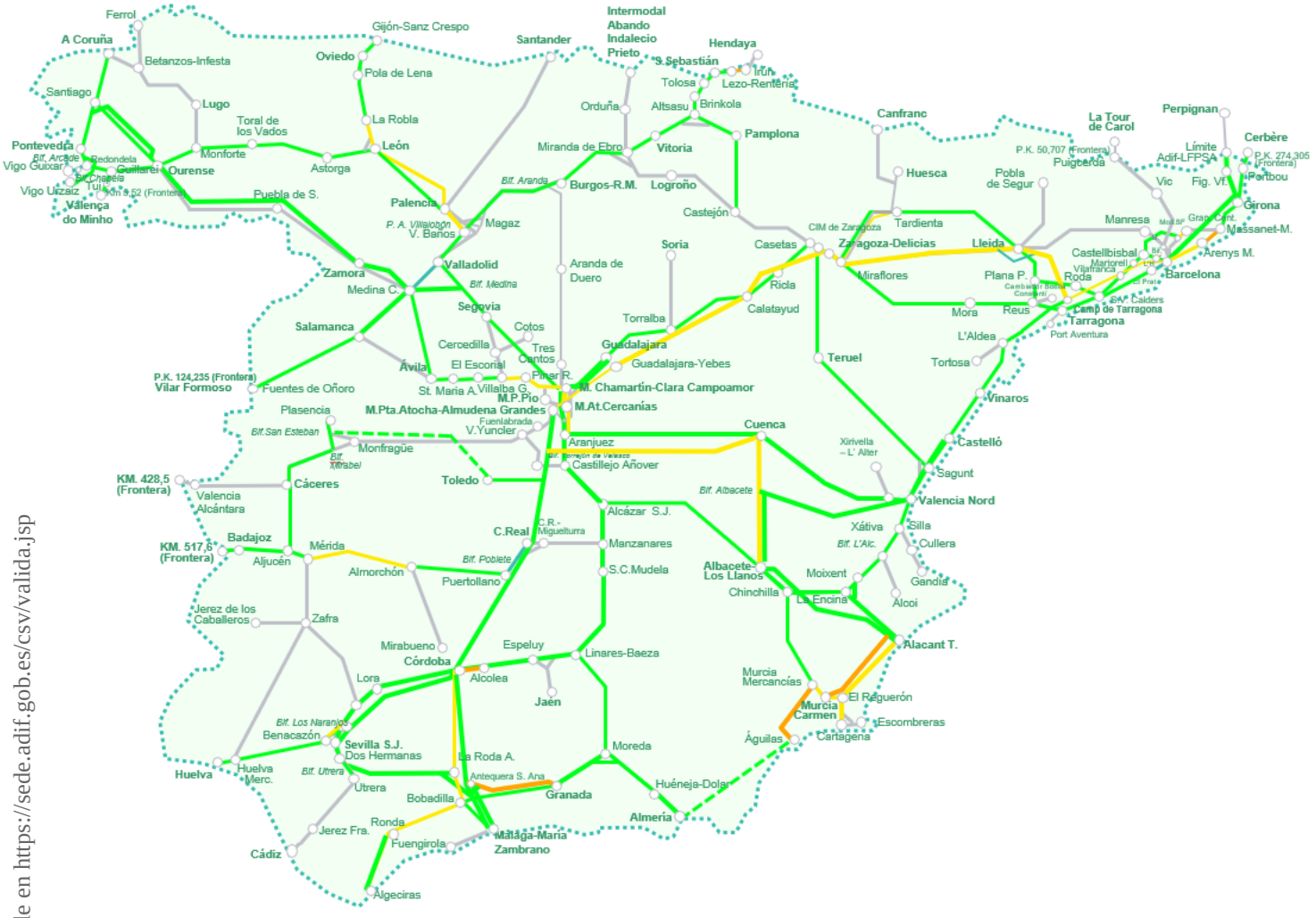
Map 14: traffic flows for Iberian gauge lines.



Map 15: traffic flows for UIC gauge lines.

As a complement to this chapter, a saturation map of the network sections included in this Capacity Strategy is presented. Each significant section has been color-coded to visualize its degree of saturation according to the following references:

- Green: no saturation issues. All capacity requests can be allocated.
- Yellow: occasional saturation issues. Changes to received requests may need to be proposed.
- Orange: systematic saturation issues, occasionally reaching congestion. Some requests may need to be rejected.



Map 16: saturation degree of the network sections.

3.2.1. Cross-border Traffic Flows

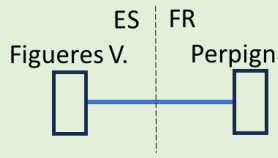
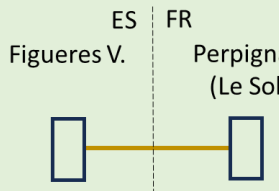
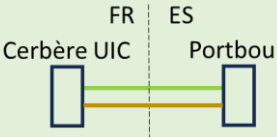
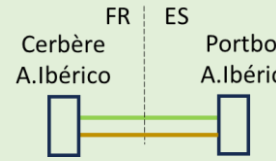
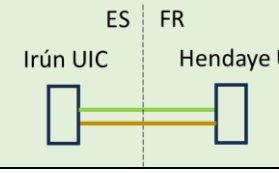
General Considerations

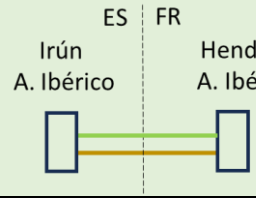
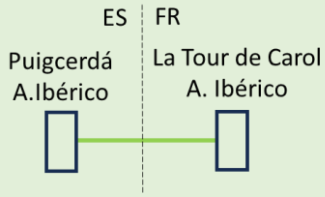
- For the calculation of the number of trains per hour, 7 days per week and 24 hours per day have been considered, except in specific cases indicated.
- It is important to note that cross-border traffic flow may not be uniform throughout the day, particularly during maintenance periods when infrastructure capacity may be reduced.

➢ **Spain – France border**

For the preparation of the traffic flow table, the following have been considered:

- The analysis of traffic flow at the Portbou–Cerbère and Irún–Hendaye borders has been carried out separately, considering the two tracks of different gauges (UIC and Iberian) that cross the border section.
- The data shown in the following table comes from the information available to the IM (essentially the number of requested train paths for the 2026 timetable). Some Spanish freight railway undertakings have acquired or are in the process of acquiring locomotives to operate on the International Section Figueres–Perpignan, so a potential increase in freight traffic through this border section is expected in the coming years.

Border Section	Passenger train paths per hour		Freight train paths per hour
	Long Distance	Regional	
	0,7[(1)]	0	0
	0	0	0,8[(1)]
	0	1,0	0,7
	0	0,9[(2)]	0,1
	0	0,4	0,4

Border Section	Passenger train paths per hour		Freight train paths per hour
	Long Distance	Regional	
	0	1,5	0,1
	0	0,8	0

(1) The maintenance band in the international section implies the total closure for 5 hours, so the number of hours per day considered is 19 hours.
(2) Traffic in both directions is counted, even if it has been requested in only one application (for both directions).

Table 8: planned Train Paths on Spain–France Border Sections.

Cross-border traffic flow between Spain and France has been the subject of information exchange and coordination between ADIF and SNCF Réseau.

➢ Spain – Portugal border

The data shown in the following table comes from the information available to the IM (essentially the number of requested train paths for the 2026 timetable).

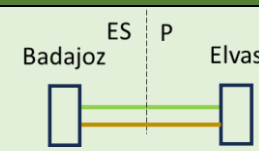
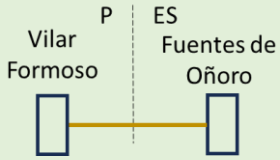
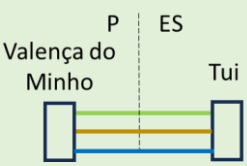
Border Section	Passenger train paths per hour		Freight train paths per hour
	Long Distance	Regional	
	0	0,2	0,1
	0	0	0,2
	0,2	0,2	0,4

Table 9: planned Train Paths on Spain–Portugal Border Sections.

The most important TCRs with international impact are shared with the collateral Infrastructure Managers (SNCF Réseau and Infraestruturas de Portugal) in two annual meetings held in May and November. At these meetings, the most important aspects of the TCRs and their impact on international traffic are presented.

Likewise, these meetings intend to coordinate the TCRs on both sides of the border so that the impact on traffic is as minimal as possible, as well as to present and agree on alternative routes when the TCRs entail the interruption of traffic.

REFERENCE DOCUMENTS

- ADIF TCRs Catalogue
- ADIF-AV TCRs Catalogue
- Annex H of the ADIF Network Statement
- Annex H of the ADIF-AV Network Statement
- PISERVI

CHAPTER 4.- VALIDATION

	Name and Position	Signature and Date
Approve:	Javier Achútegui Hernández Capacity Management Deputy Director ADIF	Firmado electrónicamente por: ACHÚTEGUI HERNÁNDEZ JAVIER (FIRMA) 11.12.2025 08:40:19 CET