

# Capacity Strategy 2026

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## INTRODUCTION

One of the main objectives of the railways in the coming years is to take a greater share of the transport market, and to achieve this, they have to apply competitive and agile planning and production processes. In this sense, and within the improvement of these processes, *RailNet Europe* (RNE), in collaboration with *Forum Train Europe* (FTE) is developing the Timetabling and Capacity Redesign (TTR) project.

The creation of this document called "**Capacity Strategy 2026**" is part of the TTR project of which ADIF is a member to, in general terms, carry out the redesign of the timetable process in a harmonized way.

The Capacity Strategy should be seen as the basis for more accurate timetable planning. In this respect, it should provide from an early-stage information about the intentions of Infrastructure Managers (IM) and capacity applicants (Applicants) for the coming years, such as that about future new traffic flows, new available infrastructure or even information about Temporary Capacity Restrictions (TCR), among others.

The elements that influence the Capacity Strategy must be communicated with the level of detail available, even if this is low, since this information is considered necessary, both for the preparation of the Infrastructure Manager's plan, and for its communication at European level with the intention of creating a common strategy. It is necessary to bear in mind that it is fundamentally informative and non-binding in nature.

Throughout the document different data (infrastructure, projects, capacity, traffic flows, ...) are reflected to put the reader in context, however, due to the changing nature of these data they should not be considered as a reference and it is urged to consult the official documents published by the IA, 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 1.2, in its last update dated 13 October 2022, it is structured in the following chapters:

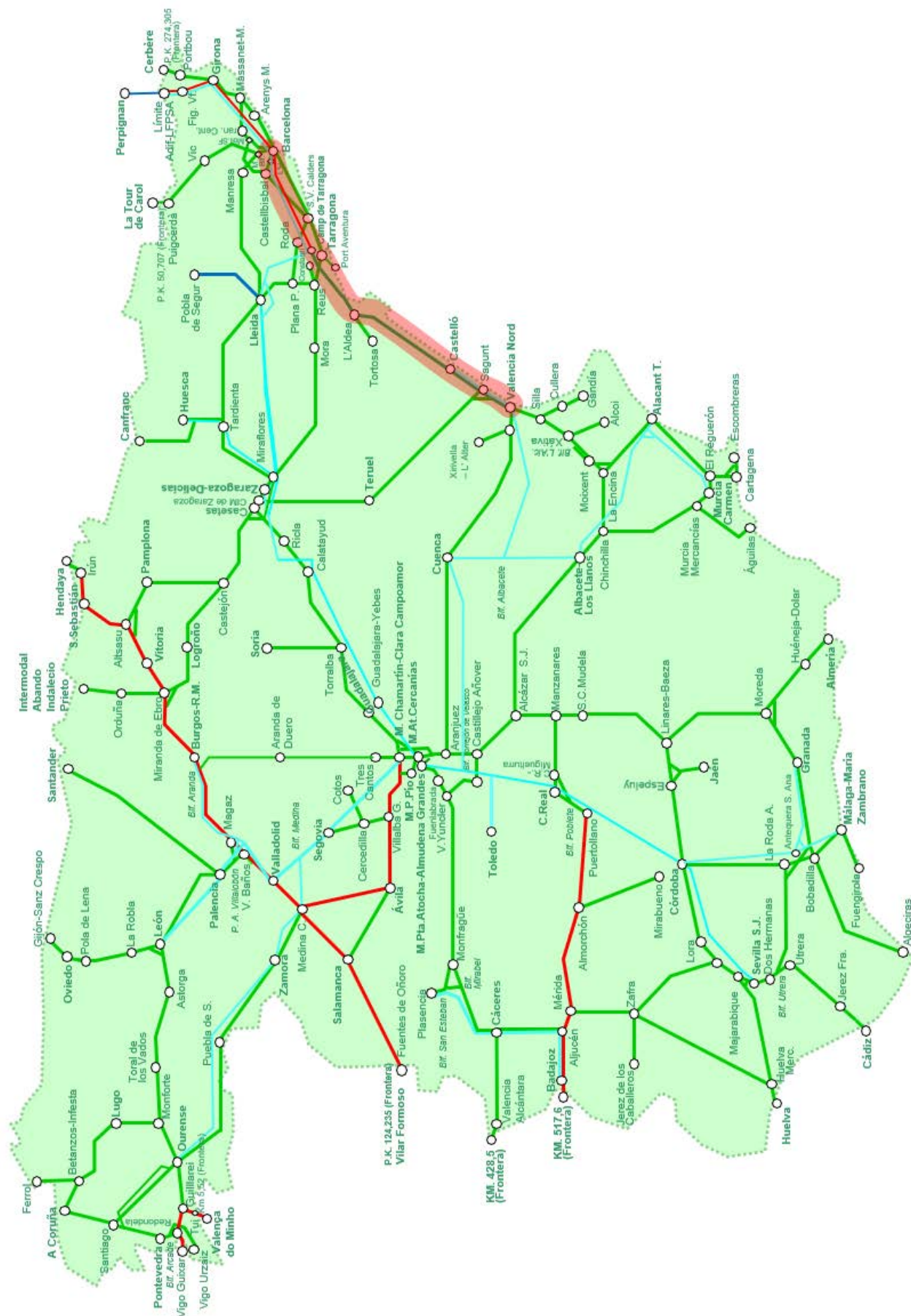
## CHAPTER 0 - GEOGRAPHICAL AREA

The 2026 Capacity Strategy continues to apply to the three lines characterised by international traffic already indicated for the 2025 Capacity Strategy. Likewise, and with a focus on continuous improvement, three more lines have been included, defining the geographical area as indicated below:

- Line 050 TARRAGONA - BARCELONA - FRENCH BORDER SECTION
- Line 100 MADRID CHAMARTÍN CLARA CAMPOAMOR - IRÚN
- Line 120 MEDINA DEL CAMPO - PORTUGUESE BORDER
- PORTUGUESE BORDER - BADAJOZ - MÉRIDA - PUERTOLLANO
- PORTUGUESE BORDER - TUI - VIGO
- MEDITERRANEAN CORRIDOR (BARCELONA TO VALENCIA)

These lines are shown in red on the following map of the ADIF and ADIF-AV Rail Network:





The six lines under study in this Capacity Strategy belong to the European Atlantic Corridor, the Mediterranean Corridor (TEN-T) and the European Core Rail Transport Network.

The main characteristics of these lines, at the time of preparation of this document, are detailed below:

- **Electrification, track type and gauge:**

- L050 TARRAGONA-BARCELONA - FRENCH BORDER: double track electrified at 25KV, standard gauge.
- L100: double track, except for small single track sections passing through Valladolid and Burgos. The line is electrified at 3KV and is of Iberian gauge.
- L120 The Medina del Campo -Salamanca section: single track electrified and Iberian gauge. The FUENTES DE OÑORO - SALAMANCA section: non-electrified single track and Iberian gauge. This section is expected to be electrified by 2025.
- Portuguese Border - Badajoz - Mérida - Puertollano:
  - L508 Frontera PK 517.6-Badajoz. Non-electrified single track, Iberian gauge.
  - L520 Puertollano-Badajoz. Non-electrified single track, Iberian gauge.
- Portuguese Border - Tui - Vigo:
  - L814 Guillarei- Frontera km 5.5 (Valencia do Minho). Single track in Iberian gauge. Electrified at 3kV DC.
  - L810 Bif Chapela- Guillarei. Double track between Bif Chapela and Redondela. Between Redondela and Guillarei single track. Iberian gauge. Electrified to 3kV DC.
  - L812 Vigo Guixar-Bif Chapela. Single track in Iberian gauge. Electrified at 3kVdc.
- Mediterranean Corridor (Barcelona to Valencia):
  - L240 L'Hospitalet de Llobregat-Sant Vicenç de Calders. Mainly double track, Iberian gauge. Electrified at 3Kv DC.
  - L200 San Vicenç de Calders- Barcelona Sants section. Double track, Iberian gauge. Electrified at 3kV DC.
  - L210 Tarragona-San Vicenç de Calders section. Double track, Iberian gauge. Electrified at 3kV DC.
  - L600: Double track. Iberian gauge between Castellón and Tarragona and mixed gauge between Valencia and Castellón.

- **Maximum ramps:**

- For the Tarragona-Barcelona-French Border route on the L050, the maximum ramps are 30 thousandths located between Vilafranca and Barcelona in the odd direction, and between Barcelona Sants and Bif Mollet in the even direction, which is a section with passenger traffic only.
- On L100 and L120 the maximum ramp is 17 or 18 thousandths. Except for these sections, the rest of the slopes range between 0 and 18 thousandths in practically the entire study area.
- On the route Badajoz - Puertollano the maximum characteristic ramp of the section is 16-17‰.
- In Tui-Vigo the maximum characteristic ramp of the route is 15‰ in Vigo direction and 18‰ in Tui direction.
- Mediterranean Corridor:
  - L240: maximum characteristic ramp of 14‰.
  - L200: maximum characteristic ramp of 27‰.
  - L210: maximum characteristic ramp of 6-9‰.
  - L600: maximum characteristic ramp of 15-20‰.







- **Traffic control and management installations:**

- The L050 TARRAGONA – BARCELONA – FRENCH BORDER section has BCA blocking equipped with ERTMS N1.
- The L100 has mainly BAB blocking, except for the single track sections.
- The L120 MEDINA DEL CAMPO – PORTUGUESE BORDER with BLAU mainly, except the section Vilar Formoso – Fuentes de Oñoro which has Telephone Block and between Campillo and Bif. Arroyo de la golosa which has BAU.
- The L520 BADAJOZ–PUERTOLLANO is equipped with BAU and BLAU blocking, although there is a section with Telephone Blocking (TB) between Villanueva de la Serena – Brazatortas–Veredas.
- Tui–Vigo: it is equipped with BAU and BAB on the double track section.
- Mediterranean corridor with automatic locking:
  - L240, L200, L210, L600: BAB except for a small BAU section on L240.

- **Maximum speeds:**

- The L050 TARRAGONA– BARCELONA – FRENCH BORDER section allows you to travel at a higher speed as it is a high-speed line.
- On the L100, the section with the highest maximum speed in the study area is the section between Magaz and Miranda de Ebro, which in the vicinity of Burgos can reach up to 200 km/h. Other sections with maximum speeds above 160 km / h are the Magaz–Medina de Campo section. Other sections with maximum speeds above 160 km/h are the Magaz–Medina del Campo sub-stretch.
- The L120 SALAMANCA – PORTUGUESE BORDER section has a maximum speed of 140 and the Salamanca – Medina del Campo section reaches 155.
- Tui–Vigo: maximum speed 160.
- Badajoz–Puertollano: in the section Badajoz – Mérida the maximum speed is 200 and in the section Mérida–Puertollano 160.
- Mediterranean Corridor:
  - L200 and L210: maximum speed 160.
  - L240: maximum speed 140.
  - L600: maximum speed 200.

- **Level crossings:** there are level crossings on L100 and L120, but not on L050.

- **Temporary Speed Limitations (TSLs):** the railway network in the study area may present TSLs mainly due to the infrastructure (embankments and trenches) and track superstructure (track, catenary and switches and crossings). Additionally, other LTVs correspond to works, level crossing protections, or even technical conditions and braking distance. All this makes it necessary to reduce speed on some sections to maintain reliability.

- **Operating incidents:** the complete analysis of incidents allows the evaluation of the different causes that give rise to them and, therefore, to determine the actions necessary to minimise incidents and thus improve the quality of the service. The most recurrent incidents are those related to traffic control and management and telecommunications installations.

## CHAPTER 1 – EXPECTED INFRASTRUCTURE CAPACITY FOR 2026

### ➤ Capacity and current degree of saturation of these lines:

The saturation level is used to evaluate the use of the network and is calculated as the percentage of actual traffic produced with respect to the maximum that can be assumed to guarantee the operation of the services while preserving their reliability. Traffic levels above 50% are considered to be high, which can lead to occasional saturation problems. With saturation above 75%, the scheduled traffic is around the maximum assumable, and there are systematic saturation problems, occasionally reaching congestion.

In the whole of the railway lines in the scope of this Capacity Strategy document, there is a predominance of sections with average saturation levels below 50%. Only in some specific cases, in certain time slots, high levels of saturation are reached, above 75%, for example, at peak hours of the Madrid commuter trains, or in some bottlenecks such as the single tracks of Line 100 located in the section: Medina del Campo – Venta de Baños. Chapter 3 shows the average saturation level of all the sections in the scope of this document.

Line saturation data is published in Annex H of the ADIF and ADIF-AV Network Statement.

### ➤ Additional available capacity:

Firstly, it should be noted that ADIF has a Draft Investment Needs Program for the Madrid-Basque Country, Madrid-Cantabria Conventional Network Lines and connections with France and Portugal, which contains a list of investment needs, to be specified in the actions shown in the table on the following page.

In this regard, on the one hand, those actions are shown that have a positive impact that will have an effect on the available capacity and, on the other hand, those actions are indicated that, although they do not have a direct impact on capacity, the result of these actions will have a positive effect on the safety and reliability of the facilities.

Likewise, according to the ERTMS National Implementation Plan 2017, ERTMS N1 is scheduled to be implemented in the following sections by 2030:

- L100 and L120, in almost all the area covered by this study.
- Portuguese Border – Badajoz – Mérida – Puertollano, including in the Plan the section between Portuguese Border – Aljucén. The rest of the section is not included.
- Portuguese Border – Tui – Vigo, including in the Plan the section Vigo–Guillarei. The Guillarei–Tui section is not included.
- Mediterranean Corridor, (Barcelona to Valencia), included in the Plan in its entirety.
- The L050 section already has ERTMS.

However, this action is not among the actions already budgeted by different areas of ADIF.



In addition, there is another set of actions which, although not included in the prioritisation, must be taken into account to ensure the adequate functionality of the Conventional Network lines Madrid-Basque Country, Madrid-Cantabria and connections with France and Portugal. These actions consist mainly of the implementation of sidings for trains of 750 m in length.

These actions will result in TCRs during the execution of the works and, therefore, changes in capacity during the development of these, which, however, will result in an improvement in performance in one way or another depending on the purpose of each action:

- Actions in rail terminals or logistics services: they will result in a better service offered for freight and, consequently, in a greater demand for them by railway undertakings.
- Actions to renovate and improve facilities: these will lead to higher reliability indices for the facilities and, therefore, to greater service availability.
- Actions to extend the network or number of tracks: these will have a direct impact on increasing capacity, as in the case of the Valladolid by-pass.





SUBSYSTEM	ACTION	STATUS	Defined project proposal	Project approved by Adif management	Financing
IISS AND COMMUNICATIONS	DRAFTING OF PROJECT AND EXECUTION OF WORKS FOR THE IMPLEMENTATION OF THE ERTMS LEVEL 2 AUTOMATIC PROTECTION SYSTEM ON LINES 238 AND 246 (MOLLET-CAN TUNÍS JUNCTION)	EXECUTION	YES	YES	YES
INFRASTRUCTURE	WORKS FOR THE CONSTRUCTION PROJECT OF THE NEW SANT ANDREU COMTAL STATION, BARCELONA. AV MADRID ZARAGOZA FRENCH BORDER LINE. LA SAGRERA LA TRINIDAD JUNCTION SECTION	EXECUTION	YES	YES	YES
INFRASTRUCTURE	EXECUTION OF THE WORKS OF THE CONSTRUCTION PROJECT OF THE SUBURBAN RAILWAY STATION OF SANT ANDREU DE COMTAL. TRACK AND ELECTRIFICATION	EXECUTION	YES	YES	YES (MRR)
IISS AND COMMUNICATIONS	EXECUTION OF THE WORKS OF SAFETY AND RAILWAY COMMUNICATIONS FACILITIES IN PROVISIONAL AND DEFINITIVE PHASE OF THE CONVENTIONAL RAILWAY LINE BARCELONA - GRANOLLERS PASSING THROUGH THE NEW STATION OF SANT ANDREU	EXECUTION	YES	YES	YES (MRR)
INFRASTRUCTURE AND ELECTRIFICATION	EXECUTION OF THE WORKS OF THE CONSTRUCTION PROJECT OF A PARKING AREA FOR HIGH-SPEED TRAINS IN SANT ANDREU COMTAL. TRACK AND ELECTRIFICATION	EXECUTION	YES	YES	YES (MRR)
IISS	DRAFTING OF THE CONSTRUCTION PROJECT AND EXECUTION OF THE WORKS FOR THE SECURITY INSTALLATIONS OF THE NORTH PARKING AREA OF BARCELONA SANTS STATION: DEAD-END STREET OF SANT ANDREU COMTAL	EXECUTION	YES	YES	YES
PLATFORM, TRACK AND ELECTRIFICATION	EXECUTION OF THE CONSTRUCTION PROJECT WORKS FOR THE STANDARD GAUGE CONNECTION TO THE MEDITERRANEAN CORRIDOR OF THE MULTIMODAL PLATFORM OF LA LLAGOSTA (BARCELONA)	EXECUTION	YES	YES	YES (MRR)
IISS	EXECUTION OF THE WORKS OF THE CONSTRUCTION PROJECT OF THE SIGNALLING OF THE NEW ACCESS TO THE MULTIMODAL PLATFORM OF LA LLAGOSTA	EXECUTION	YES	YES	YES (MRR)
INFRASTRUCTURE	WORKS FOR THE EXECUTION OF THE CONSTRUCTION PROJECT OF THE NECESSARY ACTIONS FOR THE COMMISSIONING OF THE ACCESS TO THE NEW TERMINAL OF BARCELONA AIRPORT	EXECUTION	YES	YES	YES (MRR)
IISS	EXECUTION OF THE WORKS FOR THE RAILWAY SECURITY AND TELECOMMUNICATIONS INSTALLATIONS FOR THE ACCESS TO THE NEW TERMINAL AT BARCELONA AIRPORT	EXECUTION	YES	YES	YES (MRR)
INFRASTRUCTURE	WORKS FOR THE EXECUTION OF THE CONSTRUCTION PROJECT FOR THE RENOVATION OF THE RAILWAY INFRASTRUCTURE OF STREET 4 OF THE FREE ZONE INDUSTRIAL ESTATE OF BARCELONA	EXECUTION	YES	YES	YES
IISS	DRAFTING OF THE CONSTRUCTION PROJECT AND EXECUTION OF THE ADAPTATION WORKS OF THE SIGNALLING INSTALLATIONS OF THE BARCELONA - CAN TUNIS STATION	EXECUTION	EDITORIAL	NO	YES
INFRASTRUCTURE	EXECUTION OF THE CONSTRUCTION PROJECT WORKS FOR THE ADAPTATION OF THE CAN TUNIS STATION, PLATFORM, TRACK AND ELECTRIFICATION	AWARDED	YES	YES	YES (MRR)
IISS	DRAFTING OF THE CONSTRUCTION PROJECT AND EXECUTION OF THE ADAPTATION WORKS OF THE SIGNALLING INSTALLATIONS OF THE BARCELONA - CAN TUNIS STATION	EDITORIAL	YES	YES	YES (MRR)
INFRASTRUCTURE	CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SUBSECTION: CASTELLBISBAL - MARTORELL	EXECUTION	YES	YES	YES
INFRASTRUCTURE	CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL MURCIA. SUBSECTION: MARTORELL - SANT VICENÇ DE CALDERS	EXECUTION	YES	YES	YES
INFRASTRUCTURE	CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL - MURCIA. SUBSECTION: SANT VICENÇ DE CALDERS - TARRAGONA - VILA-SECA JUNCTION	EXECUTION	YES	YES	YES



IISS AND COMMUNICATIONS	IMPLEMENTATION OF STANDARD GAUGE ON THE MEDITERRANEAN CORRIDOR, SECTION: CASTELLBISBAL - MURCIA, SUBSECTION: CASTELLBISBAL - TARRAGONA - VILASECA JUNCTION. SAFETY AND COMMUNICATIONS INSTALLATIONS	EXECUTION	YES	YES	YES
INFRASTRUCTURE	DRAFTING OF THE COMPLEMENTARY PROJECT OF THE CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF THE STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. CASTELLBISBAL-MURCIA SECTION. SUBSECTION: SANT VICENÇ DE CALDERS - TARRAGONA - VILASECA JUNCTION (RODA DE BARÀ TUNNEL)	EDITORIAL	EDITORIAL	SUPERVISION	YES
INFRASTRUCTURE	SERVICES FOR THE DRAFTING OF THE CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF A THIRD LANE AND IMPROVEMENT OF OPERABILITY ON THE MAIN ROAD OF THE INDUSTRIAL ESTATE SANT VICENÇ DE CASTELLBISBAL	EDITORIAL	EDITORIAL	NO	YES
INFRASTRUCTURE	SERVICES FOR THE DRAFTING OF THE CONSTRUCTION PROJECTS FOR THE RENOVATION OF LANES ON THE MARTORELL-SANT VICENÇ DE CALDERS AND SANT VICENÇ DE CALDERS-VILASECA SECTIONS AND THE REPLACEMENT OF TURNOUTS AT THE VILASECA JUNCTION	EDITORIAL	EDITORIAL	NO	YES
IISS AND COMMUNICATIONS	EXECUTION OF WORKS OF SIGNALLING, FIXED TELECOMMUNICATIONS AND ERTMS N2 OF THE RODALIES DE BARCELONA. SECTION: HOSPITALET DE LLOBREGAT-PORT AVENTURA	EXECUTION	YES	YES	YES (MRR)
COMMUNICATIONS	EXECUTION OF THE WORK AND MAINTENANCE OF THE CONSTRUCTION PROJECT FOR THE PROVISION OF DOUBLE LAYER GSM-R IN THE VICINITY OF BARCELONA SECTIONS: L'HOSPITALET - PORT AVENTURA / MANRESA - SANTS- VILANOVA - SANT VICENÇ DE CALDERS	EXECUTION	YES	YES	YES
IISS AND COMMUNICATIONS	EXECUTION OF THE SIGNALLING INSTALLATION WORKS ON THE L'AMETLLA DE MAR - CAMP DE TARRAGONA SECTION	EXECUTION	YES	YES	YES
INFRASTRUCTURE AND ELECTRIFICATION	WORKS FOR THE EXECUTION OF THE CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF THE STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL-MURCIA. SUBSECTION: VANDELLÓS-CAMBIADOR DE LA BOELLA. TRACK AND ELECTRIFICATION	CONSTRUCTION TENDER	YES	YES	YES (MRR)
INFRASTRUCTURE AND ELECTRIFICATION	EXECUTION OF THE CONSTRUCTION PROJECT WORKS FOR THE IMPLEMENTATION OF THE STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL- MURCIA. SUBSECTION: VINARÓZ - VANDELLÓS. TRACK AND ELECTRIFICATION	AWARDED	YES	YES	YES
INFRASTRUCTURE AND ELECTRIFICATION	EXECUTION OF THE CONSTRUCTION PROJECT WORKS FOR THE IMPLEMENTATION OF THE STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL- MURCIA. SUBSECTION: CASTELLÓN - VINARÓZ. TRACK AND ELECTRIFICATION	AWARDED	YES	YES	YES
IISS	EXECUTION OF WORK ON SIGNALLING INSTALLATIONS ON THE CASTELLÓ DE LA PLANA-L'AMETLLA DE MAR SECTION AND ON THE TORTOSA-L'ALDEA-AMPOSTA BRANCH LINE	EXECUTION	YES	YES	YES
IISS	CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF THE ERTMS SYSTEM IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL MURCIA. SUBSECTION VALENCIA VANDELLÓS	EXECUTION	YES	YES	YES
INFRASTRUCTURE	EXECUTION OF THE WORKS FOR THE CONSTRUCTION PROJECT OF THE PLATFORM OF THE NEW SOUTHERN RAILWAY ACCESS TO THE PORT OF CASTELLÓN. SECTION I (0+000 - 4+698)	CONSTRUCTION TENDER	YES	YES	YES (MRR)
INFRASTRUCTURE AND ELECTRIFICATION	EXECUTION OF THE CONSTRUCTION PROJECT WORKS FOR THE IMPLEMENTATION OF THE STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL- MURCIA. SUBSECTION: CASTELLÓN STATION. TRACK AND ELECTRIFICATION	EXECUTION	YES	YES	YES
INFRASTRUCTURE AND ELECTRIFICATION	CONSTRUCTION PROJECT (TRACK AND ELECTRIFICATION) FOR THE IMPLEMENTATION OF STANDARD GAUGE IN THE MEDITERRANEAN CORRIDOR. SECTION: SAGUNTO-CASTELLÓN TRACK 1 AND SIDINGS OF THE VALENCIA-CASTELLÓN SECTION	EXECUTION	YES	YES	YES



INFRASTRUCTURE	EXECUTION OF THE WORKS OF THE PROJECT FOR THE CONSTRUCTION OF THE RAILWAY ACCESS TO THE PORT OF SAGUNTO	EXECUTION	YES	YES	YES
IISS	IISS RAIL ACCESS TO THE PORT OF SAGUNTO	LICITATION	YES	YES	YES
INFRASTRUCTURE	CONSTRUCTION PROJECTS OF THE NEW ACCESS CHANNEL FOR THE INTEGRATION OF THE HIGH-SPEED TRAIN IN THE CITY OF VALENCIA, THE EXTENSION AND REMODELLING OF THE VALENCIA - JOAQUÍN SOROLLA STATION AND THE EXTENSION OF THE VALENCIA - JOAQUÍN SOROLLA CAR PARK	EXECUTION	YES	YES	YES (MRR)
INFRASTRUCTURE	CONSTRUCTION WORKS OF THE CONSTRUCTION PROJECT OF THE INTERMODAL AND LOGISTICS TERMINAL OF VALENCIA FUENTE SAN LUIS 1ST PHASE	CONSTRUCTION TENDER	YES	YES	YES
INFRASTRUCTURE	EXECUTION OF THE CONSTRUCTION PROJECT WORKS (TRACK AND CATENARY) FOR THE NEW INTEGRAL REMODELLING OF THE STATION OF FUENTE DE SAN LUIS (VALENCIA) FOR THE IMPLEMENTATION OF THE STANDARD GAUGE	CONSTRUCTION TENDER	YES	YES	YES
INFRASTRUCTURE AND ELECTRIFICATION	CONSTRUCTION PROJECT FOR THE IMPLEMENTATION OF STANDARD GAUGE ON THE MEDITERRANEAN CORRIDOR. SECTION: CASTELLBISBAL-MURCIA. SUBSECTION: FONT DE SANT LLUÍS-ALMUSSAFES. TRACK AND ELECTRIFICATION	EXECUTION	YES	YES	YES
IISS AND TELECOMMUNICATIONS	SAFETY INSTALLATIONS AFFECTED BY THE ELECTRIFICATION OF THE SECTION GUILLAREI-TUI	EXECUTION	YES	CONSTRUCTION STARTED	YES
ELECTRIFICATION	TOTAL RENOVATION OF THE OVERHEAD CONTACT LINE OF THE ORENSE-VIGO LINE AND SUBSEQUENT TRANSFORMATION FROM 3 KV D.C. TO 25 KV A.C. OF THE MONFORTE-ORENSE-VIGO SECTION	EDITORIAL	EDITORIAL	YES	YES
IISS AND TELECOMMUNICATIONS	ADAPTATION OF THE SAFETY INSTALLATIONS AFFECTED BY THE ELECTRIFICATION OF THE VIGO GUIXAR - REDONDELA SECTION OF LINE 812 AND NEW BYPASS BETWEEN LINES 810 AND 824 AT REDONDELA STATION	PLANNING	EDITORIAL	NO	YES
INFRASTRUCTURE	SUPPRESSION OF THE LEVEL CROSSING OF THE RAILWAY LINE MONFORTE DE LEMOS - REDONDELA IN O PORRIÑO (PONTEVEDRA)	EDITORIAL	EDITORIAL	YES	YES
ELECTRIFICATION	PROJECT FOR THE INSTALLATION OF A NEW FEEDER OUTLET IN THE GUILLAREI SUBSTATION AND COMPLEMENTARY ACTIONS	EXECUTION	YES	CONSTRUCTION STARTED	YES
IISS AND TELECOMMUNICATIONS	RENOVATION OF POWER CABLE 2200 V. SECTION VIGO - OURENSE	EXECUTION	YES	CONSTRUCTION STARTED	YES
VIA	PROJECT FOR THE COMPLETE RENOVATION OF INFRASTRUCTURE AND TRACK. L/ MONFORTE DE LEMOS - BIF. CHAPELA. SECTION: GUILLAREI STATION (P.K. 140/489) - REDONDELA STATION (P.K. 166/827)	EDITORIAL	EDITORIAL	YES	YES
VIA	PROJECT FOR THE COMPLETE RENOVATION OF INFRASTRUCTURE AND TRACK. L/ MONFORTE DE LEMOS - BIF. CHAPELA - VIGO-GUIXAR. SECTION: REDONDELA STATION (P.K. 166/827) - VIGO-GUIXAR STATION (P.K. 10/500)	EDITORIAL	EDITORIAL	YES	YES
VIA	COMPLETE RENOVATION OF INFRASTRUCTURE AND TRACK. L/ GUILLAREI - VALENÇA DO MINHO. SECTION: GUILLAREI STATION (P.K. 0/000) - PORTUGUESE BORDER (P.K. 5/300)	EXECUTION	YES	CONSTRUCTION STARTED	YES, (MRR)
INFRASTRUCTURE	BRIDGE REHABILITATION PROJECT L/MONFORTE DE LEMOS-BIF. CHAPELA. BRIDGE RÍO AVIA P.K. 73/388 AND L/ VIGO-GUIXAR A BIF. CHAPELA UNDERPASS OVER ROAD P.K. 5/955	EXECUTION	YES	CONSTRUCTION STARTED	YES
INFRASTRUCTURE	CONSTRUCTION PROJECT FOR THE REHABILITATION OF TRENCHES AND EMBANKMENTS. L/ MONFORTE DE LEMOS - BIF. CHAPELA. PP.KK. 51/030-51/130, 68/100-68/300, 143/430-144/000. L/ GUILLAREI - VALENÇA DO MINHO. PP.KK. 4/100-4/510	EXECUTION	YES	CONSTRUCTION STARTED	YES
VIA	PROJECT TO EXTEND SIDING TRACKS TO 750 M AT AS GÁNDARAS STATION. L/ MONFORTE DE LEMOS - BIF. CHAPELA	EXECUTION	YES	CONSTRUCTION STARTED	YES, (MRR)



INFRASTRUCTURE	PROJECT FOR THE REPAIR OF THE BRIDGE OVER THE RIVER CABEIRO. MONFORTE - VIGO LINE, SECTION PORRIÑO - REDONDELA, P.K. 162+717	BIDDING AND AWARDING OF WORKS	YES	YES	YES
IISS AND TELECOMMUNICATIONS	PRELIMINARY PROJECT FOR THE RENOVATION OF THE SIGNALLING SECTION: ORENSE-VIGO-TUI	PLANNING	YES	NO	YES
IISS AND TELECOMMUNICATIONS	PRELIMINARY PROJECT OF SECURITY INSTALLATIONS AT TUI STATION	BIDDING AND AWARDING OF WORKS	YES	YES	YES
INFRASTRUCTURE	LEVEL CROSSINGS. REST. SECTION VIGO - OURENSE	PLANNING	YES	NO	YES
INFRASTRUCTURE	PERMEABILITY OF RÚA TARASCÓN. SECTION VIGO - OURENSE	PLANNING	YES	NO	YES
INFRASTRUCTURE	PERMEABILITY AND ENCLOSURES. SECTION VIGO - OURENSE	PLANNING	YES	NO	YES
NETWORK DEVELOPMENT	REDONDELA BYPASS	PLANNING	EDITORIAL	NO	YES
VIA	TRACK RENEWAL IN THE LINE CIUDAD REAL -BADAJOZ. BRAZATORTAS - GUADALMEZ SECTION	EXECUTION	YES	CONSTRUCTION STARTED	YES
VIA	TRACK RENEWAL MANZANARES - CIUDAD REAL SECTION (INCLUDES THE RENEWAL OF TURNOUTS IN DIFFERENT STATIONS OF THE LINE 522 BETWEEN CIUDAD REAL - MANZANARES)	PLANNING	EDITORIAL	NO	YES
VIA	REPLACEMENT OF RS SLEEPERS BY MONOBLOCK PP.KK. 355+562 (CASTUERA) TO PP.KK. 393+500 (NEAR VILLANUEVA DE LA SERENA)	PLANNING	EDITORIAL	NO	YES
VIA	NEW FREIGHT TRACKS (LENGTH > 750M). NEW DON ÁLVARO SIDING (5.3), IN THE AREA AROUND MÉRIDA (UNDER STUDY) (5.3), AT BELALCAZAR STATION (5.5) AND AT CAMPANARIO STATION (5.4).	EDITORIAL	EDITORIAL	YES	YES
ELECTRIFICATION	ELECTRIFICATION AND SSEE TO 25 KV AC: PUERTOLLANO - MÉRIDA SECTION	EDITORIAL	EDITORIAL	YES	YES
ELECTRIFICATION	ENERGY ACTIONS ON THE MANZANARES - CIUDAD REAL SECTION	PLANNING	EDITORIAL	NO	YES
INFRASTRUCTURE	SUPPRESSION OF LEVEL CROSSINGS IN THE SECTION MÉRIDA - ALJUCÉN	EDITORIAL	EDITORIAL	YES	YES
STATIONS	NEW GOODS TERMINAL IN THE SOUTHWEST EUROPEAN LOGISTICS PLATFORM. IN BADAJOZ. THE PROJECT INCLUDES: THE CONNECTION OF THE RAILWAY TERMINAL TO THE GENERAL LINE; THE INSTALLATION OF TRACK BUNDLES, BOTH FOR THE RECEPTION AND DISPATCH OF TRAINS AND FOR LOADING AND UNLOADING; THE CONSTRUCTION OF THE NECESSARY AUXILIARY MANOEUVRING TRACKS; AND THE LOCATION OF A FREIGHT TRANSFER AREA THAT WILL SERVE AS A STORAGE AND HANDLING AREA FOR GOODS. IT IS ALSO PLANNED TO BUILD ACCESS ROADS TO THE FREIGHT TERMINAL TO CONNECT THE RAILWAY ENCLOSURES WITH THE EXTERNAL ROAD NETWORK, AS WELL AS AN AREA FOR THE PARKING OF HEAVY VEHICLES	EXECUTION	YES	CONSTRUCTION STARTED	YES
INFRASTRUCTURE	REPAIR OF 12 CUTTINGS ON THE MERIDA - PUERTOLLANO SECTION	PLANNING	YES	NO	YES
INFRASTRUCTURE	TREATMENT OF TRENCHES FROM PP.KK.280+225 TO 280+640 (5.6) AND FROM PP.KK.389+400 TO 389+700 (5.4)	PLANNING	YES	NO	YES
INFRASTRUCTURE	IMPROVEMENT OF THE STATE OF THE TUNNELS BETWEEN PP.KK. 317+888 AND 318+198 (LAS CABRAS, BETWEEN BELALCÁZAR AND CABEZA DEL BUEY)	PLANNING	YES	NO	YES
IISS AND TELECOMMUNICATIONS	RENOVATION OF SIGNALLING, TELECOMMUNICATIONS AND ENERGY IN THE SECTION CIUDAD REAL-GUADALMEZ LOS PEDROCHES	PLANNING	YES	NO	YES
IISS AND TELECOMMUNICATIONS	MODIFICATION OF SAFETY INSTALLATIONS AT ALMADENEJOS - ALMADÉN STATION	PLANNING	YES	NO	YES



INFRASTRUCTURE	REMOVAL AND PROTECTION OF LEVEL CROSSINGS: PUERTOLLANO - MÉRIDA SECTION	PLANNING	YES	NO	YES
IISS AND TELECOMMUNICATIONS	INTERLOCKINGS FOR THE CREATION OF NEW SIDINGS AT BELALCÁZAR (5.5), CAMPANARIO (5.4) AND DON ÁLVARO (5.3), AND MODIFICATION OF THE INTERLOCKINGS AT MÉRIDA	PLANNING	YES	NO	YES
VIA	NEW FREIGHT TRACKS (LENGTH > 750M): ALMADENEJOS (5.6) AND GUADALMEZ (5.5 AND 5.6) STATIONS	EDITORIAL	EDITORIAL	NO	YES
IISS AND TELECOMMUNICATIONS	RATIONALIZATION OF THE FACILITIES: ALMORCHÓN STATION	PLANNING	YES	NO	YES
IISS AND TELECOMMUNICATIONS	RATIONALISATION OF THE INSTALLATIONS: OX HEAD STATION (5.5)	PLANNING	YES	NO	YES
INFRASTRUCTURE	PROJECT FOR THE MODERNIZATION, IMPROVEMENT AND TREATMENT OF THE FOUNDATIONS OF THE BRIDGE OVER THE RIVER ALCAZABA, LOCATED AT PP.KK. 493+045 OF THE MADRID -BADAJOZ LINE	EXECUTION	YES	CONSTRUCTION STARTED	YES
NETWORK DEVELOPMENT	DUPLICATION OF TRACK FROM MÉRIDA - ALJUCÉN (PLATFORM AND TRACK, IISS AND ELECTRIFICATION)	EDITORIAL	EDITORIAL	YES	YES (MRR)
INFRASTRUCTURE	PRELIMINARY PROJECT FOR THE CHANGE OF FUNCTIONALITY OF THE AUTOMATIC PROTECTION OF THE CLASS A2 LEVEL CROSSING AT P.K. 326/428 OF THE LINE 520 CIUDAD REAL - BADAJOZ, IN THE MUNICIPALITY OF CABEZA DEL BUEY (BADAJOZ)	TENDER AND PROJECT AWARD	YES	YES	YES
INFRASTRUCTURE	DRAFTING OF THE CONSTRUCTION PROJECT AND EXECUTION OF THE WORKS FOR THE NEW INSTALLATION OF THE AUTOMATIC PROTECTION OF THE LEVEL CROSSING CLASS A3 LOCATED IN THE P.K. 294/113 OF THE LINE 520 CIUDAD REAL - BADAJOZ IN THE MUNICIPALITY OF CHILLÓN (CIUDAD REAL)	BIDDING AND AWARDED OF WORKS	YES	YES	YES
IISS AND TELECOMMUNICATIONS	SUPPRESSION OF TELEPHONE BLOCKADE BETWEEN VILLANUEVA DE LA SERENA - BRAZATORTAS/VEREDAS	BIDDING AND AWARDED OF WORKS	YES	YES	YES
IISS AND TELECOMMUNICATIONS	EXECUTION OF WORKS AND MAINTENANCE OF FIXED AND MOBILE TELECOMMUNICATIONS INSTALLATIONS GSM-R IN THE CONVENTIONAL NETWORK ROUTES BRAZATORTAS (VEREDAS) - ALMORCHÓN AND ALMORCHÓN - VILLANUEVA DE LA SERENA	BIDDING AND AWARDED OF WORKS	YES	YES	YES (MRR)
IISS AND TELECOMMUNICATIONS	FIBER OPTIC AND IP NETWORK. INFRASTRUCTURE RENOVATION PROJECT IN THE CENTRAL AREA. SECTION: MANZANARES - GUADALMEZ LOS PEDROCHES	BIDDING AND AWARDED OF WORKS	YES	YES	YES
IISS AND TELECOMMUNICATIONS	OPTICAL FIBER AND IP NETWORK. IP EQUIPMENT AREA 2 (CÁCERES, BADAJOZ AND CIUDAD REAL)	EDITORIAL	EDITORIAL	YES	YES
IISS AND TELECOMMUNICATIONS	FIBER OPTIC AND IP NETWORK. IP EQUIPMENT AREA 5 (CIUDAD REAL)	EDITORIAL	EDITORIAL	YES	YES
INFRASTRUCTURE	PRELIMINARY PROJECT FOR THE NEW AUTOMATIC PROTECTION INSTALLATION OF THE LEVEL CROSSING CLASS A3 AT THE P.K. 326/428 OF THE LINE 520 CIUDAD REAL - BADAJOZ, IN THE MUNICIPALITY OF CHILLÓN (CIUDAD REAL)	TENDER AND PROJECT AWARD	YES	YES	YES
INFRASTRUCTURE	PROJECT FOR STABILIZATION OF THE CUTTINGS BETWEEN PP.KK. 707+360 TO 708+130 OF THE LINE L050 MADRID-PUERTA DE ATOCHA - ADIF - LFPSA LIMIT	EDITORIAL	EDITORIAL	YES	YES
INFRASTRUCTURE	PROJECT FOR THE REPAIR OF THE GUALBA VIADUCT, AT P.K. 674+460 LINE 050 MADRID-BARCELONA	PLANNING	EDITORIAL	NO	YES
IISS AND TELECOMMUNICATIONS	EXECUTION AND MAINTENANCE WORKS OF THE INSTALLATIONS DEFINED IN THE CONSTRUCTION PROJECT OF THE SIGNALLING INSTALLATIONS, FIXED TELECOMMUNICATIONS AND ASSOCIATED ELEMENTS (ERTMS Nº 2) FOR THE BARCELONA FIGUERES SECTION OF THE MADRID - ZARAGOZA - BARCELONA - FRENCH BORDER HIGH SPEED LINE	EXECUTION	YES	YES	YES



INFRASTRUCTURE	IMPROVEMENTS TO THE GUALDA VIADUCT. BIF. MOLLET-RIELLS A. V.	EXECUTION	YES	YES	YES
INFRASTRUCTURE	PROJECT FOR THE STABILIZATION OF THE CUTTINGS BETWEEN PP.KK. 707+356 TO 708+130 OF LINE L050 MADRID-PUERTA DE ATOCHA- ADIF - LFPSA BOUNDARY. BASE MTO. RIELLS-BIF. GIRONA MERCADERIES	EXECUTION	YES	YES	YES
INFRASTRUCTURE	PROJECT FOR THE STABILIZATION OF THE CUTTINGS BETWEEN PP.KK. 707+356 TO 708+130 OF LINE L050 MADRID-PUERTA DE ATOCHA - ADIF - LFPSA BOUNDARY. BASE MTO. RIELLS-BIF. GIRONA MERCADERIES	EXECUTION	YES	YES	YES
INFRASTRUCTURE	IMPROVEMENTS IN LEVELLING. LINE: MADRID-PUERTA DE ATOCHA-LIMITE ADIF - LFPSA. ROUTE: LABOÇ A.V- BIF CAN TUIS A.V.	EXECUTION	YES	YES	YES
INFRASTRUCTURE	IMPROVEMENTS IN LEVELLING. LINE: MADRID-PUERTA DE ATOCHA-LIMITE ADIF - LFPSA. ROUTE: LABOÇ A.V- BIF CAN TUIS A.V.	EXECUTION	YES	YES	YES
STATIONS	WORKS ON THE NEW SAGRERA STATION, WITH EFFECTS DUE TO CUTS AND RELOCATION OF TRACK ON L050	EXECUTION	YES	YES	YES (MRR)





## 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 the lines it manages, either through maintenance work on the infrastructures in service, or by carrying out improvement and expansion works on its network, may inevitably lead to capacity restrictions.

In this regard, and with respect to the general principles to be considered for the planning of these RTCs, the actions will involve, in most cases, works in the maintenance band, thus not affecting traffic. As for those actions that require a cut in traffic, they will try as far as possible to be carried out on weekends when the effect on traffic is less and, as a last resort, they will involve traffic cuts on working days, preferably on one lane, so that the total cut of both lanes will only be carried out in strictly necessary cases.

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 indicated below:

- **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:

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

Likewise, in "intermediate" cases where an 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 RTC will be classified by its immediately lower impact.

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

Likewise, the ADIF and ADIF-AV Network Statement include the catalogue with the TCRs in the General Interest Railway Network, which is available by clicking on:

- [Catalogue of TCRs ADIF](#)
- [Catalogue of TCRs ADIF-AV](#)



The information contained in the catalogues is presented in a table that, together with the reason for the restriction, highlights the type of traffic impact (total cut, track availability restriction, speed restriction, weight... etc.), explaining the expected impact in as much detail as possible. These catalogs are periodically updated with information from the TOC Commissions, which are the ones that define and agree on the programming of actions and works on the infrastructure.

However, the **coordination and communication process between ADIF and ADIF-AV and the Railway Undertakings** when TCRs exist is not limited to the TOC Commissions, with their central and territorial, ordinary and extraordinary sessions, nor to the publication of the Catalogues in the Network Statement.

There are, in this sense, other instruments through which the communication of possible outages and their dates is carried out, such as specific or monographic meetings to discuss the works, the schedules of the affected trains, and even the alternative routes.

Finally, to specify the operation of a TCR that exceeds the capacity reserved for maintenance and conservation (known as Maintenance Bands), ADIF and ADIF-AV inform Railway Undertakings of the details in what are known as Extraordinary Work Files (TBP/TBA). In addition to general information and timetables, these files include 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 Undertakings.

## 2.2.- EXPECTED MAJOR IMPACT TCRs

Due to the significant impact they could have on the capacity allocated and for the Railway Undertakings' consideration for the planning of their transport plans, it is indicated below high and major impact TCRs, i.e. those whose duration is greater than 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 **2026** and exclusively for the selected geographical area.

Below is information on the main capacity restrictions on the network in the area under study. Detailed information on these restrictions, and those of the rest of the rail network, is available in the ADIF and ADI-AV Network Statement.

### ➤ Line 050: BARCELONA – FRENCH BORDER SECTION:

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
-	Mollet - Riells A.V. Bif.	-	-	-	Improvements to the Gualda Viaduct	Traffic impact to be defined
-	Base Mto. Riells - Bif. Girona Mercaderias	-	-	-	Project for the stabilization of the cuttings between PP.KK. 707+356 to 708+130 of the Madrid - Puerta de Atocha Line - Adif - LFPSA boundary	Traffic impact to be defined
-	Base Mto. Riells - Bif. Girona Mercaderias	-	-	-	Project for the stabilization of the cuttings between PP.KK. 707+356 to 708+130 of the Madrid - Puerta de Atocha Line - Adif - LFPSA boundary.	Traffic impact to be defined
-	Loboç A.V. Bif Can Tuis A.V.	-	-	-	Grading improvements	Traffic impact to be defined
-	Loboç A.V. Bif Can Tuis A.V.	-	-	-	Grading improvements	Traffic impact to be defined
-	La Sagrera Station	-	-	-	New station works and track relocation	Traffic impact to be defined
-	La Llagosta Terminal	-	-	-	In pre-project, affecting the connection with the L050 at Bif Mollet	Traffic impact to be defined



2019-7-004	Figueres Vilafant Station	Both	-	-	Adaptation works at Figueres Vilafant station to its definitive layout, planned TBA 80/14	It only affects the parking capacity of Figueres Vilafant. Once completed, the 160 km/h LTV will be eliminated from Figueres-Vilafant. Work completed in the absence of software
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➤ **Line 100 MADRID CHAMARTÍN CLARA CAMPOAMOR – IRÚN:**

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
2022-6-052	Valladolid - Pisuerga River	Both	End 2023	2026 (Start + 27 months)	Construction Project for the Duplication of Standard Gauge Track North of Valladolid Campo Grande Station to the North Junction of Valladolid-East Variant. In project drafting phase	-> Total weekend shutdown from Saturday at 00:00 hours to Sunday at 16:00 hours (approximately) -> 104-day shutdown of Tres Hermanos station. -> In drafting -> Affection: Infrastructure, Track and Electrification

➤ **Line 814 GUILLAREI – VALENÇA DO MINHO:**

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
2022-2-018	Redondela - Guillarei	Single track	1st quarter 2024	2026 (Start + 23 months)	Project for the complete renovation of infrastructure and track of the GUILLAREI - REDONDELA route	TOTAL CUTTING of 6 months to execute the works in the TÚNEL DE VALOS, this cut should be coordinated with the works in O PORRIÑO

➤ **Line 520 CIUDAD REAL – BADAJOZ (Section between PUERTOLLANO and BADAJOZ):**

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
2021-3-036	No impact foreseen for the moment	-	No impact foreseen for the moment	No impact foreseen for the moment	Suppression of the telephone blockade between Villanueva De La Serena – Brazatorta/Veredas	- Action in previous phases of contracting of the drafting of the project and execution of the works - Not affected for the moment. It is estimated that the works will not begin before 2024.
2021-3-041	493/045	-	2nd quarter 2022	-	Project of modernization, improvement and treatment of the foundations of the bridge over The River Alcazaba, located in the P.K. 493+045	Interruption of traffic between Fresnal and Guadiana. It will be carried out after the commissioning of the work of AV. Traffic will be diverted from Montijo by AV.

➤ **Line 600 VALENCIA (ESTACIÓ DEL NORD) – CAMBIADOR DE LA BOELLA:**

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
2021-4-017	VILA-REAL - CASTELLÓ	Both	-	-	Access to the port of Castelló	-
2022-4-007	VALENCIA-NORD - VALENCIA LA FONT DE SANT LLUIS	Both	2023	2028	New access channel for the integration of the high-speed rail in the city of Valencia	- 8-hour night-time cuts on both tracks - Single-track traffic during various phases of the works - Occasional cuts in the continuity of the 1435mm gauge between



						Valencia Joaquín Sorolla and Castelló at maximum intervals of 4 consecutive days - Temporary speed limits in the vicinity of the installed track equipment - Temporary speed limits in the vicinity of the installed track devices
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➤ **Line 200 BARNA. EST. DE FRANÇA – MADRID-CHAMARTÍN – CLARA CAMP. (SECTION BETWEEN BARCELONA-SANTS AND SAN VICENÇ DE CALDERS):**

Identifier	TCR leg	Address	TCR Home	End TCR	Reason for restriction	Expected impact
2022-5-014	Sants				Work to improve evacuation conditions on Sants platforms	Traffic impact to be defined
2022-5-015	Sitges - Garraf				Tunnel	Traffic impact to be defined

The lines under study are electrified (except for the Salamanca-Fuentes de Oñoro section, which is also scheduled to be electrified in the near future) and, in general, have double track. Therefore, the main actions to be carried out on these lines, and which cause the aforementioned TCR, are the improvement of signalling/communications systems, and various specific actions to improve infrastructure to ensure the reliability of the route.

Investments that improve the performance of the existing lines and their orderly programming over the next few years are contemplated.

Therefore, the following blocks of actions are considered:

- The rehabilitation or renovation of the track, either due to obsolescence of assets or improved performance.
- Stabilisation of the infrastructure, which will increase the reliability of the lines.
- The modernisation of traffic control and management facilities, improving the operation of the system.

## 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, which 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, being these figures an 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 very process of creating the grids and the track occupancy graph (GOV) of the stations is the ultimate determination of the capacity in each exact situation, so that the actual capacity may differ slightly from the train path quotas foreseen as a result of the actual configuration in each specific situation.

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



In this sense, the offer of train path quotas is made for three-hour periods and classified according to the following three types of services:

- VLD: Long Distance passenger services
- VCR: Cercanías and Media Distancia passenger services
- Merc: Freight services

### **3.1.1. PPT on Line 050 Section TARRAGONA – BARCELONA – FRENCH BORDER**

This section includes the railway infrastructure belonging to line 050 between the Camp de Tarragona and the limit of ADIF-LFPSA stations.

The section comprises 231.4 Km of double track with standard gauge (1435 mm), electrified at 25 Kv and ASFA and ERTMS N1 protection system. Temporarily, due to infrastructure works, there is a section of about 20 km of single track between Barcelona-Sants and Bif Mollet.

The characteristic ramp between the ADIF-LFPSA boundary and the Mollet rail line is 18‰ (passenger and freight traffic) and between the Mollet rail line and Camp de Tarragona is 30‰ (passenger traffic only).

ADIF-AV has estimated the capacity of the Barcelona-Sants – Límite ADIF-LFPSA section, according to a Free Network model, and between Camp de Tarragona and Barcelona-Sants according to a Cadenced Integrated Network model, although in both cases it is conditioned by the parking capacity at Barcelona-Sants station, due to the high saturation rate of this station. The total number of spaces offered per day by ADIF-AV on the Barcelona Sants– ADIF-LFPSA limit section is 152 and 184 between Camp de Tarragona and Barcelona Sants.

The section has an interval of time reserved for maintenance (Maintenance Band, hereinafter MB) of 5 hours, namely between 0:00 and 5:00 every day of the week, during this period no capacity is offered.

The maximum length for passenger trains running on this section is 400 metres. In the case of freight trains, the maximum permitted length, both basic and special, is 750 metres.

On this section, there are specific "Access Conditions": Between Bif Mollet – Riells AV, whereby the maximum permitted running time for freight trains is 27min (time simulated by ADIF), due to maximum use of capacity.

In addition, Barcelona Sants (AV) station has been declared a "Congested Station" due to the forecast future demand forecast by ADIF-AV in accordance with the framework agreements it has signed. This may entail additional capacity limitations in addition to those imposed by the capacity of the section.

### **3.1.2. PPT on Line 100 MADRID CHAMARTÍN CLARA CAMPOAMOR – IRÚN**

This section describes the entire line 100 between Madrid Chamartín Clara Campoamor and Irún stations. As it is a very extensive line, neither its infrastructure nor its traffic is homogeneous throughout it, so its description will be made by sections.

The line comprises 637 km of double track for the most part, except for the sections Arcas Reales-Río Pisuerga (15.9 km) and Quintanilleja-Burgos-R.M. (13.6 km), which are single track and represent the main bottleneck. The entire line is of Iberian gauge (1668 mm), electrified at 3 kv and with ASFA protection system.

The maximum characteristic ramp is 16–18‰ in several sections of the line.



ADIF has estimated the capacity of the line according to various models depending on the characteristics of the traffic on the line:

- In the Madrid area, an Integral Time-Based Network model has been used. In order to manage the large number of commuter trains running between Chamartín and El Escorial, the number of train paths offered by ADIF on this section ranges from 302 to 362, depending on the section considered, with the majority, approximately 65%, offered for VCR services.
- From El Escorial to Venta de Baños, a Free Mesh model is used, in which the number of train paths offered by ADIF ranges from 96 to 248, depending on the section considered, with the majority (50%-70%) offered for freight services. A smaller percentage is reserved for VCR services, and only 5% to 10% is reserved for VLD services, since, due to the similarity of the route on this section with High Speed Line 080, most VLD services run along this line.
- The Venta de Baños – Miranda de Ebro section has a Pre-Graphed Integral Mesh Model that allows between 88 and 200 train paths to be offered, depending on the section considered. Again, most of them (60-70% approximately) are offered for freight services and the rest are distributed between VCR and VLD services.
- From Miranda de Ebro to Brinkola, a Free Mesh model is used, with ADIF's train path quotas ranging from 138 to 234, depending on the section considered, with the majority (50%-70%) offered for freight services and the remainder divided between VCR and VLD services, with a slightly higher share for VLD services.
- On the Brinkola-Irún section, an Integral Grid model has been used to manage commuter trains. On this section, the train path quotas offered by ADIF range from 274 to 324, depending on the section considered, except on the Lezo-Rentería-Irún section, where capacity is greatly reduced due to the works being carried out to implement the third rail, specifically 49 train paths are offered. Most of the train paths offered are distributed between VCR services (45-50%) and Freight services (40-45%), leaving a small share for VLD services.

The line has a time interval reserved for maintenance (MB) of about 4-5 hours. Between Chamartín and Venta de Baños stations, the MB varies between 23:30h and 5:30h, with slight changes depending on the section. Between Venta de Baños and Altsasu, the MB changes to daytime and runs between 7:00h and 13.30h, with slight changes depending on the section. From Altsasu to Irún the MB returns to the night timetable from 0:00h to 5:00h.

Between Chamartín and Villalba de Guadarrama, freight traffic is restricted from 6:00 am to 9:00 am on weekdays, due to the high level of commuter traffic.

The maximum length for passenger trains running on this section is 420 metres between Chamartín and Miranda de Ebro and is reduced to 325 metres from that point to Irún. In the case of freight trains, the maximum basic length allowed is 480 metres from Madrid to Venta de Baños, between Venta de Baños and Altsasu it is increased to 520 metres and between Altsasu and Irún it is 450 metres. The special length is 550 metres along the whole line.

### **3.1.3. PPT on Line 120 MEDINA DEL CAMPO – PORTUGUESE BORDER**

This section includes the railway infrastructure belonging to line 120 between the stations of Vilar Formoso and Medina del Campo.

The section comprises 201 km of single track with Iberian gauge (1668 mm). The Salamanca-Medina del Campo section is electrified at 25000 V AC between Salamanca and Arroyo





de la Golosa and at 3000 V DC between Arroyo de la Golosa and Medina del Campo. The Vilar Formoso–Salamanca section is not electrified. The protection system is ASFA between Fuentes de Oñoro and Medina del Campo, and between Vilar Formoso and Fuentes de Oñoro there is Telephone Blocking (LV).

The maximum characteristic ramp of the section is: in the direction of Medina del Campo 17‰ and in the direction of Vilar Formoso 18‰.

ADIF has estimated capacity using a free mesh model. On the Vilar Formoso–Salamanca section, the total number of slots offered per day by ADIF is 33, while on the Salamanca–Medina del Campo section the number of slots offered is 55.

The line has a time interval reserved for maintenance (BM) of 3 hours, specifically on the Vilar Formoso–Salamanca section the BM is from 16:10h to 19:10h in Salamanca and from 15:30h to 18:30h in Vilar Formoso, and on the Salamanca–Medina del Campo section the BM is from 1:15h to 4:15h in Salamanca and from 0:30h to 3:30h in Medina del Campo.

The maximum length for passenger trains running on this section is 300 metres. In the case of freight trains, the maximum permitted length is 550 metres for basic trains and 600 metres for special trains.

#### **3.1.4. PPT in Section PORTUGUESE BORDER – BADAJOZ – MÉRIDA – PUERTOLLANO**

This section includes the railway infrastructure belonging to line 520 between the stations of Badajoz and Puertollano.

The section comprises some 300 km of non-electrified single track with Iberian gauge (1668 mm). The protection system is ASFA. There is a section with Telephone Blocking (TB): between Villanueva de la Serena – Brazatortas–Veredas.

The maximum characteristic ramp of the section is 16–17‰.

ADIF has estimated capacity using a free mesh model. On the Badajoz–Mérida section, the total number of slots offered per day by ADIF is 106, while on the Mérida–Puertollano section, the total number of slots offered per day by ADIF is 10–12.

The line has a time interval reserved for maintenance (MB) of 3 hours, specifically in the Badajoz–Mérida section the MB is from 23:00h to 2:00h, in the Mérida–Almorchón section from 2:00h to 5:00h, and in the Almorchón–Puertollano section the MB is from 1:00h to 4:00h.

The maximum length for passenger trains running on this section is 400 metres between Badajoz and Mérida and 420 metres between Mérida and Puertollano. In the case of freight trains, the maximum length allowed is 400 metres for basic trains and 460 metres for special trains.

#### **3.1.5. PPT on Section PORTUGUESE BORDER – TUI – VIGO**

This section includes the railway infrastructures belonging to lines 814, 810 and 812 between the stations of Tui and Vigo Guixar.

The section comprises some 31 km of Iberian gauge track (1668 mm). The whole section is electrified at 3000 V DC. Most of the section is single track, except for the 4.1 km between Redondela–Bif Chapela, which is double track. The protection system is ASFA with Automatic Blocking.



The maximum characteristic ramp of the section is: Vigo direction 15‰ and Tui direction 18‰.

ADIF has estimated capacity using a Free Mesh model. The total number of slots offered per day by ADIF on single track sections is 80–96, while on double track sections the number of slots offered per day is 360.

The line has a time interval reserved for maintenance (MB) of 3 hours, specifically between 2:00h and 5:00h, except for the 2.8 kilometres between Guillarei and Tui, where the MB is between 2:30h and 5:30h.

The maximum length for passenger trains running on this section is 300 metres. In the case of freight trains, the maximum length allowed is 400 metres for basic trains and 465 metres for special trains.

### **3.1.6. PPT in Mediterranean Corridor (BARCELONA to VALENCIA)**

This section includes the railway infrastructure of the main lines connecting Barcelona and Tarragona and the continuation of the section from Tarragona to Valencia via line 600.

There are several options that connect the area around Barcelona with Tarragona, mainly:

- Line 240: between the stations of L'Hospitalet de Llobregat and Sant Vicenç de Calders, it is the preferred access channel for freight traffic to the terminals around Barcelona. 71 km of mainly electrified double track (3000 V DC) of Iberian gauge with automatic blocking, MB from 0:00h to 5:00h and a maximum characteristic ramp of 14‰. ADIF has estimated the capacity of the section according to a Cadenced Integral Mesh model. The usual number of slots offered per day by ADIF on this section is around 400, however, temporary capacity restrictions are being produced due to works to implement standard gauge for the Mediterranean Corridor.
- Line 200 (San Vicenç de Calders– Barcelona Sants section): section with preferential passenger traffic (commuter and MD), normally no freight traffic, except for works or exceptions. 60 km of electrified double track (3000 V DC) of Iberian gauge with automatic blocking, MB from 23:30h to 4:30h and a maximum characteristic ramp of 27‰. ADIF has estimated the capacity of the section according to a Cadenced Integral Mesh model. The number of slots offered per day by ADIF on this section is approximately 380.
- Line 210 (Tarragona–San Vicenç de Calders section): section with mixed passenger and freight traffic. Approximately 25 km of electrified double track (3000 V DC) of Iberian gauge with automatic blocking, MB from 0:00h to 5:00h and a maximum characteristic ramp of 6–9‰, depending on direction. ADIF has estimated the capacity of the section according to a Free Mesh model, resulting in a daily quota offer of about 360. Temporary capacity restrictions may occur on this section due to the works for the implementation of standard gauge for the Mediterranean Corridor.

Line 600, between the stations of Cambiador de la Boella and Valencia Nord, is the main connection line between Tarragona and Valencia. From the area around Cambiador de la Boella there are links to connect with both the standard gauge lines and the Iberian gauge lines around Tarragona. It has 254 km of electrified double track (3000 V DC) with automatic blocking. Between Cambiador de la Boella and Castellón it is Iberian gauge track and between Castellón and Valencia it is mixed gauge track (standard and Iberian). The MB is 5 hours, ranging between 23:30h and



5:45h depending on the section, the maximum characteristic ramp is between 15–20‰, depending on the direction. ADIF has estimated the capacity of the section according to a Free Mesh model. The usual number of quotas offered per day by ADIF is around 250–350 (depending on the section), however, temporary capacity restrictions are being produced due to works to implement standard gauge for the Mediterranean Corridor.

### 3.2.– TRAFFIC FLOWS

#### 3.2.1. Traffic on Line 050 TARRAGONA – BARCELONA – FRENCH BORDER Section

This section analyses traffic flows on the Camp de Tarragona – Barcelona–Sants – ADIF–LFPSA boundary section of Line 050. The scheduled train data for a specific day selected as representative are in the order of 8–13 trains per direction for passengers and 2–6 trains per direction for freight on the Barcelona Sants – ADIF\_LFPSA boundary section. For the Camp de Tarragona – Barcelona Sants section, passenger traffic increases considerably, in the order of 40–55 trains per direction per day, and there are no freight trains running on this section.

On this section, all freight traffic is international traffic. This traffic does not travel the entire section, as it leaves or joins line 050 at the Bif Mollet station, and from there it goes to the Barna Can Tunis or Barcelona–Morrot terminals. Technical stops are usually scheduled for some of these trains at the Vilobi D'Onyar, Riells–A.V. and Llinars–A.V. stations to manage overtaking with passenger trains so as not to affect the travel times of the latter.

Regarding passenger traffic, the types of traffic are different depending on the section:

- Barcelona Sants– ADIF–LFPSA boundary: there are 2 types of LD passenger services, domestic traffic to/from Figueres–Vilafant station and international traffic. On this section, all of them make a commercial stop at the intermediate station of Girona and the international trains also stop at Figueres–Vilafant station.
- Camp de Tarragona–Barcelona Sants: there is an MD distance service between Barcelona–Sants and Lleida with a stop in Camp de Tarragona, with about 8 trains per day. The rest of the traffic on the section is LD passengers, in the order of 75–100 trains per day, mostly domestic traffic, usually only 2 international LD trains run on this section.

Comparing the quotas offered with the scheduled traffic, the level of saturation of the Barcelona–French border section is low, at around 21–24% (without taking into account the temporary single track capacity reduction discussed in 3.1.1). However, the saturation of the Tarragona–Barcelona section is higher with an average of 45–55% but reaching up to 80% at peak hours.

#### 3.2.2. Traffic on Line 100 MADRID CHAMARTÍN CLARA CAMPOAMOR – IRÚN

This section analyses the traffic flows of the entire line 100 between the stations of Madrid Chamartín Clara Campoamor (Chamartín) and Irún. As it is a very long line, its traffic is not homogeneous throughout it, so it will be described by sections:

- In the Madrid area, the predominant type of traffic is commuter traffic. With some 140–220 trains per day between Chamartín and Villalba de Guadarrama stations, this type of traffic is significantly reduced on the Villalba de Guadarrama–El Escorial section to around 70–100 trains per day. There are very few Long Distance (LD) passenger services, as most of them run on line 050. Medium Distance (MD) passenger and freight traffic is much lower



than that of local trains, in both cases standing at approximately 20–25 trains per day. This section has an average saturation of 50–60%.

- Between El Escorial and Venta de Baños, MD passenger traffic continues (20–30 trains daily), mainly to Ávila or Salamanca, but also other more occasional MD trains to other cities on the northern coast (Valladolid, Palencia, León, Vitoria...). LD passenger traffic is very low, about 2 trains. On this section, freight traffic remains homogeneous (20–30 trains per day). Finally, the average saturation is 25%, except for the single-track sections, which reach 50–55% saturation.
- On the Venta de Baños – Miranda de Ebro section, MD traffic is reduced to 6–8 trains per day. The LD service is about 4 trains per day between Venta de Baños and Burgos, as most of this type of traffic runs on the alternative AV line (L080) and increases to 8–10 trains per day from Burgos to Miranda, as there is no AV option. And the freight service is slightly reduced, with respect to the previous section, remaining around 15–25 trains per day. The saturation of this section is 20–30%.
- From Miranda de Ebro to Brinkola there are around 25–30 trains per day: 6–14 MD trains, 8–10 LD trains, and between 7 and 15 freight trains per day. Saturation on this section is low, 10–20%.
- On the Brinkola–Irun section, the predominant traffic is commuter traffic, approximately 60–80 trains per day. Traffic of 6–10 trains per day of MD passengers and LD passengers reach San Sebastian. Freight trains running on this section to Irun are of the order of 10–16 trains per day. Saturation on this section is 30–35% except for the section under construction between Lezo–Rentería and Irún, which is congested due to the reduction in capacity.

### **3.2.3. Traffic on Line 120 MEDINA DEL CAMPO – PORTUGUESE BORDER**

This section analyses the traffic flows of Vilar Formoso–Medina del Campo on Line 120.

On this line there is passenger traffic only between Salamanca and Medina del Campo (not international), specifically Largas Distancias from Madrid/Burgos to Salamanca and Medias Distancias from Valladolid to Salamanca. Only freight trains run on the rest of the section (Vilar Formoso–Salamanca), with international freight traffic running along the entire section. On the section with the heaviest traffic, 20 to 30 trains per day coexist, while on the section with the lowest volume of traffic, the number of trains per day currently ranges from 3 to 7 trains per day.

Comparing the quotas offered with the programmed traffic, the level of saturation of the section is low, around 13–18% for the section without passenger traffic and around 30–40% for the section with passenger traffic.

### **3.2.4. Traffic on the PORTUGUESE BORDER – BADAJOZ – MÉRIDA – PUERTOLLANO Stretch**

This section analyses the traffic flows of lines 520 between Puertollano and Badajoz stations and 508 between La Frontera and Badajoz.

In general, in this line they coexist:

- Long Distance (LD) traffic between Madrid and Badajoz (about 8 daily), part of this traffic enters the city of Mérida and therefore runs in both directions along the Aljucén–Mérida



section, LD traffic does not run along the Mérida–Puertollano section. There is no international LD traffic on this line.

- Medium Distance (MD) traffic north–south (from Madrid/Plasencia/Cáceres to Mérida/Sevilla and vice versa) and east–west (from Badajoz to Mérida/Puertollano/Alcázar San Juan and vice versa). Puertollano/Alcázar de San Juan and vice versa), the number of daily traffic flows ranges from 6 per day on the section with the least MD traffic (Mérida–Puertollano) to 18 per day on the section with the most MD traffic (Aljucen–Mérida). Between Frontera and Badajoz there is also MD traffic Frontera–Badajoz, about 4 per day.
- The usual freight traffic (1–5 daily) runs from the border/Badajoz to the area around Mérida, southbound (Zafra/Huelva) and on to Madrid. The international traffic from/to the border has as destination/origin Badajoz and the surroundings of Merida, 2–4 daily.

Comparing the quotas offered with the programmed traffic, it is observed that the saturation level is very different depending on the section, ranging from a low level (13%) in the Badajoz–Aljucen section, to a high level (75%) between Merida–Almorchon due to the low available capacity.

### **3.2.5. Traffic on the PORTUGUESE BORDER – TUI – VIGO**

This section analyses the traffic flows on the Valença do Minho – Tui – Redondela – Vigo Guixar route, where international traffic between Vigo and Portugal passes along with domestic traffic from Vigo and other destinations.

The section with the most traffic is Vigo Guixar– Redondela. In this section converge both national and international LD passenger traffic as well as MD and national freight. The usual routes for freight traffic departing from Vigo–Guixar are relatively short, staying in Galicia or arriving in the area around León. The MD passenger traffic departing from Vigo–Guixar passes through different Galician cities, between 12–18 trains per day. As for LD passengers on this section, most of them are international traffic and there is also a national cross traffic to Barcelona.

Regarding the international traffic, the freight traffic coming from the Portuguese border of Valença do Minho has as destination several points of the Northwest of the peninsula: A Coruña, A Susana, Lugo, Meirama, Pontevedra, ... This traffic usually ranges between 4–8 trains per day. The VLD passenger trains arrive from Portugal, through Tui to Vigo–Guixar and vice versa, usually 4 daily traffic.

Comparing the quotas offered with the programmed traffic, the saturation level of the section is low, it can be estimated that on average the saturation is around 25%.

### **3.2.6. Traffic on the Mediterranean Corridor (BARCELONA to VALENCIA)**

This section analyses the traffic flows of the main lines connecting Barcelona and Tarragona and the continuation of the section from Tarragona to Valencia via line 600.

There are several options that connect the area around Barcelona with Tarragona, mainly:

- Line 240: between the stations of L'Hospitalet de Llobregat and Sant Vicenç de Calders. It is the preferred access/exit channel for freight traffic to the terminals around Barcelona for trains from a wide range of points in the rest of the peninsula. The section with the highest





number of freight trains is between Vilafranca del Penedés and Castellbisbal, and usually carries between 60–70 freight trains per day. The R4 (Sant Vicenç de Calders–Manresa) from Barcelona also runs on this line. The usual traffic on the R4 is around 70 trains per day, but on the Molins de Rei – L'Hospitalet LL. section the R4 and R1 (Molins de Rei–Maçanet–Massanes) converge, so the traffic doubles to 150 trains per day. Saturation on Line 240 is at an average level of 30–45%, except for the Martorell–Castellbisbal section which is saturated due to the temporary restrictions imposed for the implementation of standard gauge.

- Line 200 (San Vicenç de Calders – Barcelona Sants section): On this section the usual traffic is commuter and MD, LD passenger and freight traffic is very low, about 4–8 daily. Most of the traffic is commuter trains on the R2 (Sant Vicenç de Calders/Aeroport – Barcelona Estacio de França/Granollers) from Barcelona, with about 160 commuter trains per day on the less busy section and about 240 on the busiest section, which is between El Prat – Barcelona Sants. There is also quite significant traffic of MD trains, around 60–70 daily, between Barcelona and mainly Reus, Lleida, Port Aventura and Tortosa. Saturation on Line 200 (San Vicenç de Calders – Barcelona Sants section) is quite high, between 50–61% on average, but reaches 80% at peak times.
- Line 210 (Tarragona–San Vicenç de Calders section): mixed passenger and freight traffic. Some 45–55 freight trains run daily. Passenger traffic is practically the same as that mentioned for the section of line 200, being mainly MD traffic (about 75 daily). The saturation of Line 210 (Tarragona–San Vicenç de Calders section) is at an average level of 35–45%.

Line 600 carries all types of traffic: freight, commuter, LD and MD, depending on the section, the proportions of these traffics are very different. The number of freight traffic is fairly homogeneous along the entire line (5–10 daily) except in the area around the Boella Changeover, where there is only LD traffic (approximately 14 daily) which passes through the gauge changeover to access line 050. The section with the highest number of LDs (25–30 daily) is between Valencia and Castellón, since all the LDs of the Mediterranean corridor (Barcelona, Valencia, Alicante, Murcia, ...) converge with the high-speed traffic from Madrid that take advantage of the mixed gauge implemented in this section to reach Castellón. This section (Castellón–Valencia) is also the only section of the line on which commuter trains run, some 80–85 daily belonging to the C6 (Valencia–Nord – Castellón). As for MD traffic, there are several services running on parts of this line, the main ones are Valencia–Tortosa, Barcelona–Tortosa, Castellón–Vinaroz, and Valencia–Teruel–Zaragoza–Huesca, the number of MD traffic is between 8–30 daily. Saturation on Line 600 is low (10–20%) except for the section where commuter trains run, Valencia – Castellón, where saturation is higher, reaching 50% on average, but reaching up to 75% at peak times.





### 3.2.7. CROSS-BORDER TRAFFIC FLOWS

#### ➤ Spain – France

#### GENERAL CONSIDERATIONS

- For the calculation of number of trains per hour it has been considered a week of 7 days and 24 hours per day except in some cases.
- Portbou-Cerbère and Irún-Hendaye borders need to be analyzed separately considering the 2 tracks with different gauges (UIC and Iberian) crossing the border section.
- Except for the border section Figueres V. – Perpignan, the number of trains per hour has been calculated for 24 hours, but it must be considered that during the maintenance bands the trains cannot circulate, so the real number of trains per hour may be higher than indicated in the table.
- The data registered in the previous table comes from the information available for the IM (essentially the number of train runs requested for TT-2022). Some Spanish freight RUs are in process of acquiring locomotives to run through the Figueres – Perpignan International Section, so a potential increase in freight traffic through this border section can be anticipated in the coming years.

Border point	Passenger train paths per hour		Freight train paths per hour
	Long Distance	Regional	
Figueres V. - Perpignan BV	0,5 <sup>(1)</sup>	0	0
Figueres V. - Perpignan FI (Le Soler)	0	0	0,6 <sup>(1)</sup>
Cerbère-Portbou (vía UIC)	0	1,0	0,5
Cerbère-Portbou (vía ibérica)	0	0,5 <sup>(2)</sup>	0,2
Irún-Hendaya (vía UIC)	0	0	0,6
Irún-Hendaya (vía ibérica)	0	0	0,2
Puigcerdá-La Tour de Carol (vía ibérica)	0	0,7	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).



## ➤ Spain – Portugal

### GENERAL CONSIDERATIONS

- For the calculation of number of trains per hour it has been considered a week of 7 days and 24 hours per day.
- The number of trains per hour has been calculated for 24 hours, but it must be considered that during the maintenance bands the trains cannot circulate, so the real number of trains per hour may be higher than indicated in the table.
- The data registered in the previous table comes from the information available for the IM (essentially the nº of train runs requested for TT-2023).

Border point	Passenger train paths per hour		Freight train paths per hour
	Long Distance	Regional	
Badajoz - Elvas	0	0,08	0,2
Vilar Formoso – Fuentes de Oñoro	0	0	0,23
Valença do Minho - Tui	0,17	0,17	0,35

### REFERENCE DOCUMENTS

- Adif TCRs Catalogue
- ADIF-AV TCRs Catalogue
- Annex H of the Adif Network Statement
- Annex H of the Adif-Alta Velocidad Network Statement

### CHAPTER 4.- VALIDATION

	Name and position	Signature and date
Approve:	Javier Achutegui Hernández Director de Gestión de Capacidad de ADIF	





