





# **Table of contents**

1.	Management Summary	5
2.	ScanMed-RFC performances	16
2.1	The results for ScanMed capacity	16
2.2	Phases for capacity: offer, interest, pre-allocation	17
2.3	The trend of punctuality for the year 2021	21
2.4	ScanMed User Satisfaction Survey: customers response in 2021	22
3.	Implementing ScanMed RFC Strategy	29
3.1	Product portfolio developments	29
3.2	Specific interoperability issues	30
3.3	Planned Temporary Capacity Restrictions management	30
3.4	Work on Train Performance Management	32
3.5	International Contingency Management ICM	33
3.6	Speed restrictions in Italy for trains with silent brakes	34
3.7	Pocket wagon restriction in Denmark	35
3.8	Handover between the ACOs	35
3.9	Handover between the AMs	35
4.	RAG-TAG and cooperation with users and stakeholders	36
4.1	Corridor cooperation: users, partners, RAG-TAG	38
4.2	Climate Friendly Transport Declaration	39
4.3	Communication & Events	39
5.	Policy framework and ScanMed-RFC challenges	41
Key	Performance Indicators	45
Сар	acity KPIs	45
Operations KPIs4		46
Market KPIs		47
Punctuality measures.		48



#### Growing freight volumes on the ScanMed Corridor!

Increased market share on rail is a prerequisite for the success of the green climate shift. Therefore, we work closely with our customers and stakeholders to ensure that Railway is the obvious choice transporting goods as part of a complete logistic flow. Rail transport has a low overall emission, and it represents a low energy consuming way of transporting goods. ScanMed-RFC continued developing the dialogue, gathering all stakeholders sitting at the same "table" with an End User perspective, discussing new logistic flows and volumes of goods on Rail and in combination with other transport modes. The Intermodal cost study is useful identifying and visualize options for more freight on Rail. In order to further influence and motivate our customers, stakeholders and the ScanMed-RFC," the Climate Friendly Transport Declaration" was developed and it has the main objective of using and transforming the focus on the possibilities of rail transports in order to jointly reach the climate goals. Major companies signed it to support the efforts to build a greener future for our continent. ScanMed-RFC, with its international perspective adds value, ensuring that international freight transports are attractive and running smoothly cross-border, with the overall customer satisfaction of 85%.

In 2021 and forward, there are intensive construction works to maintain and improve the infrastructure. The



Figure 1 - L.Thulin, O.Sellnick, E.Mastrodonato

capacity restrictions have an impact on the offered capacity and quality, but the joint coordination with the stakeholders mitigates the consequences to provide reliable and high-quality transports today and to meet the future transport demands. The reason for the success of ScanMed-RFC capacity products is having attractive well-coordinated paths with competitive running times which meet the needs of most of the freight operators. The sales rate of corridor capacity products decreased by 27%, but the overall requested capacity increased. This is due to changes in the customers planning of transports. RFC ScanMed punctuality decreased from 64 % to 55 %.

The most important aspect for improving quality is in collaboration with the stakeholders. The Brenner Axis Task Force is a good example of such a cooperation. The Task Force was successfully completed establishing the new "Brenner Coordination Group" that continues the good work to increase the quality and capacity in the dense Brenner Area. To revitalise rail and to meet the transport needs of tomorrow ScanMed-RFC strengthened the cooperation with Shift2Rail/EU-Rail and its partners to implement innovations, an example is the successful test of running a 1.050 mt long train between Malmö and Machen.

It is ultimately the transport buyer who chooses the transport options and modes. To makes rail work better, the sector need a closer cooperation to improve accessibility. The entire chain of stakeholders needs to create new opportunities based on the market needs. Each country has developed solutions that work nationally. However, increasing the share of rail transport and thereby supporting the achievement of climate goals, calls for greater willingness to compromise and identify viable international transport solutions.

Linda Thulin - Chair of the Management Board



# 1. Management Summary

The 2021 for the railways, was a year in which we stopped to reflect on some important issues. Due to the continuation of the covid emergency, we had to rethink some processes at all levels of the organization of companies in the sector and the European corridors were not an exception.

Our way of working, after two years of covid emergency, has radically changed, we have learned to work remotely in a different way, where the only opportunities for meeting were possible exclusively in case of necessity.

Due to a native approach of working in a virtual office, the ScanMed-RFC Team lived this situation as an opportunity and not as a problem only. We've improved our processes in terms of cooperate together and taking decisions at a distance, and we succeeded in continuing staying in close contact with our customers and users to meet their needs and market demand.

Coming to our concrete actions, we've started 2021, the European Year of Railway, publishing the ScanMed RFC User Satisfaction Survey USS. The USS was coordinated together with RailNetEurope and made available for download from the Customer Information Platform, CIP.

In January-2021 we've also published the PaPs Offer TT2022 document, which was made accessible in PCS Path Coordination System – RNE and ready for any order, by our C-OSS & Capacity Manager. In the annual catalogue, all internationally coordinated, harmonised and pre-constructed paths of ScanMed RFC were presented, to be requested via the C-OSS and PCS.



Figure 2 - Eva Raymond | Administration Communication Officer

After that the Rail Freight Corridors, in close cooperation with RNE (Rail Net Europe), offered a number of PCS trainings scheduled in early 2021. Thanks to the flexibility of the increased options of online meetings, several trainings were offered with same content available in multiple sections.

January-2021 was also the month when we started the process to hire a new Administration Communication Officer. In 2019 we've started with a four persons brand new team and a new Managing Director. In 2020 two Managers were replaced, due to them leaving the RFC to face new professional challenges (C-OSS Manager and



Customer and Market Manager); in 2021, for the same reason, we've replaced the other two persons in the Team: Accessibility Manager and Administration Communication Officer. As a result, we jumped into the second part of 2021 with a completely new team of four persons compared to beginning of 2019. Thanks to a very efficient process, in February-2021 ScanMed-RFC Team welcomed Eva Raymond, the new Administration Communication Officer. Born in Slovakia, she moved to Paris to study and work there for fifteen years, then in 2020 she moved to Vienna.

In February-2021 the corridors RFC RALP, RFC NS-M, ScanMed-RFC, RFC NS-B offered dedicated Q&A PCS session. This was also possible thanks to the cooperation among the C-OSS Managers of different Corridors.

The 20th Florence Rail Forum of the Florence School of Regulation of the European University Institute was the occasion for ScanMed-RFC, in February, to investigate on future governance options to improve the performance of RFCs. ScanMed-RFC Managing Director, also published a concerned article on the EUROPEAN TRANSPORT REGULATION OBSERVER – The Governance of Rail Freight Corridors.



Figure 3 - EUI - Governance of RFCs

According to the Pilot Project work of the Brenner Axis Task Force (an initiative by DB Netz, OeBB Infra, RFI and ScanMed-RFC) in March-2021 the Task Force held a workshop with Railway Undertakings. The overall goal was to help reaching market goals as well as climate goals, and a fully developed Task Force, represent a good example of joint coordination of traffic for a European macro-area across different countries.



Figure 4 - Brenner axis Task Force

Technical flyers were distributed to show the first achieved results, ready to use on the field by the RUs. Railway Undertakings were suggested to present issues where they see the need of establishing / optimising processes



and procedures between Railway Undertakings and Infrastructure Managers across the three countries and beyond the existing bilateral, trilateral procedures.

To keep our customers and users informed, in April we shared an updated 21st of April 2021, from the Danish Transport, Building and Housing Agency, who issued revised measures on transport with semi-trailers on pocket wagons in Denmark.

April was also the month of an unfortunate event, with a damaged switch caused by a derailed freight train, that caused a disruption. Trains no longer entered Munich East station (marshalling yard) from the direction of Munich South. ScanMed-RFC, called by DB Netz, organised the ICM procedure and arranged the mitigation measures and information for users.

ScanMed-RFC, in April, also participated at the BSR Access Multimodality AGORA. Hans Wolf, ScanMed-RFC - Program Implementation Manager Sweden, was hosted by Kvarken Council EGTC as one of the speakers and participants at the BSR Access Multimodality AGORA next to Jan Bergstrand (Shift2Rail – ScanMed-RFC Referent for Innovation Deployment).

ScanMed was invited to speak at the Forum for Nordic Railway Association on the 19th of May (topic: Railway freight through the Øresund towards Fehmarn Belt opening). Linda Thulin – ScanMed-RFC president, had the chance to highlight that the opening of the Belt connection in 2029, for international rail freight traffic could even be problematic, as it is dependent on additional capacity all the way between Norway, Sweden, and the Continent.



Figure 5 - IT service procured

In May 2021 we published the 2020 edition of the ScanMed RFC's Annual Report, with all the information about our activities over the previous year. During COVID-19, we strengthened and simplified the communication and information provided for our customers and stakeholders, helping make the transition to the railway easy.

May was a full month for us, and as every year since 2014, we launch a satisfaction survey that has given the Corridor Users the opportunity to tell us more about the strengths and weaknesses of our performance.

In May we also procured a service of web designing and IT management for the Association. ScanMed RFC looked for a provider of on-call / part-time service of Website and Microsoft 365 Administration.

With the occasion of the 1st RFC Network – RNE session 2021 on cross-border issues, the Rail Freight Corridor Network together with RailNetEurope (RNE) hosted three exclusive online sessions to celebrate the European #yearofrail 2021. ScanMed-RFC took an active part in it, with a presentation and a speech in one of the sessions.

Global Railway Review, in June, published the digital version of the "Achieving Intelligent Rail Freight focus" where ScanMed-RFC had the opportunity, in the first and most important article of the review, to inform on



initiatives on ACHIEVING INTELLIGENT RAIL FREIGHT. The article was realised thanks together with our Chair, Linda Thulin; our Managing Director, Emanuele Mastrodonato; Jan Bergstrand (Senior Strategic Analyst & Programme Manager at Trafikverket); and with Trafikverket key contribution.



Figure 6 - Global Railway Review article

Disruptions in 2021 were not too few. A new ICM case for an International Disruption (Munich North) was opened at RFC ScanMed. After the heavy rain on Wednesday night (June 23rd), the technical systems at the Munich North marshalling yard failed after a water ingress.

In June we informed applicants about the delivery of the draft timetable offer for requests on ScanMed RFC TT2022. Result(s) were made available in each dossier in PCS.

A new International Disruption (Verona-Bolzano Line) and an ICM case occurred at RFC ScanMed, in July-2021. Railway traffic was slowed down and will undergo changes due to a technical issue in Verona Parona.

In August 2021 we informed our stakeholders that Customer Information Platform (CIP) was rolled out to the entire RFC Network. With this, the CIP provides customer-relevant information on railway infrastructure in 26 European countries covering the entire RFC Network.

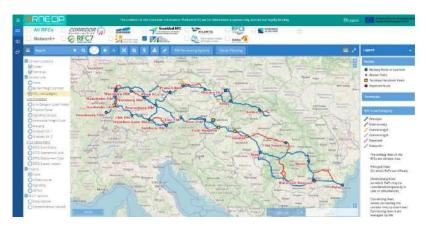


Figure 7 - CIP map - RNE



We reached out to customers in August 2021 to announce, that the Final Offer PaPs for the Timetable 2022 was available in PCS. Our C-OSS Manager | Paul Dippmann, coordinated the exchange with our users on this respect.

ScanMed-RFC Managing Director, Emanuele Mastrodonato, has taken part in Digital Rail Revolution conference presented by Global Railway Review (in September), and informed on how ScanMed RFC boost the implementation of innovative smart projects for a competitive railway while contributing to climate goals.



Figure 8 - Emanuele Mastrodonato Speaker at Digital Rail Revolution by Global Railway Review

ScanMed RFC in September also participated in the Connecting Europe Express (CEE) which was running through Europe in celebration of the Year of rail 2021, and we prepared a video for this specific event https://usercontent.one/wp/www.scanmedfreight.eu/wp-content/uploads/2021/09/RFC\_06\_2.mp4 in cooperation with RFC-network.

On the September the 8th, 2021, Emanuele Mastrodonato, the Managing Director of ScanMed RFC, had a chance to meet Mr. Pat Cox, Coordinator of the ScanMed multimodal Corridor, and the European Commission representatives. The CEE event was organised by the Bozen / Bolzano chamber of commerce. The focus was put on the local issues integration in a European vision, and it was the occasion to discuss how the Brenner axis can be a European testbed for cross-border solutions.



Figure 9 - Hanne B. Nielsen

In September, we also invited our stakeholders to the 2nd RFC Network – RNE session 2021 on International Contingency Management.

The Intermodal Cost Study was the focus of the news to highlight use cases along the Corridor. In the September use case we looked into the transport of steel between Germany and Sweden.

ScanMed RFC, in September went through several changes within the association. Our Vice-President Hanne Bjørn Nielsen left the association. ScanMed-RFC was delighted to have her onboard and we wished Hanne all the best for the future. As new Member of the Administrative Steering Board of the Association, we welcomed Oliver Sellnick. On top of this change also, Mats Åkerfeldt was formally taken onboard as new Accessibility Manager.



At the end of September, ScanMed RFC was present at Expo Ferroviaria. Interesting technical solutions and panels have been presented at the fair. On top of this, the Managing Director Emanuele Mastrodonato had the pleasure to meet up with our RAG Speaker Andrea Penso and our Regional South Leader Gregor Thalhammer in a hybrid meeting partly in presence. The meeting aimed at addressing the RUs (Railway Undertakings) issues to the right existing tables so that they can be solved smoothly.



Figure 10 - E.Mastrodonato, A.Penso

Together with three other Managing Directors of the Rail Freight Corridors (Marc Adler – Rhine Alpine RFC; Furio Bombardi – Mediterranean RFC; Simona Di Loreto – Baltic Adriatic RFC) our Managing Director – Emanuele Mastrodonato, had a chance to participate at the ExPo Ferroviaria round-table on European Rail Freight Corridor and the Year of Rail, for a seamless European Railway Area.





Figure 11 - ExPo Ferroviaria - E.Mastrodonato 2nd left

The CEO and the President of RFI made an intervention covering aspects of an interoperable and competitive European railway network and RFI's contribution.

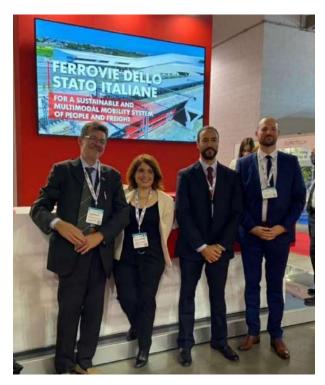


Figure 12 - F.Bombardi, S.Di Loreto, E.Mastrodonato, M.Adler

In October, ScanMed-RFC represented by the President, Linda Thulin, participated in the Connecting Europe Express train. Linda took the opportunity to explain that the Rail freight Corridors and Shift2Rail (Europe's Rail) are strengthening the cooperation in exploring, testing, and implementing innovative railway projects in order to meet the transport needs of tomorrow.

Then, in mid-October we've invited our users to the 3rd RFC Network – RNE session 2021 on Time-Table Redesign. After two very successful sessions hosted by the RFC Network together with RailNetEurope (RNE) to



celebrate the European Year of Rail 2021, we continued with the last step of the trilogy, and the 3rd session focused on Time-Table Redesign.

The ScanMed Reserve Capacity for TT 2022 was published in October in PCS, ready for orders. In addition to fixed pre-arranged paths for the annual timetable, the ScanMed RFC also offered Reserve Capacity, according to Art. 14.5. EU Regulation 913/2010 in a flexible manner. Already from the first moment of the introduction of the ScanMed offer of pre-planned paths the requests rates have reached +150% of the offer for the Maschen – Malmö section. The reason for this success is attractive well-coordinated paths with competitive running times which attract the majority of the freight operators.



Figure 13 - P.Cox 4th left, E.Mastrodonato 5th right

On the occasion of the European Year of Rail, Emanuele Mastrodonato, Managing Director of RFC ScanMed, participated on 13th of October 2021 in Cross-border Railway in Europe event. Emanuele Mastrodonato presented the results of the Pilot Project 2021 from the Brenner axis task Force, which followed the 2020 preparatory work on the check of the bi-lateral and tri-lateral operation agreements and on designing the measures to put in place.

With the occasion of the Management Board meeting, ScanMed RFC team recently met in Oslo to say thank you and goodbye to Bjørn Kristiansen who spent several years within the association, among others, also as a President. The team welcomed Oskar Stenstrøm (Director of Freight at BaneNor) as a new representative of BaneNor in the ScanMed RFC Management Board.





Figure 14 - L.Thulin, O.Stenstrom

On October 29th, ScanMed RFC organized a RAG/TAG meeting to listen to the stakeholders. It was a good opportunity to discuss our current and new projects in development and to talk about the objectives and improvements to achieve soon.

The First ScanMed Climate Declaration was signed. Meyership is one of North of Norway's largest forwarding companies and has operated for over 150 years.



Figure 15 - Meyership - R.Jakobsen, K.Tsesmetsis

Meyership says they are investing heavily in railways to work hard for the northern region in Norway to move more goods from road to rail.

Hector Rail signed the Climate Declaration. We, at ScanMed, are glad to have signed the Climate Friendly Transport Declaration together with Hector Rail, represented by CEO Hector Rail, Claes Schiebe, that met up with the President of ScanMed RFC, Linda Thulin.

In the use case nr. 2 of the ScanMed-RFC Intermodal Costs Study, we transport goods, at a distance of over 2000 km, from a local paper mill in Borlänge Sweden to the intermodal terminal Riem Ubf in Munich. In November-2021 we've offered some insights on this new use case on the ScanMed Corridor for users.



A delegation from the Swedish Transport Administration visited Verona QE terminal together with ScanMed representatives, in November. The objective was to do a site visit to understand the needs for the terminal and what ScanMed and Shift2Rail project can do to support. We also focused on Intelligent Video Gate and RFID in Rail.



Figure 16 - Terminali Italia - O.Mendozza, S.Castello (1st right), G.Ivansson, E.Mastrodonato, J.Bergstrand, M. Åkerfeldt

Gunnar Ivansson (RFID consultancy), Jan Bergstrand (Shift2Rail and Europe's Rail coordinator) from the Swedish team met the Verona QE team at Terminali Italia: Mendozza Onofrio and Castello Salvatore (Head of Terminal Production), accompanied by ScanMed RFC team: Emanuele Mastrodonato (Managing Director) and Mats Åkerfeldt (Accessibility manager).

With the occasion of the TEN-T ScanMed Corridor 16th Forum on 25-Nov-2021, Emanuele Mastrodonato – Managing Director of ScanMed RFC said "The cooperation between TEN-T ScanMed multi-modal Corridor and RFC ScanMed is getting closer and closer. We were pleased to learn that our European Coordinator, Mr. Pat Cox, considers ScanMed RFC as a key contributor to our common goals, and we welcome the TEN-T ScanMed Corridor sharing our mid-term objectives. Together we'll make the Railways the obvious choice"

In December, Emanuele Mastrodonato, Managing Director of ScanMed RFC announced the signature of the climate declaration with Mr. Thorsten Dieter, DB Cargo - Board Member, who signed the declaration by distance.







Figure 18 - E.Mastrodonato

Figure 17 - DB Cargo - T.Dieter

RFC ScanMed results were shared as news from Verona Quadrante Europa on Terminals' ranking in Europe, this remarked the importance of the Terminals (pink spot in the picture) on the ScanMed TEN-T Corridor, to foster the sustainable freight transport.

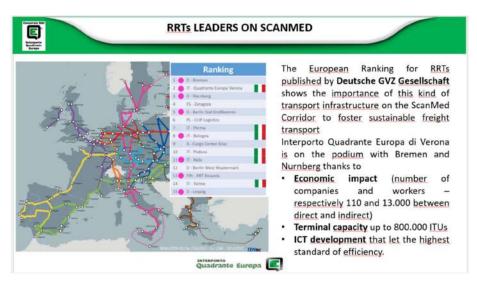


Figure 19 - ScanMed RFC Terminals



A few of us managed to meet up before Christmas 2021 but the whole ScanMed RFC Team wished our stakeholders a peaceful and enjoyable holiday season.

# 2. ScanMed-RFC performances

## 2.1 The results for ScanMed capacity

Capacity via the C-OSS is brought to the market with two products: Firstly, the PaP (Pre-Arranges Path) product for the annual request for rail freight capacity. Secondly, RC (Reserve Capacity) product for recurrent business needs. The capacity offer is accessible for both Railway undertakings (RU) and Non-RU applicants.

The PaP offer was published mid of January and promoted until mid of April (X-11 until X-8). Reserve Capacity is published at X-2 and it is possible to request RC until X+11. This means that the corridor offer is comparable to the non-corridor requests when it comes to deadlines and timing of the request.

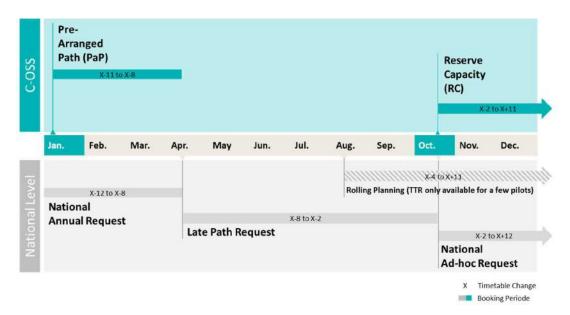


Figure 20 - Product Portfolio based on Annual timetable

When it comes to the figures, it can be said, that the requests via the C-OSS are stabilizing. Still, in the Northern part of the corridor, the conflict rates remain high meaning that more than one Applicant is applying for the same PaP. In figures, the conflict rate between Maschen and Padborg is 142%. Half of the requests on ScanMed North are in conflict. Requests without conflict receive a PaP. Requests with conflicts are offered attractive Tailormade capacity. Additionally, by offering the "Alternative Offer" to the Applicants, who have received a Tailormade offer, the Applicants can decide, whether they want to keep the Tailormade-Path or if they want to switch to another PaP (that has not been requested).



What we have seen for TT2022 is that the Applicants have widened their scope how to use the PaP in a more flexible manner. The PaP is used for safeguarding attractive pre-planned capacity between Maschen and Malmö, whereas the stretches further up Sweden have been requested as Feeder/Outflows.

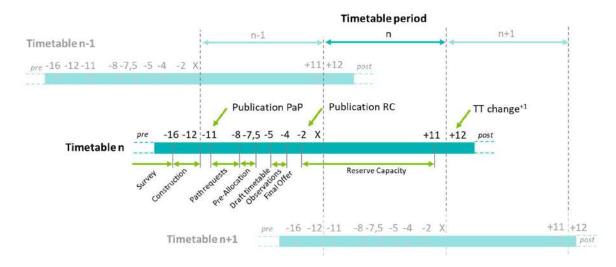


Figure 11 - Timetable period

# 2.2 Phases for capacity: offer, interest, pre-allocation

### PaPs' results (Pre-arranged Paths)

The PaP Sales rate has decreased by 27 %. It can be assumed that due to the economic situation several trains have been merged into one train (thus less requested PaP-kilometers). In addition, our customers have adopted new strategies for train composition. Also, they have changed the stopping behavior and mostly requests Maschen-Malmö with PaPs but going further up Sweden with Feeder/Outflow paths.



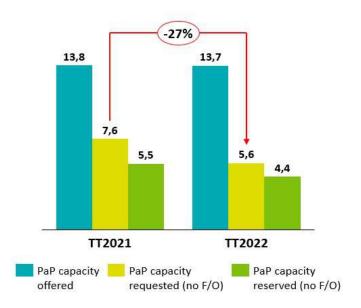


Figure 22 - PaP Capacity Overview TT2021 and TT2022 (in Mio. PaP-km)

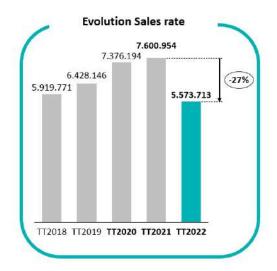


Figure 23 - Evolution PaP Request rate from 2017 (TT2018) to 2021 (TT2022) (in Mio. PaP-km)

After application of the priority rules of the Framework of Capacity Allocation (FCA), the requested capacity has been reserved by 70% with PaP capacity and 30% with Tailor-made capacity. The circumstance that not everything can be pre-booked on PaP capacity is caused by the very high conflict rate of PaPs by 51% (45 requests with 23 dossiers in conflict, less conflicts than TT2021). Interestingly it can be highlighted that capacity is reserved within multi-corridor dossiers, which is an indication of a functioning network approach of corridors as international traffic is requested in one dossier on several corridors in just one step. Moreover,



almost 31% of the total pre-booked capacity via the C-OSS was requested as a Feeder/Outflow, which means that the existing PaP product can be extended easily with the arrival and destination of the trains.

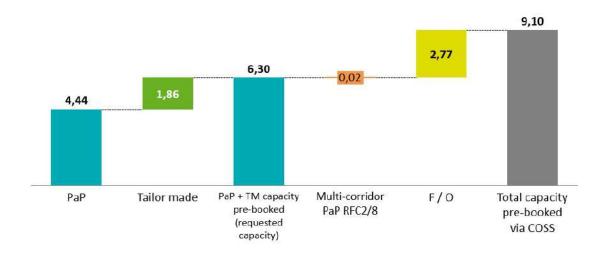


Figure 24 - Composition of the requested capacity in 2021 (for TT2022) (in Mio. Path km)

The trend of previous TT periods also continued. This means that the big majority of PaP requests happens on ScanMed North. Approximately 62% of the offered PaP capacity was requested in the North. In the South (ScanMed RFC between Italy, Austria, and Germany until Maschen) no PaPs were requested.

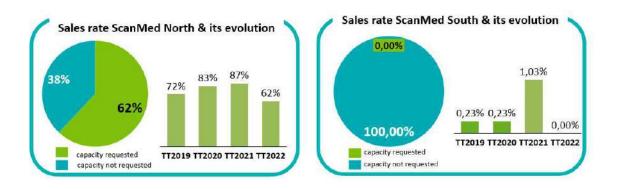


Figure 25 - Requested capacity for TT2022 (Percentage of capacity requested)

ScanMed RFC is bringing a dedicated part of the whole international capacity to the market. This means that Applicants can also request capacity without the involvement of the RFC. Therefore, the pre-booking results of the corridor must be also seen in the light of the whole international allocated capacity. Figure 13 shows clearly that the C-OSS has allocated approximately 59 % of the international freight traffic capacity via Peberholm and



around 50% of the capacity via Padborg. For TT2022, unfortunately, no capacity was requested via the C-OSS at the border stations Kufstein, Brenner and Kornsjö.

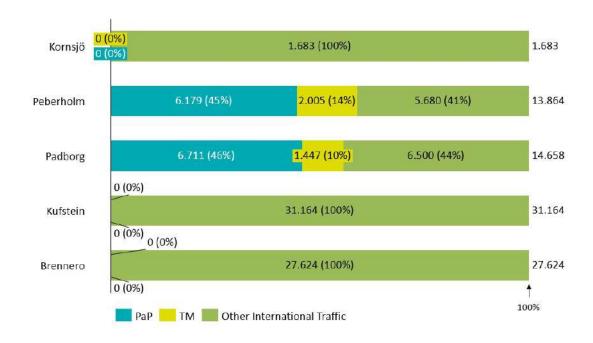


Figure 26 - Ratio of the capacity allocated by the C-OSS and total allocated capacity TT2022 (Nr allocated running days)

#### CAP product for recurring business needs: Reserve Capacity (RC)

For recurring business needs, ScanMed RFC offers Reserve Capacity (RC), that can be requested during the running timetable period. The big difference of RC compared to PaPs is, that Reserve Capacity is offered as empty slots without e.g., fixed border times. Instead, Applicants may request RC according to their needs for international freight paths. Reserve Capacity on ScanMed RFC is offered on the lines north of Domegliara. With the publication of the slots, we also indicate standard running times.

As seen in the previous TT period, ScanMed RFC also offered one slot per day and direction. The allocation method for Reserve Capacity is different from the PaPs allocation. Reserve Capacity is allocated with the principle FCFS "first come, first served".



Usually, these four advantages of RC can be claimed:

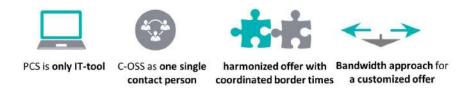


Figure 27 - Four advantages of Reserve Capacity

The picture here shows the development of the offer, pre-booked capacity and reserved capacity of the requests for Reserve Capacity during the last TT periods. It can be seen that Reserve Capacity, in general, was only requested a very few times in the past. The corridor is ambitiously communicating with RUs the advantages of Reserve Capacity and the benefits because the request in PCS can be tracked by all Infrastructure managers for all requested sections. The C-OSS tracks the progress of the timetable construction in PCS.

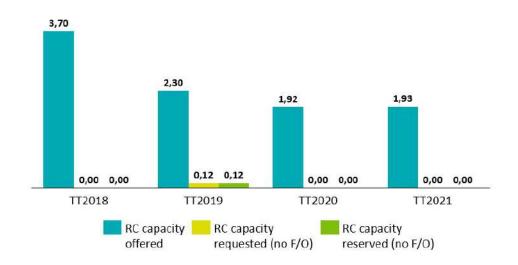


Figure 28 - RC Overview between Timetables 2018 and 2021 (in Mio. RC-km)

# 2.3 The trend of punctuality for the year 2021

RFC ScanMed punctuality declined in 2021 compared to 2020. We use the same measure as previous year, until 30 minutes deviation from the timetable. The punctuality has decreased from 64 % to 55 % at the destination respectively exit point from the corridor. Furthermore, the punctuality at origin/entry point decreased to 66 % were we in 2020 has a punctuality of 71%.

The largest decrease in punctuality is from Verona QE, -13% compare to 2020 in the North-South direction.



In the South – North direction, the largest decrease in the punctuality is from Munich (arrival), the decrease was –11% compare to 2020. So measured punctuality in 2021 for Munich was 52%. Main traffic is on the stretches Malmö - Maschen and Munich – Verona.

Only a few trains run on Northern and Southern part of the corridor (e.g., from Scandinavia to Italy), so there is barely a direct connection between punctuality at Maschen and Munich (and vice versa).

Outstanding events that have affected the quality were among others:

- Derailment München Ost (May 2021)
- Water entry into signal box at München Nord (June 2021)
- Fire at signal box Verona Parona (July / August 2021)

Especially the departure figures at Munich and Maschen are negatively influenced by trains arriving from other parts in Germany as well as from the Netherland and Belgium. The punctuality of these trains is significantly lower than the average.

Delays are identified to be to 11% (North – South) and 10% (South – North) caused by Infrastructure Managers and to 58% (N-S) and 59% (S-N) by Railway Undertakings, while 29% (both ways) are related to "secondary causes". Track back to causes not clearly attributable to the one or the other. And 3% (both ways) of causes are external (weather conditions, accident on the line, etc....).

The most important aspect for improving quality is in collaboration with the customers, analysing representative samples of heavily delayed trains.

# 2.4 ScanMed User Satisfaction Survey: customers response in 2021

In 2021, ScanMed RFC also conducted a user satisfaction survey to collect the feedback regarding its work on the corridor. On top of that also RNE sent out a User Satisfaction Survey for all Rail Freight Corridors (RFCs).

#### Feedback collected during virtual customer visits

The new year starts with the annual publication of the PaP catalogue mid of January, which is a main task of the C-OSS. After the publication, the C-OSS promotes the new PaPs, the new features in the PaP Catalogue and conducts customer visits. For that a special presentation is prepared and individualized for each customer. These promoting activities are used to highlight the new features of the newly published capacity offer and all linked ongoing projects, initiatives, and pilots at the corridor level. During the virtual visits and MS Teams Video Calls, the C-OSS together with experts from the corridor team and from the IM (timetabling/customer relationship departments) collect customers' expectations and further room for improvement.

In 2021, virtual PCS trainings together with RNE were held (PCS training week for all Applicants) in February. Some Applicants used the possibility to ask specific questions before, during and after the meeting that have been answered by the C-OSS.

#### Users' feedback

Nineteen users of the corridor were asked to participate in our ScanMed RFC-specific USS in 2021, whereas seven Users responded creating a response rate of 32%. Again in 2021, this year's survey was to ask specific qualitative questions. In addition, some questions were asked in an open text manner, allowing the users to provide with qualitative feedback. The users appreciated the way of collecting the answers via an online tool. Some Railway Undertakings were answering aggregated on behalf of their respective umbrella company.



The customers rated the following aspects as positive:

- Increasing "Involvement" in the corridor e.g., promising activity of Regional WGs, more accurate information to customers, good communication
- Increasing satisfaction regarding the provided information from the corridor
- Increasing interest in corridor advertising
- reliability of the PaP (Cutting-out days that are affected by long-and mid-term TCRs allows high stability against TCRs)
- Good coordination of TCR in the Working Group Brenner
- · Opening opportunities for efficient rail freight users
- PCS as an easy booking system

The customers rated the following aspects neutral:

- Efficiency of the Wishlist
- Idea of the implementation of a "newsletter"

The following items need to be improved and tackled in the future:

- More information on re-routing and alternative path concepts
- Promoting our TICO offer further
- Increase PaP offer in the North (quantity)
- Increase TCR coordination in the North
- Reducing short-term TCRs in the South is desirable
- Evaluate ways to increase flexibility of parameters
- Capacity needs collection is too early

Each year, the C-OSS tries to include in the PaP construction as far as possible the train parameters indicated in the wish list. The diagram shows a positive trend comparing 2020 and 2021 regarding the parameters. Positively, the multi-corridor PaPs, also called HaPs, were evaluated much better. Dwell times at borders and stop pattern of PaPs was evaluated again high for 2021. The analysis of the survey shows, that the speed of PaPs needs to be improved.





Figure 29 - Satisfaction with the PaP parameters

The mentioned feedback above builds the basis for further actions of the team of ScanMed RFC and the results were presented to the Management Board.

#### Customers' visit 2021 (examples from our sales activities)

During the three first quarters of 2021 we were not able to visit customer face to face during the pandemic, and all of the fair's was cancelled. But thanks to all good and innovation technology we managed to have several team meetings with important customers to discuss both excisting and new business. In the fourth quarter of 2021, parts of Europe opened up and making it more possible to visit customers face to face. We then focused to visit our main customers and to present and have them sign our "Climate Friendly Transport Declaration". Some examples of the customers signing the declaration were Hectorrail, DB Cargo, TX Log, Mercitalia Rail, Meyership among others.

Fish/Fresh train: The scope of this project is to ship fresh fish to the European market on rail, and the return flow from Europe to Scandinavia will be fruits/vegetables. Several partners/stakeholders are involved, and the launch (test train) is set to be during Q3 2022. RU's from five different countries have been asked to contribute and end customers (seafood producers) are willing to finance the trial period. Specialist from Trafikverket, BaneNor, BaneDanmark and ScanMed RFC are involved in the project. Relevant use cases from our Intermodal Cost Study are used in the project.

Hectorrail/Collicare: Through 2021 there has been close dialogue with Hectorrail and Collicare, to set up a route for their new Parma to Sweden train in 2022-2023. Hectorrail and Collicare is also in dialogue with the ScanMed RFC team to set up train number two from Italy to Norway.





Figure 30 - Workshop in Norway, with the fresh train group

### Rail Freight Corridors' Network - User satisfaction survey with RNE Rail Net Europe

For the second time, Rail Net Europe (RNE), together with 10 Rail Freight Corridors (RFC), conducted the User Satisfaction Survey (USS) of 2021 through an online tool. After having tried Survio in 2020, this year we continued with this tool, but we changed for sending emails via a new tool named Mailjet. In the past, this work has been managed by an external consulting partner, but it is now the second time that we decided to carry it out by RNE together with the RFCs.

The field phase of the study started on the 26th of August 2021 and ended on the 8th of October 2021.

Seven respondents generated 7 evaluations. One respondent is counted multiple times if her/his organization uses and responds for multiple corridors.



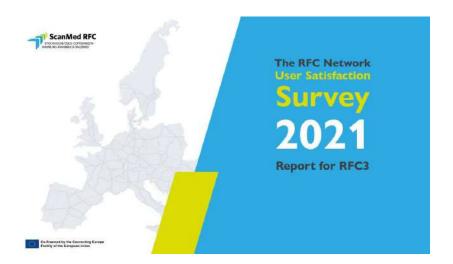


Figure 31 – RFC User Satisfaction Survey 2021 – Satisfaction & Participation

The number of invitations sent was thirty-seven but we observe a lower response rate than the previous year.

The overall satisfaction of ScanMed RFC is 85%, the respondents answered that they are very satisfied, satisfied or slightly satisfied. This is a 6% decrease of satisfaction when comparing to 2020.

The open question relating to the satisfaction with the infrastructure showed that the ScanMed RFC should focus on measures to improve infrastructure **capacity**, infrastructure parameters and measures to improve infrastructure standards.

The satisfaction with TCRs pointed out that ScanMed RFC should focus on the information on works and possessions, and on the involvement of customers.

The amount of capacity requested via the C-OSS is 67%. Compared to the past year, it has been constant.

Among the reasons for not ordering via the C-OSS, we can find the missing traffic because of the poor technical conditions of the lines by IMs, operating on RFC through subsidiaries, ordering via Infra.



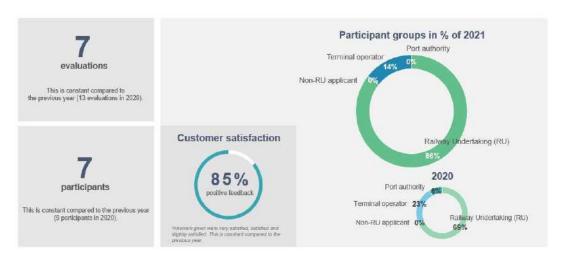


Figure 32 - RFC User Satisfaction Survey 2021 - Satisfaction & Participation

Regarding the commercial offer – the answers show that ScanMed RFC needs to work on the parameters of the PaPs, commercial speed of PaPs and protection of PaPs from TCRs.

Train Performance Management was considered by 57% to be generally satisfied. Among the issues to be tackled by ScanMed RFC were the RU/terminal improvement as well as the efficiency of measures taken to improve punctuality.

ScanMed RFC has had experience with International Contingency Management over the past years, 33% of the respondents indicated that they are generally satisfied. ScanMed RFC should focus on the quality and usability of re-routing scenarios.

The Railway Undertaking Advisory Group (RAG) and the Terminal Advisory Group (TAG) were generally considered as satisfactory by 57%. This is a 19% increase in satisfaction compared to last year.

71% indicated that they regularly participate at RAG/TAG-meetings.

43% viewed the communication services provided by the ScanMed RFC as satisfactory. The topic to focus on is the information on the website.

The establishment of the South Brenner Axis Task Force is considered as a step in the right direction by 57%, 14% of the respondents felt unsure and thought that more could have been done at an earlier stage.

Still 29% of the respondents noted that they have no knowledge about the Single Contract of Use (SCU). This confirms that more needs to be done in this area in the upcoming years.



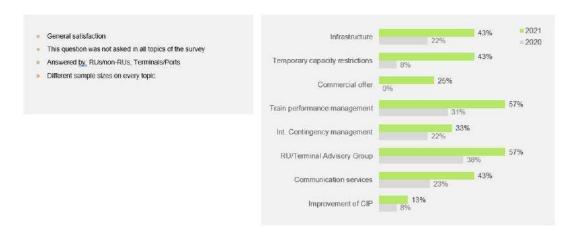


Figure 33 - Summary satisfaction rating

For the question "Does your company face capacity bottlenecks on lines / handover stations leading to terminals and ports?" the replies were divided as specified below:

- 100% of ports and terminals were generally satisfied
- 17% of RUs/non-RUs were generally satisfied

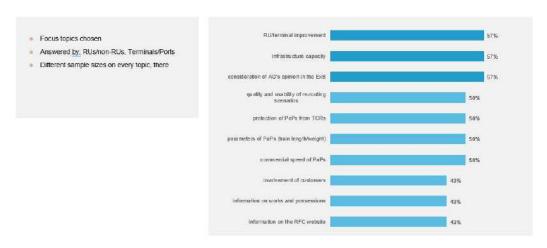


Figure 34 - Summary - TOP 10 Focus Topics

CIP was viewed as generally satisfactory by 13%, focus should be on improving the interactive map, the route planning and geographical coverage.



# 3. Implementing ScanMed RFC Strategy

### 3.1 Product portfolio developments

#### In 2021 the corridor continues offering PaPs, RC and TICO

The Terminal Integrated Capacity Offer (TICO) as an official corridor product. The product exclusively applies to requests of PaPs, which are linked to Terminal slots as part of an integrated offer. The integrated offer consists of at least one PaP and a coordinated terminal slot via the C-OSS. In 2021, fifteen Terminal and Ports located in Norway, Sweden, Denmark, Germany and Italy participated in the integrated terminal offer. The four levels of TICO show the different level of commitment of the terminal and PaPs. TICO level 4 has the highest level of integration.

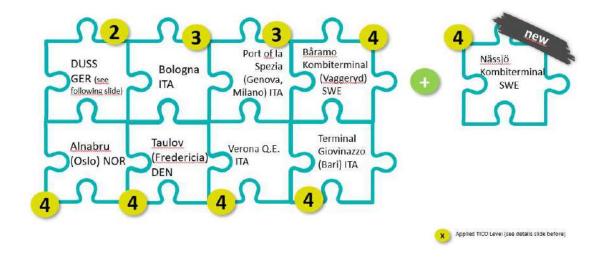


Figure 35 - Status Terminal Integrated Capacity Pilot with participating Terminals for TT2022

ScanMed RFC welcomes one new terminal, that has joined the TICO network, Nässjö Kombiterminal in Sweden. It joined with the most integrated Level 4.



Figure 36 - Impression from Nässjö Kombiterminal



#### PaPs meet market needs with special features

PaPs have shown a big potential -even if they are- pre-constructed to be adopted to the Applicants' needs. This possibility arises from the FlexPaP approach on the ScanMed RFC. Only the border times of PaPs are fixed, whereas the running times can be adopted if it stays in certain frames. Applicants used the chance to consult the C-OSS asking how to adopt PaP s (for example stop pattern and bandwidths). This allows a higher flexibility, which is appreciated by the Applicants.

In addition, in cooperation with RFC North-Sea Baltic, ScanMed RFC offered so called Harmonized PaPs (HaPs) that allow smooth connection between the two corridors and minimize transport times, because the PaPs are harmonized also in Netherlands and Belgium, thus extending the ScanMed offer to the Benelux countries. The Handover point is in Maschen-Osnabrück. The linked offer with Corridor Rhine-Alpine has its transition point at Bologna-Piacenza).

Reserve Capacity has the highest flexibility, because the Applicants determines the timetables according to its needs and the construction via the Infrastructure Managers is followed by a bandwidth approach.

# 3.2 Specific interoperability issues

#### Rail Freight Corridor Development Plan

One of the basic documents of a Rail Freight Corridor according to Regulation 913/2010 is the Implementation Plan. In short and according to the Regulation, the Implementation Plan is a "document presenting the means and the strategy that the parties concerned intend to implement in order to develop over a specified period the measures which are necessary and sufficient to establish the freight corridor". On the 1st of June 2021, RNE and the RFC Network presented, in a meeting of the Network of Executive Boards (NExBo), a short presentation discussing the ideas of developing the current Implementation Plan into a Development Plan to further address and develop the RFCs drive for higher quality, efficiency and competitiveness. At the meeting, the NExBO was offered a proposal, prepared and submitted, for a revision of Regulation 913/2010. The NExBo chair proposed to support the proposal of RNE and thus asked RNE to present a detailed proposition on the structure and content of a Development Plan in the first meeting of the NExBo in 2022.

## 3.3 Planned Temporary Capacity Restrictions management

ScanMed RFC's regional groups North and South for Temporary Capacity Restrictions (TCRs) delivered a description of the existing national processes both for TCRs and for Timetable planning, and highlighted therewith the complexity of our starting point. TCR-planning phases and milestones, both at level of individual Infrastructure Managers of ScanMed RFC as well as at European level, through the RNE Guidelines and through Annex VII.

The process for late TCRs for 2021 has been implemented successfully.

TCR WG Leader participated in 2021 as something new in the Regional North meeting immediately after the two coordination meetings in TCR WG and presented the coordinated TCRs. It gave the participants in Regional North the opportunity to provide input and feedback on the work that was carried out in TCR WG North, and if there were requests for specific TCRs, these requests were going to be subsequently tried.



In addition to the results evolved from the TCR coordination, further improvements of the routines for coordination and communication of TCRs on ScanMed RFC have in 2021 put in place an agreement between the IMs of the Corridor on how to handle "late TCRs". This procedure, which is subject for implementation in 2021, aims to strengthen the cooperation between strategical level and operational level in the occasion of late TCRs while assuring transparency between the IMs on the Corridor.

TCR WG north leader present how BDK and DB Netz have coordinated in the past year, and then presents the new Excel format. It is decided that we are going to use the new format from 2021 and onward and that each country should update their TCRs before each meeting. With the new Excel format, a more manageable way to coordinate was achieved. Visually, it is quickly and easily showing where and when as well as displaying what kind of TCR it is. At the same time, we made sure that we all presented our TCRs in the same way. In the past, each IM presented their TCRs in their own way, and although it is fine, this is just easier to understand when it is done uniformly.

## 3.4 Specific TCR South issues from 2021

In 2021, intensive construction work was again carried out on the Brenner section between Munich and Verona in order to maintain and improve the infrastructure in high quality. A total of approximate 175 relevant TCRs were discussed between the IMs, coordinated and consulted with our customers. The Infrastructure Managers colleagues meet three times a year and subsequently presented the TCRs to the Railway undertakings. They had the opportunity to give feedback on the coordinated TCRs and also came up with their own proposals which were taken into consideration.

The biggest restriction in 2021 was the closure of the Brenner axis from 01-09 August 2021 due to bridge works between Vipiteno and Fortezza. This was preceded by extensive coordination between regional authorities, Infrastructure managers and railway undertakings which was already started in 2019. Special care was taken on the different transport needs of freight and passenger train companies which had to be carefully coordinated.

Up to 70 train paths were diverted via the diversion route via Salzburg, Villach and Tarvisio on busy days. A particular challenge was to coordinate the diversion traffic with the existing traffic on the Tauern axis and to provide sufficient capacities. The timely preparation of the diversion timetables with all IMs and RUs involved was a great challenge due to the different planning systems and philosophies of the Infrastructure Managers, but it was ultimately successful thanks to the good cooperation.

In 2022, the lead for the organisation of TCR coordination will be transferred from Gregor Thalhammer (DB Netz) to Roland Pavel (ÖBB Infra).



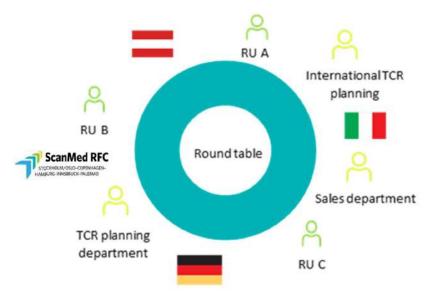


Figure 37 - TCR Coordination

Specific TCR North issues from 2021 – here is a description of the major TCRs in the ScanMed North for 2021

Germany: Hamburg Oberhafen - Eidelstedt Total closure 15/4 - 20/4

Veddel - (via HH main station) - Eidelstedt Total closure 23/12 - 01/01

Denmark: Ringsted - Snoghøj (Fredericia) closure 17/7 - 7/8

København - Ringsted closure 4/7 - 25/7

Sweden: Malmö Godsbangård-Peberholm closure 16/4 - 17/4 and 5/11 - 6/11

Malmö godsbangård-Göteborg closure 14/4 - 18/4 and 8/8 - 4/12

Malmö godsbangård-Hallsberg closure 19/9 - 28/9

It is important to note that these TCRs are not as well coordinated as we see, for example, in 2023 and beyond. This is due to the fact that we first restarted TCR WG North here in April (2021) this year, and there were TCRs for 2022 more or less determined in the countries before we could coordinate. But I think we can see in 2023 that our coordination has improved significantly already.

### 3.5 Work on Train Performance Management

### Reliability and punctuality trend

Within our TPM working group we continued to focus on analyzing the punctuality, since that is one of the most important KPI's for measuring the performance in the corridor.

Another KPI that was started to be measured was the volume numbers in the ScanMed corridor. Each IM was asked to send their cross-border volumes so measure could be taken from 2021 and measured through the years to come. The reason for this is for the opportunity to visualise trends for cross border traffic from these reports. Moreover, the trend (with decrease-increase of traffic volumes) during the years can be displayed. It will also be



useful to start measuring the passengers train in order to compare passenger traffic to freight trains. Measuring volumes and its' trends, is to individuate an indicator of the effectiveness of the RFCs and IMs in improving the competitiveness of freight transport in Europe.

In 2021 RNE started the Data Quality Monitoring and management. Three projects have been carried out. A special focus was laid on the quality measurement at border stations. Another group analyzed the attribution of trains to one or several RFCs. The project tried to attribute a train to only one RFC where possible. This is done via a flow chart and key question is; "Can the service to run a specific train be provided by one single RFC?"

Performance Management on RFC 3 is carried out by the TPM working group (general discussions and coordination) and the regional working groups, where together with the Railway Undertakings specific quality issues are tackled. The TPM group continuously measures the performance and publishes the results (punctuality and delay causes) on the Corridor Information Platform (CIP)

A promising aspect for improving quality is in collaboration with the customers, analysing representative samples of heavily delayed trains. This was partially started within the Brenner Task Force. For the Northern part it is highly recommended to start something similar with the support of the Railway Undertakings. In addition, the Customer Relations Manager gets directly in contact with important stakeholders and tries to improve it.

## 3.6 International Contingency Management ICM

During 2021 there were three ICM cases coordinated by the ScanMed along the corridor and in two different member countries. International disruptions are taken of great care and importance within ScanMed RFC and with as speedy handling as possible together with the concerned partners and stakeholders of the corridor. Procedures and guidance are outlined in the Handbook for International Contingency Management (ICM) and with additional instructions according to the ScanMed RFC Re-Routing options & processes.

In April, a derailment of a freight train in Munich East marshalling yard while operating to Munich East passenger station damaged switch 109 in Munich East marshalling yard. The concerned IM DB Netz therefore declared an International Disruption and during the period that followed, the mitigation measures that would allow the least possible impact on the traffic were performed in close cooperation between the concerned IMs under ScanMed RFC's ICM coordination. After an investigation and thorough analysis of the situation, it was determined that this switch 109 in Munich East marshalling yard was unusable, and no train operations between Munich East marshalling yard and passenger station was possible. Initially, DB Netz expected massive capacity restrictions for international freight trains and a backlog of trains in the direction of Austria. The analysis of the damaged switch concluded that it had to be replaced immediately and the damaged double-crossing switch 109 had to be specially manufactured. From the middle of May, the switch was replaced and the track was by then available with reduced speed.





Figure 38 - München Ost (Munich East) Rangierbahnhof

In July, the ScanMed RFC ICM coordination was activated on another disruption on the corridor line. On this occasion it was the leading IM, RFI, which declared an international disruption case at Verona. This was due to a fire in the relay room of the Verona Parona station. The fire caused a total non-functioning traffic management apparatus, of all the entities within the Verona Parona Communication Post and of the even and odd block sections (spacing system) of the Verona Parona-Domegliara and Verona Parona-Bivio San Massimo sections. Given the severe damage caused by the fire, only 60% of capacity for freight trains could be guaranteed, and for the coming month, with delays of 30 minutes, in each direction. The ICM case at Verona Parona station was closed in the beginning of September and returning to full capacity on the Brenner line. The results and findings of the two ICM coordination processes, which ScanMed RFC carried out in 2020, have been summarised in two review reports for each case, respectively.

To mitigate the influence of international disturbances the ICM process descriptions have been incorporated in the IMs' national incident framework, according to the handbook for International Contingency Management (ICM handbook) - endorsed by RNE General Assembly and all Infrastructure Mangers (IMs). This review rapport is made according to RNS new handbook for ICM, annex 10 Requirements on evaluation report for disruptions/simulations.

# 3.7 Speed restrictions in Italy for trains with silent brakes

In November of 2021, the Italian Agency for Rail, Road and Motorway Safety (ANSFISA) introduced a new urgent prescription for freight trains having in composition vehicles equipped with organic low friction coefficient (LL) brake blocks (IB 116\* type), concerning speed restrictions as a major preventive safety measure. These brakes are commonly known as silent brakes and these restrictions were established since more than 29 events (of which 8 on trains transporting dangerous goods) affecting vehicles equipped with LL brake blocks took place over the past two years. This restriction also affected the permitted speed for wagons carrying general freight from 120km/h to 80km/h and to 60km/h for trains carrying dangerous goods. In these cases, the brake blocks, due to the malfunction of the continuous automatic brake, had an increase in temperature which caused flames generating in some cases negative consequences to the wheel tread.



# 3.8 Pocket wagon restrictions in Denmark

Due to a safety incident on the Great Belt Bridge on the 13th of January, The Danish Accident Investigation Board (AIB) extended the ban on pocket wagons after an investigation. The ban which was implemented, aimed to last for fourteen days and applied to the whole country of Denmark, but the initial ban applied only to the bridge where the incident occurred.

The revised measures after the incident did not contain a requirement for additional fastening of semi-trailers across the Great Belt. Instead, it contains several other safety measures, including a minimum requirement for the locking force of the hitch and a minimum weight requirement to ensure the safe handling of traffic. Instead, it contained several other safety measures, including a minimum requirement for the locking force of the hitch and a minimum weight requirement to ensure the safe handling of traffic.

#### 3.9 Handover between the ACOs

In February 2021, ScanMed RFC's Communication and Administration Officer, Johnny Tilgrim, left his position in ScanMed RFC for a new opportunity at Trafikverket in Stockholm. A new Administration and Communication Officer, Eva Raymond, was hired and is based in Vienna. A short physical handover between Eva and Johnny could take place in Vienna in February 2021 thanks to Johnny Tilgrim's possibility to organize a business trip.

This allowed them to meet in person and introduce the corridor's activity in a more personal way than just via a teleconference meeting. The handover between Johnny Tilgrim and Eva Raymond continued then via digital exchange until the end of March 2021, when Eva became officially trained in her new role as Administration and Communication Officer.





Figure 39 - Johnny Tilgrim and Eva Raymond

#### 3.10 Handover between the AMs

During 2021, former Accessibility Manager of almost two and a half years, Johan Carlgren, left his position in the ScanMed RFC for a new opportunity at Trafikverket, the IM in Sweden. The position of Accessibility Manager in the corridor was then filled by Mats Åkerfeldt. Unfortunately, due to the pandemic, there could not be any physical meeting to make the handover official together with the ScanMed RFC team and members and most of the phase for handing over the job responsibility to Mats had to be performed digitally. Between Johan and Mats, since they are both based in Stockholm there could be some physical meetings along with digital information sharing, even during the strict pandemic restrictions that were in place all over Europe. In the end of June 2021, it was the time for the formal handover, when further details around the organisation of the ScanMed team, working group, stakeholders and other functions as well as structure of the work were concluded to Mats in his new role as Accessibility Manager of ScanMed RFC.





Figure 40 - Johan Carlgren and Mats Åkerfeldt

# 4. RAG-TAG and cooperation with users and stakeholders

At the end of 2021, the ScanMed RFC team were able to meet up with customer again. Some very interesting meetings was planned and scheduled and druing these meetings, the "Climate Friendly Transport Declaration" could be presented. The idea for the "CFTD" is to be a simple, one-page document, laying out some goals for both the customer and ScanMed RFC. Once signed, this will also represent a pretext to contact the customer regularly to follow up on progress and see if they need any assistance in navigating their rail industry. ScanMed RFC believe that if concrete goals are set for how many such signed declarations our CRM Manager is to obtain over a year, it will represent a quantifiable figure – something to measure the CRM role against. Furthermore, there is a potential for such a declaration to lead to customers investigating further what the corridor is, what is to be delivered and to ask for corridor capacity from their RU counterparts. "CFTD" was well received by our RAG-TAG speakers who already have signed the document.

Several of important topics was discussed in the 2021 RAG-TAG meetings, which were all held digitally. Some examples of these topics were:

- Investigate the possibility to use English as a secondary operating language on Maschen Malmö section.
- Pocket wagon ban through Denmark. ScanMed team will invite speakers to have a constructive dialogue
- Market Project Innovative programs within Europe's Rail IP5 for goods activities that are expected
  to take place in the corridor
- Asia—Euro Railgate how will the logistic change worldwide be in the future (positive or negative)?

During 2021, ScanMed RFC also had the pleasure to welcome our new RAG deputy speaker, Gustaf Engstrand from Tagforetagen in Sweden. Gustaf was replacing Henrik Møller Larsen from Greencargo.

### 4.1 The working group "Brenner" - ScanMed-RFC Regional WG South

Important topics in 2021 were the discontinuation of shunting at Brenner station, which was intensively discussed in the Working Group. There has also been intensive coordination between the authorities, Infrastructure Managers and Railway Undertaking in optimizing the train checks that had to be carried out



because of refugees on the trains. Another topic was the optimized cooperation and organisation of clearing measures in the event of heavy snowfall in winter in order to disrupt train traffic as little as possible or to be able to resume it as quickly as possible after closures.

Many topics were also discussed in Work Package 1 of the dedicated Brenner Task Force, which was also continued in 2021. With the establishment of a joint and transnational task force (DE/AT/IT), the Infrastructure Managers DB Netz, ÖBB Infra and RFI, developed solutions for a more integrated joint coordination of traffic on the Brenner axis. The Brenner Railway Action Group and the Free State of Bavaria provided support for the project.

Important successes were achieved in the following areas:

- For the first time an automated joint data management was set up as an important prerequisite for better scalability and a comparable data basis across the entire Munich - Verona axis. Terminals now receive additional timetable information and incident information for preventive scheduling of terminal operations.
- Weekly cross-border performance meetings with operational experts, based on the new joint data Management, have generated a common operational picture and sharpened an axle vision and understanding.
- Quality Management and optimized capacity management were developed by extending the train running analysis to the railway undertakings in the course of joint quality dialogues.
- A new communication format in the event of incidents was installed, which has already been successfully tested several times. It guarantees a rapid joint picture of the situation across the entire axis and the implementation of traffic management measures with the railway undertakings to better cope with the situation.

The Task Force was successfully completed, and the joint work has created the prerequisite for successful measures to be continued beyond the Task Force. In addition to operational formats, the new "Brenner coordination Group" of the three Infrastructure managers was installed as a regular exchange body to continue with the good cooperation. <sup>1</sup>

#### The working group Regional North

The rail freight corridor called ScanMed can be said to consist of two corridors in one and is sometimes easier to manage and organise due to its expansive length. In its northern parts, ScanMed connects the Scandinavian countries, Sweden, Norway and Denmark, to their respective main continental markets and opportunities for RUs to send goods to the southern parts of Europe by train. The overall objectives for the REG WG North are to

<sup>&</sup>lt;sup>1</sup> The Regional Group South already existed before the installation of the ScanMed freight corridor and represents an effective exchange format between infrastructure managers and railway undertakings. Over the years the WG Brenner has become a well-established platform for trilateral coordination of TCRs (Temporary Capacity Restrictions). The Regional Group South focuses mainly on operational issues and questions on how freight traffic on the Brenner axis can be further harmonized between IMs and RUs.

In addition, the group has established itself as an important format in which regular information is provided on the construction measures for the next 24 months and these are also coordinated between the participants.

Furthermore, operational topics such as the organization of shunting operations at border stations, reduction in border stopping times and information about special features and innovations in cross-border traffic have their permanent place in this format. The activities of the Brenner Task Force to improve operational traffic coordination and the interfaces with the terminals also receive substantial support from within the group. The close interlocking of the initiatives ensures a competent exchange of knowledge between EIU and RU and provides for fast discussion and decision-making paths. There continues to be a high level of construction activity on the line sections of the Munich Verona corridor, as the infrastructure operators are investing heavily in infrastructure renewal.



simply the organisation between IMs in the included countries but also be transparent towards its partners, customers and stakeholders in terms of creating an integrated holistic traffic management. Capacity is always an important aspect of rail transports and a close collaboration with all described parties aims to improve punctuality and reduce as well as mitigate disruptions on the corridor. Furthermore, REG WG North manages TCRs in close cooperation with the TCR WG and other interoperability issues, which might cause disruptions on the corridor line. Every year, the REG WG North aims to conduct four meetings for its members, where input from the customers is the basis of conducting a fruitful forum for improvement. The overall goals for the group are to improve punctuality and reduce disruption at border crossing and measure key trains for RU. Key train means important trains as far as the cross-border service is concerned (punctuality, major delays and more).

### 4.2 Corridor cooperation: users, partners, RAG-TAG

A continuous and proceeding collaboration and open exchange with the ScanMed RFC users and partners are vital for the further development and administration of all corridor activities. Unfortunately, and due to the fact of the continuous pandemic restrictions all over Europe, most of the meetings and creative forums arranged within the ScanMed RFC had to be done digitally. In these cases, and opportunities for a fruitful exchange, the ScanMed RFC uses segments or parts of its strong structure and organization to have the needed expertise and knowledge available to the users and partners of the corridor. The ScanMed RFC continued during 2021 to elaborate on this customer and market focus, which aims to facilitate freight transport on rail and moving more transport to this mean of moving goods within Europe.

#### Market demand

ScanMed RFC has continued developing a direct dialogue with end users (defined as non-RU applicants). The main objective is to gather all stakeholders to the same "table". There is a lot to be achieved when all parties are gathered, since all work are done with the same ambition to get more volume to rail. By making business cases, follow-up with involved stakeholders, made our corridor successful involving more relevant customers. ScanMed RFC are also seeing volume growth for rail freight in our corridor's countries, and this trend is also present in several other European countries. Increased market share on rail is a prerequisite for the success of the green climate shift. In order for this shift to further develop, a close collaboration and work with customers and end-users are needed and an important aspect.

#### Last phase of the Longer and Heavier Trains internal study

Trafikverket have made tests for a freight train of 835 meters from Machen to Malmø. The aim is to achieve climate goals and to be able to get more capacity and goods and to have better profitability in their business.

A number of meetings were held with several customer in the corridor to understand how longer and heavier trains can help them to reach their goals.

With phase 3 of the internal study, we tackled: Quantitative assessment of market potential; Identification of measures; Comparison between market demand and offer. This phase has been delayed due to covid. ScanMed-RFC Members are contributing to the Team activities to be enable the work together with experts active in Europe's Rail, to boost the deployment matching the market demand and testing the innovative solution on real traffic flows.



### 4.3 Climate Friendly Transport Declaration

In present time and when comparing road to rail transports; rail transport has lower overall emissions, and it represents a less energy consuming way of transport compared to using road. Therefore, and in accordance with the European Union's high goals and requirements for the future of freight transports, the aim is to increase rail freight by 50% in 2030 and 100% by 2050. To be more precise, this European Green Deal, approved in 2020, is a set of policy initiatives by the European Commission with the overarching aim of making the EU climate neutral in 2050. In order to further influence and motivate our customers and the ScanMed RFC, the Climate Friendly Transport Declaration has the main objective of using and transforming the focus on the possibilities of rail transports in order to jointly reach these goals set out by the Commission. This declaration from the ScanMed RFC encourages our customers and stakeholders to support the efforts to build a greener future for our continent. A regular and mutual follow-up of the signed document will enable both parties to track and evaluate the progress of this environmentally important aspect of transporting goods in Europe. ScanMed RFC and our CRM Manager has high goals for the future of rail freight and wishes to involve our customers in this journey towards making sure that efforts are taken for generate a business friendly, competitive, and sustainable transport chain.



Figure 41 - CEO Hector Rail, Claes Schiebe, and President of ScanMed RFC, Linda Thulin

### 4.4 Communication & Events

#### Communication

Due to the COVID-19 pandemic, in 2021 ScanMed RFC continued to organize most of the meetings in a digital manner, but in the second part of the year, the restrictions became finally less strict in Europe and the team could finally meet in person in Vienna in November 2021.

ScanMed RFC kept updating the main communication tools, the website and social media (LinkedIn, Twitter) and of course e-mail communication. The LinkedIn page has grown by 186 followers during the year.



Furthermore, the corridor has shared important updates related to the RAG/TAG-meetings, ICM-cases and other interesting facts during the year. The cooperation with RNE and other RFCs has grown even more in 2021 and an RFC Network common account on LinkedIn was created. Twitter was also continued to be used for communication. ScanMed RFC also have Facebook and Instagram accounts for use in the future.

As every year, ScanMed RFC launched a satisfaction survey that has given the Corridor Users the opportunity to tell us more about the strengths and weaknesses of our performance.

ScanMed RFC also procured a service of web designing and IT management for the Association. ScanMed RFC looked for a provider of on-call / part-time service of Website and Microsoft 365 Administration. ScanMed RFC is also still focusing on developing and adding more value to CIP through participation in working groups and assuring that the information provided is correct and up to date.

#### **Important Events in 2021**

- In January 2021, the PaPs Offer TT2022 document was published, which was made accessible in PCS
   Path Coordination System RNE and ready for any order, by our C-OSS & Capacity Manager
- In February 2021, the 20th Florence Rail Forum of the Florence School of Regulation of the European University Institute was the occasion to investigate on future governance options to improve the performance of RFCs. ScanMed-RFC Managing Director, published a concerned article on the EUROPEAN TRANSPORT REGULATION OBSERVER The Governance of Rail Freight Corridors.
- In May 2021, ScanMed was invited to speak at the Forum for Nordic Railway Association
- In September 2021, ScanMed RFC was present at Expo Ferroviaria
- In October 2021, a digital RAG/TAG-meeting was organized by ScanMed RFC to listen to the stakeholders
- Also, in September and in October 2021, ScanMed-RFC participated in the Connecting Europe Express train
- In November 2021, a delegation from the Swedish Transport Administration visited Verona QE terminal together with ScanMed representatives
- In December 2021, Emanuele Mastrodonato, Managing Director of ScanMed RFC announced the signature of the climate declaration with Mr. Thorsten Dieter, DB Cargo - Board Member, who signed the declaration by distance





Figure 42 - J.Bergstrand, M.Akerfeldt, E.Mastrodonato, G.Gustavsson

# 5. Policy framework and ScanMed-RFC challenges

The 2021 was the year of rail, and an important reflection was done on the overall objectives for the sector, in terms of market and society objectives, with a focus on common climate objectives.

Once again, it is key to remark that, for railway transport, the climate objectives are perfectly aligned with market objectives of shifting more freight to rail and move more passengers by train at certain distances, so that the competition with the other modes of transport can find its perfect mix to safeguard our planet with a sustainable development of the economy.

This approach is going to be reflected in the revision of the TEN-T Regulation and the Rail Freight Corridors Regulation which will be presumably finalised in the next two years. ScanMed-RFC very much welcomed the initial proposals of the European Institutions as regards these two pieces of legislation, even if some aspects should be better clarified when it comes to their practical implementation on the field.

Here below are described some of the major initiatives where the sector (RFCs, RNE, IMs, RUs, CER, EIM, UIRR, ERFA, ...) together with the European Institutions (as well as National, and local) were involved.

In March 2021 a Joint Position Paper of a majority of EU Member States was discussed during the informal





Figure 43 - Pat Cox, E.Mastrodonato

Council of Transport Ministers meeting. This initiative shown that growing rail freight is a priority for most Member States. An ambitious approach is needed to focus on growing rail freight whilst also fostering fair competition. There's a need to better understand how policy measures can impact achieving a modal shift from road to rail while supporting the decarbonization of the transport sector. Rail freight growth has remained stagnant for the past decade and it is therefore clear that a more ambitious approach is required. This must involve levelling the playing field of intermodal competition, but also providing the legislative framework under which rail freight can become more attractive to end users through the development of infrastructure which meets the needs of rail freight and a capacity management framework which allocates clear rights to rail freight at an international level.

In June, the European Transport Ministers, gathered virtually at their EU Council meeting, and adopted two important sets of Council Conclusions on EU rail and on the EU Strategy on Sustainable and Smart Mobility. In their conclusions, the Council unequivocally recognizes the central role which rail must be allowed to play to increase the overall sustainability of the EU economy and to achieve EU climate objectives.

The text highlight key issues for the development of the sector: the impact of Covid on EU mobility and on railways, the need for supporting rail Research and Innovation, the role of modal shift, the importance of TEN-T and rail freight corridors, the revamping of night trains, the need to boost long-distance and cross-border (high-speed) passenger rail services, ERTMS, and the efforts being made to further digitalize passenger and freight services. Regarding the Council Conclusions on the Commission's Sustainable and Smart Mobility Strategy, it is relevant to underline that this calls for the "polluter-pays" and "user-pays" principles to be reflected in transport policy measures for and across all modes of transport.

The 'Connecting Europe Express', a special train launched for the European Year of Rail 2021, departed from Lisbon on 2 September. It stopped in more than 100 towns and cities during its five-week journey, before arriving in Paris beginning of October. European Commissioner for Transport, Adina Välean, said that rail has shaped our common European history and that rail is also Europe's future, as a route to mitigating climate change and powering economic recovery from the pandemic, to build a carbon-neutral transport sector. In fact, as foreseen, the Connecting Europe Express has been a rolling conference, laboratory and forum for public debate on how to make rail the transport mode of choice for passengers and freight. All this demonstrated how the sector is committed to make the Green Deal a success. A strong European railway sector is vital for achieving the EU climate targets, and we need to continue to shift freight from road to rail, providing with efficient services. The project has been also a reminder of the lack of interoperability between some parts of Europe's rail network, but, all in all, it has demonstrated the very good cooperation in place between railway undertakings and infrastructure managers at European level.





Figure 44 - L.Thulin - Connecting Europe Express

The proposal of the European Commission to revamp the Trans European Network for Transportation (TEN-T) Regulation has been adopted on 14 December 2021, and it is quite aligned with ScanMed-RFC vision on the future of our sector. As punctuality objective we see that 90% of cross-border freight trains must be at their destination within 30 minutes of their scheduled time of arrival. The time allowance for crossing an internal EU border is proposed to be 15 minutes, and this shall include any applicable border police controls as well as technical and administrative procedures. The P400 loading gauge has been included as a requirement for the railway infrastructure network.

We've also found the proposal on TEN-T very much consistent with ScanMed-RFC suggestions on the alignment of the TEN-T Corridors with Rail Freight Corridors, and we support developing new tools and processes for the management of the European Railway Capacity (not only RFCs' capacity) and to improve Traffic Management with better communication among IMs and jointly, towards users, especially on key relations according to a market view, which is the peculiarity of the ScanMed-RFC.

In the proposed new regulation Freight terminals received a dedicated section. Member States have to assess the adequacy of the freight transshipment capacities on their territory, especially with a view to the market-share doubling foreseen for rail freight by 2050.

New and reinforced infrastructure requirements will aid in shifting transport flows towards rail. The concept of European Transport Corridors (ETCs) through the integration of Core Network Corridors (CNCs) and Rail Freight Corridors (RFCs) is aligned with ScanMed-RFC position on the need of a reinforced cooperation between the organisations on some matters. This will improve the cooperation between the governing bodies of RFCs and CNCs and will allow the identification of the investment priorities of the CNC work plans. As far as Interoperability is concerned, the deployment of ERTMS on the core network requires a strong acceleration to meet the deadline of 2030. As the new proposal on TEN-T will be discussed in parallel with important files of the Fit for 55 legislative



package, consistency and synergy between the different provisions are needed. The European Commission also disclosed the establishment of the Green Rail Investment Platform, managed by the European Investment Bank (EIB). Some of the main take-aways from these announcements are:

- Current deadlines maintained on TEN-T (completion of core network by 2030 and completion of comprehensive network by 2050). Creation of a new deadline: completing a newly established extended core network by 2040.
- Creation of a network of European Transport Corridors (ETCs), under the control of a European Coordinator.
- Minimal operational line speed of 100km/h for freight trains on the core and extended core network.
- Speeding of ERTMS requirements on TEN-T network.
- Maximum dwelling time of all freight trains crossing an EU border of no more than 15 minutes on average.
- Member States asked to elaborate national action plans for the development of a multimodal freight terminal network.
- Urban nodes along TEN-T to adopt sustainable urban mobility plan aiming to promote zero-emission urban logistics.
- Creation of a new corridor untitled "Baltic-Black-Aesan Seas"
- Revision of train driver directive foreseen in 2022.
- Commission to assess the need to propose a new regulation to incorporate TTR and other best practices into law.
- Commission to publish guidelines on TAC by 2023.
- European Investment Bank (EIB) established the Green Rail Investment Platform to assist public and private investments on rail projects.



# **Key Performance Indicators**

In this paragraph we report the 2021 figures regarding:

- the Capacity KPIs compared to the previous year
- the Operation KPIs with punctuality at origin / destination, and the share of delay minutes according to groups of causes
- the Market KPIs describing the Traffic Volume in terms of number of trains crossing the corridor border points
- the punctuality at border stations and at relevant points

# **Capacity KPIs**

			2021 TT2022	2020 TT2021
Officer of Comparity	Volume of offered capacity (PaPs) at X-11 (in Mio. km*days)		13,7	13,8
Offered Capacity	Volume of offered capacity (RC) at X-2 (in train km.)		1,8	1,9
	Volume of requested capacity (PaPs) at X-8 (in Mio. km*days)		5,6	7,6
Requested Capacity	Volume of requested capacity (RC) at X+12 (in Mio. km*days)		AR2022	0
Requested Capacity	Volume of requests (PaPs) at X-8	45	49	
	Volume of requests (RC) at X+12		AR2022	0
Pre-booked Capacity	Volume of pre-booked capacity (PaPs) at X-7,5 (in Mio. km*days)		4,4	5,5
Conflicting requests	Number of conflicts (PaPs)		23	38
TCR-affected capacity	Share of pre-booked PaPs affected by TCRs (in PaP days)		0%	0%
Response time for a corridor offer (RC)	Number of days needed by the C-OSS to deliver an RC-offer to a customer		AR2022	not applicable
Integration of the product	Number of PaP-requests including Terminal slots (TICO)		0	1
Cross-corridor PaP-requests	Number of PaP-requests including at least one PaP-segm	ent on another RFC (in %)	17,8	14,3
Cancellation/Modification rate	Cancellations / modification rate of PaPs before TT change (share of not cancelled days)		73%	87%
		Alnabru-Göteborg	58	56
		Göteborg-Malmö	61	66
		Katrineholm-Malmö	61	59
Planned speed	Average planned speed of PaPs at X-11 (in km/h)	Hallsberg-Malmö	64	69
		Malmö-Maschen	65	63
			65	69
		München-Verona	52	53
		Kornsjö	0%	0%
	Datia of associate allocated but the COCC and the tatal	Peberholm	59%	59%
Ratio of capacity	Ratio of capacity allocated by the C-OSS and the total allocated capacity at TT change	Padborg	52%	50%
	anocated capacity at 11 change	Kufstein	0%	1%
		Brennero	0%	2%



# **Operations KPIs**

66 % 71 %
55 % 64 %

## **Delay Causes**

Share of delay minutes in respective group of delay causes

Source: TIS / OBI

Content: all international trains on the corridor which cross at least one corridor border

	2021	
Delay Group	North - South	South - North
Infrastructure Manager	11 %	10 %
Railway Undertaking	58 %	59 %
Secondary	29 %	29 %
External	3 %	3 %



# **Market KPIs**

# Number of train runs crossing the defined border points

Border point(s)	North - South	South - North	Data source
Kornsjö	584	645	BaneNOR
Peberholm	3478	3487	TRV
Padborg / Flensburg	4566	4550	DB
Kiefersfelden / Kufstein	13122	12838	DB/ÖBB
Brennero / Brenner	9983	9883	ÖBB/RFI



## **Punctuality measures**

### Punctuality at border stations and important points - general remarks

Punctuality 0-30 minutes (%)

Source: TIS / OBI

- Content: all international trains on the corridor which cross at least one corridor border
- Main traffic is on the stretches Malmö Maschen and Munich Verona
- Only a few trains run on Northern <u>and Southern part of the corridor (e.g., from Scandinavia to Italy)</u>, so there is barely a direct connection between punctuality at Maschen and Munich (and vice versa)
- Especially the departure figures at Munich and Maschen are negatively
  influenced by trains arriving from <u>other</u> parts Germany as well as from the
  Netherland and Belgium. The punctuality of these trains is significantly lower
  than the average.

Point	Punctuality N-S	+/- 2020	Remarks
Malmö departure	83	-6	
Peberholm (run through)	80	-8	
Flensburg (run through)	64	-8	
Maschen Rbf arrival	52	-12	
Munich departure	62	-6	Aggregated from different stations
Kufstein arrival	63	-7	
Kufstein departure	62	-5	
Brennero / Brenner arrival	60	-6	
Brennero / Brenner departure	49	-9	
Verona QE arrival	52	-13	



### Comments on Comparability of the data / Data Quality

- Punctuality is calculated on base of delta-t (delay) for defined points in TIS
- This delta-t is delivered by the national system (based on the timetable there)
- Different national processes (e.g. for train numbering, timetabling or ad hoc trains) can lead to deviations
- If the different train parts have different numbers, the connection gets lost in many cases (not linked trains)
- The problem can influence punctuality figures and the <u>amount</u> of trains

Point	Punctuality S-N	+ / - 2020	Remarks
Verona QE departure	65	-7	
Brennero / Brenner arrival	62	-11	
Brennero / Brenner departure	50	-11	
Kufstein arrival	56	-6	Starting trains between Brenner and Kufstein
Kufstein departure	55	-8	
Munich arrival	52	-11	Aggregated from different stations
Maschen Rbf departure	66	-6	Incl. trains starting in other parts of Germany, NL or B
Flensburg (run through)	56	-6	•
Peberholm (run through)	64	-7	•
Malmö arrival	68	-4	•



### Scandinavian Mediterranean Rail Freight Corridor - RFC 3

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A cooperation between the Infrastructure Managers on the longest European Rail Freight Corridor

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