# PERFORMANCE REPORT

This chapter provides information about traffic developments at borders and the modal split in trans-Alpine traffic and 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.

With the update of the Implementation Plan in 2023, four new core objectives for the Corridor were defined with target values. The core objectives and their progress are monitored in the following performance report under the related KPI category.

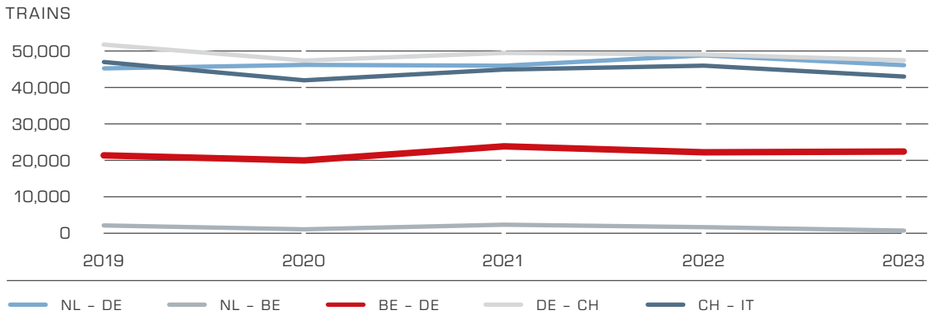




## MARKET DEVELOPMENT KPIs

This chapter gives information on the development of the KPI number of trains per border for RFC Rhine-Alpine and the modal split of rail in selected ports and in trans-Alpine freight traffic. The information on the number of trains is provided by the IMs 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 The KPI Numbers of trains per border is heavily influenced by the overall economic situation and the associated throughput in the ports, both of which show a negative trend for 2023. Consequently, together with an increase in construction activity on Corridor lines, a significant decline in the number of cross-border freight trains on all borders was registered, except on the border between Belgium and Germany. General evolution in 2023 for the entire Corridor, compared to 2023 was a decrease in traffic of –4.52%.

### KPI NUMBER OF TRAINS PER BORDER




### CORE OBJECTIVE 1: KPI NUMBER OF TRAINS PER BORDER

| BORDER CROSSING | NL – DE | NL – BE | BE – DE | DE – CH | CH – IT |
|---|---|---|---|---|---|
| AVERAGE 5 YEARS & GOAL FOR 2025 | 45,590 | 1,877 | 21,594 | 50,585 | 45,754 |
| **2023 FIGURES** | **46,187** | **1,510** | **22,232** | **47,450** | **43,644** |
| DEVIATION IN % | 1.3% | -19.6% | 2.95% | -6.2% | -4.6% |

For this existing KPI, RFC Rhine-Alpine defined as target to keep the number of trains per border on the Corridor (regrouped per country) stable until 2025. This core objective was set while keeping in mind the increase in TCRs on Corridor lines in the upcoming years and the economic growth of the Corridor regions. Hence, to measure the progress in this area, RFC Rhine-Alpine uses the average number of trains in the last five years (2018-2022) as the base value, which is indicated in the table above. In 2023, the borders between the Netherlands - Germany and Germany - Belgium already met the target set for TT2025.



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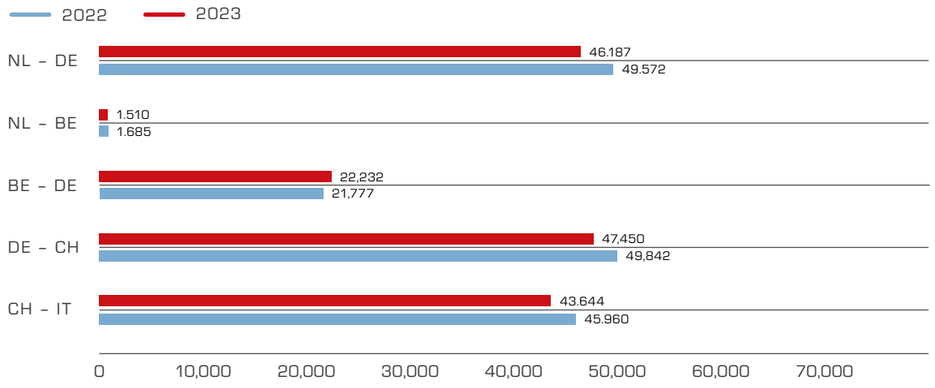
### BORDER CROSSING NL – DE

At the border points between the Netherlands and Germany, traffic volumes went down by -6.8% in 2023 compared to 2022. In the intermodal segment the decrease was less pronounced (-3%).

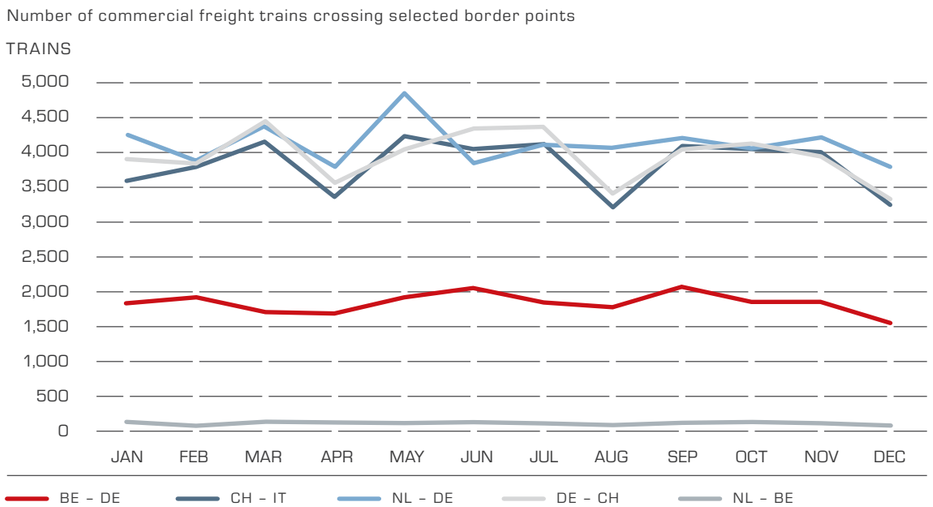
The downturn is due to several factors: less coal trains because of the war in Ukraine, less single wagon load trains, less trains deviated from Montzen and a lot of TCRs.

**KPI NUMBER OF TRAINS PER BORDER – COMPARISON 2023/2022**




*Disclaimer: The Bad Bentheim border point (NL - DE) is included to have a full picture of the traffic between the Netherlands and Germany to take into account re-routed trains due to works between Emmerich and Oberhausen, even though this border point is not part of the Corridor.*

**MONTHLY NUMBER OF TRAINS PER BORDER**








### BORDER CROSSING NL – BE

In this report, the volumes at the Sas van Gent/ Zelzate border point are published for the first time, as there are now enough historical figures to recognise a trend. This is the border point between the ports of Terneuzen (NL) and Gent (B), which are jointly known as North Sea Port.

In 2023 volumes went down by -10.4% in comparison to 2022. This is mostly due to a decrease of traffic from and to the North Sea ports in general.

### BORDER CROSSING BE – DE

In 2023, traffic at the Montzen border point increased by 2.1% compared to 2022. This increase can partly be explained by a two-week closure of the railway line linking Montzen to Germany during the second half of May 2022, which led to a drop of -7.1% in traffic in the previous year.

### BORDER CROSSING DE – CH

Compared to 2022, traffic at the Basel border decreased by -4.8% in 2023.

### BORDER CROSSINGS CH – IT

In 2023, the overall evolution at the border crossings between Switzerland and Italy, compared to 2022, was a decrease in traffic of -4.6%.

The incident in the Gotthard tunnel in August seriously impacted the volumes in that month. However, the impact on the remainder of 2023 was not significant.

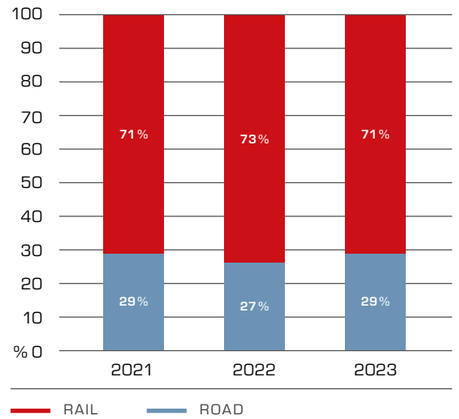
## MODAL SPLIT OF TRANS-ALPINE FREIGHT TRANSPORT AND IN SELECTED PORTS

### TRANS-ALPINE TRAFFIC

In 2023, the trans-Alpine freight transport decreased compared to the previous year. In total, 37 million tons were transported by road and rail in 2023. Compared to the previous year, this corresponds to a decrease of -4.7 %. Trans-Alpine road freight transport recorded a decline in volume of -1.4 %, whereas the volume transported via rail decreased by -5.9 %. The total of goods transported via rail amounted to 26.4 million tons, with changes due to the closure of the Gotthard tunnel as well as slow economic growth in 2023. Even though the rail share in modal split of trans-Alpine traffic remains high, the changes in volume of freight transport influenced the general modal split significantly. In 2023, the modal split of rail freight was 71%, which is 2 percent lower than in the previous year.

*As the information is usually not available for the previous year when the Annual Report is compiled, only the development for the ports up to 2022 is shown.*

**MODAL SPLIT OF TRANSALPINE FREIGHT TRANSPORT 2021-2023**




*Official numbers for 2021 and 2022 were corrected by the SWISS FOT after the publication in the Annual Report 2022 of RFC Rhine-Alpine.*

### PORT OF ROTTERDAM:

In 2022, the modal split of rail in transporting containers remained the same as in 2021. In absolute terms, a limited growth from 1.100.000 TEU in 2021 to 1.160.000 TEU in 2022 for rail was noticed.

### PORT OF ANTWERP

In 2022, the market share of rail in the transportation of maritime containers remained almost unchanged (7.6% versus 7.4%). Despite



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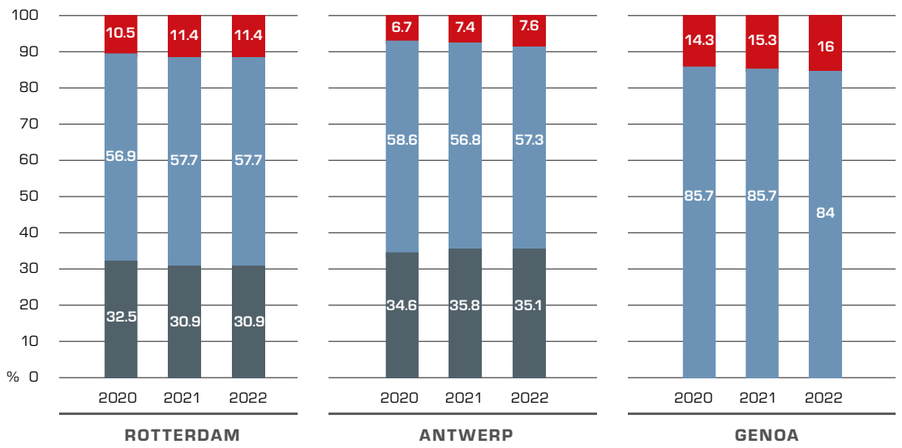
the merger of the ports of Antwerp and Zeebrugge into the unified port company, Port of Antwerp – Bruges in April 2022, the figures relate only to the Port of Antwerp.

### PORT OF GENOA

In 2022, traffic by rail to and from the port of Genoa registered the fourth consecutive annual increase, precisely by 6.7% compared to 2021, reaching more than 9,230 trains moved in a year, once again growing more than the gateway volumes which increased by 2.4%. In general, the port's overall throughput is still below the pre-pandemic level, but rail volumes (TEUs) continue to perform very well with an increase of 17.7% compared to 2019. In total, more than 362,000 TEUs were shipped by rail in Genoa during 2022, with the modal split reaching 16% representing an increase compared to previous years.

MODAL SPLIT IN PORTS 2020-2022




RAIL
Road
IWW

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





# OPERATIONS KPIs

This chapter gives information on the general development of punctuality of freight traffic on RFC Rhine-Alpine, the number of trains crossing a border along the RFC as well as the planned and actual dwell time in border sections.

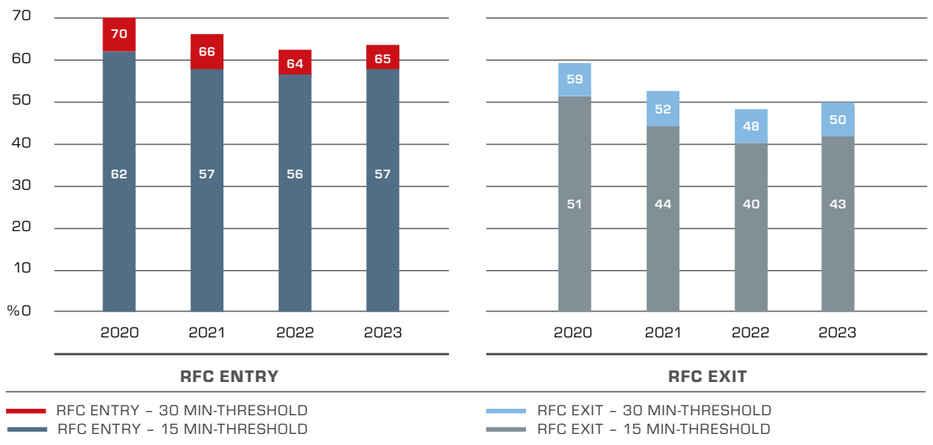
### PUNCTUALITY REPORT 2023

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.

The RFCs agreed on considering international 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 of the train run belonging to the RFC). RFC Exit indicates the location where the train exits the RFC line (last point of the train run belonging to the RFC).

PUNCTUALITY DEVELOPMENT




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

In 2023, the overall RFC punctuality slightly improved compared to 2022, but is still on a low level. The exit punctuality (30 min threshold) increased from 48 % to 50 % in 2023 , but a significant decline in the second half of the year was noticed. The slight decrease of freight traffic volumes and the increase of passengers in most parts of the Corridor led to almost similar operational challenges as the year before: scarce capacity, operational bottlenecks and a huge amount of temporary capacity restrictions due to high construction activities all along the Corridor. The need to catch up maintenance, especially in Germany and on the section Brig-Domodossola-Milan/Novara, caused several TCRs and long-lasting speed reductions. Delays, instable timetables and even train cancellations were the consequence.

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## CORE OBJECTIVE 2: DELTA RFC ENTRY AND EXIT PUNCTUALITY 2023

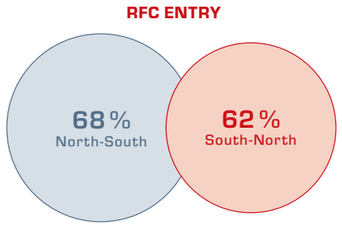
| | 2019 | 2020 | 2021 | 2022 | **2023** | 2025 |
|---|---|---|---|---|---|---|
| ENTRY PUNCTUALITY | 66 | 70 | 66 | 64 | **65** | |
| EXIT PUNCTUALITY | 55 | 59 | 52 | 48 | **50** | |
| DELTA ENTRY PUNCTUALITY VS EXIT PUNCTUALITY | -11 | -11 | -14 | -16 | **-15** | -16 |

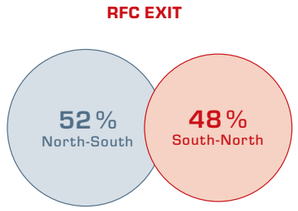
It is the goal of RFC Rhine-Alpine to improve performance, mainly punctuality and reliability on the Corridor. Thus, the delta between Entry and Exit Punctuality was chosen in the implementation plan 2023 to show the performance on the Corridor lines.

Taking the development from 2018 to 2022 into consideration, the target is to keep the delta of Entry and Exit Punctuality (30 min threshold) stable at 16% in 2025. This takes into account the current and expected capacity limits on the Corridor lines due to major construction works in the upcoming years.

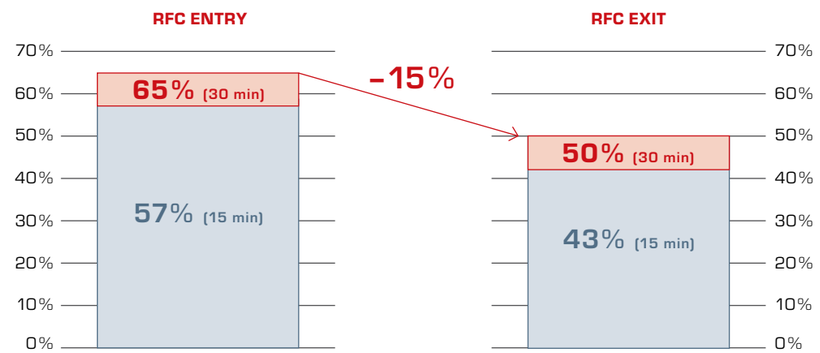
In 2023, the delta between Entry and Exit punctuality on Corridor lines was -15%, hence the target level defined for 2025 in the core objective was already met in 2023.

## RFC ENTRY AND EXIT PUNCTUALITY PER DIRECTION IN 2023 (30' THRESHOLD):




## KPI RFC ENTRY AND EXIT PUNCTUALITY IN 2023



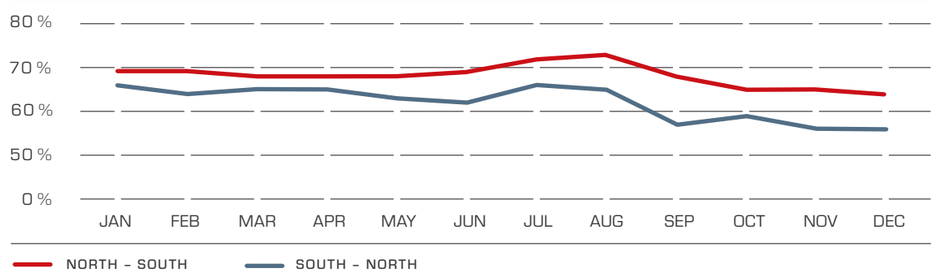




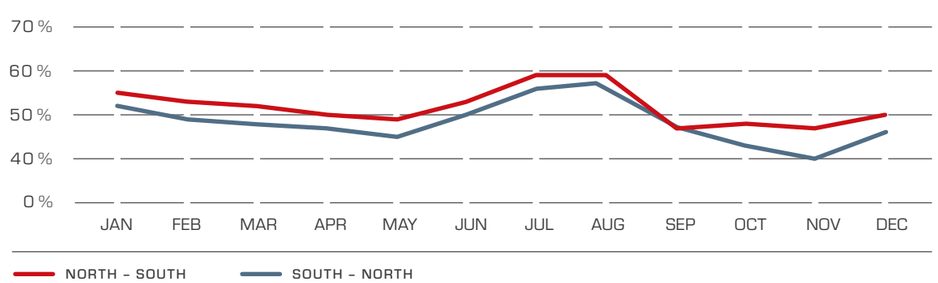

The impact of climate change is also affecting railway operations more and more. Strong rainfalls and storms caused caused complete closures of important lines or even whole parts of the railway network several times. Heavy snowfall became less common, but with staff shortage and withdrawal of operation from the regions, handling of such events is a real challenge nowadays – the heavy snowfall resulting in cancellations in the Munich region in December 2023 showed this drastically. Another topic impacting quality and reliability are strikes – on our Corridor at the moment mostly occurring in Germany.

The derailment of a freight train in the Gotthard Base Tunnel in August showed the importance to have good rerouting options in case of incidents. For two weeks, both tubes were completely blocked and all the traffic had to be rerouted. As the old mountain line is no longer usable for most freight trains, due to gauge limitations and infrastructure simplifications after the completion of the new line, freight trains had to take detours - mainly via the Lötschberg line. As the incident happened during "Ferragosto" and the planned volumes were reduced, a considerable part of the trains could run on alternative routes. End of August single track operation with priority for freight traffic has been resumed. The challenge to run the whole traffic volumes on this highly important transit axis persisted, leading to a significant drop in punctuality in Switzerland and at the borders in the second half of the year. The punctuality on the Corridor through Switzerland decreased by around 10 % during this period. For 2024, timetables have been adjusted as the restrictions are expected to remain until autumn due to comprehensive restoration works.

## MONTHLY RFC ENTRY PUNCUTALITY PER DIRECTION




## MONTHLY RFC EXIT PUNCTUALITY PER DIRECTION

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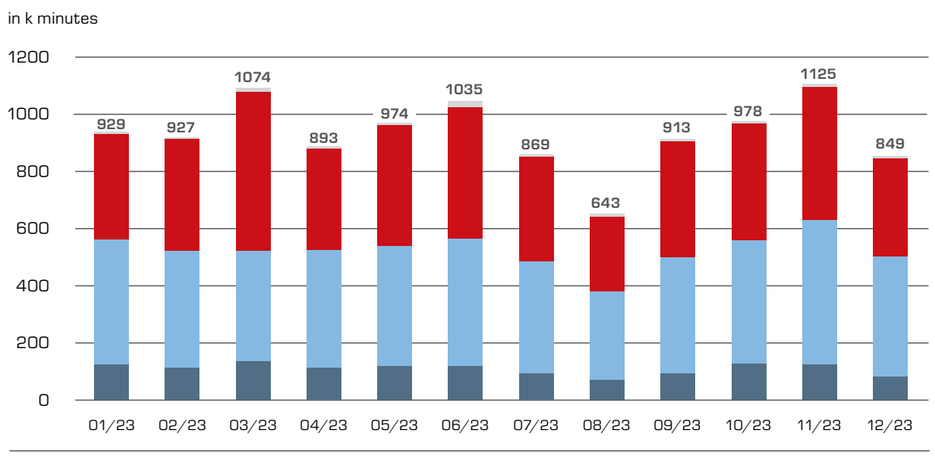
## TOTAL NUMBER OF DELAY MINUTES REPORTED TO TIS FOR BOTH DIRECTIONS




The graph above shows the total number of delay minutes reported by the IMs 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.





For 2023, also the dwell time at borders is published for the first time on RFC Rhine-Alpine. Planned dwell is calculated for each border on a predefined section of about 20 km in which the border procedures take place. If a train is not stopping, the dwell time consists only of the runtime for these 20km. In this way measurements are also comparable if procedures don't take place always in the same points or are executed in more than one location. The real dwell is calculated on real runtimes between starting and ending point of the section. The average KPI values are calculated based on all international freight trains passing the whole section.

Generally, the figures substantiate the known bottlenecks within the Corridor, where planned dwell times are not sufficient to buffer operational restrictions and missing capacity in neighbouring networks and nodes.

## KPI DWELL TIME AT BORDERS PER DIRECTION (PLANNED AND ACTUAL)

The calculation of this KPI is based on the data in RNE's TIS. International freight trains crossing a border of an RFC are considered in the calculation. The presented data might differ from the data gathered in the national systems due to data quality differences between individual IMs.

| BORDER | BORDER DIRECTION | AVG. PLANNED DWELL (MIN.) | AVG. REAL DWELL (MIN.) |
|---|---|---|---|
| AACHEN-WEST — MONTZEN | DE — BE | 71 | 95 |
| AACHEN-WEST — MONTZEN | BE — DE | 68 | 85 |
| BASEL BADISCHER BF. — BASEL SBB PB/RB | DB — CH | 54 | 52 |
| BASEL BADISCHER BF. — BASEL SBB PB/RB | CH — DB | 56 | 69 |
| BRIG — DOMO II | CH — IT | 146 | 133 |
| BRIG — DOMO II | IT — CH | 223 | 238 |
| BRIG — DOMODOSSOLA | CH — IT | 36 | 36 |
| BRIG — DOMODOSSOLA | IT — CH | 170 | 191 |
| CHIASSO SM — BIVIO PC ROSALES | CH — IT | 54 | 51 |
| CHIASSO SM — BIVIO PC ROSALES | IT — CH | 48 | 43 |
| EMMERICH — ZEVENAAR OOST | DE — NL | 11 | 16 |
| EMMERICH — ZEVENAAR OOST | NL-DE | 7 | 5 |
| KALDENKIRCHEN — VENLO | DE — NL | 40 | 42 |
| KALDENKIRCHEN — VENLO | NL — DE | 32 | 47 |
| RANZO — S. ABBONDIO — LUINO | CH — IT | 1 | 16 |
| RANZO — S. ABBONDI — LUINO | IT — CH | 2 | 24 |

Remark: Planned dwell figures for Luino border are displayed too low due to inconsistencies between national systems and TIS concerning Timetable delivery.
Disclaimer: The border Sas van Gent - Zelzate is currently not measured.

# FACTORS AFFECTING OVERALL CORRIDOR PUNCTUALITY IN 2023

## THE NETHERLANDS

Also during 2023, there were some longer periods of total closure of the German railway line between Emmerich and Oberhausen. During these periods, freight trains from and to Germany had to run via the border stations Oldenzaal (Bentheimroute) and Venlo (Brabantroute). These are both routes with not only freight but also with heavy passenger traffic. Punctuality of the freight trains running via these routes is always lower as on the dedicated freight line "Betuweroute". During these rerouting periods there were regular problems with the capacity of the yard Venlo and the German yard Viersen where trains in the direction Ruhr area have to turn direction.

Besides that, some infrastructural problems occurred during the year. The main issues were track instability problems. Some were caused by badgers building their settlements in the railway track, others were caused by heavy rainfall and saturation of the embankments. Both situations caused temporary speed restrictions for all trains and delays. Then the tracks needed to be rebuilt during a total closure of the lines for some weeks resulting in re-routings and cancellations.

## BELGIUM

Most delays on the Infrabel network were caused by single incidents: delays from the neighbouring IMs, exceptional weather (storm Ciarán) and incidents involving persons. Despite multiple measures being implemented to prevent the last one, these incidents still cause a lot of delays.

Other causes with a big impact on the punctuality figures were breakdown of rolling stock and mistakes by staff.

On 13th of October, the discovery of two suspicious packages led to the, to the closure of Antwerp Central station and partial closure of lines surrounding Antwerp, causing delays for freight traffic.

Miscommunication regarding the rules of exceptional transport in combination with the breakdown of a train on the other track resulted in the closure of the Aachen / Montzen border point for several hours. Measures were taken to avoid this in the future.

## GERMANY

The following occurrences were were impacting the traffic on RFC Rhine-Alpine during 2023 the most:

**Collective bargaining / EVG strike (March – June)**
The Railway and Transport Union (EVG) called four strikes between March and June. Two strikes took place, bringing rail traffic in Germany to a virtual standstill. The signal boxes and control centres of DB Netz AG were affected by the strike. The strike days were 27 March 2023 and 21 April 2023.

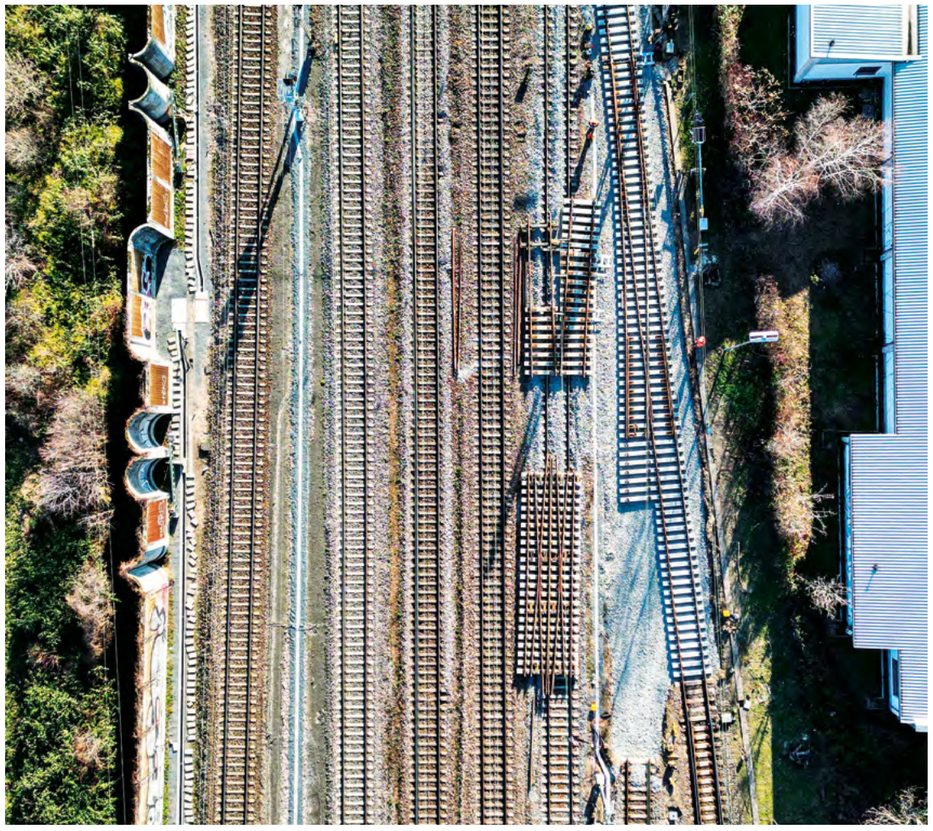
**Several storms throughout Germany (July)**
In July, there were extreme weather conditions due to heat and thunderstorms with gales. At the beginning of July, western Germany around Cologne was particularly affected. In mid-July, storm Ronson hit the South of Germany. There were closures in the Rhine Valley due to trees on the tracks and damage to the overhead line equipment.

**Collective bargaining / GDL strike (November – December)**
The German train drivers' trade union GDL called two strikes in November and December. Most of the train drivers in Germany participated in  in the strike, as did individual DB Netz AG signal staff. Traffic largely came to a standstill. The strike days were 16 November 2023 and 8 December 2023.

**Snow / storm (December)**
On 1 December 2023, there was heavy snowfall, mainly in the south and west of Germany. This







Track works on the Riedbahn line between Frankfurt and Mannheim.

caused delays or closures in some large yards (e.g., Neuss and Aachen West). The clean-up work proved to be difficult and protracted. In addition, there was a storm on 23 December 2023 which led to trees on overhead lines and other restrictions, mainly in the south/southwest of Germany.

Furthermore, major construction works have reduced the quality of transport in Germany, a few of which are listed below:

- Several total closures as well as single-track closures for the three-track extension of the Emmerich – Oberhausen line throughout the year.
- Several closures and single-track closures on the right side of the Rhine between Wiesbaden Ost and Rüdesheim due to track works between 06/01/2023 and 04/06/2023. In connection with works on the left side of the Rhine, there were occasionally over-regional backlogs of freight traffic.
- Overhead line works with total closures between Rastatt Süd and Baden-Baden from 01/04/2023 to 10/06/2023.
- Track renewal with total closures between Brunnenstück and Karlsruhe Gbf from 14/03/2023 to 04/05/2023.



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## SWITZERLAND

The most drastic disturbance, not only in Switzerland but for the whole Corridor, was, as already mentioned, the derailment of a freight train on the 10th of August in the Gotthard Base Tunnel (GBT). More information is provided under the chapter International Contingency Management.

On the 14th of December, also the Lötschberg axis was affected by a major event. After persistent rain and snowfall, the Karst spring located above the Lötschberg tunnel began to grow significantly. As a result, an immense amount of water and sand penetrated the tunnel tubes at the same location as in February and March 2020 within a short timeframe. Alerted by the installed warning systems the tunnel was closed immediately, and bigger damage could be avoided. The cavern with the sediment setting basin, which was created to be prepared for such events, worked as foreseen. But the amount of water and sand reached within three days its capacity of 2500m$^3$ (calculated for the maximum quantity within half a year) – luckily the basins had been emptied just the week before. As a consequence, part of the material remained on the tracks and the tunnel had to be closed completely for two days and the east tube another week to empty the basins and restore the installations. Trains were rerouted as far as needed via the fully operative mountain line.


Cavern with sediment basins to collect and filter sand out of the karst-breakthrough in the Lötschberg Base Tunnel.

## ITALY

Additionally, the southern part of RFC Rhine-Alpine was also affected by weather-related incidents during 2023.

**Heavy rain and landslide on 6th June**
Following heavy rains which affected the area during the night between the 6th and 7th of June, landslide material reached the railway site at the entrance to the Laveno tunnel situated close to the locality of Porto Valtravaglia. Entering through some side windows of the tunnel, debris covered the railway track and caused the derailment of a freight train on its way between Luino and Sesto Calende. The train deviated and continued its journey inside the tunnel for approximately 470m before stopping. The 19th waggon of the train came to a stop at one of the windows and was partially covered by debris that continued to fill up the tunnel. The important line along the east shore of the Lago Maggiore remained therefore closed for a day and half.

Freight train derailed inside the Laveno tunnel

Top view of the landslide

**Cloudburst on 31st of October in Milan province**
On the 31st of October, a heavy cloudburst hit the entire province of Milan, causing severe disruptions to rail traffic. Many passenger trains were cancelled due to the impracticability of some railway lines and stations. Freight traffic was also affected for the departure/arrival of trains, especially in the Milano Smistamento freight yard and for all routes to Milan.

**Storm in Lombardy on the 24th of July**
The heavy storm on Monday, the 24th of July, caused serious damage to the entire Milan - Chiasso line, as well as at the station of Monza, where the gusts of wind caused some roofing and materials to come off and end up between the tracks.

Broken canopies in Monza station





# 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.

**CORE OBJECTIVE 3: RATIO OF PAP CAPACITY OFFERED AND FINAL TIMETABLE OFFER**

| | TT 2019 | TT 2020 | TT 2021 | TT 2022 | TT 2023 | **TT 2024** | TT 2026 |
|---|---|---|---|---|---|---|---|
| VOLUME OF OFFERED PRE-ARRANGED PATHS (X-11) IN MILLION PATH-KM | 17.6 | 17.2 | 17.6 | 18.2 | 18.1 | **16.7** | |
| FINAL TIMETABLE OFFER (X-3) IN MILLION PATH-KM | 6.4 | 5.6 | 4.1 | 5.0 | 6.9 | **8.3** | |
| RATIO | 36.36% | 32.56% | 23.30% | 27.47% | 38.12% | **49.70%** | 35% |

It is the objective of RFC Rhine-Alpine to publish a PaP offer (at X-11) on all principal Corridor lines crossing a border that fits the needs of the customers in the best possible way. The quality of the initial PaP offer (at X-11) can best be derived through comparison to the Final timetable offer (at X-3), which is closest to the actual train run. The aim is to stabilize the ratio at 35% until TT2026.

For TT2024, the volume of offered PaPs (X-11) was 16.7 million path-km and the final timetable offer (at X-3) was 8.3 in million path-km, resulting in a ratio of 49.7%. Compared to the previous timetable year, this is an increase of 11.6% and already above the target of 35% for TT2026.

**KPI Volume of offered, requested and pre-booked capacity**
This KPI shows the development of offered, requested and pre-booked PaPs for the 2019 – 2024 (TT) (see page 30). 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 TCRs.

These cut out days led to a decrease in the volume of offered PaP-km. For TT2024, 16.7million PaP km were offered. The volume of requested capacity (PaPs) was 9.6million PaP km and, despite a lower offer, increased by 23% compared to the previous year. 58% of the offered capacity was requested for TT2024. Due to conflicts between some requests, it was only possible to allocate 87% of the requested capacity as PaPs. This led to a volume of pre-booked capacity of 8.3million PaP-km. The remaining 13% 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 (see graph on page 31).

A reserve capacity of 1.8million path-km was offered for TT2023. As in previous years, no requests were received. For TT2024, the offer remains on the same level at 1.8 million path-km.

**KPI Ratio of pre-booked capacity**
This KPI shows the ratio of the volume of pre-booked capacity (at X-7.5) to the volume of offered capacity (PaPs). For TT2024 the ratio is 50% compared to 38.1% for TT2023.

**KPI Number 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 number of requested dossiers for TT2024 increased by 45% compared to the previous year. The amount of conflicting PaP requests increased by 19. All applicants that couldn't receive a PaP after the conflict solving process were answered with an path offer (see graph page 31).

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## KPI VOLUME OF OFFERED, REQUESTED AND PRE-BOOKED 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.

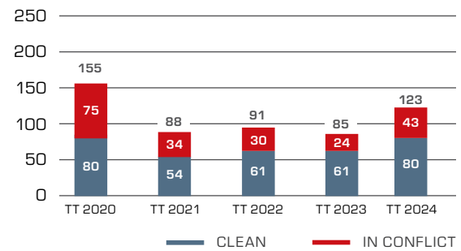





### KPI Ratio of the Capacity Allocated by the C-OSS and the Total Allocated Capacity

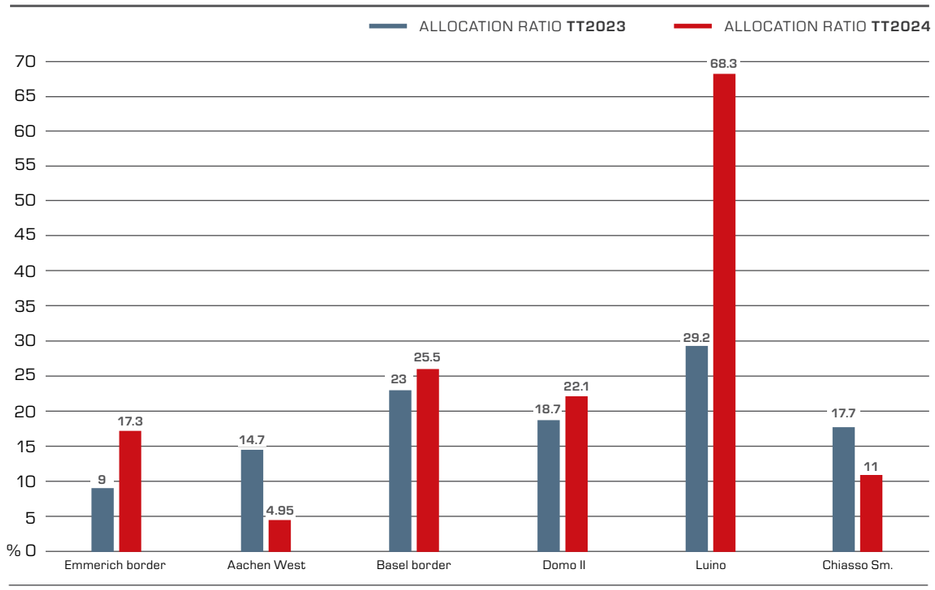
The KPI Ratio of the capacity allocated by the C-OSS and the total allocated capacity is calculated with data provided by the IMs and the C-OSS of RFC Rhine-Alpine, both after the finalisation of the allocation process. At every border where PaP capacity is offered by the C-OSS, the number of crossing 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. For TT2024 the allocation process for the second half of the TT-year was not finished yet at the editorial deadline of this Annual Report for the border Luino and Chiasso Sm. We have extrapolated the numbers from Dec 10th 2023 – June 8th 2024. For the Luino border the request increased compared to the previous year, combined which the later reduced amount of running trains through the Gotthard Base Tunnel, the high ratio will not be representative for the coming years.

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




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

## KPI RATIO OF CAPACITY ALLOCATED BY C-OSS AND THE TOTAL CAPACITY




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.



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**KPI Average Planned Speed of PaPs**
The KPI Average Planned Speed of PaPs shows the average of the planned commercial speed of the PaPs in km/h for selected connections. The KPI is calculated by dividing the length of the PaP by the planned travel time. Thus, the average planned speed of PaPs also includes necessary stops on the route, as well as parts with restricted speed (e.g., cities). On RFC Rhine-Alpine, it is constantly adjusted from year-to-year to better fit the needs of IMs and applicants respectively, for instance taking into account necessary stops for train drivers or necessary waiting times at borders on that O/D relation. Thus, increasing the speed of a PaP does not directly lead to better quality. 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).

**CORE OBJECTIVE 4: KPI AVERAGE PLANNED SPEED OF PAPS FOR TT2025**

| AVERAGE PLANNED SPEED OF PAPS ON RFC RHINE-ALPINE IN KM/H | LENGTH OF THE STRETCH IN KM | TT 2022 | TT 2023 | TT 2024 | TT 2025 | GOAL TT 2026 |
|---|---|---|---|---|---|---|
| MAASVLAKTE — OBERHAUSEN STERKRADE | 228.1 KM | 70.8 | 70.8 | 71.5 | **71.3** | 71.5 |
| Y. SCHIJN — DORSFELD | 211.3 KM | 44.7 | 46.1 | 45.7 | **46.6** | 45.7 |
| BASEL SBB RB — NOVARA B. TO | 339.5 KM | 40.4 | 39.6 | 42.1 | **37.3** | 42.1 |
| TROISDORF — BASEL SBB RB | 509.0 KM | 61.5 | 61.3 | 62.7 | **62.3** | 62.7 |
| KARLSRUHE GBF — GALLARATE | 519.4 KM | 52.2 | 51 | 50.8 | **50.7** | 50.8 |
| MAASVLAKTE — MILANO SM | 1,148.3 KM | 55.2 | 53.9 | 56.2 | **56.2** | 56.2 |
| Y. SCHIJN — MILANO SM | 1,092.9 KM | 50.1 | 50.5 | 52.5 | **51.0** | 52.5 |
| BASEL SBB RB — MILANO SM | 330.3 KM | 49.2 | 47.8 | 49.0 | **47.1** | 49 |
| BASEL SBB RB — CHIASSO SM | 274.0 KM | 58.5 | 58.6 | 57.9 | **58.1** | 57.9 |

The goal is to keep the average planned speed of PaPs per selected O/D on the level of TT2024 until TT2026, as the current values reflect years of adapting to enable smooth running of trains on the Corridor lines. Overall, the average planned speed of PaPs was stable for TT2025. The biggest deviation from the previous timetable year was the speed between Basel-SBB-RB and Novara B.TO, which is mainly due to TCRs planned in 2025.





Freight train in the port of Gent (North Sea Port).



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