

RAIL FREIGHT CORRIDOR RHINE-ALPINE

ANNUAL REPORT
2020



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**KEY TOPICS
 IN 2020 42**

Many different topics were addressed by all stakeholders in RFC Rhine-Alpine during 2020 and many achievements were accomplished. Despite challenges, especially due to the Corona pandemic, we jointly supported the gradual improvement of conditions for rail freight on the Corridor. Here are RFC Rhine-Alpine's focus topics for 2020, with joint information from the Management Board and Executive Board.

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3,900 km
OF CORRIDOR LINES

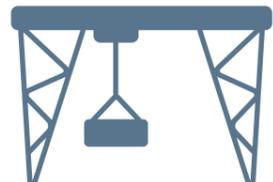


6 SEA PORTS

- // AMSTERDAM
- // ANTWERP
- // GENOA
- // NORTH SEA PORT
- // ROTTERDAM
- // ZEEBRUGGE



MORE THAN **100**
TERMINALS



5.2 million

PATH-KM ALLOCATED
BY THE C-OSS FOR
TT2021



57.1 km WORLD'S LONGEST
RAILWAY TUNNEL:
GOTTHARD BASE TUNNEL



OUR VISION

With its services, the Corridor facilitates cross-border rail freight transport in order to create a competitive advantage over other modes of transport. The involved Infrastructure Managers and Allocation Body cooperate intensively to provide better railway services for international freight transport in Europe.

By enhancing the flexibility and quality of rail freight services on the Corridor and optimising the utilisation of scarce capacity through a high level of international cooperation, we want to foster rail freight services as a sustainable mode of transport in Europe. Jointly, we are making the shift from road to rail happen.

IN 2020, THE WORLD FACED AN UNEXPECTED CHALLENGE.

The Corona pandemic had a major impact on the European rail freight sector and dominated our work and private lives throughout the year. We all had to adapt in a highly flexible way to the developments of the pandemic and the restrictions set out by governments.

Rail freight and intermodal transport turned out to be a very resilient mode of transport. All stakeholders in the transport chain did their very best to keep operations going, protecting the health of their operational staff and shifting as much as possible to contactless operations. Rail Freight Corridor Rhine-Alpine experienced almost no track closures on account of COVID-19 infections.

As a consequence of the reduced economic activity due to the COVID-19 crisis, the number of cross-border freight trains on RFC Rhine-Alpine went down considerably from April to June, slowly coming back to normal monthly levels by the end of the year. The International Contingency Management incident in Auggen (6 days of total closure of the Rhine valley line in the beginning of April 2020) also impacted rail freight volumes. Compared to 2019, the overall number of cross-border freight trains in 2020 decreased by 7.4 %.

A positive side effect of the decrease in the number of both freight and passenger trains was an improved performance. The overall RFC Rhine-Alpine exit punctuality (30 min threshold) increased from 55 % to 59 % in 2020. All stakeholders in the transport chain were able to improve performance in a situation where fewer end-customer requests were organised with existing resources and higher available capacity on rail infrastructure.

The most important infrastructure development in 2020 was the completion of the infrastructure for the New Railway Link through the Alps (NRLA) in Switzerland, with the Ceneri Base Tunnel and final works, e. g. for high profile transport. The Gotthard axis is now ready for 740m trains with a P400 loading gauge. Also, infrastructure in Northern Italy is being adapted accordingly. The festivities which the Swiss Federal Office of Transport (FOT) and SBB Infrastruktur had planned for the Ceneri opening in September 2020 could unfortunately only be conducted in a smaller event with few invitees. The Transport Ministers of RFC Rhine-Alpine together with those of France, Austria, Slovenia, Liechtenstein and Luxembourg as well as the EU Commissioner for Transport adopted the Locarno Declaration following the opening of the Ceneri Base Tunnel. The Declaration underlines the need for continued international cooperation on railway infrastructure development.

The RFC Rhine-Alpine members of all boards and Working Groups grew accustomed to working online and working from home. Nevertheless, work continued as planned. The main contributions of RFC Rhine-Alpine colleagues to international coordination during 2020 are detailed in the chapter **“Key Topics in 2020”**, p. 42. They include among others:

- Capacity Bottleneck Analysis up to 2030
- ERTMS deployment overview and information on ongoing developments
- Implementation and use of ERTMS risk monitoring with many stakeholders
- State of play report on infrastructure works for 740m trains
- Start of a feasibility study for Railway Collaborative Decision Making (R-CDM)
- Progress regarding end-to-end performance monitoring and organisation of a stakeholder performance workshop
- PaP offer remained on the same level as in previous years and clarification of processes for Draft and Final Timetable
- Testing of the TCR Tool was performed, with the involvement of railway undertakings on RFC Rhine-Alpine
- Strong input via RNE Working Groups into the update of the ICM Handbook of the European Infrastructure Managers
- Digitalisation/simplification of the Corridor Information Document
- Intensified use of CIP and of the RFC Rhine-Alpine LinkedIn page for information on the Corridor.

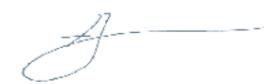
The Executive Board followed the developments closely and supported them, for example in the form of intensive discussions in the ERTMS task force and by removing interoperability barriers (e.g. train driver language and braking performance) as well as by promoting initiatives on digitalisation and quality. All Member States and the European Commission made strong financial support available to the wider economy in general and to the rail and logistics industry in particular to cover losses from the Corona pandemic.

Furthermore, they pushed the infrastructure and ERTMS development on RFC Rhine-Alpine. The support for the development of rail freight was underlined at European level by the adoption of the Berlin Declaration as part of the German EU presidency.

The Railway Undertakings Advisory Group (RAG) pointed out the major challenges which the lack of capacity is posing to rail freight operations – both in service facilities and on the main lines along the Corridor itself and on re-routing lines. This will continue to be a major issue also with increased TCRs over the coming years and we will jointly need to find solutions.

This Annual Report provides an overview of the main developments on RFC Rhine-Alpine regarding KPIs, performance, infrastructure and key topics in 2020.

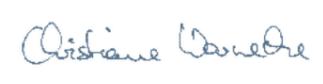
We would like to thank all persons involved for their contribution to improved international cooperation and infrastructure in 2020.



Peter Hondebrink
Chairperson of the
Executive Board



Guus de Mol
Chairperson of the
Management Board



Dr. Christiane Warnecke
Managing Director of RFC
Rhine-Alpine

RFC RHINE-ALPINE IN A NUTSHELL

ORGANISATION

The Regulation (EU) 913/2010 concerning a European rail network for competitive freight entered into force on 9 November 2010. It defined the establishment of rail freight corridors with the overall purpose to increase rail freight's competitiveness and market share on the European freight transport market. European Infrastructure Managers embrace this chance for enhanced collaboration and work together in eleven corridors running all across Europe.

The cooperation of Infrastructure Managers (IMs) and the Allocation Body (AB) in RFC Rhine-Alpine is organised by a joint office and has the legal form of a European Economic Interest Grouping (EEIG). All IMs and the AB of the Corridor countries are members or contractors of the EEIG:

- ProRail (The Netherlands)
- Infrabel (Belgium)
- DB Netz (Germany)
- SBB Infrastruktur (Switzerland)
- BLS Netz (Switzerland)
- TVS (Swiss Allocation Body)
- RFI (Italy).

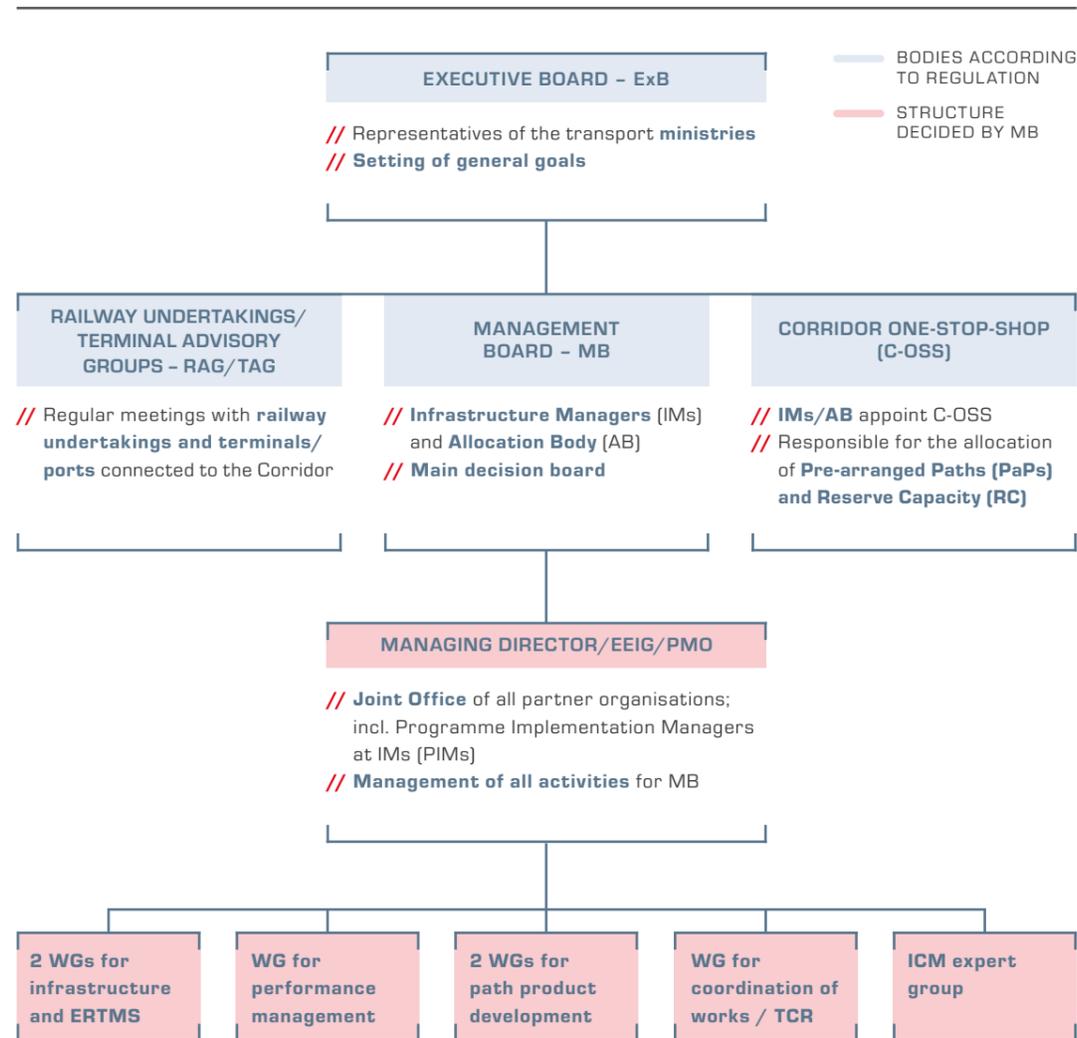
The Executive Board (ExB) represents the joint interests of the Transport Ministries of all countries involved and takes landmark decisions for cooperation on the Corridor. The Executive Board is chaired by Peter Hondebrink from the Dutch Transport Ministry.

The Management Board (MB) consists of high-level management representatives of the IMs/AB and is responsible for the further development of the international cooperation of the IM/AB partner organisations. The MB has set up a Programme Management Office (PMO) as the permanent working organisation of the IMs. The PMO is represented by the permanent office team and one delegate of each IM/AB, the so-called Programme Implementation Managers (PIM). They are responsible for the coordination and reporting of their national project implementation to the Corridor organisation.

The RFC Rhine-Alpine team during a workshop in Luzern in early March 2020.



BODIES OF RFC RHINE-ALPINE AS THEY WERE DECIDED BY MB AND BASED ON EU REGULATION 913/2010



Seven Working/Expert Groups with experts from all partner IMs/AB of the Corridor; yearly agreement on workplans

Furthermore, the PMO monitors the goals and actions of currently seven RFC Rhine-Alpine Working Groups (WG) and Expert Groups. These groups were established to work efficiently on various topics for the improvement and support of cross-border rail freight services on the Corridor.

The Railway Undertakings Advisory Group (RAG) and the Terminal Advisory Group (TAG) are advisory groups to the MB. They serve as exchange platforms to involve railway undertakings (RU), terminals and ports as well as stakeholders of the intermodal transport chain in order to discuss customer opinions and requirements for the development of RFC Rhine-Alpine from an external point of view.

The Corridor One-Stop-Shop (C-OSS) facilitates train path management for international rail freight. It is the single point of contact allowing applicants to request and receive answers regarding infrastructure capacity for international freight trains.

TRASSE SCHWEIZ BECOMES SCHWEIZERISCHE TRASSENVERGABESTELLE

From 1 January 2021 on, Trasse Schweiz will be a non-profit entity under public law with a separate legal personality, the so called “Schweizerische Trassenvergabestelle (TVS)”. It is owned by the Swiss federal government, but is independently organised and it runs and keeps its own accounts. The TVS is responsible for drawing up the timetable, planning and allocating paths. In addition, it also ensures the collection of the track access charges, keeps the Swiss infrastructure register (RINF) and publishes the investment plans of the Infrastructure Managers.

TVS is the legal successor of Trasse Schweiz and therefore all rights and obligations automatically pass to TVS, meaning that contractual relations with RFC Rhine-Alpine remain unchanged.

PERFORMANCE REPORT



Rail freight showed a high resilience in the COVID-19 pandemic, with number of trains going back to normal levels at the end of 2020.

This chapter provides information about traffic developments at borders and the modal share in the ports of Antwerp, Rotterdam and Genoa as well as about the most recent KPIs on capacity management and operations. The KPIs have been coordinated with external stakeholders like RUs and MoTs and are the same for all RFCs.

MARKET DEVELOPMENT KPIs

This chapter gives information on the development of the number of trains on RFC Rhine-Alpine and the modal split of rail in selected ports. The information on the number of trains is provided by the Infrastructure Managers and is mainly related to the border points on the Corridor. Regarding the modal split, existing information from different sources is compiled in this report. The KPI Ratio of the Capacity Allocated by the C-OSS and the Total Allocated Capacity can be found in the chapter "Capacity Management KPIs", p. 26.

KPI OVERALL NUMBER OF TRAINS PER BORDER

The general evolution in 2020 for the entire Corridor, compared to 2019, was a decrease in the number of trains at all borders of 7.4 %.

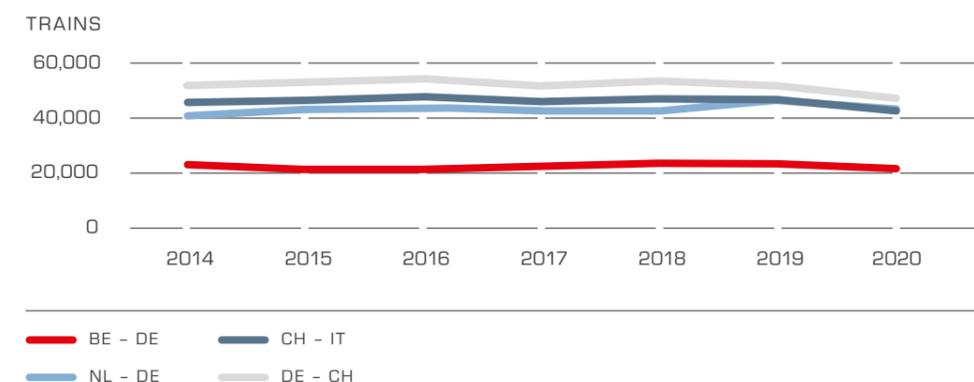
Whereas during the first quarter of 2020 the decrease was limited to 4%, it grew significantly to a decrease of 13.6% during the second and third quarters. The main reason for this decrease is the COVID-19 crisis. The fourth quarter showed a recovery, as volumes increased by 0.6% compared to 2019.

BORDER CROSSINGS NL - DE

In general, at the Dutch border points, there was a decrease in traffic of 4% compared to 2019.

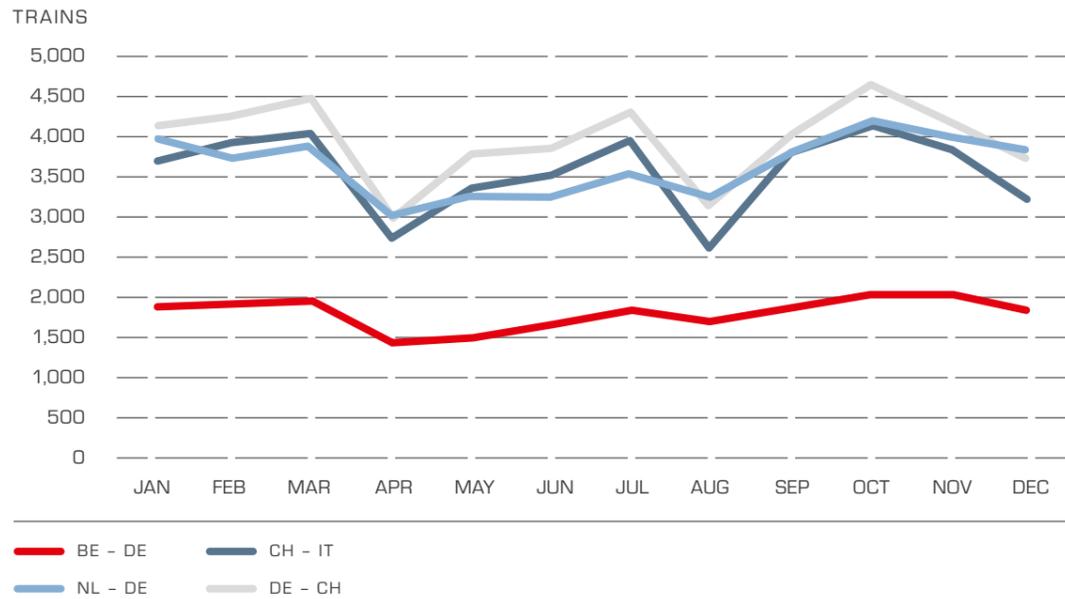
KPI OVERALL NUMBER OF TRAINS PER BORDER

Number of commercial freight trains crossing selected border points



MONTHLY NUMBER OF TRAINS PER BORDER

Number of commercial freight trains crossing selected border points



The decrease is mainly due to the COVID-19 crisis. The good news is that, while there was a decrease of 7.5 % in the volumes during the first 9 months, the last quarter of the year showed an increase in the volumes of 7 % compared to 2019.

BORDER CROSSING BE - DE

In Belgium in 2020, traffic at the Montzen border point decreased by 6.7 % compared to 2019. In the first quarter of the year, the volumes remained constant compared to the same period in 2019. During the second and third quarters, numbers fell by 13.7 %. The last quarter of the year showed a recovery, with the number of trains rising by 0.5 % compared to the previous year. Obviously, the COVID-19 crisis was the main reason for the overall drop in numbers in 2020.

BORDER CROSSING DE - CH

Compared to 2019, traffic at the Basel border point decreased by 8.8 % in 2020.

During the first quarter of the year, the decrease in numbers was limited to 2 %. In the second and third quarters, the decrease amounted to 14.8 %. Again, the COVID-19 crisis was the main reason for this drop. Quarter 4 showed a recovery, as the decrease in numbers reduced to only 3.5 %. December showed an increase in numbers of 2.4 %, compared to December 2019.

BORDER CROSSINGS CH - IT

In Italy in 2020, the overall evolution compared to 2019 was a decrease in traffic of 9.5 %.

During the first quarter of 2020, the decrease in numbers amounted to 6.4 %. The decrease grew to 15.2 % during quarters 2 and 3, showing the impact of the COVID-19 crisis. The fourth quarter exhibited a recovery, as the decrease was limited to 1 %. Also, traffic at the Swiss-Italian border points showed an increase of 5.5 % in volume in December as compared to the previous year.

MODAL SPLIT IN PORTS

As the information is usually not available for the previous year when the Annual Report is compiled, only the development up to 2019 is shown.

ROTTERDAM

The total volume of transshipment in the Port of Rotterdam in 2019 increased by 2.0 %. As in the previous year, the shift between commodities continued. The container volumes increased by 2.6 % (+4.5 % in 2018) and bulk decreased by 0.3 % (-1.7 % in 2018).

In 2019 (compared to 2018) the modal share of inland waterways (IWW) increased by 0.4 % while the share of road decreased by 1 %. The share of rail traffic in 2019 increased by 0.6 % compared to 2018.

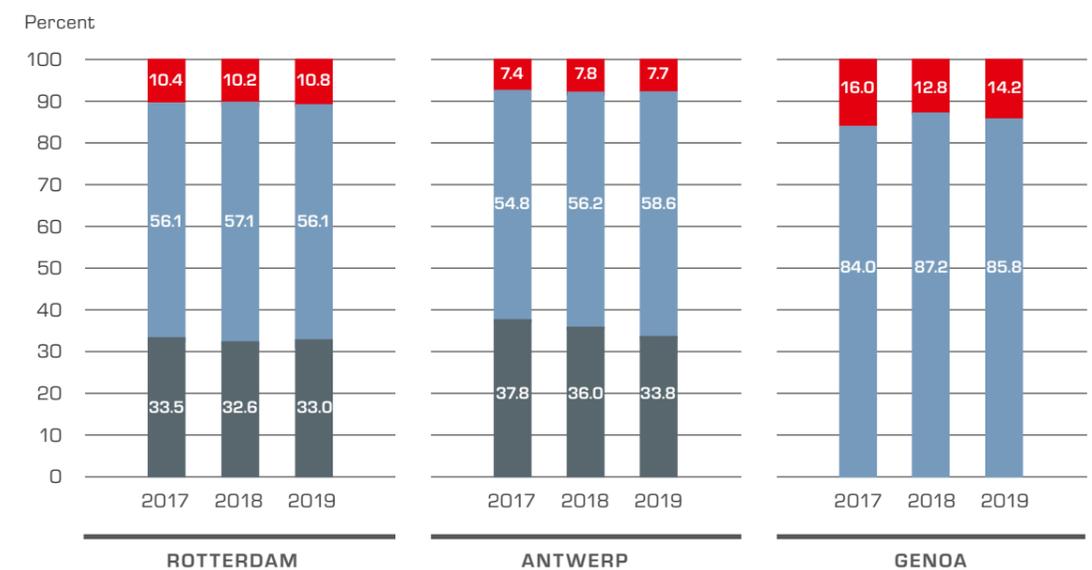
ANTWERP

The total transshipment in the Port of Antwerp has increased steadily in recent years. With 7.7 % the modal split of rail stayed nearly stable compared to 2018. The drop in the share for IWW of 2.2 % is due to the drought and the low water level on the Rhine and was absorbed by road.

GENOA

The rail volume handled in the Port of Genoa in 2019 grew to over 7,000 trains, pushed by the increase in port traffic and notwithstanding the temporary closure of the main port rail yard. Containers shipped by rail exceeded 300,000 TEUs, reaching a modal split of 14.2 %.

KPI MODAL SPLIT IN PORTS 2017 - 2019



Definition: modal split [%] of freight traffic at the Ports of Rotterdam, Genoa and Antwerp; the modal split is calculated for hinterland container traffic on the basis of TEUs.

Legend:
■ RAIL
■ ROAD
■ IWW

OPERATIONS KPIS

This chapter gives detailed information on the level of punctual and delayed trains and the related delay reasons.

PUNCTUALITY REPORT 2020

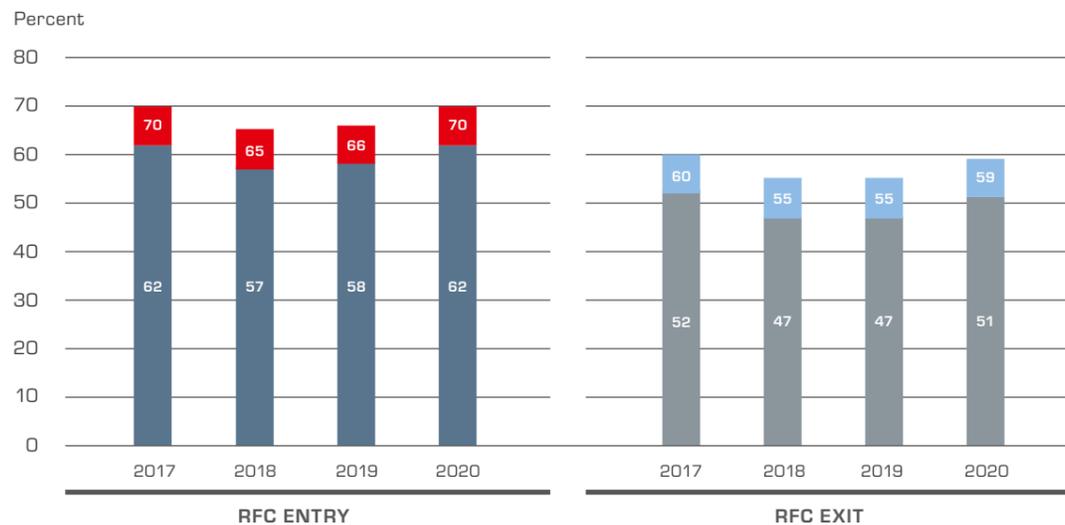
Punctuality calculation is performed using the Train Information System (TIS) data by comparing the timetable delivered to TIS and the running time in operations at defined measuring points. On the Customer Information Platform (CIP), RFC Rhine-Alpine publishes three reports on a monthly basis:

- The punctuality development management summary, with punctuality figures, number of trains and distribution of delay reasons;
- The punctuality overview report with different delay thresholds;

- The punctuality development report on RFC Rhine-Alpine lines and at relevant points and borders.

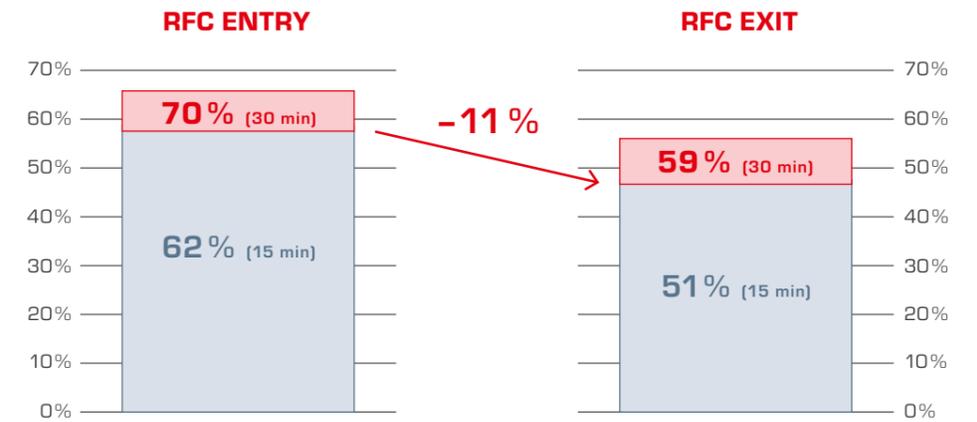
To provide reliable statistics and reports, a high data quality is required. Therefore, the Train Performance Management (TPM) experts of RFC Rhine-Alpine are involved in the RNE Data Quality project, providing valuable input to expand a European-wide process for the identification of RFC trains and properly assigning them to the corridor(s) responsible for their TPM treatment. This project is still ongoing and will be concluded in 2021. Another issue which affects data quality is the linking of trains: about 10% of international train runs on RFC Rhine-Alpine are still not indicated in TIS because they run with national train numbers and are not linked to each other, for example in case of re-routing.

PUNCTUALITY DEVELOPMENT



■ RFC ENTRY - 30 MIN-THRESHOLD
■ RFC ENTRY - 15 MIN-THRESHOLD
■ RFC EXIT - 30 MIN-THRESHOLD
■ RFC EXIT - 15 MIN-THRESHOLD

RFC ENTRY AND EXIT PUNCTUALITY IN 2020



RFC ENTRY AND RFC EXIT PUNCTUALITY PER DIRECTION 2020

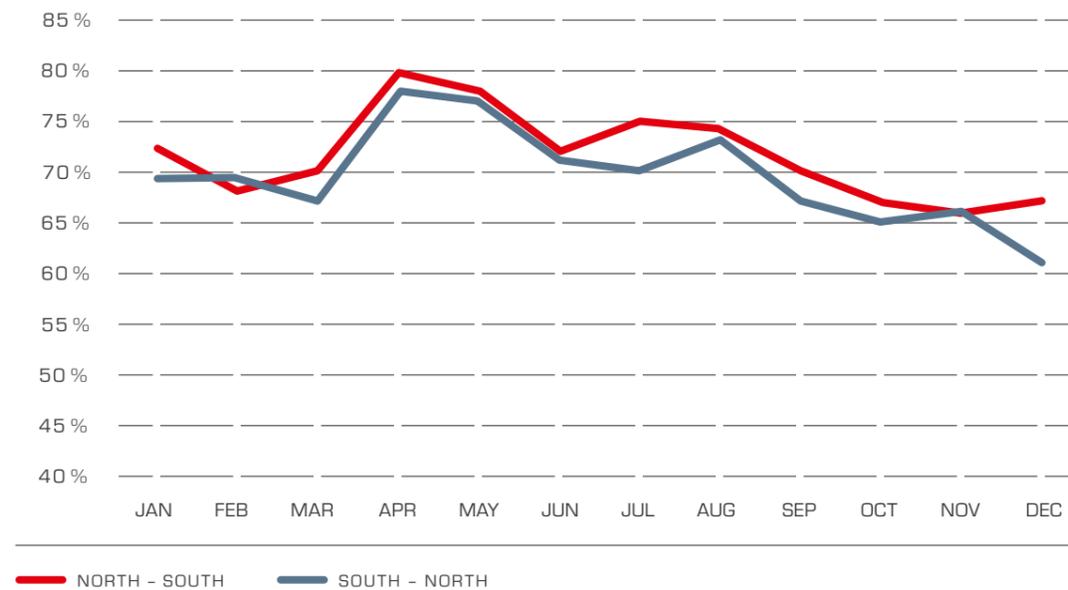


The RFCs agreed on considering international rail freight trains on the Corridors as punctual when they are not more than 30 minutes delayed. Other international Working Groups set a 15-minute threshold. For this reason, both figures are shown as an overall punctuality KPI for RFC Entry and RFC Exit. To understand the graphs correctly, it is necessary to know that RFC Entry is defined as the location where the train first enters an RFC line (first point on the train run belonging to the RFC).

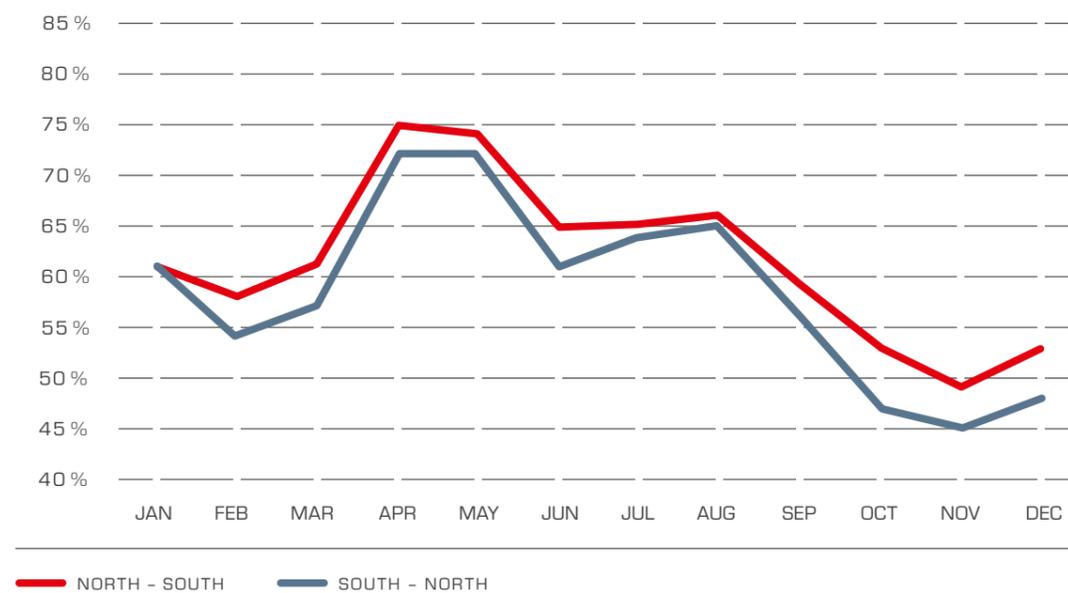
RFC Exit indicates the location where the train exits the RFC line the last time (last point of the train run belonging to the RFC).

In 2020, punctuality increased significantly (10%) during the first Corona phase in April and May. This is due to a markedly lower number of passenger and freight trains (see number of freight trains at borders in chapter "Market development KPIs", p. 15) and thus more capacity available on the networks. The evolution of punctuality

MONTHLY RFC ENTRY PUNCTUALITY PER DIRECTION



MONTHLY RFC EXIT PUNCTUALITY PER DIRECTION

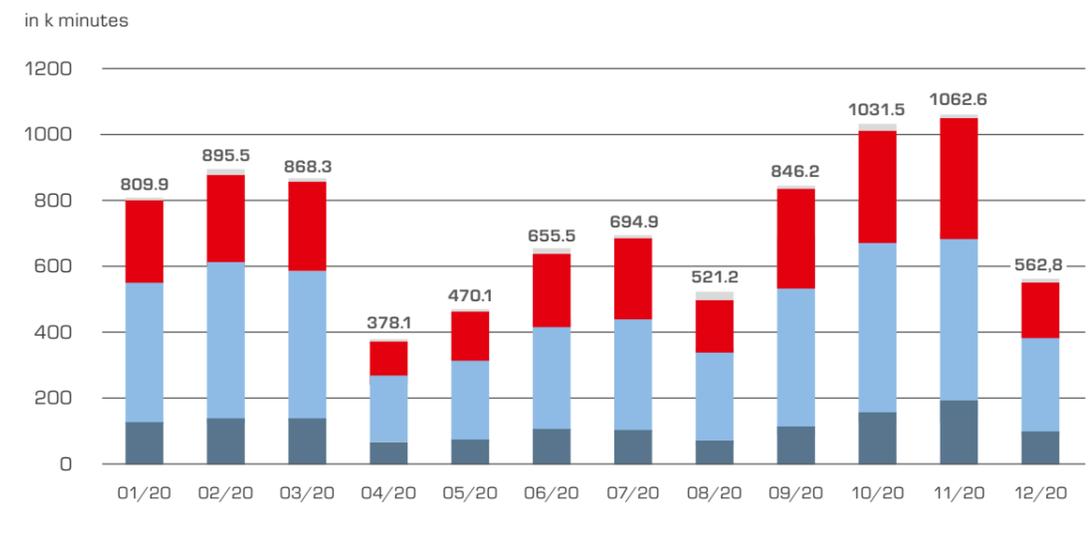


during the second half of 2020 clearly shows that performance is directly influenced by availability of capacity. Towards the end of the year, the number of passenger and freight trains went back to normal levels and more construction works further reduced capacity while at the same time impacting punctuality negatively (see further explanations below in this chapter on p. 22).

In the first quarter of 2020, the WG TPM analysed the top 10 delayed trains and addressed

the critical trains at the RUs or in the bilateral Working Groups. Several issues relating to structural timetable problems were tackled and passed on to the appropriate timetable departments. The efforts of the WG TPM members contributed to solving single problems by involving the concerned stakeholders. However, the breakthrough in boosting performance on RFC Rhine-Alpine is not possible under the current framework conditions.

TOTAL NUMBER OF DELAY MINUTES REPORTED TO TIS FOR BOTH DIRECTIONS



IM delay reasons: e. g. timetable planning, dispatching errors, infrastructure failures, temporary capacity restrictions (as far as not considered in timetable), unplanned works

RU/others' delay reasons: e. g. train preparation, train formation by RU, rostering/re-rostering, rolling stock failures, loading irregularities, RU staff. RU/others' delay reasons also include delays caused by terminals (loading, unloading) or other parties (e. g. truck drivers) before handing the train over to the RUs.

Secondary delays: delays indirectly caused by the previous reasons, e. g. delayed circulation of another train and the resulting track occupation or conflicts within nodes. Incidents with trains/dangerous goods are also displayed here.

External reasons: delays which are out of the influence of IMs and RUs, e. g. weather conditions, natural events, authorities.



FACTORS AFFECTING PUNCTUALITY IN 2020



THE NETHERLANDS

On the ProRail network, some structural problems were affecting the punctuality of freight trains. These are mentioned below.

Capacity shunting yards Waalhaven Zuid and Kijfhoek

Due to problems with the fire extinguishing system at the Waalhaven Zuid shunting yard, there is no capacity to shunt wagons, change traction and check the brakes at this yard. These processes now have to happen at another shunting yard in the harbour area. Most shunting operators/RUs have moved these processes to Kijfhoek so there is less capacity available in Kijfhoek for other trains. Because extra capacity at this yard is limited, diversions and delays are a regular occurrence.

Availability of line Maasvlakte Yangtzehaven Noord – Maasvlakte West

The line from Maasvlakte Yangtzehaven Noord (Euromax Terminal) to the Maasvlakte West yard runs through a very sandy environment (dunes). If it is windy, sand can blow over the rails and the tracks are no longer drivable or have problems with the detection. Trains have to wait at Maasvlakte West or stay at the Euromax terminal till the tracks are cleaned.

Rail brakes of the hump at Kijfhoek

Several times in 2020 there were problems with the rail brakes of the hump at the Kijfhoek shunting station. This mainly affects single-wagon load traffic.

Furthermore, during the year, there were some minor infrastructural incidents that influenced freight train punctuality.



BELGIUM

Due to the COVID-19 pandemic, punctuality on the network increased in general, especially during the first pandemic phase in April and May.

The largest incidents of delay on the network were an irregular signal passing in Antwerp harbour, incidents involving a person and natural causes resulting in a total delay of 34,458 min for freight traffic.

- Irregular signal passing in Antwerp harbour caused 8,203 minutes delay for freight traffic from 6 to 23 February.
- There were five instances where an incident involving a person was the cause of delay adding up to a total of 12,660 minutes.
- There were four incidents where exceptional weather conditions led to a delay for freight traffic. The total number of minutes accrued was 13,595, caused by the storm Chiara, trees on the tracks, snow and a lightning strike.

GERMANY



Punctuality of freight traffic in general

Due to the Corona crisis in 2020, railway traffic in Germany has been operating with the highest punctuality in the last 15 years. At times, up to 15 % less trains were operating on the network. As a result, more capacity was available which was beneficial for freight traffic.

Improvements in freight traffic punctuality of 10 % were noticed, especially during the first Corona wave in spring 2020, whilst punctuality in autumn dropped back to last year's level.

Also in 2020, a significant decrease in secondary delay reasons was recorded. Especially for the delay reason involving the sequence of trains. However, the overall share of secondary delays remains very high at 66 % of all delay reasons.

Further drivers of delays in 2020, as in 2019, were the preparation of trains, staff and vehicle rotations (RU-related) as well as delays in relation to construction works (IM-related). Due to intensified vegetation management, weather-related damage has continued to decline.

Storm Sabine (Chiara)

On 10 and 11 February, Deutsche Bahn had to halt its rail services throughout Germany as storm Sabine (Chiara) wreaked havoc across the country. Other parts of Europe, including

France, the Netherlands, Belgium and Luxembourg, where 'Sabine' is known as 'Chiara', were seriously impacted by the storm as well.

Accident in Auggen

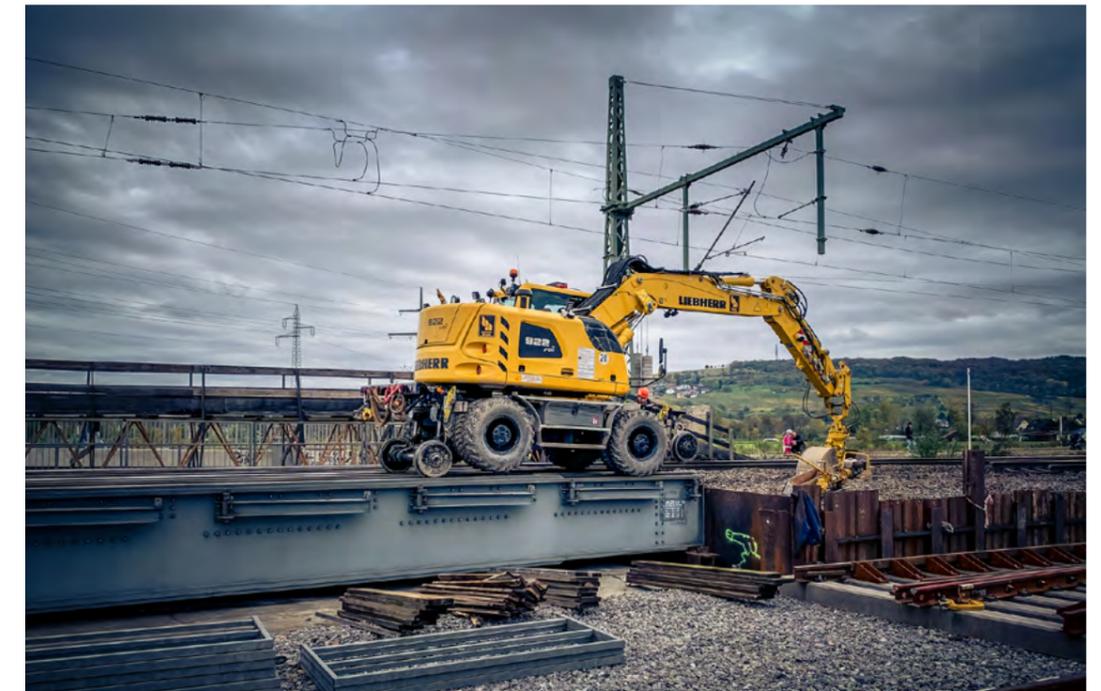
Due to the accident in Auggen in April 2020 the Rhine valley line was completely interrupted for six days. As an ICM case was declared, more information on this accident can be found in chapter "International Contingency Management", p. 48.

Accident in Niederlahnstein

On 30 August, a freight train derailed in the Niederlahnstein station, in the middle Rhine valley near Koblenz. Around 100,000 liters of diesel leaked from the overturned car. The rail freight traffic on the right bank of the Rhine had to be stopped until 30 September 2020 for clean-up and restoration. All freight traffic had to be carried out on the left bank of the Rhine.

After the destroyed superstructure had been removed, an immediate measure was to excavate around 19,000 tons of soil over an area of 2,500 m². In the following 4 weeks the superstructure, 300 meters of track, four switches and around two kilometres of cable according to the existing track plans were restored. Up to 250-300 people were employed on the construction site to reopen the right bank of the Rhine for rail traffic as quickly as possible.

Furthermore, several long-term construction sites on RFC Rhine-Alpine affected punctuality in 2020, namely the construction of the third track on the Emmerich-Oberhausen line, the expansion of the European high-speed network ("ABS 4") between Aachen and Cologne, the expansion of the Cologne node for local, long-distance and freight traffic and also the construction works between Karlsruhe and Basel. For more information on infrastructure projects, see chapter "Infrastructure Projects", p. 30.



Construction work on the Karlsruhe-Basel line in Haltingen.



SWITZERLAND

Gotthard-Axis (SBB)

The punctuality values on the Gotthard axis were significantly above the target throughout the whole year. Even the re-routed traffic due to the total closure of the Simplon axis in August did not have a negative effect on punctuality.

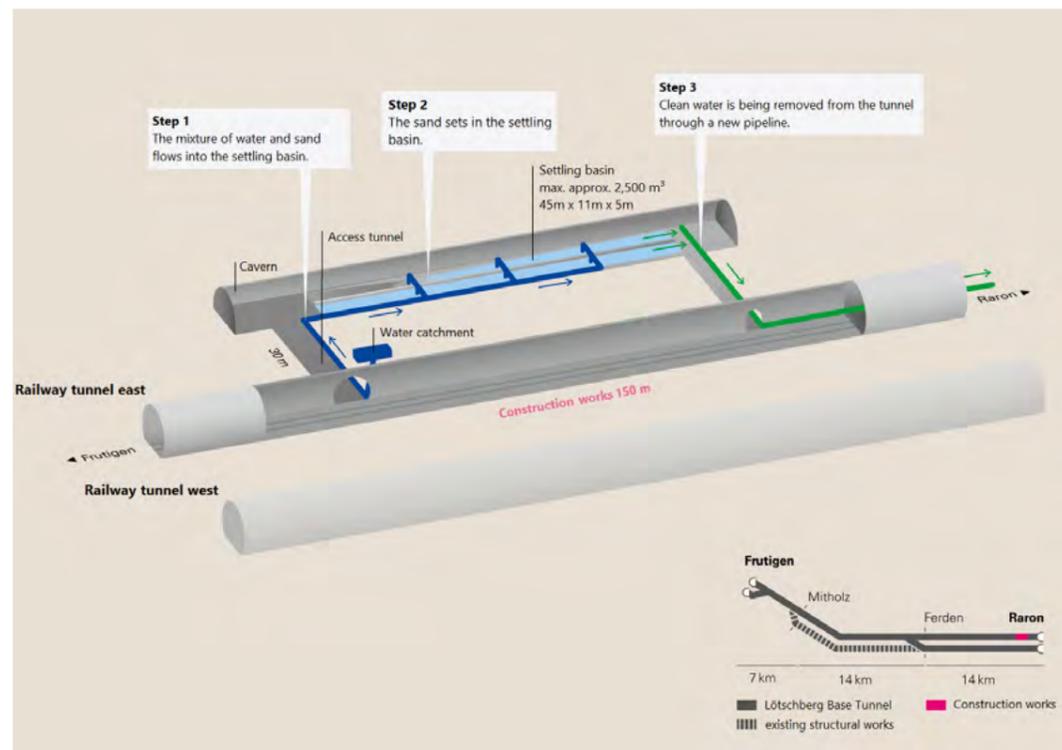
The biggest factors driving delays and capacity restrictions were the many single-track traffic routings as well as the total line closures (construction works for the 4-metre Corridor, e.g. Bözberg Tunnel, Luino) and the total interruption of the Corridor due to the incident in Auggen (Germany) in April and the associated limited capacity on the re-routing line via Singen – Schaffhausen.

Furthermore, events occurred throughout the year that led to restrictions, but these only had a local and very limited impact on transit freight traffic.

Lötschberg Axis (BLS)

In February and March 2020, water and sand were washed into the double track section of the Lötschberg Base Tunnel due to geological changes (Karst springs). As a result, the tunnel's eastern bore had to be temporarily closed three times in succession. For several days, the tunnel was even closed completely. As an immediate remedy, BLS installed a steel sedimentation tank in the affected area of the tunnel bore. During these two months, capacity was restricted and several trains had to be rerouted via the Lötschberg mountain line with consequences on operations and punctuality of traffic.

The Lötschberg Base Tunnel clean-up was done in three process steps.



After the incident in the Lötschberg Tunnel the soil and walls of the cavern were reinforced. More information can be found on the [BLS Website](#).



ITALY

On the RFI network, there were several events impacting Corridor traffic that influenced the punctuality of freight trains. In particular:

- Single track circulation (14 - 26 September 2020) between Sesto Calende and Somma Lombardo for gauge works.
- Interruption on the Arona-Domodossola line from 16 August to 6 September with slowdowns until 11 September.
- Closure of the Domodossola/Domo Il stations for about a month between August and September.
- Interruption in December of the Luino-Laveno and Gallarate-Laveno via Ternate sections due to PC80 gauge works.

Some difficulties arose from the adaptation of traffic regulations answering to requests by the

RUs and accepted by RFI. In particular, the RFI decision to increase in train compositions and towed mass over 1,600 tons has generated some limitations on circulation due to energy absorption on some lines (e.g. min. 30 minutes between two trains on the Luino line). Consequently, certain train routes are mandatory, especially in the presence of side-by-side lines.

Snowfall in the last period of the year has had a negative impact on punctuality, and not only in Italy. The COVID-19 pandemic had a positive effect on freight train punctuality during times when passenger train traffic was down. There was no significant reduction in the volumes of goods transported, especially on the Luino line.

Further explanations on train performance issues are provided in chapter "Train Performance Management", p. 50.

CAPACITY MANAGEMENT KPIs

This chapter provides information on the development of the Pre-arranged Paths (PaPs) and Reserve Capacity (RC) offered by RFC Rhine-Alpine.

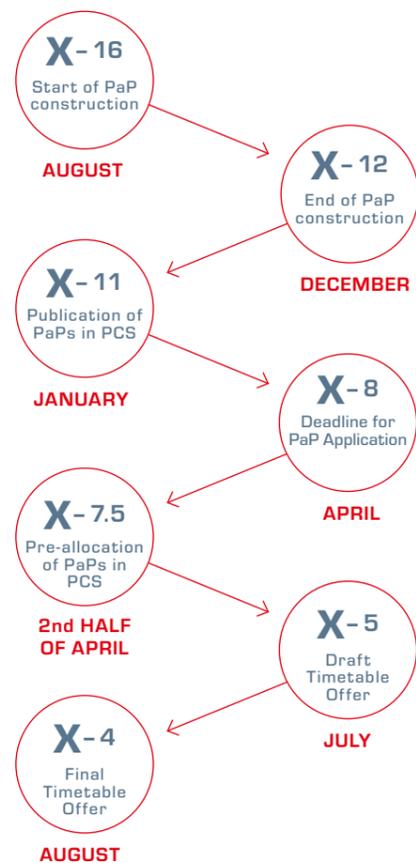
KPI Volume of Offered, Requested and Pre-allocated Capacity

This KPI shows the development of offered, requested and pre-allocated PaPs for the 2016 – 2021 timetable (TT). Generally, the offered PaPs are planned for operation on seven days a week, yet some connections might have a lower availability (e.g. 4 or 5 running days), or a given PaP might not be available on some days throughout the year due to TCR. For TT2021, the volume of requested capacity (PaPs) decreased compared to previous years. 30% of the offered capacity were requested for TT2021. Due to conflicts between some requests, it was only possible to assign 82% of the requested capacity as PaPs. The remaining 18% were answered with tailor-made paths. In addition to the requests for PaPs, a high amount of connected feeder and outflow paths was requested and allocated.

One reason for the reduction in PaP requests was the circumstance that, for TT2021, an inter-modal operator largely tendered new contracts with paths, for which the PaP offer did not seem to fit well. Customers then needed to request according to their operational needs for the new contracts. For TT2021, no special COGIS paths were offered by several IMs and published by the C-OSS, but harmonised paths for the Mannheim-Switzerland-Italy route were discussed by the IMs and RUs concerned. These running times were requested via national tools. Despite the decrease of PaP requests, the feedback from customers showed no systematic change from PaP requests to requests via national systems.

A reserve capacity of 1.8 million path-km was offered for TT2020. As in previous years, no requests were received. For TT2021, the offer remains on the same level.

PAP SALES PROCESS



KPI Volume of Requests including Number of Conflicts at X-8

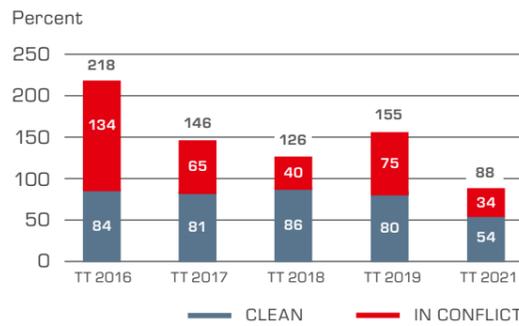
This KPI shows the number of conflicting and clean requests (i.e. dossiers) made by the applicants in the Path Coordination System (PCS). The lower number of requested dossiers for TT2021 is related both to the lower amount of requested capacity described above and to the newly introduced PCS envelope concept, which enables applicants to link related requests in one dossier. This also resulted in fewer conflicts between PaP requests. Conflicting requests

VOLUME OF OFFERED, REQUESTED AND PRE-ALLOCATED CAPACITY

This KPI shows the volume of PaPs in the phases of PaP publication (X-11), PaP requesting (X-8) and PaP pre-allocation (X-7.5) in million path-km per year.



KPI VOLUME OF REQUESTS INCLUDING NUMBER OF CONFLICTS AT X-8



This KPI shows the number of conflicting and clean dossiers (multiple path requests placed in PCS which referred to the same PaP on RFC Rhine-Alpine).

relate especially to path sections in the southern part of the RFC through Switzerland. However, the IMs were able to make alternative (tailor-made) path offers for all applicants that could not receive a PaP.

KPI Ratio of the Capacity Allocated by the C-OSS and the Total Allocated Capacity

The KPI Ratio of the capacity allocated by the C-OSS is calculated with data provided by the IMs and the C-OSS of RFC Rhine-Alpine, both after the finalisation of the allocation process. At every border of the Corridor, the number of crossing trains, which have been allocated via PaPs in PCS (including feeder/outflow and tailor-made paths), is compared to the number of international freight trains, which were requested via PCS or national systems and allocated by the IMs along the Corridor. Regarding the allocation status, Basel has the highest number of allocated trains in the annual timetable on RFC Rhine-Alpine in absolute numbers, followed by Emmerich, Chiasso and Aachen/Montzen. In total, the highest number of allocated trains in the annual TT is concentrated in the southern part of the Corridor. The completion of the NRLA led to higher traffic numbers on the Gotthard axis as traffic shifts from the Lötschberg axis. Since the PaP offer stayed constant in TT2021, the ratio of international freight trains allocated by the C-OSS dropped accordingly in Chiasso and increased in Domo Il.

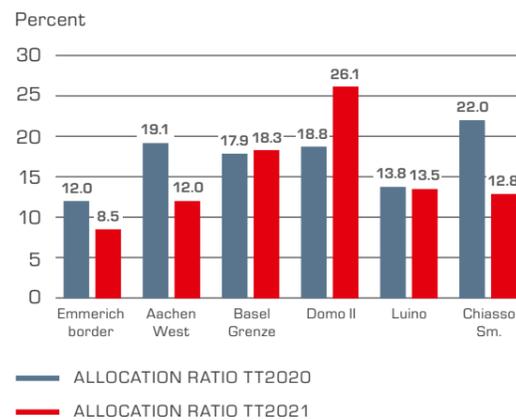
KPI Average Planned Speed of PaPs

The KPI Average Planned Speed shows the planned commercial speed of the PaPs on Corridor sections with pre-defined origins and destinations, selected for Long PaPs, Short PaPs as well as for subsections on RFC Rhine-Alpine.

For TT2022, we have defined new sections (O/Ds) in order to achieve better comparability in the future and to cover all major Corridor sections. Furthermore, we adapted the calculation method for the KPI Average Planned Speed and included all stopping times at borders and other stations. This could lead to a lower value compared to previous years. The number of PaPs used to calculate the average speed are shown. The PaPs running on the respective O/D have to cover the whole section to be included into the calculation.

At some borders, a longer stopping time is caused by e.g. customs handling or the applicants' desired change of operation. This leads to a lower average speed than at borders without dwelling time. The selected O/Ds serve as examples. Further connected O/Ds would show hardly any difference regarding planned speed (e.g. Amsterdam instead of Maasvlakte).

KPI RATIO OF CAPACITY ALLOCATED BY C-OSS

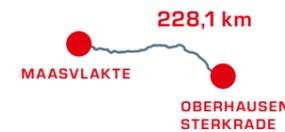


This KPI shows the ratio of trains which were allocated by the C-OSS as PaPs compared to trains which were requested via PCS or national systems and allocated by the IMs.

KPI AVERAGE PLANNED SPEED OF PAPs FOR TT2022

This KPI shows the average of the planned commercial speed of the PaPs in km/h for selected connections

70.8 km/h



AVERAGE SPEED OF **20** PAPs

44.7 km/h



AVERAGE SPEED OF **17** PAPs

40.4 km/h



AVERAGE SPEED OF **4** PAPs

61.5 km/h



AVERAGE SPEED OF **20** PAPs

52.2 km/h



AVERAGE SPEED OF **10** PAPs

55.2 km/h



AVERAGE SPEED OF **10** PAPs

50.1 km/h



AVERAGE SPEED OF **6** PAPs

49.2 km/h



AVERAGE SPEED OF **24** PAPs

58.5 km/h



AVERAGE SPEED OF **17** PAPs

INFRASTRUCTURE PROJECTS



In 2020, the Ceneri Base Tunnel was opened. After 27 years of construction, the New Railway Link through the Alps was completed.

A NEW OVERVIEW

PROJECTS ON RFC RHINE-ALPINE

THE NETHERLANDS

- 1 new overtaking track in Geldermalsen
- 2 new Rail Terminal TPN Venlo
- 3 Amsterdam Aziëhavenweg rail yard



BELGIUM

- 4 Port of Zeebrugge and its hinterland connections
- 5 740m long trains on the Belgian network
- 6 ETCS in Belgium

GERMANY

- 7 Rhine/Main and Rhine/Neckar
- 8 ABS/NBS Emmerich - Oberhausen
- 9 Karlsruhe - Basel
- 10 ETCS in Germany on RFC Rhine-Alpine



SWITZERLAND

- 11 Opening Ceneri Base Tunnel
- 12 4-metre Corridor
- 13 Upgrade of Lötschberg Base Tunnel
- 14 Improvement Basel RB
- 15 Quadrupling Olten - Aarau
- 16 Bellinzona - Luino upgrade

ITALY

- 17 Technological upgrade Chiasso line
- 18 Loading gauge of Luino line
- 19 Loading gauge of Chiasso line and Milano node and interlocking of Chiasso line
- 20 Domodossola - Novara

This chapter reports on projects which made significant progress or were completed during 2020. These projects are part of the Implementation Plan of RFC Rhine-Alpine.

PROJECTS IN THE NETHERLANDS

1 NEW OVERTAKING TRACK IN GELDERMALSEN

With the opening of the new overtaking track in Geldermalsen in September 2020, the length limitation for freight trains from Amsterdam/Amersfoort in the southern direction has been lifted. The length restriction in the northern direction was lifted in 2019. The modifications are part of the "Rail Environment Geldermalsen" project.

2 NEW RAIL TERMINAL TPN VENLO

The rail terminal at Trade Port Noord Venlo, with a capacity of up to 12 trains per day, was put into use in autumn 2020. The new rail terminal is connected to the Gekkengraaf yard, which was opened in 2019 on the Eindhoven-Venlo line.

3 AMSTERDAM AZIËHAVENWEG RAIL YARD

In 2020, a start was made on the design and construction of one additional arrival/departure track in the Aziëhavenweg rail yard in the Amsterdam Port Area. The new track will come into use around 2024.

PROJECTS IN BELGIUM

4 PORT OF ZEEBRUGGE AND ITS HINTERLAND CONNECTIONS

The construction of a new fan of sidings in the existing marshalling yard at Zeebrugge, which started in February 2019, continued in 2020. Two tracks will be able to accommodate 740m long trains. Commissioning is

forecasted for 2022. The introduction of automatic signalling in the northern part of the siding of Ramskapelle was finished in 2020 and commissioned in December 2020.

Regarding the third track between Brugge and Dudzele, the execution of the first phase of the renewal of the bifurcation at Dudzele was finished in November 2020. The studies of the northern part of the third track were finalised in 2020; the start of construction is scheduled for 2021.

Work on the construction of a third and fourth track between Gent and Brugge also continued in 2020. The construction works in Oostkamp were finished at the end of the year.

Samskip train from Amsterdam Houtrakpolder to Duisburg.



PROJECTS IN GERMANY

7 RHINE/MAIN AND RHINE/NECKAR

Regarding the additional double track line between the Rhine/Main and Rhine/Neckar regions, a significant milestone was reached in 2020.

After the route for connecting the Mainz-Darmstadt freight train line to the new line (Neubaustrecke - NBS) was defined in 2019, the preferred option for the route between Lorsch and Mannheim could be presented to institutional representatives of the region.

Public participation will continue in 2021. The regional demands will be processed for parliamentary consultation.

The documents for planning approval of section 1 from Zeppelinheim to Weiterstadt will be submitted to the Federal Railway Authority in the first half of 2021.

5 740m LONG TRAINS ON THE BELGIAN NETWORK

In the context of a study finalised in 2019 regarding the locations where additional side tracks are needed to accommodate 740m long trains in the Flemish region, the detailed studies of the identified sites in Dendermonde and Lokeren as well as the feasibility studies for Testelt and Hasselt are ongoing.

In December 2020, it was decided to start a specific "side tracks 740m" project to identify the locations on the freight corridors (TEN-T Core Network) where investments are essential to allow the running of 740m long trains without any restrictions.

The construction of the Gent-Zeehaven sidings, which will create two tracks able to receive 740m long trains, continued in 2020. Commissioning is scheduled for May 2022.

6 ETCS IN BELGIUM

ETCS deployment continued with the aim of the whole network being equipped by 2025. ETCS will become mandatory from TT2026 (14 December 2025).



Construction works on the tracks in Dudzele, Belgium.

8 ABS/NBS EMMERICH – OBERHAUSEN

In 2020, the design and approval planning for the third track continued.

In the sections Oberhausen, Dinslaken, Voerde and Rees, additional tendering processes for the construction works started. The entire construction works have been awarded in the planning approval section 1.1 Oberhausen. The section is under construction.

In Rees, Voerde and Dinslaken the preliminary building activities were realised in 2020. Catenary and engineering construction works will start in 2021.

Four out of five railway flyovers in the section 1.1 Oberhausen were completed in 2020, one bridge is still under construction and should be completed in 2021.

The planning approval decision for the planning approval section 2.1 Friedrichsfeld was taken in December 2020.

Further planning approval decisions are expected for 2021.



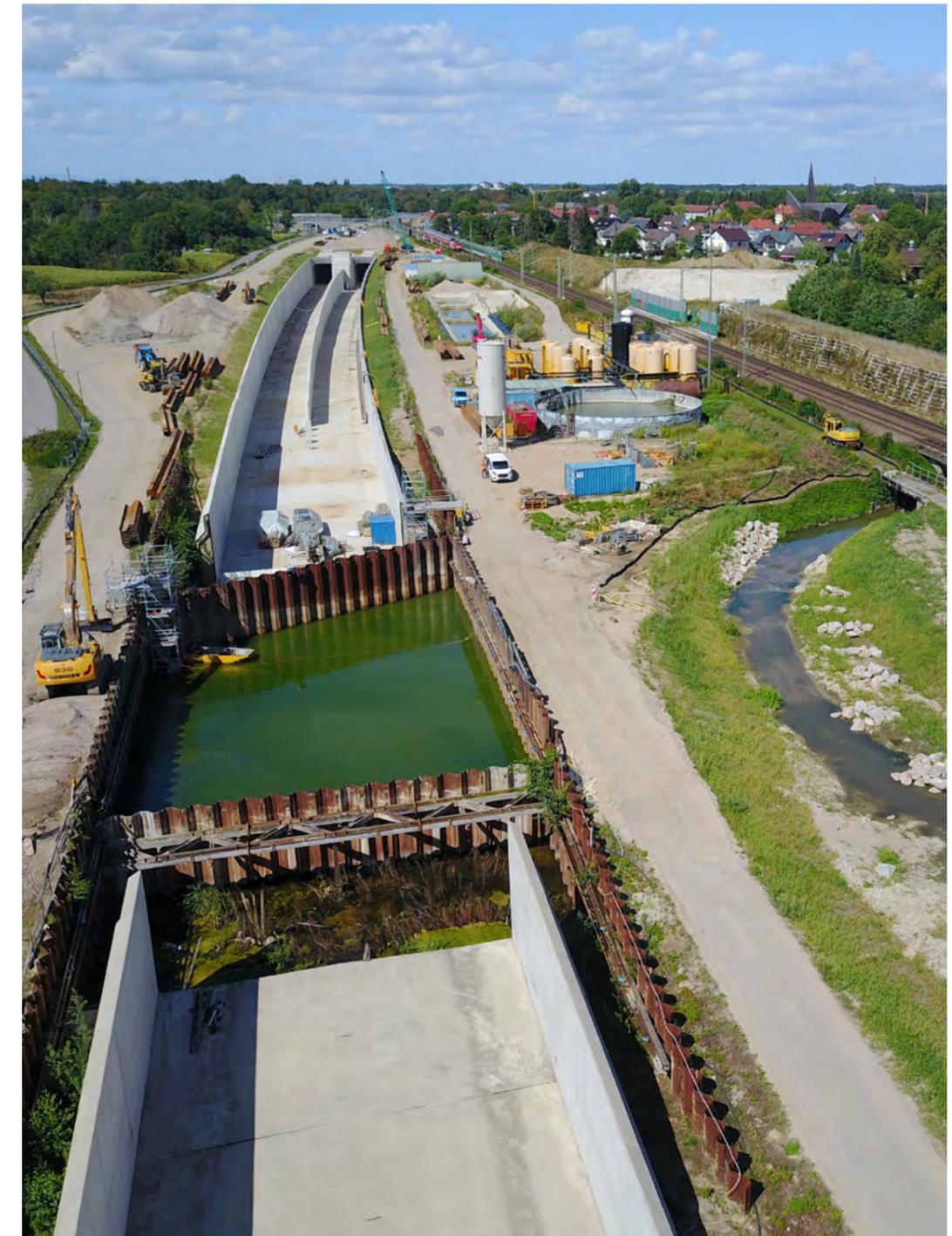
9 KARLSRUHE – BASEL

In 2020, the Karlsruhe – Basel project made further progress both in the planning approval process and in the construction works. The investigation process to determine the causes for the 2017 tunnel incident in Rastatt is still going on.

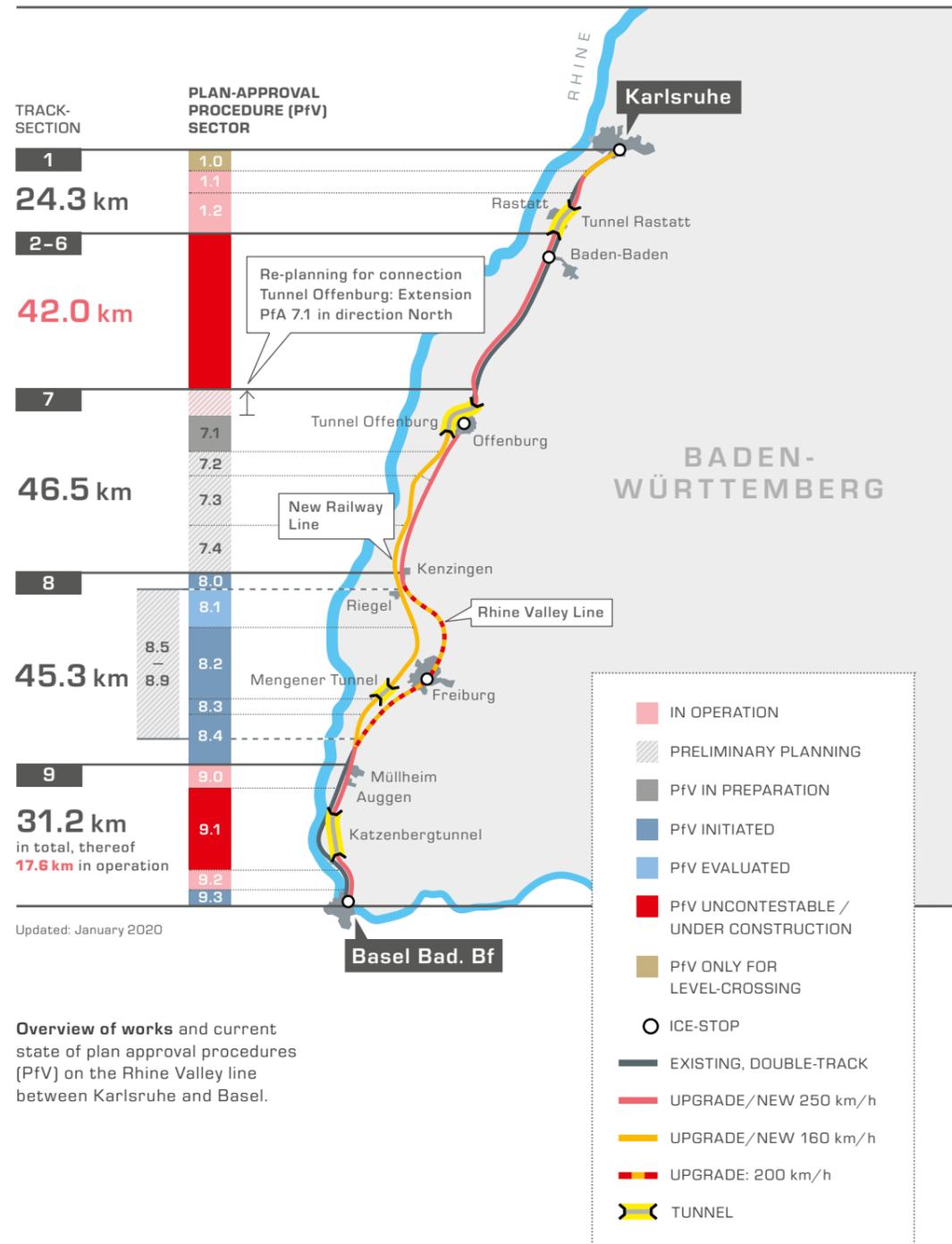
Although the investigation and arbitration process are still ongoing, Deutsche Bahn and the commissioned Working Group have developed a plan to proceed with the second drilling machine. Preparation works are continuing.

In section 7, the general planners finished their work on the preliminary design according to the decisions of the German Federal Parliament, respecting the recommendations of the advisory committee. In 2020, “early public participation” for the Tunnel Offenburg took place and the other parts will follow in 2021. The COVID-19 situation caused massive restrictions for gatherings. Consequently, the participation process was mostly digitalised using a virtual marketplace solution combined with social media interaction and live-streaming. The reactions and feedback were positive throughout and even more extensive than in the classic “live events”.

Construction works at the Karlsruhe-Basel line: The last piece of the groundwater tank is covered with concrete at the south portal of Rastatt. A water ditch was relocated parallel to the groundwater tank, taking up its natural shape at the south exit of the tunnel.



PROJECT KARLSRUHE - BASEL



In section 8, the approval process for PfA (approval section) 8.1 is continuing. The public hearings took place for PfA 8.2, 8.3 and 8.4.

In section 9, PfA 9.0, construction works are in progress. Several bridges are under construction and the preparations for new platforms and for building the track will be continued. The final works and documentation in PfA 9.1 (in operation since 2012) are on time. The construction works in PfA 9.2 are ongoing, especially the construction of new barrier-free platforms and track works. In PfA 9.3, the planning approval in Switzerland was finished by the end of 2020.

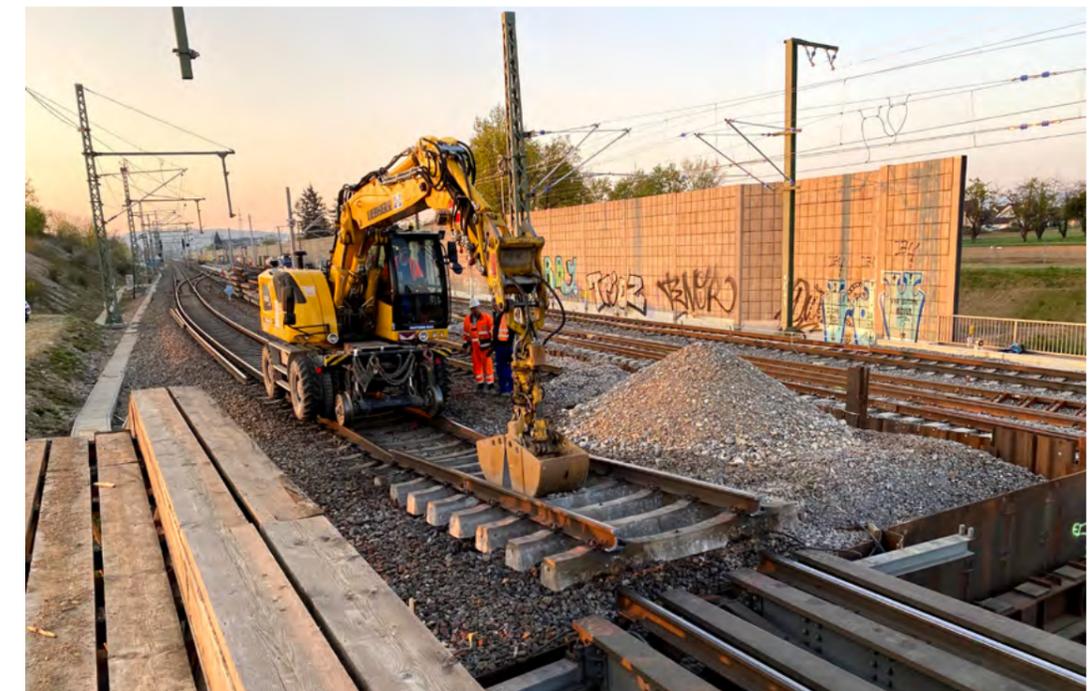
10 ETCS IN GERMANY ON RFC RHINE-ALPINE

ETCS deployment in Germany continued in 2020 and significant progress has been achieved: The tendering of ETCS equipment was awarded for approx. 600 km of RFC lines (ETCS L1 LS and ETCS L2). A first continuous ETCS installation

between the border points of Basel (CH) and Venlo (NL) is expected by December 2025. Works will be completed stepwise, starting with the Basel to Lahr line section in December 2022.

In preparation of ETCS L1 LS installations, the progress of civil works (e.g. cable tunnels) is on schedule. In preparation of the ETCS L2 deployment between Basel and Lahr, two electronic interlockings have been completed and successfully taken into service (Köndringen and Denzlingen).

In view of increasing demands on crypto key management, DB Netz has launched a tender for the development of an online key management system in order to ensure sufficient service quality in the future.



PROJECTS IN SWITZERLAND

11 OPENING OF THE CENERI BASE TUNNEL

After implementation of the tunnel and rail infrastructure systems between 2017 and 2019, the test operation was carried out between March and August 2020. In concert with the timetable change in December 2020, the tunnel was put into operation as planned. Thus, the NRLA (New Railway Link through the Alps) has been completed after about 27 years of construction and investments of about 23 billion Swiss Francs (= ca. 21 billion Euro).

12 4-METRE CORRIDOR

Along the entire Gotthard route, some 20 tunnels were enlarged and 80 alterations were made to platforms, traction current systems, signalling installations and overpasses. The main project was the construction of the new 2.7 km long Bözberg Tunnel

between Effingen and Schinznach-Dorf. The new Bözberg Tunnel was connected to the existing line in November 2020. The old tunnel will now be rebuilt as a service and emergency tunnel by 2022. In December 2020, the whole Gotthard line between Basel and Chiasso/Luino was enabled for freight trains with a 4-metre profile.

13 UPGRADE OF LÖTSCHBERG BASE TUNNEL

The partial extension of the Lötschberg Base Tunnel (2nd tube Ferden-Mitholz) is part of the national "Ausbauschnitt 2035 (AS 2035)" investment plan, which was approved by the parliament at the end of 2019. The project documents were submitted for review at the same time. The project is expected to be approved by the Swiss Federal Office of Transport (FOT) in mid-2021.

In the meantime, the FOT commissioned the project planning for the "full expansion" of the Lötschberg Base Tunnel (2nd tube for the whole length of the tunnel).

SBB Cargo International freight train in the new Ceneri Base Tunnel



Freight train passing the new tunnel portal of the Bözberg Tunnel in Schinznach

Parliament's decision on the „partial or full extension" is expected for mid-2023. The implementation will not start before 2025 and commissioning not before 2031.

14 IMPROVEMENT OF BASEL RB

Plans are to rebuild the Basel shunting yard. New parking areas for locos will be constructed and existing sidings will be extended up to 750-m. In addition, the overall capacity will be increased. The first capacity improvements are expected for 2022.

15 QUADRUPLING OF OLTEN – AARAU

The project aims to build a fourth track between Olten and Aarau to increase capacity and decrease travel time. The centrepiece is the 3 km long double track "Eppenbergtun-

nel" between Schönenwerd and Aarau. After a construction period of about 6 years, the whole infrastructure project went live in December 2020.

16 BELLINZONA – LUINO UPGRADE

Between Bellinzona and Luino, the overall capacity will be increased by a new crossing station and a partly double track upgrade. The quality will be improved as well. The double track between Contone and Quartino was opened in 2019. Currently, the upgrade of the station in Pino for 750-m freight trains is under construction. Go-live and full availability of 750-m tracks is expected by the end of 2022.

PROJECTS IN ITALY

17 TECHNOLOGICAL UPGRADE OF THE CHIASSO LINE

In December 2020, the main works for technological upgrading of the Chiasso line were completed. The capacity (passenger and freight services) of the line has been increased to up to 12 trains per hour and per direction. In the second phase, forecasted for 2021, the line will be equipped with a superimposed ERTMS L2. In 2022, further works will involve the Milano node.

18 LOADING GAUGE OF THE LUINO LINE

In 2020, the works for upgrading the loading gauge of the Luino line to P/C 80/410 were completed. From Luino to Gallarate, trains with trailers and Rolling Highway trains can run on the line with special authorization (TES: Trasporti Eccedente Sagoma/overall dimensions exceed limits of the loading gauge). In 2021, the certification process will be completed and the trains will be able to run without special authorisation (TES).

19 LOADING GAUGE OF CHIASSO LINE AND MILANO NODE

In 2020, works for upgrading the loading gauge up to P/C 80/410 were ongoing on the

Chiasso line and in the Milano node. Removal of the special authorisation (TES) requirement on the line between Chiasso and Milano Smistamento is anticipated for 2021. In 2022, all main freight lines of the Milano node will be upgraded for trains with trailers and Rolling Highway trains.

19 INTERLOCKING OF CHIASSO LINE

The 'brand-new' Computer Based Interlocking (IXL) from Monza to Chiasso was placed in commercial service on 5 December 2020. The IXL is set to be interfaced with the ERTMS L2 (RBC) and the first ERTMS L2 on site. Test runs started in December 2020 and will continue until April 2021.

In December 2020, the first ERTMS L2 test trains started running on the line.

20 DOMODOSSOLA-NOVARA

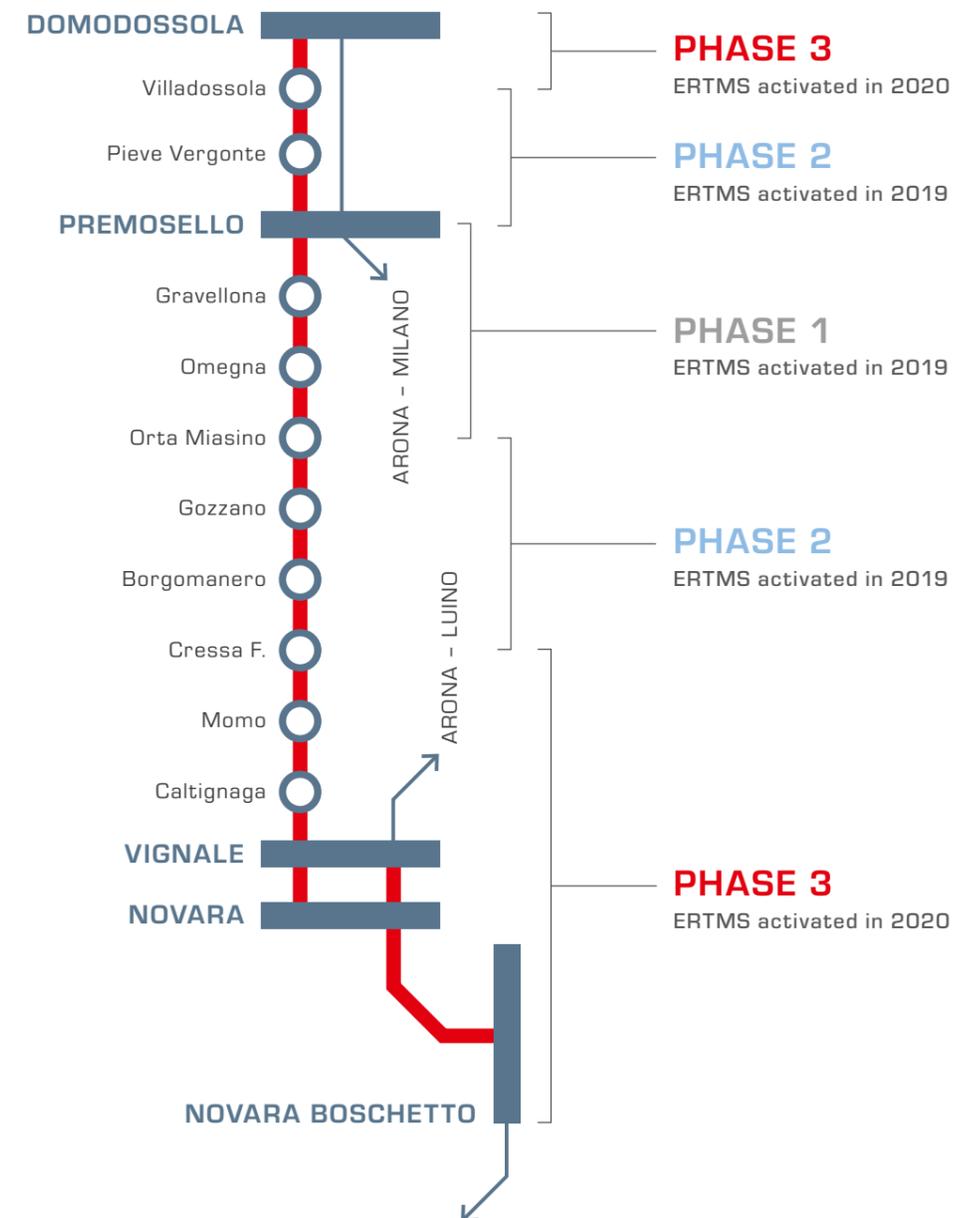
On 31 January 2020, ERTMS L1+ Radio Infill was placed in commercial operation on the Domodossola-Novara line.



A Mercitalia Rail freight train at Peri railway station, Italy.

ERTMS DEPLOYMENT OVERVIEW OF DOMODOSSOLA - NOVARA SECTION

The graph shows the ERTMS deployment on the Domodossola - Novara section. After a successful completion of phases 1 and 2 and the corresponding ERTMS activation in 2019, the sections of phase 3 went into operation in 2020.



KEY TOPICS IN 2020

Despite the **COVID-19 pandemic**, RFC Rhine-Alpine continued in 2020 to push for developments to make the shift to rail happen.

Many different topics were addressed by all stakeholders in RFC Rhine-Alpine during 2020 and many achievements were accomplished. Despite challenges, especially due to the Corona pandemic, we jointly supported the gradual improvement of conditions for rail freight on the Corridor. Here are RFC Rhine-Alpine's focus topics for 2020, with joint information from the Management Board and Executive Board.

IMPACT OF THE COVID-19 PANDEMIC

In 2020, the Corona pandemic had many implications for the European rail freight sector and dominated our work and private lives throughout the year. We all had to adapt in a highly flexible way to the pandemic developments.

Rail freight and intermodal transport turned out to be a very resilient mode of transport. All stakeholders in the transport chain did their very best to keep up operations on RFC Rhine-Alpine, protecting the health of their operational staff and shifting as much as possible to contactless operations:

- IMs managed to keep almost all routes open;
- RUs could run the requested trains and reacted flexibly to changed operational needs of customers and end-customers;
- Terminal operators enabled contactless pick-up and delivery.

As a result, RFC Rhine-Alpine experienced almost no track closures on account of COVID-19 infections. Some international traffic was even shifted from road to rail, as trucks and truck drivers faced more restrictions when crossing a border.

As shown in the chapter "**Market development KPIs**", p. 15, the lower economic activity because of the COVID-19 crisis resulted in a sharp decline in the freight volume of RFC Rhine-Alpine from April to June. The number of trains slowly came back to normal levels in September and showed a slight increase of 0.6 % from October through December. The overall number of cross-border freight trains in 2020 decreased by 7.4 %.

A positive side effect of the decrease in the number of trains both in rail freight and passenger traffic was a strongly improved performance of rail freight trains (see chapter "**Operations KPIs**", p. 18). All stakeholders in the transport chain were able to improve performance in a situation where lower end-customer requests were organised with existing resources and higher capacity on rail infrastructure. There were also less infrastructure works during the first phase of the pandemic than originally planned. However, with the number of trains and TCRs getting back to normal levels in the second half of 2020, the delays began to increase again. Ultimately, 2020 clearly showed the effect of scarce capacity and an intensively used network like RFC Rhine-Alpine on performance.

All Member States along RFC Rhine-Alpine and the European Commission made strong financial support available to the rail and logistics industry to cover losses from the Corona pandemic.

AD HOC EU REGULATION DUE TO THE PANDEMIC

The Executive Board has focused on supporting the resilience of the Rail Freight Corridor during the pandemic. At the national, bilateral and Corridor level, there has been continuous monitoring of train performance and barriers. Regarding the infection risks, rail freight generally has an advantage, as very few train staff members (mostly train drivers) cross national borders. Restrictions on cross-border travel have been alleviated by exceptions for train drivers to ensure continuous operations. This is in line with the EU Green Lanes concept.

POLICY DEVELOPMENTS

Politically, 2020 has been an important year for railway policy supporting rail freight.

LOCARNO DECLARATION

With the opening of the Ceneri Base Tunnel, the Swiss Minister took the initiative for the **Locarno Declaration 2020**. This declaration underlines the importance of cross-border cooperation on infrastructure planning aimed at developing both rail freight and passenger market. The declaration also confirmed the priorities from earlier ministerial meetings, including capacity management and quality of transport. The Locarno Declaration was endorsed by the Transport Ministers from Austria, Belgium, France, Germany, Italy, Liechtenstein, Luxembourg, the Netherlands, Slovenia and Switzerland and published on 3 September 2020.

EUROPEAN DEVELOPMENTS

At the European level, the **Berlin Declaration** was adopted by all EU Transport Ministers plus the Ministers from Norway and Switzerland on 21 September 2020. The Berlin Declaration is a follow-up of the Rotterdam Declaration

At the EU level, Regulation (EU)2020/1429 was adopted as of 7 October 2020. This Regulation gives Member States the flexibility to reduce the track access charges until 31 December 2020 on a non-discriminatory basis. Such a reduction would reduce the costs of railway operations during the difficult phase of the pandemic. If a Member State decides to reduce the track access charge, the Infrastructure Manager must be compensated for the reduced revenues from charges. The reduction of charges may also include reservation fees. The period of application of the Regulation may be prolonged following a decision by the European Commission.

(2016) and the Vienna Declaration (2018) and monitors the progress on the identified priorities. The Berlin Declaration confirms the importance of further developments of the Rail Freight Corridors as a tool to facilitate international rail freight. It clarifies existing priorities such as an infrastructure for the 740m train length, Timetable and Capacity Redesign, and it also lays down some new priorities like digitalisation and automatic coupling. The technological innovation of automatic coupling can improve the efficiency and safety of the train preparation process and needs a network-wide approach.

On 9 December 2020, the European Commission published the Smart and Sustainable Transport strategy (COM(2020) 789). In this strategy, the policy towards the modal shift to rail freight was confirmed. Doubling of rail freight in the EU by 2050 is set as a milestone. The strategy paper confirms the need to reform the rail freight sector largely in line with the Berlin Declaration.

EU TRANSPORT MINISTERS SIGNED THE BERLIN DECLARATION, CONFIRMING THE IMPORTANCE OF FURTHER DEVELOPMENTS OF THE RFCs AS A TOOL TO FACILITATE INTERNATIONAL RAIL FREIGHT.

MONITORING THE RFC IMPLEMENTATION

Article 22 of Regulation (EU) 913/2010 specifies that the Executive Boards must report every 2 years on the results of the implementation plan for their respective Rail Freight Corridor. The structure of the report of the Executive Board for RFC Rhine-Alpine in 2020 included the following chapters: Corridor lines and bottlenecks, changes in traffic on the Corridor, state of play of the objectives for the Corridor, investment planning, coordination of works, Corridor One-Stop Shop, capacity allocation and traffic

management; each giving information on the respective topic. The Executive Board of RFC Rhine-Alpine values the work done by the Corridor to reduce capacity bottlenecks, to offer corridor specific capacity by the C-OSS and to remove interoperability issues on the Corridor. It is committed to working with the Management Board and Corridor partners such as RAG and TAG on further improvements including the performance of traffic.

CAPACITY OFFER

PROCESS IMPROVEMENTS FOR THE DRAFT AND FINAL TIMETABLE OFFER

In previous years, RFC Rhine-Alpine had to cope with delays caused by the IMs in the harmonisation of the timetable offer related to tailor-made paths to PaP losers, feeder and outflow paths. This led to delays in the offer for the Draft and Final Timetable (DTT and FTT). Therefore, there was an intensive discussion in 2020 on possible improvement measures to be able to provide a good offer to the applicants at the DTT and FTT deadlines. The improvements agreed upon for the process in TT2021 were also discussed with RUs. RFC Rhine-Alpine coordinated a process to set clear framework conditions for both IMs and RUs. Consequently, it was possible to make a timely offer in TT2021 for all dossiers that run exclusively on RFC Rhine-Alpine. In very few cases, harmonisation of the timetable offer could not be finalised, among other things due to

different national legislations and procedures. In these cases, IM timetable colleagues added comments in PCS so as not to stop the further allocation process for these dossiers.

Despite these efforts on the part of RFC Rhine-Alpine, a large number of Draft and Final Timetable offers for TT2021 were unfortunately delayed. This was due to the large timetable construction delays at a non-RFC Rhine-Alpine IM, which affected the harmonised offer between RFC Rhine-Alpine and RFC North Sea – Mediterranean.

DEVELOPMENT TOWARDS A CAPACITY USAGE PLAN FOR THE RHINE VALLEY

DB Netz developed a proposal for a capacity usage plan on the Mannheim – Basel line based on path orders/capacity usage in previous years. This was also coordinated with SBB



SBB Cargo International train on the Corridor in Zugersee, Switzerland.

Infrastruktur for continuation in Switzerland. Several members of the RFC Rhine-Alpine Working Group Product Development were involved in the process.

Due to legal concerns, the originally intended formal publication of this capacity supply and its use for path allocation could not be implemented. However, these system paths contributed to an increase in quality. The PaP offer for TT2022 is based on the developed

proposal and the idea for the capacity usage plan was presented to the potential applicants during the customer consultations.

Various customers have ordered similar paths already for TT2021 in national tools. The times at the network borders were already partly harmonised in the pre-coordination between DB Netz and SBB Infrastruktur; this had a positive effect on the harmonisation quality of the path offers for DTT and FTT (TT2021).

TEMPORARY CAPACITY RESTRICTIONS

AT THE RFC WORKING GROUP LEVEL

According to CID Book 4, future TCRs as a result of the regular international coordination were published twice in 2020 – in January and August. Another update was already issued in December 2020. RFC Rhine-Alpine publishes TCR information both in the form of a detailed Excel sheet and in the form of impact sheets which focus on major TCRs at all IMs and provide information on planned diver-

sions and impacts on the RUs. The IM experts also coordinated the planned maintenance windows so that transparency could be ensured on this topic as agreed with the RAG.

In 2020, RFC Rhine-Alpine also provided information on planned TCRs in 2021 and 2022 to RUs/applicants during the online RAG meetings and during some online German BID-meetings (Bauinformationsdialoge).

The DB Netz member of the WG TCR initiated coordination between DB Netz, ÖBB, SBB Infrastruktur, SNCF Réseau and RFI for the impactful works in 2024 on the Rhine valley line to ensure maximum possibilities to deviate freight traffic. The planned TCRs for 2023, 2024 and 2025 were presented and discussed in the RAG meeting on 21 October 2020. DB Netz informed the participants that they plan to start re-routing coordination with RUs in spring 2021. The RAG speaker of RFC Rhine-Alpine also brought this topic up in the RAG of RFC North Sea – Mediterranean with the request to have a joint Working Group of the two RFCs which would deal with re-routing possibilities. It was clarified that the responsibility for the coordination with RUs and neighbouring IMs needs to stay with DB Netz which is in charge of the process. The two RFCs will, however, be involved via their TCR experts, among other ways.

Valuable support was given by the TCR experts of RFC Rhine-Alpine regarding the development of the TCR Tool at RNE. They continued piloting the TCR Tool for publication of the TCRs on the Corridor lines. Besides this, they gave valuable suggestions for improvements of

the TCR Tool, which also took into consideration the input provided by the RUs in a dedicated workshop. This was done in close cooperation with the responsible staff at RNE. The TCR Excel overview and impact sheets will, however, still be prepared and published in parallel.

FROM A REGULATORY PERSPECTIVE

In order to ensure that the national IMs of RFC Rhine-Alpine can comply with Annex VII of Directive 2012/34/EU in terms of the national legal framework, this action point has been included in the Action Plan of the Executive Board. The focus points are the new provisions on cooperation of the IMs regarding capacity allocation and harmonisation of capacity restrictions on the respective rail networks.

In 2020, the IRG-Rail Access Group started to review the existing national regulations based on the implementation of the new Annex VII in the national Network Statement to jointly identify the existing regulations. This will be followed in 2021 by a more detailed and qualitative analysis of the problems and issues arising from the implementation of this new regulation.



Camorino junction at the north portal of the Ceneri Base Tunnel near Giubiasco/Bellinzona.

INTERNATIONAL CONTINGENCY MANAGEMENT

ICM INCIDENT ON THE RHINE VALLEY LINE

A tragic accident with a Rolling Highway train in Auggen, which resulted in one casualty and several passengers injured, caused a complete line interruption between Freiburg and Basel from 2 to 8 April 2020.

A locomotive hauling a Rolling Highway service collided with a concrete bridge section at Auggen on the Karlsruhe – Basel main line, about 20 km north of Basel, at around 7.30 p.m. on 2 April. On this part of the Rhine valley line, the route is currently being expanded to four tracks. The concrete section fell from a bridge, which was set to be demolished. The locomotive and a coach for drivers, which was coupled to the locomotive, derailed following the collision. The train was loaded with seven lorries and was operating on the Rolling Highway route from Freiburg (Breisgau) to Novara, Italy. The driver of the freight train died and several lorry drivers got injured.

Due to the accident, the Rhine valley line was completely interrupted for six days. Whilst intra-German re-routing via the Gäubahn (Stuttgart-Singen) was immediately made available by DB Netz, additional capacity could also be assured on the Brenner line and via France.

During this interruption, the processes described in the ICM handbook were applied. The coordination role of RFC Rhine-Alpine was highly appreciated by the IMs; relevant stakeholders were informed and involved. During

the closure, all re-routing requests from RUs could be answered with an offer. Mostly, the Gäubahn option via Stuttgart/Singen was used for re-routing. As far as re-routing capacity is concerned, the general thinning out of the timetable due to COVID-19 made it easier to deal with the situation.

A detailed analysis of the disruption was provided to the Management Board and a summary of effects and findings was also shared with European stakeholders in a SERAC meeting. The findings were considered in the review process of the ICM handbook, which is carried out at the RNE level (see below).

UPDATE OF THE ICM RE-ROUTING SCENARIOS

The annual update of the re-routing scenarios of RFC Rhine-Alpine was organised in the second half of 2020 and published in early January 2021. The team of RFC Rhine-Alpine together with the experts from the IMs checked and updated all infrastructure parameters and streamlined the wording. The most important changes are the introduction of the recently opened Ceneri Base Tunnel and the introduction of capacity indications by DB Netz. The Gotthard mountain line is no longer considered for re-routing.

The documents can be found on the [Corridor website](#) and the information is displayed in the [CIP map](#).

THE REVIEW OF THE INTERNATIONAL CONTINGENCY MANAGEMENT PROCESS IS ONGOING, WITH A PARTICULAR FOCUS ON CAPACITY COORDINATION AND ALLOCATION RULES.



Replacement of bridge sections on the Munnikensteeg viaduct near Kijfhoek.

ICM HANDBOOK REVIEW

In the second half of 2020, RNE started a comprehensive review of the Handbook for International Contingency Management, which was first developed in 2018 after the six-week line closure in Rastatt.

As it did during the initial development, RFC Rhine-Alpine played a strong role and gave input to the review process. Experiences from the Auggen incident in 2020 as well as conceptual improvements were brought to the review process.

For example, clarifications in the process for capacity coordination are based on interviews with ICM and TT experts carried out by a task force of RFC Rhine-Alpine. Also, the mandatory use of the RNE Incident Management Tool as well as modifications to the communication process are provided for.

The review process shall be concluded in the first half of 2021.

PROGRESS ON JOINT ALLOCATION RULES

The goal of the Executive Board's action on ICM is to agree on allocation rules in case of international incidents and to share a common EU approach on these rules which should apply on deviation routes, especially where the available capacity for re-routed freight trains is limited. A workshop on the allocation rules took place on 29 January 2020, following a Network of Executive Boards (NExBo) initiative. In December 2020, the NExBo decided to launch several pilot studies on ICM cases on principal and diversionary lines of the corridors by the end of 2021.

TRAIN PERFORMANCE MANAGEMENT

In addition to the overall performance monitoring (see chapter "Performance Report", p. 14), several developments were pushed by RFC Rhine-Alpine and its members to improve the overall performance management and transparency related to the train run.

ELETA

The Executive Board has supported the successful finalisation of the ELETA project. This provides an intelligent determination of ETA forecasts available for RUs, IMs and terminals. TIS is a key enabling technology. The ELETA project held its final conference in November 2019.

Regarding the legal provision for the use and exchange of TIS data, a vote on this is provided for in RISC 2021, while the publication is expected to be done by the first quarter of 2021 within the TSI package 2022.

Building upon the result of the ELETA project, a proposal for a digitalisation project (Enhanced real-time communication about train composition and estimated time of arrival) was suc-

cessfully launched following a CEF programme support action call on the Issues Log Book. The partners RNE, UIRR, RFC Rhine-Alpine, Hupac, DB Cargo and the Dutch Ministry will work together in the 2021-2022 project on multiple elements: train composition, calculation of ETA, role of terminals, feasibility study on Railway Collaborative Decision Making. In this digitalisation project, partners can benefit from the different work streams and ensure an innovative and inclusive approach to data sharing.

RAILWAY COLLABORATIVE DECISION MAKING

In 2019, RFC Rhine-Alpine and the Swiss Federal Office of Transport organised three workshops with RUs, intermodal operators, terminal and port operators to deeply discuss punctuality issues and how to boost performance on the Corridor. One main point highlighted by all stakeholders was the general lack of transparency along the intermodal transport chain. Information sharing is at a very low level and this hampers predictability and resource management.



High output maintenance work with a track renewal machine on the German network.

In the aviation sector, an approach on how to improve information sharing among all involved stakeholders was developed over the past 15 years. It is called "Airport Collaborative Decision Making" (A-CDM) and is already implemented in about 30 airports, mainly in Europe, but also around the world.

To investigate how and under which conditions this process could be applied and implemented in the railway sector, RFC Rhine-Alpine launched a feasibility study, carried out by HaCon and To70. The result of the feasibility study is expected by mid-2021. Many stakeholders are involved in the study (terminals, RUs, shunting operators, IMs) to analyse the current situation and develop an approach for a potential "Railway Collaborative Decision Making" (R-CDM). A meeting with the sounding board as a consultation group with stakeholders' representative will be organised in 2021 to ensure support, commitment and validation of the results.

The feasibility study is financed by the EU Commission as an activity of the PSA Action "Enhanced real-time communication about train composition and estimated time of arrival" in cooperation with RNE, UIRR, the Dutch Ministry of Infrastructure and Water Management, HUPAC Intermodal and DB Cargo AG.

END-TO-END PUNCTUALITY REPORTING FOR LUDWIGSHAFEN - GALLARATE

The reporting was initiated by SBB Infrastruktur in October 2019 out of the temporary task force Ludwigshafen - Gallarate in order to improve the punctuality of traffic with all involved stakeholders. It continued until the end of

2020. Regular (monthly) reports displayed the train runs from Ludwigshafen to Gallarate from the terminal origin to the destination under the terminal crane including terminal data. Terminal data was collected from Hupac and SBB Cargo International. SBB Infrastruktur took care that the information was manually fed into TIS based on Excel files.

Based on the analysis, improvement measures were introduced by all stakeholders, i.e. terminal operators, RUs and IMs. Example of some of the measures are:

- Improving procedures in the BASF terminal: Adapted communication process for outgoing trains;
- Adaptation of locomotive planning by eliminating loco changes and adapting roster planning for loco drivers;
- Several measures at local level both at Busto/Fascio Hupac and Ludwigshafen KTL, which will be followed up in dedicated groups;
- Input to further development of integration of end-to-end information in TIS and train linking possibilities in TIS.

The reporting cannot be continued in 2021 due to changes in the TIS system.

EXECUTIVE BOARD PROPOSAL: PERFORMANCE QUALITY CHARTER

On the idea of a quality charter, an elaboration of an overall concept has been prepared and the presentation to stakeholders is ongoing. Further meetings will take place in the first quarter of 2021.

CHANGES TO THE OPERATIONAL FRAMEWORK

PILOTS ON REFLECTIVE PLATES

The harmonisation of tail signals in Europe is still an ongoing topic. In a number of countries, tail lights are requested for safety reasons, while in others, reflective plates are deemed to be sufficient. On RFC Rhine-Alpine, the RUs need to use tail lights in Belgium and Italy,

which leads to higher expenditures for the lights and for the process of changing from plates to lights at the borders.

In Italy, the Italian MoT, NSA and RFI are running pilots with reflective plates on different lines and are extending these pilots. In January 2020,



North Portal of Ceneri Base Tunnel in Switzerland.

the third phase of the RFI pilot on reflecting plates started. It involves a relevant number of lines on RFC Rhine-Alpine:

- Premosello-Arona-Sesto Calende-Gallarate;
- Pino Tronzano-Maccagno-Luino-Laveno-Sesto Calende-Oleggio-Novara/Novara Boschetto;
- Laveno-Ternate-Gallarate.

From March 2021, the pilot will be extended to most of the Italian network.

Based on the TSI OPE (Commission Implementing Regulation 2019/773/EU), implementation of reflective tail plates is provided for by 16 June 2021 if no different national requirements have been claimed by then. In Belgium, the situation is further being studied by the NSA, which makes the decision.

GERMAN RAILWAY NOISE MITIGATION

Effective from 13 December 2020, the German Railway Noise Mitigation Act (SchlärmschG) was implemented. Under this legislation, it will no longer be permitted to run or let other parties run noisy freight trains on the German rail network. However, the German Ministry of Transport announced not to impose the sanctions mentioned there until the 2021/2022 timetable change.

A freight train is considered 'noisy' if at least one wagon in the train is equipped with cast-iron brake blocks. Noisy trains may continue to operate in ad hoc services if the train's speed is reduced so that its noise emissions do not exceed that of a fictitious comparable train containing only low-noise wagons.

REJECTION OF TRAIN PATHS ON THE VENLO – KALDENKIRCHEN LINE

In mid-2020, the Ruling Chamber of the German Regulatory Body (Bundesnetzagentur – Federal Network Agency) rejected an intended refusal of a train path of LTE Netherlands B.V. over the Venlo – Kaldenkirchen line for the 2020 running timetable. In accordance with the German Railway Regulation Act, DB Netz had previously notified the German Regulatory Body of the intended refusal of a train path to an access beneficiary.

The procedure concerned derogations for freight train lengths of over 690m for the upcoming annual timetables in accordance with the border

operating agreements. Technical restrictions, available capacity and previously agreed formal criteria and regulations were considered.

The Ruling Chamber of the German Regulatory Body finally rejected the intended train path rejection in favour of the RU (LTE Netherlands B.V.) concerned as part of this examination.

The full decision of the Ruling Chamber can be found on the website of the [Federal Network Agency](#).

ERTMS DEVELOPMENTS

ERTMS EXPERT PLATFORM

In 2020, the cooperation at Corridor level continued and was successful despite the effects of the Corona pandemic. The following key developments and achievements should be mentioned:

- Regular reporting to the ERTMS task force on the status of ETCS deployment progress along the Corridor;
- Support in the preparation and contribution to the ERTMS task force agenda;
- Establishment of a common database for risk assessment (SharePoint app). Creation and communication of an ETCS risk report. Risk evaluation and reporting shall be continued;
- Analysis of the requirements (trackside and on-board) for the performance of the radio system, especially in connection with ETCS L2 and presentation of the results to the ERTMS task force. Subsequently participation in a dialogue on radio strategy with representatives of the European Commission, Ministries and IMs;
- Update of the RFC Rhine-Alpine ETCS deployment overview and publication after approval by the ExB and MB. The documents include a full review of the [main description](#) and attached maps as well as special over-

views of the cross-border sections ([Annex 1](#)). Also included without an update is a presentation about the System Version Management and the Backward Compatibility Analysis ([Annex 2](#));

- Extension of communication with RUs and vehicle owners to inform them about the expected schedule and type of ETCS installations;
- Further development of the Customer Information Platform (CIP) with regard to the presentation of ETCS;
- Investigation on the content of ETCS cross-border agreements and notification to EC;
- Investigation of the ETCS interfaces with infrastructure operated by third parties in regards of lines and stations equipped with interlockings.

ERTMS TASK FORCE

The ERTMS task force of the Executive Board had five online meetings with participation of DG MOVE, ERA, NSA and IM representatives. The main activities included the review of the state of play of ERTMS deployment and support of the publication of the updated ERTMS roll-out planning on the Corridor. The documents are published on the Corridor website and CIP and show planned timelines, baselines and ERTMS levels per line section. The publication is updated compared to the 2018 pub-

lished Corridor implementation plan. The ERTMS task force also decided to work on additional map layers for the Radio System and decommissioning of the class-B systems as they are relevant for the decision-making regarding the equipment of vehicles with the ERTMS On-Board Units (OBU).

Concerning the development of the OBU support programs, the ERTMS task force regularly discussed and reviewed the preparation of partial forms of ETCS OBU retrofit financial support programs.

The risk report of the ERTMS expert platform introduced in 2020 was well appreciated and led to a dedicated initiative regarding the radio strategy.

A freight train passes through the Netherlands on the Betuweroute.



On behalf of the ERTMS task force, the Executive Board wrote a letter to the European Commission on the Digital Radio Strategy with views of EU rules on the distribution of radio frequencies and technological innovation from GSM-R to 5G supported technologies. This is an important issue in the medium term (2025+). IMs contributed to the analysis of the state of play and are closely aligned on the dialogue with the European Commission (DG MOVE and DG CONNECT/ERA).

The European Commission coordinator Matthias Ruete published his **ERTMS work plan** in May 2020 laying down the fundamental conditions and challenges to implement ERTMS on the European TEN-T network.

INFRASTRUCTURE AND CAPACITY

CAPACITY CHALLENGE

As a response to the capacity challenge presented in the update of the Capacity Bottleneck Analysis for RFC Rhine-Alpine (see information below), the Executive Board decided to establish a task force on infrastructure bottlenecks. This task force, in line with the Locarno Declaration, aims at improving infrastructure bottleneck coordination.

In 2020, the Working Group Infrastructure & Terminals of RFC Rhine-Alpine delivered a new edition of the **Capacity Bottleneck Analysis**. Part A of the report gives an overview of capacity (infrastructural) bottlenecks until the year 2030 based on national investment plans.

The analysis clearly showed clearly that capacity bottlenecks will be a challenge as the existing bottlenecks will remain on the Corridor until at least 2030 and that further potential bottlenecks can emerge.

In a separate chapter, the views of the RUs are also taken into account, listing the problem spots they identified.

Additionally, in part B an overview of the operational bottlenecks is given, resulting from an analysis of the WG TPM. The idea of this additional information is to give a more comprehensive overview of the different bottlenecks which might be encountered by the customers of RFC Rhine-Alpine.

The full report will be officially published in the first half of 2021.

The Corridor also published a **report** on national differences influencing the determination of capacity bottlenecks and presented it to the ExB members and CNC coordinator and representatives. This report examines the different national approaches towards capacity calculation and traffic forecast which lead to the determination of capacity bottlenecks on the respective networks. The aim is to show the big differences in the national approaches.

740m TRAINS

In the beginning of 2020, RFC Rhine-Alpine prepared an update of the infrastructure plans to enable 740m trains on the Corridor. The report was discussed with ExB, RAG and TAG and can be found in **CIP**.

From the side of the Executive Board and as part of its action plan, concerning the topic of the 740m trains, a questionnaire was launched by the German MoT and as soon as all the data has been collected from the other countries, a collective overview will be presented.

COORDINATION WITH CUSTOMERS

RAILWAY UNDERTAKINGS ADVISORY GROUP

In 2020, the actions of the Railway Undertakings Advisory Group (RAG) and RFC Rhine-Alpine complemented each other very well. Several topics were discussed and followed up together. For the first time, also a joint meeting of RAG and Executive Board was organised.

Some highlights are described below: After the implementation of the ICM Handbook, the RAG and RFC Rhine-Alpine discussed its further improvement. Focus was on the usability of re-routing possibilities and the allocation principles. The latter point was taken up by the Ministries of Transport, who worked on this topic throughout 2020 and will continue

in 2021. The RUs completed the picture by developing their own ICM handbook, which was presented as a draft in the beginning of 2020.

Furthermore, a TCR Workshop was organised, with information on the main TCRs in 2021 and information on the TCR Tool which RFC Rhine-Alpine supports as a pilot. The RUs were invited to participate and some tested the tool and gave input for its further development.

RFC Rhine-Alpine also provided information on infrastructure development updates. An updated plan regarding infrastructure measures for 740m trains was presented in April. Information from the RFC/IMs was also given on the update of the Capacity Bottleneck Analysis until 2030 and additional information was requested from the RUs to reflect on further bottlenecks they perceive. Also, the feedback on capacity bottlenecks from the RUs, based on an initiative of the European Commission, was collected and discussed. Additionally, the RUs raised the topic of scarce capacity in service facilities, which will be followed up in 2021.

In 2020, the RUs presented the (intermediate) results of three sub-projects of the UIC xBorder project. These were the unified braking scheme, the concept for an ideal border section and the translate4rail approach. RAG and RFC Rhine-Alpine will follow up on these projects in 2021.

Throughout the year, the participants exchanged information on the COVID-19 situation and its effect on rail freight.

TERMINAL ADVISORY GROUP

Due to the Corona situation, the spring TAG meeting was cancelled. An online meeting was held with the TAG members on 18 November 2020, where the ongoing activities related to performance management and monitoring and the R-CDM feasibility study was presented. Information was exchanged on the traffic development during the Corona crisis. Moreover, RFC Rhine-Alpine gave information on the Capacity Bottleneck Analysis and the status of 740m trains on RFC Rhine-Alpine. UIRR and RNE pre-

sented the features of the Rail Facilities Portal, highlighting the importance of data provision by the service facilities operators.

USER SATISFACTION SURVEY

The User Satisfaction Survey 2020 was prepared and for the first time conducted jointly with all eleven Rail Freight Corridors. In 2020, a different approach was chosen by the RFC Network. An entirely new and much more targeted questionnaire was developed by the RFCs. The survey was conducted between September and October 2020 and the results were published in December 2020.

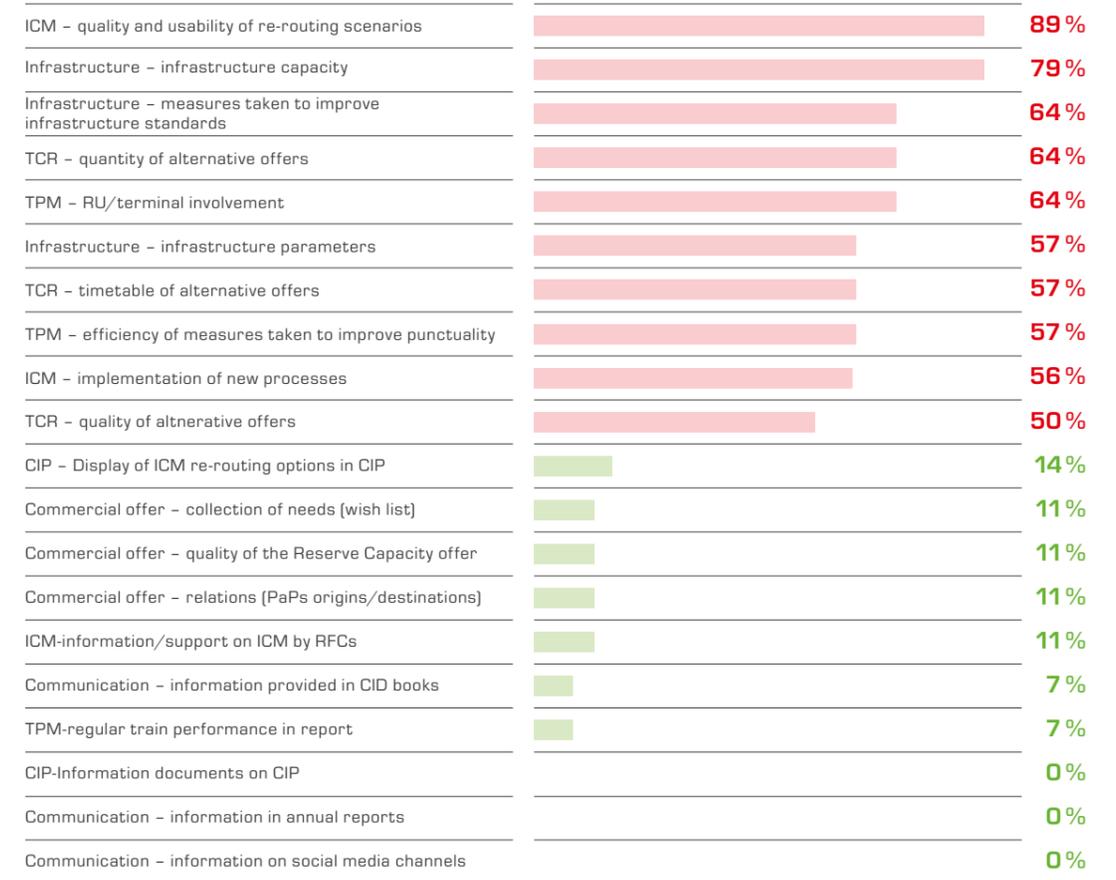
The overall satisfaction of users with RFC Rhine-Alpine increased significantly. RFC efforts were recognised, e.g. with respect to TCR Tool testing and the shift to online meetings to involve customers as much as possible. The good cooperation between IMs is highly valued. Points for improvement mostly refer to infrastructure-related capacity bottlenecks, TPM and TCRs. The results of the survey will be analysed in detail and discussed in the Management Board, Working Groups and with stakeholders like ExB, RAG and TAG at the beginning of 2021.

CUSTOMER INFORMATION PLATFORM

The Customer Information Platform (CIP) was further developed and improved in 2020. The main achievements were:

- Preparation of the roll-out to RFC Amber. As of January 2021, the stakeholders of ten RFCs benefit from the joint data platform;
- Several developments to improve user friendliness and an update of the graphical user interface;
- Alignment with RNE's big data environment;
- General improvement regarding completeness of information on line properties and projects;
- Improvement regarding display of coherent ETCS information and projects on ERTMS;
- Adaptions to the user handbook;
- Development of a joint marketing approach.

WHERE DO RFC RHINE-ALPINE CUSTOMERS SEE A NEED FOR IMPROVEMENT?



The figure above shows the wishes of respondents to initiate improvements regarding specific topics. The red bars show a high percentage and indicate that a high need for improvement is identified, whilst the green bars reflect a low need for improvement. A low need for improvement can either be explained as a high degree of customer satisfaction or as a low level of importance attributed to the topic.

ANNEX: LIST OF ABBREVIATIONS

AB	Allocation Body	R-CDM	Railway Collaborative Decision Making
ABS	Ausbaustrecke (upgraded line)	RAG	Railway Undertakings Advisory Group
APS	Authorisation for Placing in Service	RBC	Radio Block Centre
A-CDM	Airport Collaborative Decision Making	RC	Reserve Capacity
BID	Bauinformationsdialoge (construction works information dialogue)	RFC	Rail Freight Corridor
CID	Corridor Information Document	RINF	Register for Infrastructure
CIP	Customer Information Platform	RISC	Rail Interoperability and Safety Committee
C-OSS	Corridor One-Stop-Shop	RNE	RailNetEurope
COGIS	Cooperation Germany-Italy-Switzerland	RU	Railway Undertaking
DG CONNECT	EC's Directorate-General for Communication Networks, Content and Technology	SchlärmschG	Schienenlärmschutzgesetz (German Railway Noise Mitigation Act)
DG MOVE	EC's Directorate-General for Mobility and Transport	TAG	Terminal Advisory Group
EC	European Commission	TCR	Temporary Capacity Restriction
EEIG	European Economic Interest Grouping	TEN-T	Trans-European Network – Transport
ELETA	Electronic Exchange of ETA information	TES	Trasporto Eccedente Sagoma (authorisation for exceeded limit of loading gauge)
ERA	European Union Agency for Railways	TIS	Train Information System
ERTMS	European Rail Traffic Management System	TPM	Train Performance Management
ETA	Estimated Time of Arrival	TSI	Technical Specifications for Interoperability
ETCS	European Train Control System	TSI OPE	TSI Subsystem for Operation and Traffic Management
ExB	Executive Board	TT	Timetable
FOT	Swiss Federal Office of Transport	TVS	Schweizerische Trassenvergabestelle (Swiss Allocation Body)
GSM-R	Global System for Mobile Communication, subset Rail	UIC	International Union of Railways
ICM	International Contingency Management	UIRR	International Union for Road-Rail Combined Transport
IM	Infrastructure Manager	WG	Working Group
IRG-Rail	Independent Regulators' Group – Rail		
IWW	Inland Waterways		
IXL	System of Electronic Interlocking		
MB	Management Board		
MoT	Ministry of Transport		
NBS	Neubaustrecke (new line)		
NExBo	Network of Executive Boards		
NRLA	New Railway Link through the Alps		
NSA	National Safety Authority		
OBU	On-board Unit		
PaP	Pre-arranged Path		
PCS	Path Coordination System		
PfA	Planfeststellungsabschnitt (approval section)		
PIM	Program Implementation Manager		
PMO	Program Management Office		
PSA	Program Support Action (EU co-financing)		

IMPRINT

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Concept

CARRASCAL/DINDIN Communication Design

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