



2021 Annual Report



**MEDITERRANEAN
RAIL FREIGHT CORRIDOR**

Spain-France-Italy-Slovenia-Croatia-Hungary

2021 Annual Report

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Introduction

2021 has been a difficult year for the Med RFC almost as 2020, but also a year characterized by a renewed centrality of rail transport in Europe, where RFCs and IMs were called to face the challenges due to the Covid 19 outbreak in logistics and transportation. Since the pandemic arrived in Europe, rail has demonstrated resilience and reliability. Freight services have continued all over Europe, also thanks to less passenger traffic enabling greater capacity. For the MedRFC, on the other hand, the ongoing huge investments on rail infrastructures and the corresponding constructions works proceeding in many countries (Spain with the implementation of UIC gauge, Lyon – Turin basis tunnel, the major strengthening of the Slovenian and the Croatian rail network, just to point out the main ones) created a further critical landscape for rail freight operations.

Within this frame, MedRFC in 2021 concentrated its efforts on cross-border issues, with the set-up of two working groups, finalized to improve rail performance and procedures harmonisations, in a cooperative approach with the involvement of all the main stakeholders.

2021 was the *European Year of Rail* for which many events were organized all around Europe and for which the Rail freight corridor Network found a way to get more connected to their stakeholders.

The **main objective** of the annual report 2021 is to illustrate the Mediterranean RFC main activities and achievements by:

1

Providing to Corridor stakeholders and to all interested parties an updated snapshot of RFC's main features and projects;

2

Providing an overview of the key figures related to the performance of the corridor, also in compliance with the Article 19 of Regulation 913/2010;



1.1 MAIN CORRIDOR ACTIVITIES IN 2021

- > International Contingency Management: Preparation of Med RFC re-routing overview for TT 2022
- > Villa Opicina taskforce working groups
- > Modane Taskforce/working group set up
- > Update of the Implementation Plan with the IMs and the Ministries of Transport
- > New application for the Customer Information Platform (CIP) features for the benefit of the applicants.
- > Consultation with RUs and TMs feedback on Covid-19 impact on the market
- > Events for the Year of Railways with the development of the Corridor network video.

LEGEND:

- Principal route
- Diversionary route
- Connecting line
- Under construction
- Interconnection / Overlapping with other RFC
- RFC6 Terminal
- Railway junction



Updated general MAP of the MED RFC w terminals

2

Mediterranean RFC at a Glance



-  **6 Countries:** Spain, France, Italy, Slovenia, Croatia and Hungary;
-  **8 Infrastructure Managers and 1 Allocation Body:**
- The main figures of the Mediterranean Rail Freight Corridor are:
 -  Total length about **8.000 km** of railway lines
 -  of which, more than **7.000 km** of principal route
 -  and about **650 km** of diversionary routes
 -  More than **100** freight terminals
 -  **5** European Core Cargo Seaports and **2** important Riverports
 -  The most interconnected Rail Freight Corridor (**9** RFCs interconnected)
 -  **3** main manufacturing areas: Catalonia, Auvergne-Rhone-Alpes and Piedmont-Lombardy
 -  Med RFC includes **18%** of the European population and **17%** of European GDP

2.1 EXECUTIVE BOARD

The Executive Board (ExBo) is chaired by the Ministry of Ecological Transition, in charge of Transport, represented by the President Delphine Chabalier. The ExBo met twice virtually, in April and October 2021.

"Among the RFCs, the cross-border issues, at present, are still the main bottlenecks for seamless rail traffic throughout Europe, affecting its operational quality. In line with this, the RFC Med has understood that reducing border barriers with the aim of seamless border crossing must be the main objective today. In 2021, in order to improve the performance and efficiency of rail transport in the Mediterranean area, the corridor has continued to develop the cross-border harmonization projects of "Quality Circle Operation" Villa Opicina and Modane Tasks Force. Collaborative approaches like the cross border working groups of RFC Mediterranean has showed concrete results and generated a positive attitude into the participants (e.g RU, Ports and Terminals). RFC med acted as a facilitator/platform for those programs as they connect IMs and RUs as well as political stakeholders. These actions aim to implement soft measures needed to make effective the infrastructure investments. In addition, better coordination of Temporary Capacity Restrictions (TCRs) is the major objective set by the ExBo and as a first step, the corridor has improved access to information on TCRs and a better view to customers from the draft offer to the final capacity offer.

On behalf of the Executive Board, I want to thank for their dedication! Let's keep on doing our best to double rail freight traffic by 2050 as the Sustainable and Smart Mobility Strategy set out, in order to reduce greenhouse gas emissions in transport!"

Delphine Chabalier, ExBo Chair.



MEMBERS OF THE MEDITERRANEAN RAIL FREIGHT CORRIDOR

GOVERNANCE CHART



2.2 THE EEIG

The Management board set up the EEIG for Mediterranean Rail Freight corridor to deal with all the administrative issues related to the activities of the Corridor.

The governing body of the EEIG is the General Assembly (GA), which acts also as corridor Management Board (MB).

Chairs the GA and act as the president of the MB for the first part of the year Mr Manuel Besteiro Galindo (ADIF) who substitute Bojan Kekec (SŽ-INFRA) since April 2021.

2.3 THE PMO

The MB delegated to a Permanent Management Office (PMO) located in Milan, all the operational functions and project related activities of the corridor. During the COVID19 outbreak 2nd and 3rd waves the team worked efficiently and despite the closures all the activities and working groups continued to work with the goal to solve the issues due to congestions, change of the traffic and more.



FURIO BOMBARDI

Managing Director/EEIG Manager

He is a full-time manager dedicated to the EEIG and the Mediterranean Rail Freight Corridor. He is the head of the PMO and the main coordinator of all corridor related activities. He is responsible for the correct implementation of all tasks and obligations provided in the Regulation.

'Railways are not only an important part of our European civilisation common heritage, but an essential part of our future as we imagine it: Smart, green, safe and resilient.'

Adina Vălean, January 2021 European Year of Rail.

Rail Freight Corridors are the European platforms where all Rail Freight Stakeholders can cooperate on an even playing field to enhance rail transport performance and effectiveness.

Collaborative approaches like the cross border working groups of Med RFC show concrete results and generate a positive attitude in the Participants. These actions aim to implement soft measures needed to make effective the huge infrastructure investments performed by European Union.



Furio Bombardi



ISTVÁN PÁKOZDI

Deputy Director/Infrastructure Advisor/EEIG Manager

He is one of the EEIG Managers and a full-time manager dedicated to the EEIG/PMO. He is responsible for the infrastructure activities of the EEIG/PMO, such as:

- Reviewing and updating the Corridor Information Document (CID) Books in line with the actual version of RNE Common Structure;
- Managing and coordinating the Corridor Train Performance Monitoring including Data Quality aspects;
- Managing and coordinating the corridor activities in the RNE/RFC KPI Coordination Group;
- Managing and coordinating the development and yearly update of MED RFC ICM Re-Routing Scenarios;
- Managing and participating to disruption management processes, as main ICM RFC Coordinator;
- Managing and coordinating the Corridor Information Platform (CIP) activity, as a member of Change Control Board (CCB) of CIP.



PAMELA CHIARAPPA

PMO Administrative Assistant

She is responsible for the administrative management of the office, She supports the corridor communication and marketing related activities and the PMO staff in all the operational and administrative issues.



STEPHANE DASTOT

C-OSS leader

The C-OSS Leader is the manager of the single contact point for applicants to request and receive rail infrastructure capacity for freight trains (Time Table 201X and RC) crossing at least one border along the corridor. The C-OSS Leader handles communication process among IMs/ABs, other C-OSSs and Terminals linked to the corridor. He also coordinates and harmonizes TCRs with the IMs of the corridor.



GIULIA GARGANTINI

Project Manager

The Project Manager is responsible for different projects concerning the Corridor development and she is in charge of preparing and coordinating the reporting activity towards the European Commission and the European Climate, Infrastructure and Environment Executive Agency (CINEA), formerly INEA.

In 2021, among others, the Project Manager dealt with the following activities and projects:

- Customer Information Platform developments and maintenance, as CIP Development group member for MED RFC;
- User Satisfaction Survey management.

2.4 REGULATORY BODY

As provided for by the Regulation and in the Directive 2012/34/EU, a Regulatory Body has been appointed to supervise the activity of the Mediterranean Rail Freight Corridor, in order to monitor and ensure non-discriminatory access to the corridor and, among other functions, it deals with managing possible appeals from applicants. The Regulatory Body for the Mediterranean Rail Freight Corridor is: Autorità di Regolazione dei Trasporti located in Turin, Italy.

AUTORITÀ DI REGOLAZIONE DEI TRASPORTI (ART)

Via Nizza 230, 10126 Torino
Telefono: +39 011.19212500

E-mail: art@autorita-trasporti.it

PEC: pec@pec.autorita-trasporti.it

C.F.: 97772010019

3.1 CORRIDOR INFORMATION DOCUMENT

Mediterranean RFC is yearly updating the Corridor Information Documents in which stakeholders and customers can find the necessary information for the use of the freight corridor. The complete set of documents is published on the corridor website and since the end of 2018 on the Customer Information Platform (CIP). The CID Books structure is harmonised according to RailNetEurope (RNE) Common Structure. In 2020 CID Books have been further simplified and finally merged into one single CID Book, the texts where possible have been simplified and shortened, providing links to tools where the information is available such as CIP, NCI, RFP instead of duplicating the same information in the CID. (the Implementation Plan is linked as a reference). The text and the structure are harmonised across corridors. Mediterranean RFC has achieved 100% of compliance since 2017.

All the RFCs information (that are now available in the corridors CID Book in pdf version) is going to be digitalized to ease the accessibility to information related to the interested Rail Freight Corridors. Customers are able to navigate CID documents

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Corridor Documentation



of all RFCs online through easier, more customer friendly tool is ready and available by since- 2021.

As per the revised the Handbook for International Contingency Management the CID Book Section 4.5 Traffic management has been updated.

Last, but not least the Implementation Plan has been updated together with the IMs and the Ministries of Transport of Mediterranean RFC.

All the above characteristics of the lines are displayed to the users as selectable map themes. This addition of parameters increases the quantity of information provided to users. The insertion of the track gauge visualisation in the interactive map is of utmost importance for the Mediterranean RFC where the Iberian Peninsula is equipped with 1668 mm gauge and is currently performing huge investments to extend the

installation of the standard gauge (1435 mm) or mixed gauge (1668/1435 mm) infrastructure southern of Barcelona with horizon 2030.

Finally, the visualization of the ICM lines and the available re-routing scenarios is now displayed in the platform with an easy and fast visualization of the off-the-shelf possibilities in case of ICM.

For more information visit these links:

www.medrfc.eu
www.cip.rne.eu

3.2 CUSTOMER INFORMATION PLATFORM



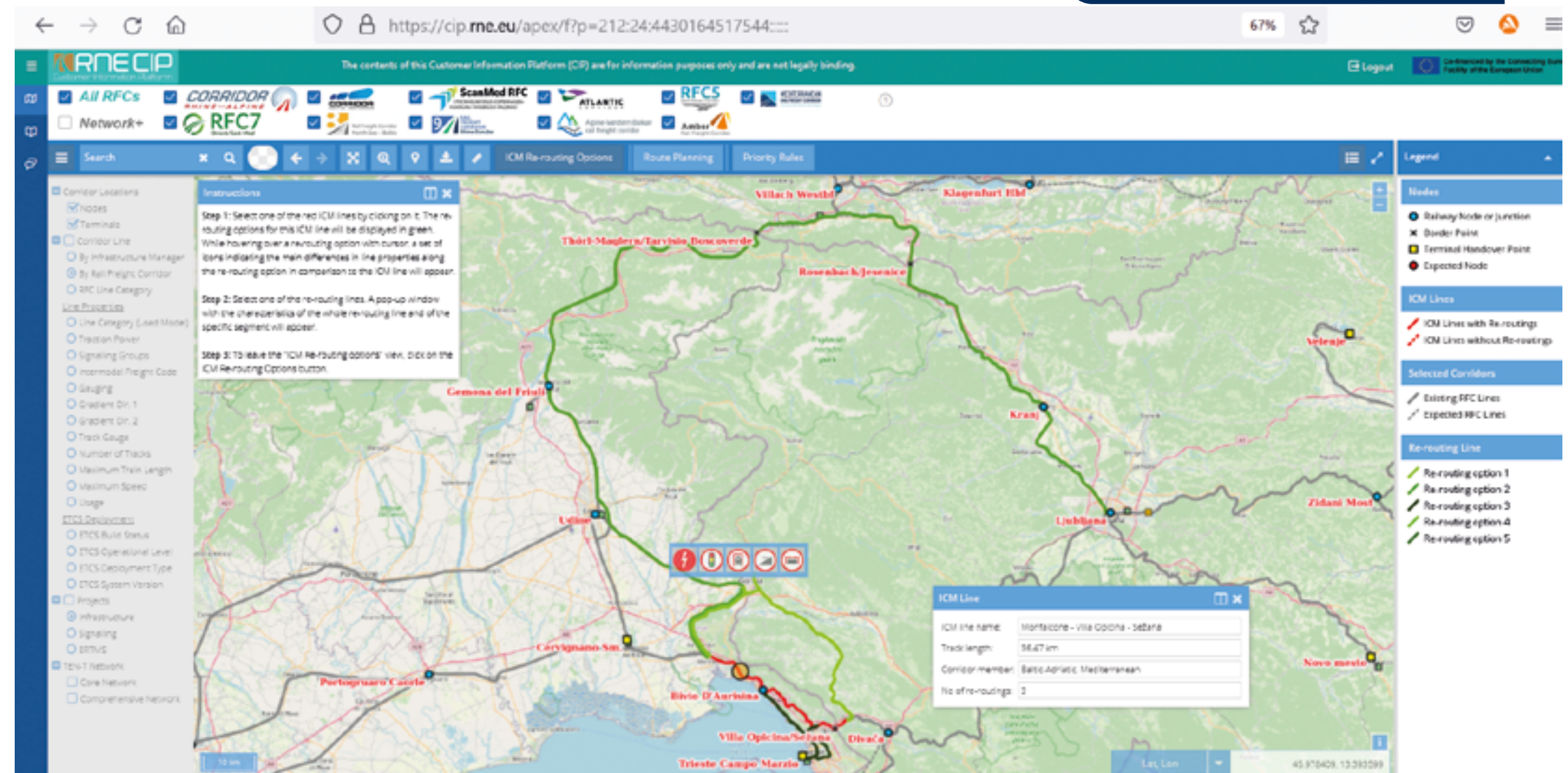
CIP Updates – What's new on CIP

The Customer Information platform (CIP) is an online platform providing easy access to harmonized information about the Rail Freight Corridors. The year 2021 marked the completion of the roll-out of CIP to the overall Rail Freight Corridor Network, in June 2021 also the contents of RFC Rhine-Danube were made available on the platform. Since then the CIP is displaying the networks of 11 Rail Freight Corridors and the railway infrastructure of 26 European countries, thus really becoming a unique source of information for RFC Network lines and documents.

In 2021 a new graphical interface was launched together with an overall improvement of the user-friendliness of the platform for the benefit of the users. This was followed by a marketing campaign made of 12 short videos illustrating how to use the platform and different functions available therein.

The technical parameters of the lines displayed in the interactive map of CIP were enriched of additional parameters:

- Track Gauge
- Number of Tracks
- Maximum Train Length
- Maximum Speed
- Usage (freight, passenger, or both)
- Miscellaneous (for additional info)



A click on the button "ICM Re-routing Options" activates the display of the ICM lines on the map, together with short instructions on how to use the function.

When selecting an ICM line (displayed red) the possible re-routing options pop-up and hovering over a re-routing option with the mouse the function gives to the

user a hint on the differences in the parameters of the line between the re-routing option selected and the normal routing with the ICM line. This is done with icons at a first glance, but details about the routing can be checked by clicking on the selected option.

4

Corridor Activities 2021



4.1 EUROPEAN YEAR OF RAIL EVENTS

Many events were organized by all the stakeholders and also by institutions, the infrastructure managers and the Rail freight corridor stakeholders in the frame of the Year of Railways in 2021, a moment to focus on the works to reach the goals of the Green Deal.

One of the most peculiar thing happened was the CEF train of passenger and freight which went across Europe for which the RFC network release a Video and a corridor roll-up and map to promote the activities and the commitment of the RFCs.



Year of Rail event – Hungary



Connecting Europe Train 2021



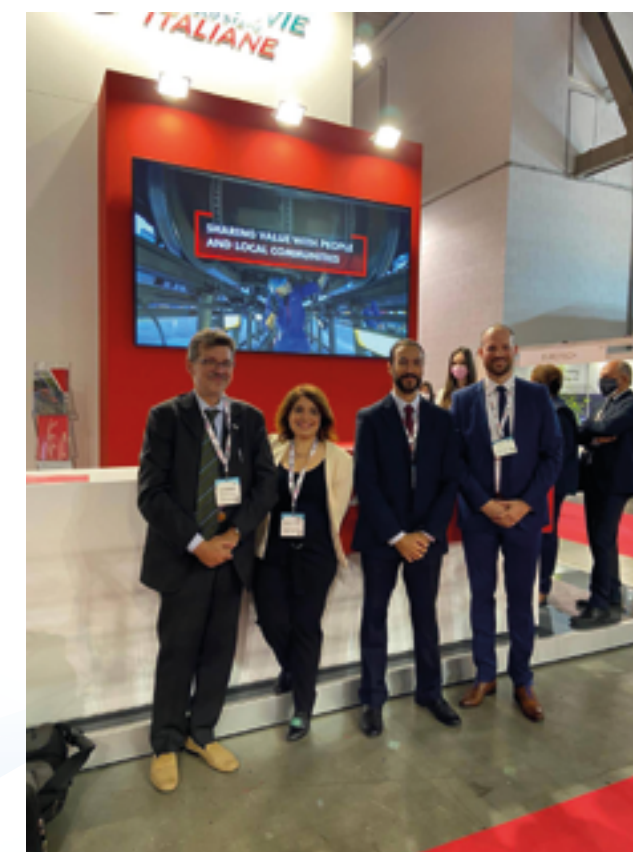
EXPO FERROVIARIA



During the EXPO Ferroviaria 2021, at the Fiera di Milano from 28th to 30th September 2021, RFI organized a conference on the role of infrastructure managers to improve the competitiveness of international rail transport. This was part of the conference “European Year of Railways: Europe without borders” which was opened by the RFI President Anna Masutti and saw the introductory speech by the Managing Director Vera Fiorani, entitled “The contribution of RFI to the creation of a competitive and interoperable European railway network”.

The RFI event was then divided into the following two thematic panels:

- **International cooperation in investment planning**
- **Rail freight corridors and the challenges of international freight transport**, moderated by Andrea Galluzzi, Head of European Rail Freight Corridors, the round table was attended by the four executive directors of the RFCs crossing the Italian network: Mark Adler RFC Rhine-Alpine, Emanuele Mastrodonato RFC Scan-Med, Simona Di Loreto RFC Baltic-Adriatic and Furio Bombardi Mediterranean RFC and by Rosa Frignola, RFI North-West Territorial Development and Marketing Manager.



SPANISH DEVELOPMENTS ALONG THE MED RFC 09.06.2021

The Med RFC together with ADIF (Administrador de Infraestructura Ferroviarias) and the Oficina del Comisionado del Gobierno para el Corredor Mediterráneo, organized in June 2021 a joint meeting to inform the customers about the important infrastructural projects taking place in Spain along the Mediterranean RFC to develop better connections and improve competitiveness. The main goals of the meeting were:

1. Presenting the state of the art of the projects and timeline perspectives within ADIF global strategy along the Mediterranean Corridor;
2. Giving to the Med RFC stakeholders a platform for better understanding the future of rail transport possibilities along the Spanish sections of the Med RFC.

The request for the meeting came from the Med RFC Advisory Group who proposed to have a recurrent informative session with focus on the important infrastructural developments in Spain with horizon 2025 and 2030. The meeting reached a high level of participation of stakeholders from different Countries of Europe and there was a high level of appreciation for the event.



VISION RAIL SESSION ONE 16.06.2021

The RFC was invited as a speaker to the first appointment of the **Vision Rail sessions**: three international webinars in which institutional representatives, national operators, entrepreneurs, academics and students shared experiences, best practices and goals. The event was organized by TELT in the framework of the **European Year of Rail** and the first session was focusing on “The role of rail in the vision of the Green Deal”. The Managing Director, Furio Bombardi, presented the view of the Med RFC on the efforts needed to reach the objectives of the Green Deal and the shift towards more sustainable mobility, such as rail.

Med RFC is a rail freight corridor, thus concentrated on railways, but it is fundamental to always consider the intramodality of the transport chain. Med RFC is connecting strong market areas of the European Union and is also connecting major maritime ports, the full potential of the RFC has still to be achieved and the important infrastructural investments foreseen with horizon 2030 will certainly increase the potential and attractiveness of rail transportation along the RFC, the efforts of the corridor are concentrated in easing the interoperability among networks and modes.

<https://www.telt-sas.com/en/visionrail/>



4.2 PROJECTS

THE VILLA OPICINA TASKFORCE: WHEN THE CORRIDOR MAKES ALL THE DIFFERENCE

Since September 2020, due to works scheduled to be carried out on the Karavanken Tunnel (on the Slovenia – Austrian border), part of the Koper – Villach traffic has been diverted via Villa Opicina/Tarvisio, generating a 32% increase in traffic on the Italian-Slovenian border crossing, with consequent problems with the management of the Villa Opicina plant and the terminals and plants located in the areas on both sides of the border.

In order to better handle these difficulties and at the same time address the major pre-existing problems of the cross border section, the Italian and Slovenian Infrastructure Managers established a task force, coordinated by the Mediterranean Rail Freight Corridor.

The objectives of the Villa Opicina Task Force – which is still operational – are the following: the joint monitoring of the programming and operational management of freight traffic, the sharing of the cross-border traffic management rules (to prevent the congestion of the plant, with consequent traffic interruptions) and the establishment of a permanent dialogue with Railway undertakings, Ports and In-Land Terminals for shared activities aimed at improving punctuality and performance at the cross border section.

The initial results achieved include the following: more efficient cooperation between the two infrastructure managers and proactive management of relations with the national railway undertakings in order to ensure compliance with the communication flows, the sharing of a common monitoring method (with the activation of a dedicated database in the cloud) and the establishment of an emergency procedure for the management of any potential traffic jams at the cross border section, following any prolonged stops on the tracks.

The constant monitoring and regular dialogue between the infrastructure managers carried out on a weekly basis have stabilized the emergency situation and have restored a punctuality level comparable to that of the previous year, thus allowing almost all the extraordinary trains to be handled in a satisfactory manner, despite the number of ordinary trains in circulation has almost doubled.

Subsequent actions were focused on the active involvement of railway undertakings, Ports and Inland Terminals by raising awareness of the need to respect

the existing planning and the constant exchange of information between the partner companies and the infrastructure managers. To this end, twelve individual meetings, where each stakeholder's specific issues were explored took place and a plenary meeting, where the results of the previous meetings were shared and the next steps to be taken were decided, was held.

Following the individual meetings, the task force grouped the feedbacks that it received by problem and by priority and even collected proposals for potential improvement measures, preparing a detailed Action Plan. The next steps include the organization of specific Working Groups to tackle each issue until its completion, of regular round table meetings with railway undertakings, ports and inland terminals in order to ensure increasingly robust and organic cooperation among all the railway system's stakeholders.

MODANE QCO: STARTING WITH THE CHALLENGE OF REDUCING TCR'S IMPACT FOR THE NEXT YEARS

A new dedicated group was also established at the Modane/ Bardonecchia border (French/Italian border), under the management of the MedRFC, with the participation of the Italian and French Infrastructure Managers and the interested RUs operating at the border.

Initially, a series of meetings were organized to share all the difficulties and weak points of the operations at the border-crossing. This analysis of the issues affecting the border was managed with the participation of all involved stakeholders in a series of meeting taking place in 2021. During these meetings several issues have been pointed out, some referred to the technical features of the infrastructure and the operational management of the lines, others referred to the national rules and agreements governing the traffic. According to the discussions performed during the meetings, one of the main points affecting the cross-border was identified in the "Temporary Capacity Restrictions (TCR) planning and operational management", which was the topic more frequently mentioned by the stakeholders. The topic is mainly referring to the TCRs management, especially in view of the huge construction works needed for the Lyon-Turin project implementation, but also in combination with the current limitations affecting the available infrastructure (e.g., Fréjus tunnel limitation to the traffic). TCRs between Lyon and Torino will have a growing impact on the available capacity between France and Italy in the next years and the RFC will make all possible effort to reduce as far as possible the impact

on traffic and help the two IMs and the RUs with this objective. During 2021 this was the main topic discussed also on a bilateral basis with the two IMs.

Other topics raised have been the following:

- Train weight&Rules
- Improve Parameters Limitations
- Communication

- Single Safety Certificate
- Reliable yearly and daily planning by RU
- Taillights
- Shunting service

The Modane QCO WG will continue its work in 2022, following a topic-by-topic approach and where needed ensuring a cyclic analysis of the issue.



4.3 C-OSS ACTIVITIES

4.3.1 CAPACITY MANAGEMENT

To simplify the access to the international rail freight capacity a C-OSS was established in 2013. As provided for in the Regulation, the C-OSS is a joint body for applicants to request and receive answers in a single place and in one operation, regarding infrastructure capacity for freight trains.

The C-OSS of Mediterranean Rail Freight Corridor, works in continuous **cooperation with a team of experts appointed by each member** of the Corridor.

The main topics dealt with by the C-OSS in 2021 were:

- RUs consultation for preparing Annual PaPs offer according the customer's capacity wish lists;
- Construction and harmonisation of offers for all products (Offers, Annual Requests and Reserve Capacity Requests);
- Coordinating and supporting RUs and IMs during the paths ordering phase;
- Coordinating the collection of needs with neighbouring Corridors;
- Coordinating and performing specific capacity studies required by customers;
- Organizing Meetings with customers like PCS Trainings with other corridors for informing about the corridor offers and news.

Appointed as "Temporary Capacity Restriction coordinator" for Mediterranean RFC, the C-OSS triggers meetings among neighbouring IMs in order to coordinate TCRs and draft the work plan for the publication and coordination of the main Capacity restriction. All TCR are published on the Mediterranean website and on CIP for the applicants.

The role of the C-OSS is also to follow and contribute to RNE projects related to freight corridors:

- International coordination/publication of works and possessions;
- Review of International Timetabling Process;
- Participating in the "C-OSS community" meetings gathering all C-OSS of all corridors aiming at finding common solutions and processes for all corridors.

The two main products offered by Mediterranean Rail Freight Corridor are:

- **Annual TT offer:** Focused on medium/long-term capacity needs with high frequency according the customers' capacity wish list. TT 20XX PaPs are published at X-11. The booking phase ends on the 2nd Monday of April (at X-8);
- **RC (Reserved Capacity)** - addresses ad hoc capacity needs at rather short notice. Ad hoc requests for individual train path can be requested until 30 days before the train runs. The RC offered by Mediterranean Rail Freight Corridor is provided in form of PaPs and it is published at X-2;

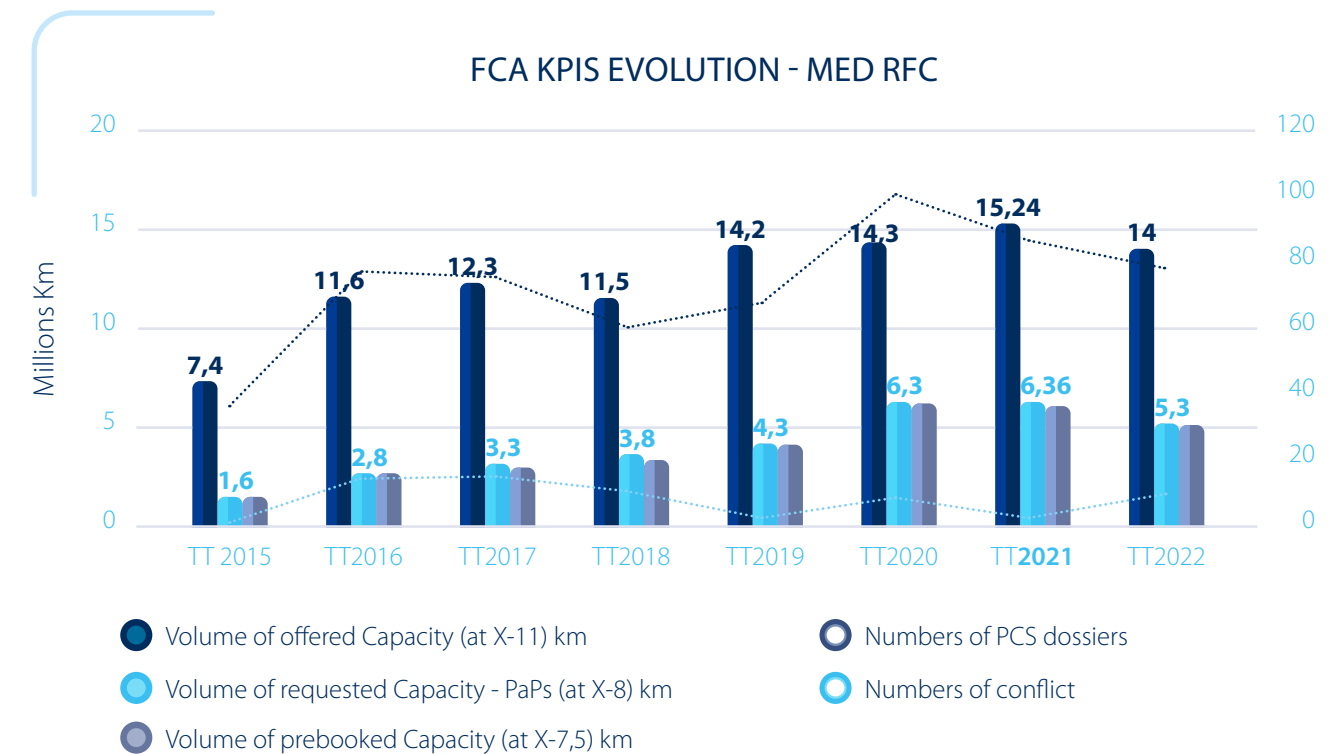
The general principles related to the functioning of the C-OSS are published in the **CID Book 4**.

PaPs are protected against unilateral decision of modification by IMs and AB. During the preparation of the offer, the Mediterranean Rail Freight Corridor C-OSS Managers duly takes into account:

- Customer feedbacks of collection of needs;
- Customers' expectations and needs (e.g. received from the Railway Undertakings Advisory Group);
- Results of the annual customer satisfaction survey on the corridor;
- Experiences from previous years.

4.3.2 CORRIDOR RESULTS - ANNUAL TIMETABLE 2021 – PUBLICATION AND REQUESTS

The TT 2021 offer was 14 Mkm at X-11, the request decreased compared to the previous year at 5,3 Mkm.



The total volume on request was in decrease than 15%, the reasons are loss flows on the East and modification of the exchange point between Nord Sea Med (RFC2) and Med (RFC6)

10 requests received were in conflict but were quickly resolved by alternative offers and Tailor Made, thus just a slight decrease in pre-booked capacity 5,22 Mkm.

Most of the dossiers were allocated on time, which is a significant improvement on last year. The repartition

of circulations requested through Annual corridor requests for TT 2021 is as follow:

High modification in the distribution, big decrease in the East due no request from Koper to Budapest and Dunajska, slightly increase between France and Italy, good increase in the West not visible in the map due the fact there is a modification of the exchange point between Nord Sea Med and Med RFC (Avignon instead Lyon, less 243 Km) .



4.4 TRAIN PERFORMANCE MANAGEMENT

Since the opening of the corridor, the Mediterranean Rail Freight Corridor has been committed, in cooperation with its members and RNE, to define procedures and tools to be used in order to put in place a solid Performance Monitoring System.

The Performance Monitoring of Mediterranean Rail Freight Corridor is carried out in 2 activities:

1. In 2021 the Train Performance Monitoring WG:

- Took part in the revision of Handbook for International Contingency Management, with its contribution to several topics of the document

- Based on the revised ICM Handbook prepared the related **Re-routing overview for TT2022**. In this document various re-routing scenarios have been elaborated on the network of the member IMs in Spain, France, Italy, Slovenia, Croatia and Hungary. The scenarios are also visible in the Customer Information Platform (CIP).

2. As a part of its Data Quality activities:

Checked and analysed the raw data of train runs and, together with RNE, identified the reasons why the trains are not automatically linked and started the elaborations

of solutions to improve the linking procedure throughout the definition of the standardized process for linking of trains (who, when, how). It was also explored the possibility of linking the ad-hoc trains in a more user-friendly way.

Furthermore in 2021 the TPM WG focused on the introduction of the Quality Circle Operation (QCO) projects, where the group (TPM WG/IMs and RUs) is

focused on analysing the state of the Italian borders of the Corridor, first at the Italian/Slovenian border at Villa Opicina/Sežana and second at the French/Italian border, Modane and then. The aim was to optimize cross-border procedures reducing the border barriers, and decrease the dwelling time at the borders.

4.5 ERTMS

4.5.1 ERTMS STATE OF PLAY



STEFANO MARCOCCIO

ERTMS WG Leader

Regarding the activities related to the development and harmonization of ERTMS along the Mediterranean RFC, 2021 has been a good year to move on with the works and developments. The ERTMS Working group met regularly during the year using online meetings due to procedures for the COVID19 outbreak and fortunately the group was able to bring home important goals. Even though the pandemic could have created slowdowns for the works and implementations of the system, every IMs was able to bring the implementations needed.



4.5.2 ERTMS STATE OF PLAY

Regarding the state of play of ETCS development, the ERTMS/ETCS implementation is published by each state minister into the national deployment plan. In Italy, from Torino to Slovenian borders the lines will be equipped with ETCS by end 2023. At the borders it is already operating. On the East there is a variety of situation, there are some sections that would be ready by 2023 and other by 2026. In France the bypass Nimes-Montpellier is in operation. The rest of the deployment on the French section of the Corridor depends on financing which is not defined yet.

The activities related to ERTMS/ETCS implementation can be divided into 3 main pillars/subgroups who have to:

1. monitor the installation in the different Countries,
2. test the interoperability at border points; in this context it was tested the dynamic transition at the SI-HU border in Óriszentpéter. A bilateral group started the dynamic transition from IT-SI and viceversa creating a trackside that gives the possibility to build the dynamic transition for the trains (without the need to stop at border).
3. identify a set of core operational rules to make ETCS work which are valid from Spain up to the last km of Hungary; the target is ambitious but for 2023 the ERTMS leader is confident to reach the goal.

The effect of the work of the groups is visible in many innovations brought during the year.

Concerning the internal interoperability, ERTMS is always in evolution to face all possible risks, and knowing how much is important to have the right train

for the right ETCS trackside, there are several levels and different release of the same products, for instance different versions of on-board unit. The final goal is to have a ETCS fully integrated with the interlocking so to have a pure digital line and not electromechanical.

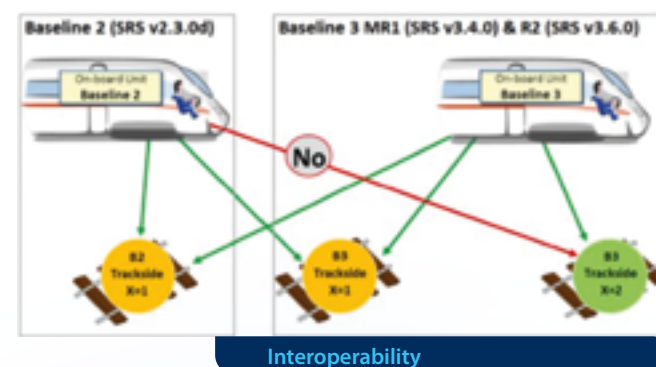
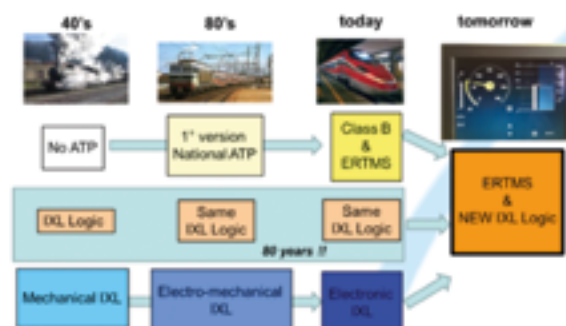
One of the goals to achieve is to reduce the fragmentation and eliminate the necessity to install different Class B system move to one single block, avoiding a loco equipped with several Class B system, but equipped with ETCS only.

Another innovation is the ETCS specification n. 2, concerning shunting operations, the only protection given to a shunting loco is to have a fixed maximum speed value without any protection.

To use ETCS «braking cars» in order to increase the safety of shunting operations.

During 2020 the following goals were accomplished:

1. It was performed a dynamic test between SI-HU as said;
2. A MoU was signed between Italy and Slovenia for the cooperation at the borders, possibility for the cooperation in the whole installation along the 2 Countries, an Italian ETCS loco will run on Slovenian lines in order to perform integration tests. This is an example of good cooperation.
3. It has been started the WG concerning the operational rules for MedRFC.



STATUS ON THE LINES OF THE CORRIDOR IN DETAILS:

ETCS in Slovenia

The Mediterranean RFC in Slovenia covers 461 km of track.

- 157 km (34 %) is single track and 304 km (66 %) is double track

In operation from 2017:

Corridor Med RFC line (blue) _ ETCS L1 B2 2.3.0d FS

- Different sections cross SLO: 411 km

In test operation from 2020:

Last section RFC 6 (continuous red) _ ETCS L1 B3 set 2 FS

- Section Zidani Most – border CRO: 50 km



ETCS in Hungary

The Mediterranean RFC in Hungary covers 1.428 km of track.

ETCS baseline: 2.3.0.d.

Main line, west & south parts:

- Hódos (Slovenian border) – Óriszentpéter – Boba*
- Boba (incl.) – Székesfehérvár (excl.)
- Zékesfehérvár station
- Székesfehérvár – Budapest (Ferencváros)
- To Croatia (up to 2030); not tendered yet.

* L1&L2 section between Óriszentpéter and Zalacséb. L1 used as fall-back.

ETCS baseline: 2.3.0.d.

Main line, east parts:

- Budapest (Ferencváros) – Monor (incl.)
- Monor (excl.) – Szolnok (excl.) - Szajol (incl.)
- Szolnok station: ETCS L1, up to 2022.
- Thales, estimated ready: 2022.

Up to 2025 (not tendered yet):

- Püspökladány – Debrecen – Nyíregyháza – Záhony border (Ukraine)



ETCS in Spain

The Mediterranean RFC in Spain covers 3.397 km of track.

- In July 2019: awarding of the contract for the 105 km double track L2 Valencia -La Encina section.
- In January 2020: commissioning of 23 km double track L1 in Vilaseca – Hospitalet section.

2021 news:

New ERTMS L2 section in operation since feb. 2021: San Isidro – Beniel (Mixed traffic HSL Alicante – El Reguerón – Murcia).

Main data: Length: 20 km 1.435 mm track. 25kV ca. Supplier: Hitachi.

New contract for ERTMS L2. Section: Barcelona Area – Tarragona (L'Hospitalet de Llobregat – Port Aventura).

Main data: Length: 78 km double track mixed gauge. Budget: 43,2 M€. Works execution period: 21 months. Supplier : Alstom

Note.- Castellbisbal – Martorell – Tarragona section belonging to the new project included in RFC6.

Summary:

The scope of the Project to be executed includes the renovation of the signalling and telecommunications facilities, as well as the installation of the ERTMS Level 2 system in the Hospitalet de Llobregat – Port Aventura section to achieve the improvement of the exploitation in these lines, substantially increasing the capacity, nowadays limited by the characteristics of signalling systems in service.

First of all, electrical interlockings will be replaced by new electronic interlockings already prepared for operation in ERTMS N2. Existing electronic interlockings will be upgraded to be able to operate at ERTMS Level 2. As a consequence, the new functionalities of the interlockings must be integrated into the Barcelona Centralized Traffic Control (CTC).

ETCS in Spain (upgrade)

Total ERTMS L1 (2.3.0d version) sections in service: 154 km

- International Section (LFP): 17 km
- Barcelona Area – International Section (Mixed traffic HSL): 114 km
- Vilaseca – Hospitalet section: 23 km

Total ERTMS L2 (2.3.0d version) sections in service: 20 km

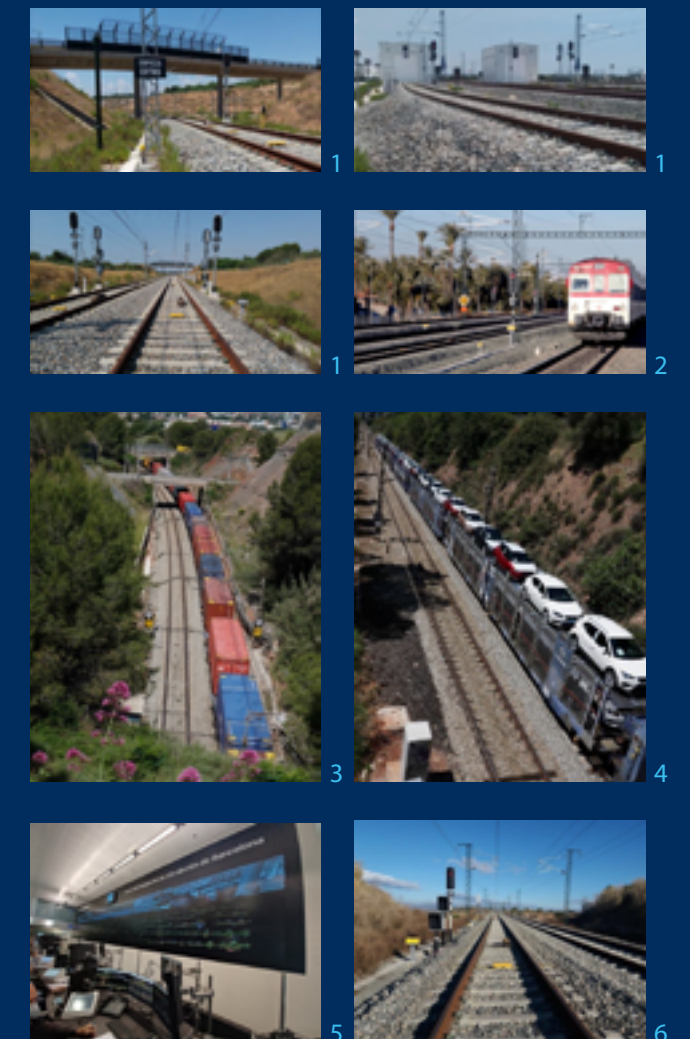
- San Isidro – Beniel (Mixed traffic HSL): 20 km

Total ERTMS L1 sections contracted: 351 km

- Castellón – Hospitalet (Vandellós): 145 km
- Valencia – Castellón: 70 km
- Valencia – Xativa – La Encina (Iberian gauge): 136 km

Total ERTMS L2 sections contracted: 317 km

- Barcelona Area – International Section (Mixed traffic HSL): 134 km
- Barcelona Area – Tarragona: 78 km
- Valencia – Xativa – La Encina (Standard gauge): 105 km



- 1 ETCS In Spain on Med RFC
- 2 San Isidro – Beniel mixed traffic HSL section
- 3 Freight traffic from SEAT car factory at Martorell tunnel
- 4 Container traffic at Castellbisbal tunnel
- 5 Barcelona Centralized Traffic Control
- 6 ERTMS at Adif RFC6

ETCS in Croatia

The Mediterranean RFC in Croatia covers 375 km of track.

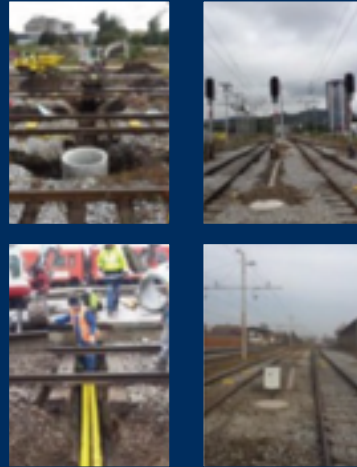
By 2023:

Will be equipped with ETCS level 1 Baseline 2.3.0.d:

- Railway line M102 Zagreb MS – Dugo Selo,
- section Sesvete – Dugo Selo and railway line M201 SB – Botovo – Dugo Selo,
- section Križevci (incl.) – Dugo Selo.

Will be equipped with ETCS level 1 Baseline 3:

- Railway line M201 SB – Botovo – Dugo Selo,
- section SB – Križevci and M202 Zagreb MS – Rijeka,
- section Hrvatski Leskovac – Karlovac



ETCS in France

The Mediterranean RFC in France covers 1.515 km of track.

Bypass Nîmes – Montpellier

In operation: 60 km, L1, 2.3. 0d

French section of line Perpignan – Figueras: 25 km, L1, 2.3.0d



ETCS on LFP

The high speed line at the border between Spain and France.

In operation: 45 km, L1, 2.3.0d

ETCS in Italy

The Mediterranean RFC in Italy covers 861 km of track.

The ERTMS migration strategy for Mediterranean RFC in Italy foresees an overlap of ERTMS / ETCS on the national Class B system:

- ERTMS/ETCS Level 1 is the solution in case the technological context is obsolete and an immediate investment is not possible. The pre-existing IXL systems, also with electromechanical technology (ACEI), are kept in operation.

- ERTMS/ETCS L2 is implemented if the IXL system is upgraded at the same time: ERTMS / ETCS L2 requires the presence of electronic IXL.

Mediterranean RFC with ERTMS/ETCS in Italy develops two main projects:

- Section Novara – Padova – Venezia with ERTMS/ETCS L2;
- Section Vicenza – Trieste – Villa Opicina with ERTMS/ETCS L1.

Novara – Padova – Venezia Focus

The planned activities are those indicated in the table below:

| SECTION | ACTIVITY | INTERLOCKING | ETCS LEVEL | BL | ASR | COMM |
|---------------------------|-------------------------|---|------------|----|-----------------------------------|---------|
| Novara - Rho | ERTMS equipment + SCMT. | Upgrading IXL + changes SCMT - SSCM - AAC | L2 | 3 | Request for commissioning 12/2020 | 06/2021 |
| Brescia - Padova | ERTMS equipment + SCMT. | Upgrading IXL + changes SCMT - SSCM - AAC | L2 | 3 | Request for commissioning 12/2020 | 12/2022 |
| Milano Lambrate - Brescia | ERTMS equipment + SCMT. | Upgrading IXL + changes SCMT - SSCM - AAC | L2 | 3 | Request for commissioning 12/2020 | 06/2023 |
| Padova - Venezia | ERTMS equipment + SCMT. | Upgrading IXL + changes SCMT - SSCM - AAC | L2 | 3 | Request for commissioning 12/2020 | 12/2023 |

TRAIN EQUIPPED WITH ETCS BL3 OBU FOR TRACKSIDE ASSESSMENT TESTS

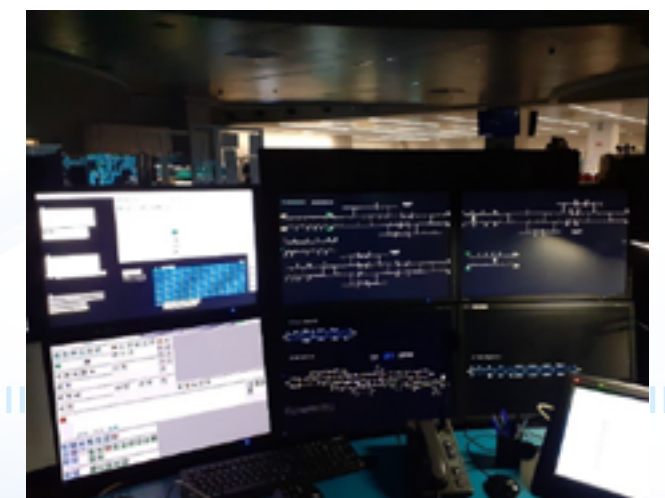
ETCS BL3 DMI

Novara – Rho Control Room

The second activation step will concern Phase 3 and in particular the Brescia – Padua section with the simultaneous construction of the RBC # 2 located at the Central Place in Verona P.N. For this step, the authorization for place in service request by RFI to the NSA is expected in July 2022. As regards the reconfiguration of the pre-existing IXL systems, the Reconfiguration Application Contract for Multistation IXLs (ACCM) has been stipulated. Test runs for Phase 3 will begin in January 2022.



Novara– Milano Rho (35 km): ERTMS/ETCS L2 has been place in service on June 2021



Vicenza – Trieste – Villa Opicina Focus

The planned activities are those indicated in the table below:

| TRACK | ACTIVITY | INTERLOCKING | ETCS LEVEL | BL | Request for commissioning | COMM |
|---------------------------------------|-------------------------|----------------------------|-----------------|----|---------------------------------|---------|
| Cittadella - Treviso | ERTMS equipment + SCMT. | Stand alone | L1 + RI (RIU-M) | 3 | 10/2022 (under construction) | 06/2021 |
| Treviso - Portogruaro | ERTMS equipment + SCMT. | Upgrading IXL multistation | L1 + RI (RIU-M) | 3 | 04/2023 | 12/2022 |
| Portogruaro - Villa Opicina / Trieste | ERTMS equipment + SCMT. | Upgrading IXL multistation | L1 + RI (RIU-M) | 3 | 09/2023 | 06/2023 |

The construction of the ERTMS / ETCS system with multi-station Radio Infill technology (RIU-M) on the Vicenza - Villa Opicina - Trieste C.le / Trieste C.M. section is currently divided into the phases listed below:

- Activity 1: Cittadella (i) -Treviso (e);
- Activity 2: Treviso (i) - Portogruaro (e);
- Activity 3: Portogruaro (i) - Villa Opicina (i) / Trieste C.M. (i).

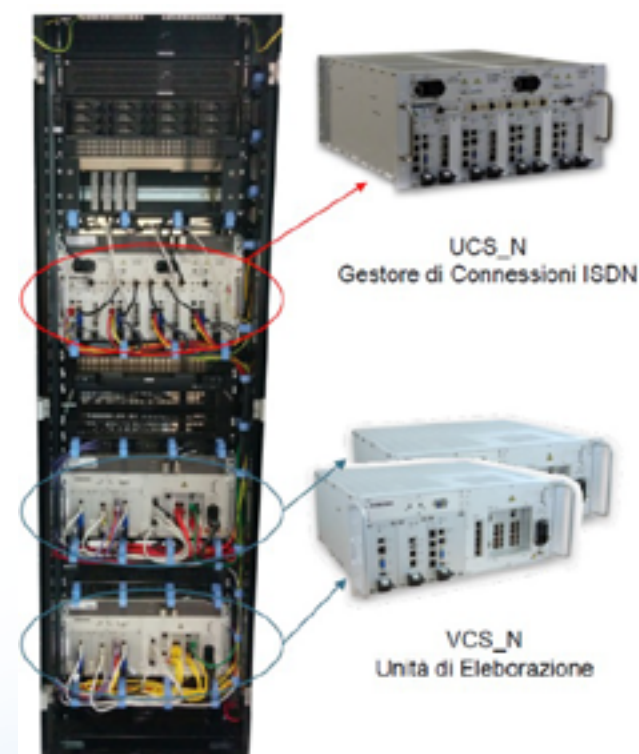
The first activation step will concern Activity 1: The Executive Design was completed (functional design, application design and construction design). The installation of the RIU-M was also completed, with the RIU located at the Central Place in Venice Mestre. The Class B upgrade, preparatory to ETCS implementation, has been placed in service on April 2022. The ETCS tests on track will begin in May 2022.

The reconfiguration of the ACCs of San Pietro in Gù and Istrana will also be carried out by the year 2022.

RFI expects to perform the Authorization for place in service request (AMIS) to the NSA by October 2022 in order to activate Activity 1 by March 2023.



Lineside rack for peripheral interface components of ERTMS/ETCS L1 with Radio Infill



Rack RIU installed in Venezia Mestre Central Place





5 Quality of Service on the Freight Corridor

Performance Monitoring

The Article 19 (2) of Regulation (EU) 913/2010 concerning a European rail network for competitive freight requires the Management Boards of the RFCs to monitor the performance of rail freight services on their respective freight corridors and publish the results once a year.

To facilitate the fulfillment of the above obligation, a joint RNE-RFC project team developed a set of KPIs commonly applicable to all RFCs.

These KPIs were included into the Guidelines “Key Performance Indicators of Rail Freight Corridors” and are available since 2017 on.

Performance of the RFCs in the following business areas:

- Capacity management;
- Commercial speed;
- Market development;
- Operation: Number of train runs /Punctuality KPIs.

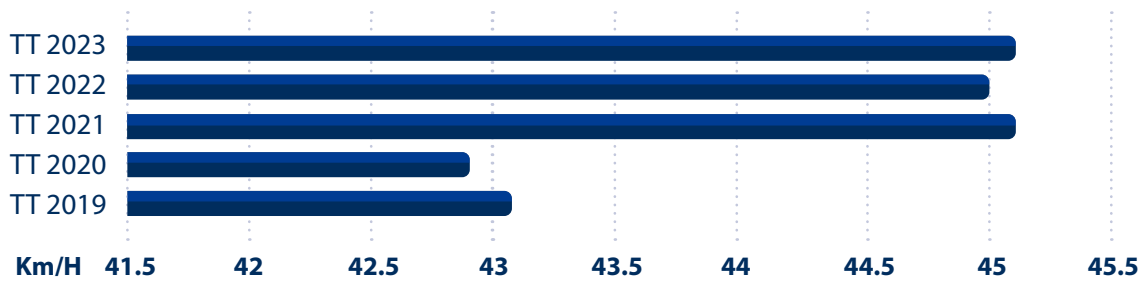
5.1 KEY PERFORMANCE INDICATORS OF THE MEDITERRANEAN RAIL FREIGHT CORRIDOR (ART. 19.1)

5.1.1 CAPACITY MANAGEMENT

For 2021 KPIs related to the Capacity in terms of offer and request have been firstly decreasingfor TT2022 then slightly increasing for TT2023, so here follows a table with a comparison:

| RFC6 | TT2019 | TT2020 | TT2021 | TT2022 | TT2023 |
|--------------------------------|--------|--------|--------|--------|--------|
| PaP Capacity Offer | 14.2 | 14.3 | 15.24 | 14 | 16.21 |
| PaP Capacity Requests | 4.3 | 6.31 | 6.36 | 5.3 | 6.03 |
| Number of PaP requests | 68 | 100 | 86 | 78 | 75 |
| Number of requests in conflict | 4 | 9 | 4 | 10 | 0 |

AVERAGE COMMERCIAL SPEED



The Average speed for TT 2023 was 45,1 has been slightly higher than the one for TT2021, that was a good result considering the difficulties created by the Pandemic and the works along the corridor.



5.1.2 OPERATION

The MedRFC recorded these following data for 2021 punctuality state, wich i flacutated a lot between the first and the second half of the year, mirroring the effects of Pandemics as said, changes and adjustments needed for consequences of the management of traffic due to the increase of the constructions along the lines of the corridor.

Here the statistics:



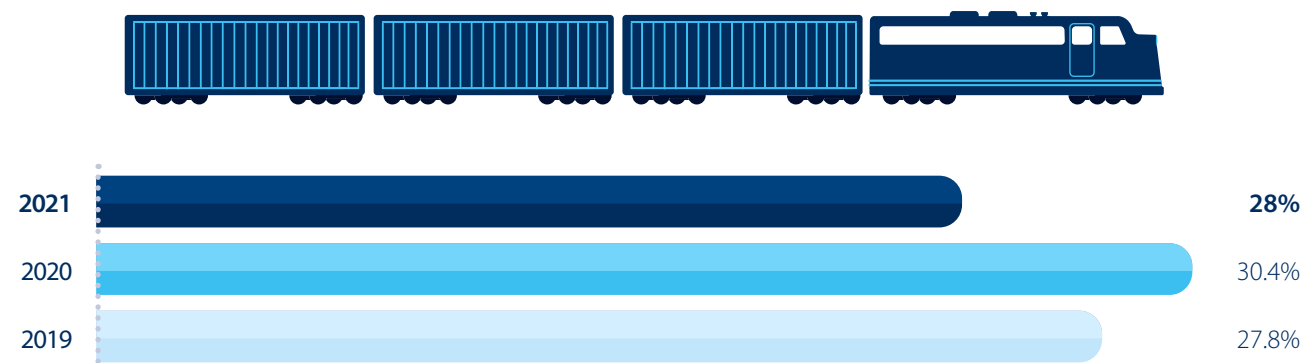
5.1.3 MARKET DEVELOPMENT

Ratio of allocated capacity

Here it is compared the ratio of allocated capacity by the corridor (final offer), versus global capacity allocated by the IM at the borders of the RFC (at the start of TT).

Good values in French borders, big drop between Slovenia and Hungary due to lack of requests Koper.

RELATION BETWEEN THE CAPACITY ALLOCATED BY THE COSS AND THE TOTAL ALLOCATED CAPACITY



| Between member states | | Between operational points | | Allocated by C-OSS 2018 | Allocated by C-OSS 2019 | Allocated by C-OSS 2020 | Allocated by C-OSS 2021 |
|-----------------------|----------|----------------------------|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| France | Spain | Cerbère | PortBou | | 56% | 66% | 84% |
| France | Spain | RFF - LFP | Límite Adif-TPFerro | | 38% | 53% | 62% |
| France | Italy | Modane | Bardonecchia | | 56% | 66% | 72% |
| Italy | Slovenia | Villa Opicina | Sezana | | 9% | 10% | 11% |
| Slovenia | Hungary | Hodoš | Őrszentpéter | | 49% | 42% | 8% |
| Croatia | Hungary | Botovo | Gyékényes | | 11% | 13% | 15% |
| Slovenia | Croatia | Dobova | Savski Marof | | 6% | 25% | 22% |
| Average | | Average | | 29.4% | 27.8% | 30.4% | 27.8% |

The Development of the market presents a variable picture along the corridor, the reaction to the issues created during Pandemic and the constructions created large differences. These are tables showing the different results between IMs in percentages.

MARKET DEVELOPMENT

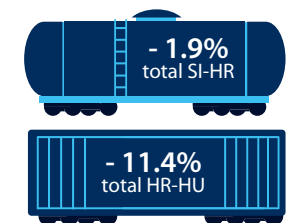
OVERALL NUMBER OF TRAINS PER BORDER - PART 1*

| | 2019 | 2020 | 2021 |
|---------------|-------|-------|-------|
| Total ES - FR | N/A | 9,356 | 4,562 |
| Total FR - IT | N/A | 7,530 | 8,271 |
| Total IT - SI | 7,189 | 8,455 | 8,973 |
| Total SI - HU | N/A | 6,097 | 6,755 |



OVERALL NUMBER OF TRAINS PER BORDER - PART 2*

| | 2019 | 2020 | 2021 |
|---------------|------|-------|-------|
| Total SI - HR | N/A | 7,300 | 7,161 |
| Total HR - HU | N/A | 8,001 | 7,091 |



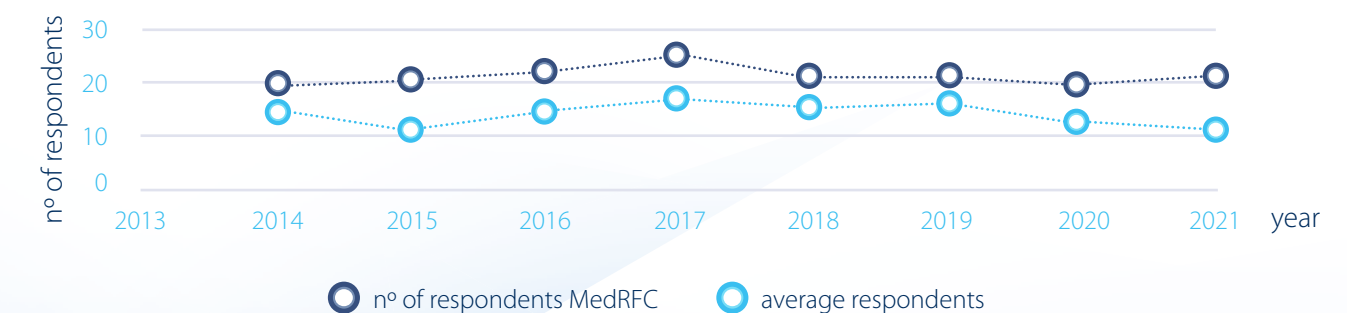
*The calculation of this KPI is based on data in IMs' systems. The total sum of the figures per border dose not correspond to the figure of the KPI 'Overall number of trains on the RFC' due to, among other reasons, the potential double-counting of trains crossing more than one border.

5.2. USER SATISFACTION SURVEY HIGHLIGHTS

A User Satisfaction Survey (USS) was performed for the year 2021, as requested by the Regulation 913/2010. The Satisfaction Survey was prepared and conducted jointly by the RFC Network, using an online platform, with all the 11 Rail Freight Corridors involved.

The survey was based on 2020 questionnaire, and it is aimed at assessing the satisfaction of the users towards the different activities performed by the RFC other than pointing out the priorities of the users as regards Rail Freight Corridor activities.

RESPONDENTS MEDRFC VS RFCS AVERAGE



The number of respondents is stable compared to last year (21 in 2021; 19 in 2020).

For the year 2021 the overall satisfaction with RFC Med is at 71%, which is slightly increasing compared to the previous year.

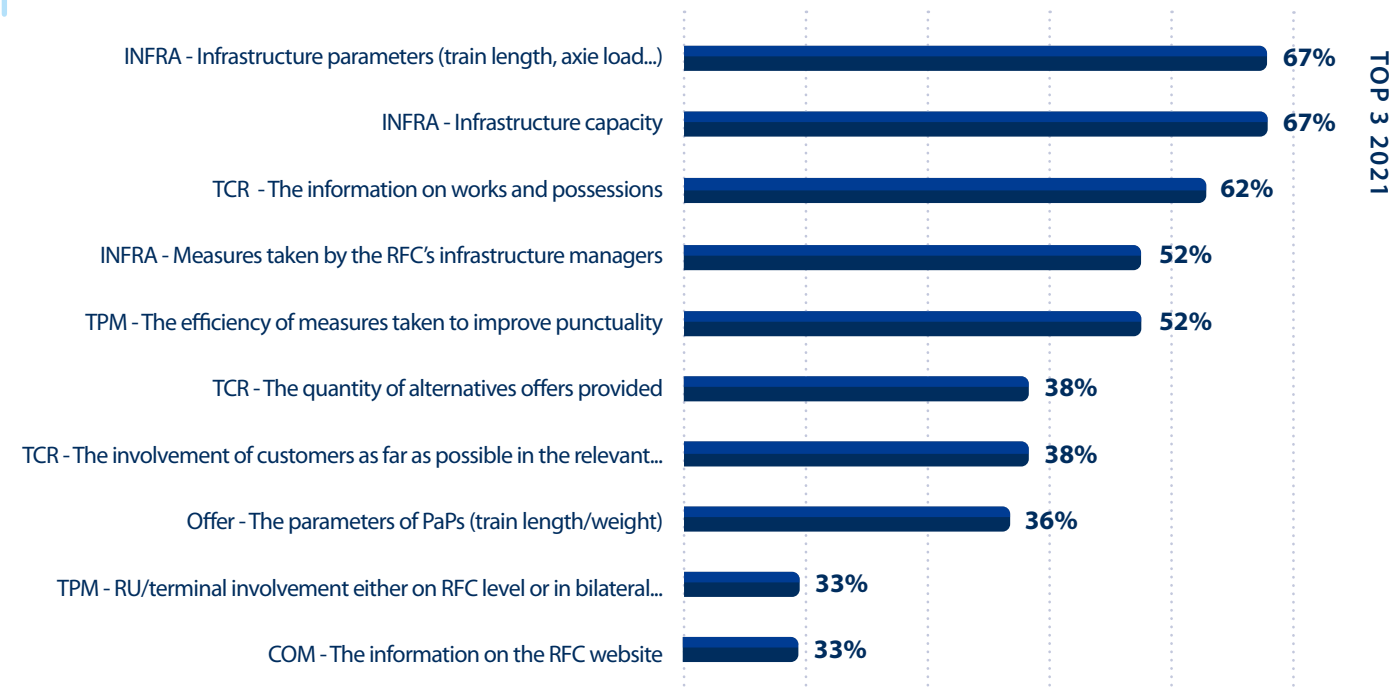
According to the users' feedback, improvements are mostly needed in the following areas: infrastructure parameters of the networks, quality of the infrastructure capacity and information on Temporary Capacity Restriction (TCR).

The results of the questionnaire and the comments provided by the respondents were analysed and discussed by the Management Board of the corridor,

the results are publicly available on the Mediterranean RFC website and CIP and they have been distributed to all the participants, other than commented during the Advisory Group meeting of 16th March 2022. A new question was inserted for the year 2021, asking the invitees to identify the bottlenecks along the corridor and indicate their severeness: the results is that according to the respondents, bottlenecks are mainly located in cross-border areas; this confirms the attention dedicated by Med RFC to the topic, in particular to Villa Opicina/Sezana and Modane/Bardonecchia border and further actions in this direction.

SUMMARY - TOP 10 FOCUS TOPICS

ALL RESPONDENTS



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Co-funded by
the European Union

Mediterranean Rail Freight Corridor

