ScanMed RFC

STOCKHOLM/OSLO-COPENHAGEN-
HAMBURG-INNSBRUCK-PALERMO

Annual Report 2020

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Contents

As always, we are here for you to enable the transport of goods on the railway, both in good and challenging times!

In close cooperation with our customers, partners, and stakeholders, we are the platform where we enable and smoothen the use of the railway for transporting goods. It ensures that railway is the obvious choice, as part of a transport solution.

Figure 1: Linda Thulin - Chair of the Management Board

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.
Our hard work showed results this year as well; with a high demand for capacity, the allocated capacity increased by 3%. We continued cooperating with terminals, offering standard capacity, and improving the quality, and we are happy for the newly established cooperation with the Terminal Nässjö in Sweden.
The customer satisfaction level is 84 %, so there is room for improvements, which we will analyse in dialogue with customers and see what more we can do for them.

Much work remains to be done until we will be satisfied with quality and reliability. We will continue to improve in the upcoming years together with our partners, customers, and stakeholders. One good example of this is the Joint Coordination of Traffic and Capacity we are testing on the Brenner Axis. We have a common approach, focusing on the short term, concrete actions, using existing tools and possibilities. We are working together and finding smart, new solutions to improve Brenner Axis's situation. The aim is to see real changes in few years, enabling a shift from road to rail on the Brenner before and after the tunnel's opening. Improve the situation with capacity at terminals and improve quality and reliability in traffic.
At the beginning of 2021, we will have a trial run focusing on enhancing traffic communication and coordination. I am looking forward to the results of this trial run.

Unfortunately, in August, we once again coordinated an international disruption (close to Hamburg). At the same time, the disruption substantiates the railway as more reliable with the new contingency management.
We look forward to 2021, the European Year of Rail, and the upcoming Railway Revolution to achieve the climate goals by taking the next steps to make railway the obvious choice for transporting goods, as part of a transport solution!

Linda Thulin
Chair of the Management Board

1. Management Summary

Our goal is to move more goods to rail and it´s only possible in close cooperation. We believe that no one can do it alone and that we are stronger together. With this in mind, we have undertaken several joint activities with our stakeholders during 2020 to make Rail an obvious choice for Freight in close cooperation.

In the first days of January 2020 a new Communications and Administration Officer, Johnny Tilgrim, joined ScanMed. Johnny has worked for the railways since 2001 working with Trafikverket, in Stockholm, Sweden. Then we have published the Pre-Arranged Paths (PaPs) Offer TT2021 accessible in PCS. After that we've published a "ScanMed RFC position paper concerning the Evaluation of Regulation (EC) 913/2010 implementation". The Commission has been evaluated the rail freight corridors set up across Europe and assessed whether the quality of rail freight has been improved in the recent years. ScanMed RFC welcomed the opportunity to evaluate the regulation (EC) 913/2010 implementation and in that occasion the paper was published and distributed by ScanMed RFC in response to the evaluation itself.
Finally, at the end of January-2020, ScanMed RFC and Trafikverket organized a workshop in Stockholm, Sweden, to further improve the use of the ICM procedure. International disruptions have to be dealt with in a coordinated, fast and responsive manner; and the workshop aimed at optimising the actions to be taken in these cases.

Figure 2: ICM meeting in Stockholm

Figure 3: PCS-Training in Frankfurt

In February 2020, ScanMed RFC President, Linda Thulin, delivered a speech at the Arctic Infrastructure Conference via live-meeting. Achieving a climate neutral Europe by 2050 was one of the topics. In the same month we recorded the postponement of the #GreenLogisticsExpo in Padua, initially scheduled from the 18th to the 20th of March. ScanMed RFC had arranged its participation but the covid restrictions didn't allowed the event to be held in the original format.

In the first half of the month, together with other Rail Freight Corridors (RFCs) we've organised a joint Path Coordination System (PCS) Training in partnership with Rail Network Europe (RNE) on the in Frankfurt. The annual training focused on the new features and functions coming along with PCS Envelope concept (EC) and provided with valuable, practical insights needed for requesting capacity on the RFCs for timetable 2021 (TT2021).

March 2020 has been an important month for ScanMed RFC. We welcomed Kosta Tsesmetsis as our new CRM Manager (Customer Relationship and Market Manager), and a new team member. Kosta joined our virtual office being based in Oslo, Norway and working from BaneNor premises. As to make Europe Climate Neutral by 2050 we have to use railway more we looked into market, political, and sector input, and the hint from the ScanMed South was that the Brenner Pass has huge amounts of freight passing daily. Benefitting of more mature conditions of the awareness about possible measures to adopt on this regards, ScanMed RFC has concluded the process to establish a Brenner Axis Task Force with valued partners and stakeholders along the stretch.

Figure 4: Brenner

The task force has the aim to see real changes in the next 2 years. The common goals for the Task Force are: Shift road traffic to the railway to the Brenner before and after the opening of the tunnel; Improve the situation with capacity at terminals; Improve quality and reliability in traffic.

March was also the month when the covid pandemic shown in a stronger manner, for the first time, its devastating effects on the population and the economy. Our sector and railway has demontrated to be resilient and ScanMed RFC shared information regarding railfreight (e.g. possible restrictions at cross border stations) through the ScanMed Rail Freight Corridor in regards to the current COVID-19 pandemic. Information has been gathered from our valued partners and we continued to inform our stakeholders in an effort to provide always timely and updated information.

The first of April we delivered a news about the publication of the Annual Report 2019, which was sent out on the 31-March-2020. In this occasion our President, Linda Thulin, quoted: ”ScanMed RFC, together with Terminals, Ports, and Railway Undertakings, ensures that the railway is the obvious choice for transporting goods!”. Linda signed the introduction of our Annual Report mentioning some of the key achieved results and upcoming challenges.
In April we’ve also published the ICM report about the accident occurred in Rendsburg, Germany, in 2019. It was a level crossing accident that caused international disturbances in the railfreight traffic. The review report was particularly interesting being about the first ICM case in Europe where the new ICM procedure was implemented on a real case (ref. RNE Rail Network Europe ICM Handbook). The result of this implementation was successfull. On the 16th of April, ScanMed RFC together with some colleagues working with Shift2Rail (Logistics Trust Networks), participated in a virtual meeting to discuss the future possibilities of transports on the railway.

In May 2020 the ScanMed RFC Accessibility Manager (Johan Carlgren) and the Operation Working Group Leader (Anne Hommik) gave out an interview about the ICM simulation that has been organised by our RFC. In the simulation a mudslide between Innsbrück and Brennero was the start where ScanMed RFC practiced once again International Contigency Management. Freight trains were affected in the proposed scenario. May 2020 was also the last month we worked with Stephan Noll as COSS Manager of the RFC ScanMed. Then we switched C-OSS Managers at ScanMed RFC, and we’ve published a video interview with Stephan Noll and the new COSS Manager (Paul Dippmann) that joined the corridor officially on the 01st June 2020.

Figure 5: TAG-TelCo

June 2020 was the month when we published news about the ScanMed RFC concept of Joint Coordination of Traffic & Capacity implemented in the Work Package of the Brenner Axis Task Force. A newsletter, was published and we’ve had the chance to share information on the progresses of the analys of the status and the first ideas on the measures to improve the operational coordination of freight traffic, among other things. ScanMed RFC participated at the SERAC meeting in June and the European Rail Freight Association ERFA presented their findings on Temporary Capacity Restrictions (TCRs). Best practices, as well as areas of possible improvements, were identified we were pleased to notice that ScanMed RFC, thanks to the work done by the Regional Working Group South (Brenner Axis) and TCR Working Group South, was mentioned as an example of how things can work effectively for works planning to guarantee good capacity.

ScanMed RFC went even more digital in July 2020, when we hosted a RAG-meeting as an online event. This was an excellent opportunity to further cooperation with all stakeholders and lots of interesting topics and discussions were handled in the meeting. In the same month we, after long preparation and work, we have moved our virtual home, the ScanMed RFC website, to a new provider with a unique design. The information on the website was updated to reflect the recent changes in the Team as well as some exciting news in our offer while offering new features. At the end of July, ScanMed RFC has organized a TAG digital meeting in the spirit of a need to meet Terminals and Ports, as well as other stakeholders. During the summer holiday period we didn't expect that so many would have participated, but almost 40 people joined us for a lively and interesting discussion. We thanked, for all the inspiring speeches, the high-level speakers that joined us and shared their stimulating areas of expertise.

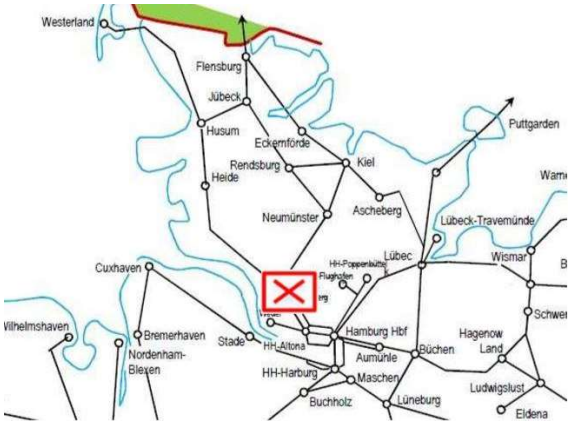


Figure 6: ICM-update

In the middle of the summer, in the night between the 1st and 2nd of August, the line between Hamburg Eidelstedt and Pinneburg was fully closed. The closure was due to a derailment of a freight train. The leading IM DB Netz assessed that the incident's impact on international traffic was significant, and an International Disruption was declared. Accordingly, ScanMed RFC's processes for International Contingency Management were activated. The leading IM, with support from the Corridor's ICM coordination organization and the Incident Managers of Banedanmark, Trafikverket, and Bane NOR, cooperated fruitfully.
On the 6th of August, DB Netz declared that access restrictions on the line had been removed. ScanMed RFC prepared a report on the ICM-case. On the 19th of August, ScanMed RFC sent information to its customers regarding the Rail Noise Mitigation Act in Germany. We provided the information on our website and explained that the Rail Noise Protection Act, prohibits the driving of noisy freight trains on the German rail network by the 13th of December 2020.
The act continues to allow freight trains to run with noisy freight wagons if specific indicated paragraphs of the Rail Noise Protection Act are applicable.

We've started our September day by heading to our website to read Hanne Bjørns's interview talking about the throwback to the summer of 2020 and a look into the future of ScanMed RFC and rail freight. Although it has been a holiday period in Europe, ScanMed RFC hasn't been on holiday. Trains have been running, and hard work commenced behind the scenes to ensure as smooth a flow of traffic as possible. We have been ready to support our customers and partners all the way. We headed into a busy autumn/winter bringing with it new work routines as a result of the COVID-19 pandemic.

To know our stakeholders's thoughts and opinions, in September 2020, the annual RFC User Satisfaction Survey has been relaunched. The survey allowed us to tell more about our strengths and weaknesses. ScanMed RFC was very interested in receiving the customer's opinion and also on the need to run longer and heavier trains. As last phase of our internal concerned study we collected different views on profitability in light of longer and heavier trains.

Figure 7: Hanne Bjørns – Vice Chair of the Management Board

Figure 8: Emanuele Mastrodonato - Managing Director of ScanMed RFC

In the end of September our Managing Director, Emanuele Mastrodonato, participated in a webinar hosted by CIFI - Italian Railway Engineers Association where he had the oppurtunity to present what the European Rail Freight Corridors, and #ScanMedRFC in particular, are doing. In October we focused on the reserve capacity on the ScanMed RFC routes. Reserve Capacity for the remaining routes of 2020, and the whole 2021 timetable was made ready for orders through the system RNE PCS. Our C-OSS Manager Paul Dippmann published detailed information on the concerned platforms and our website and help the customers asking for support. Then we presented to our audience, the agenda for the Digital Customer Workshop - RAG/TAG Autumn meeting and we opened the registrations. We proudly presented it as a jointly organised meeting with the Hamburg Port and key speakers were announced from Terminals, Multimodal Transport Operators, Ports, Railway Undertakings and major European organisations. Of course our RAG and TAG Speakers played an important role in this organisation.

In November 2020, we moved our file storage to our new Share Point home, and we shared important information to find out how to collaborate with us in a more modern and effective manner. We were happy to announce that Nässjö Kombiterminal joined the TICO (Terminal Integrated Capacity Offer) product network on ScanMed RFC. The Customer Workshop, RAG/TAG-meeting was held successfully. The Port of Hamburg contribution for this edition was key in the event co-organization. We shared video from the meeting and all the presentations.

In December ScanMed RFC has received and published updated information on the implementation of the Railway Noise Mitigation Act in Germany for timetable 2021. Unfrotunately, in the beginnig of December a new International Disruption was declared on the Brenner Line. The severe bad weather in Italy created inconvenience to rail traffic, especially in the North-East. On the Brenner-Bolzano line, traffic was suspended in the Bronzolo – Brennero section, and Bolzano-Ponte Adige sections due to adverse weather conditions that have caused landslides near the railway site.
The situation was continuously monitored by a central operations room and a crisis unit that oversees and coordinates all measures concerning circulation and information and assistance to travelers. The ICM-case on the Brenner Line has been then closed as the capacity reached the 50% threshold on the 15th December 2020.
As we always want to learn more about the marked needs in December 2020 we also finalized and made public the Intermodal Transport Costs Market Study. The outcomes will be a part of our future dialogue with our customers and stakeholders to always improve the product we offer and to continue the improvement of the cooperation.

To summarize 2020, and having a look forward to 2021, a concerned information and video interview (featured by the ScanMed RFC Communication Administration Officer - Johnny Tilgrim) with our Managing Director (Emanuele Mastrodonato) and Vice-president (Hanne Bjørn) were sent on-air, furthermore the ScanMed RFC Strategy paper was published in its finalsed version.

2. ScanMed capacity performances

ScanMed RFCs capacity portfolio offers Railway undertakings (RU) and Non-RU applicants two products for their capacity needs for rail freight.

Firstly, the PaP (Pre-Arranges Path) product for the annual request for rail freight capacity. Secondly, RC (Reserve Capacity) product for recurrent business needs. To achieve the aim to be a customer and service orientated corridor with fitting capacity products, we ask our partners frequently for direct and indirect feedback to shape the capacity portfolio in the right direction. The feedback from our Applicants is considered for shaping our offered capacity to the market-needs.

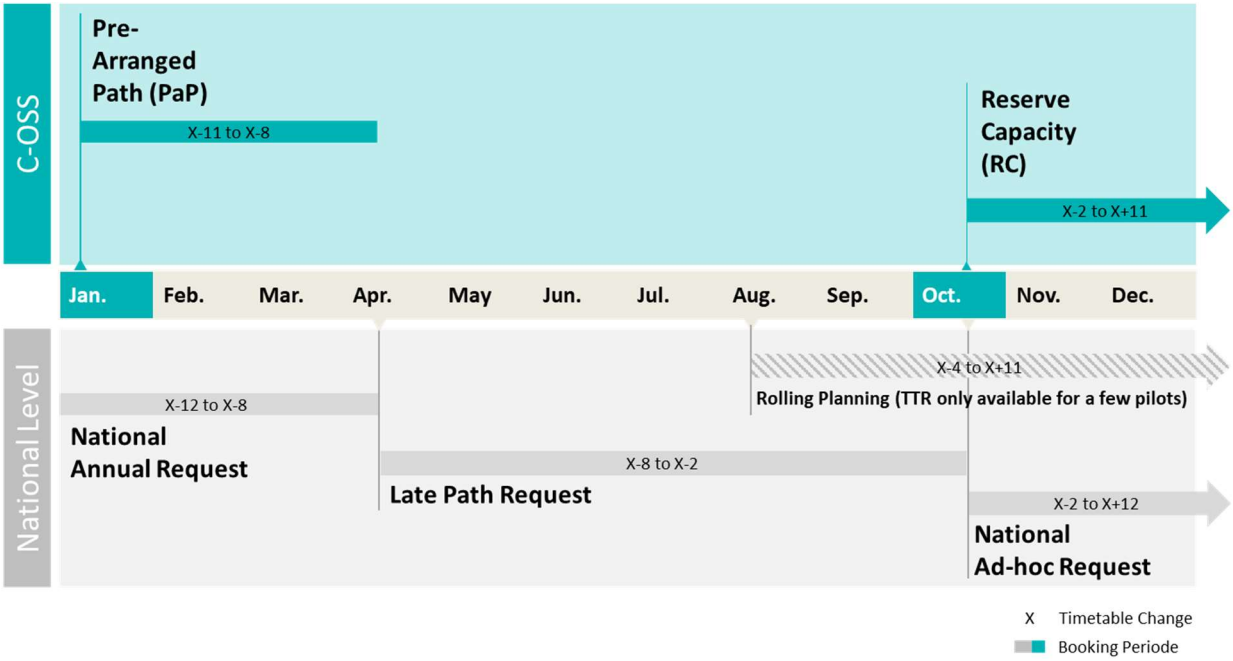


Figure 9: Comparison chart PaP and RC

In general, it can be said that the capacity usage at the C-OSS level is increasing, especially with a high request and pre-booking rate of PaPs on the Scandinavian corridor stretches and tremendous increasing demand on the Southern part by almost 300 % (even though remaining on a low level in the South part).

Again, for TT2021 the conflict rate remains very high in the North part of the corridor. Although the customers are satisfied with the conflict solving procedure, ScanMed RFC put a lot of effort to improve this situation with modified and adapted capacity products even if the quantity remains on a constant level. By offering the "Alternative Offer" to the Applicants, who have received a Taylormade offer, the Applicants can decide, whether they want to keep the Taylormade-Path or if they want to switch to another PaP (that has not been requested).

A major highlight was the TICO request for the terminal in Verona Quadrante for TT2021. TICO (Terminal Integrated Capacity Offer) offers the Applicants to request corridor capacity together with terminal capacity in

one step in PCS (Path Coordination system). Moreover, the Applicant will receive the allocation decision directly in PCS as well as the final terminal times for loading and shunting services.

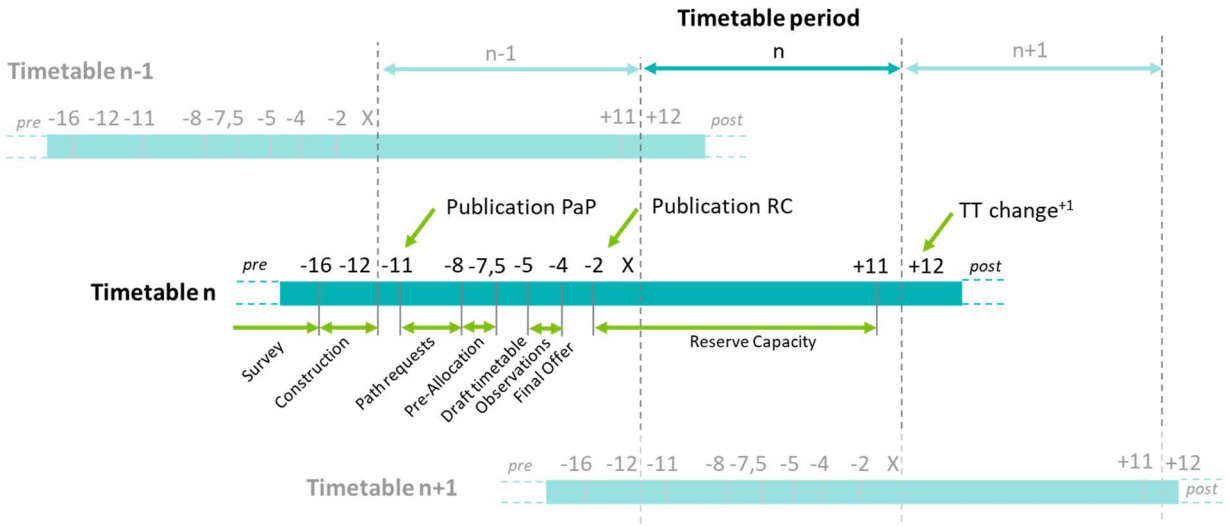


Figure 10: Timetable period

2.1 Capacity offer, interest, and pre-allocation

Results Pre-arranged Path (PaP)

The success seen over the past years regarding capacity requests and pre-booking of PaPs can be repeated and even enhanced in TT2021. Although the offered PaP capacity has declined by 17 % comparing TT2020 and TT2020, the requested capacity has increased by 3 % and the pre-allocated (reserved) capacity has also increased also by 3%. Therefore, we can conclude, that the offered capacity better fitted the demands from the Applicants.

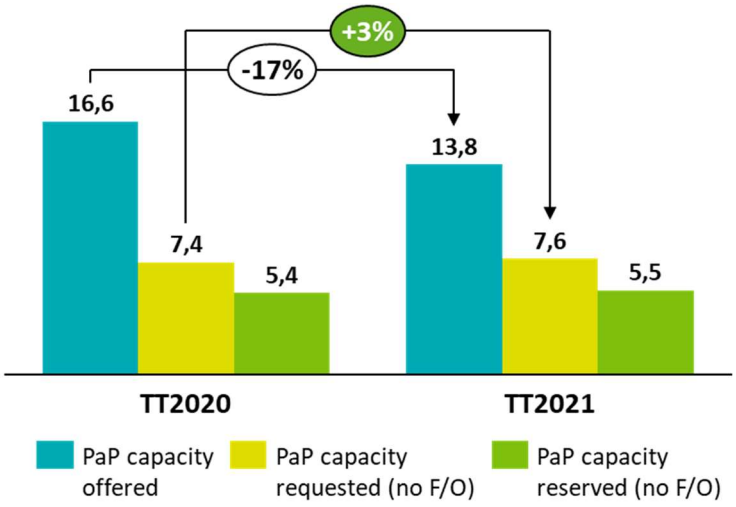


Figure 11: PaP Capacity Overview for Timetables 2020 and 2021 (in Mio. PaP-km)

Looking back since the foundation of ScanMed RFC, the request rate of PaPs has now increased by 58% since 2017 to more than 7,6 Mio. PaP-km.

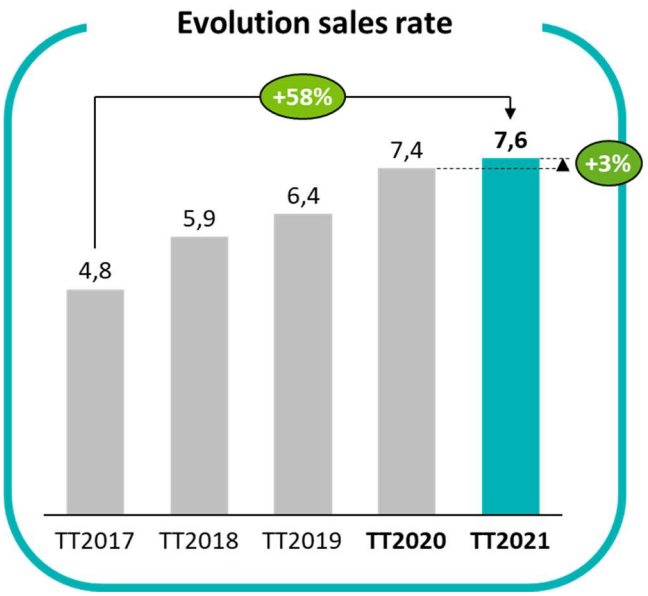


Figure 12: Evolution PaP Request rate from 2017 (TT2018) to 2020 (TT2021) (in Mio. PaP-km)

This development leads to the situation that the request and usage rate of PaP capacity increased from 44,4% to 55,1% of the offered capacity for TT2021. After application of the priority rules of the Framework of Capacity Allocation (FCA), the requested capacity has been reserved by 61% with PaP capacity and 39% 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 78% (49 requests with 38 dossiers in conflict, increase of 4% compared to TT2020). 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, 18% of the total pre-booked capacity via the COSS 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.

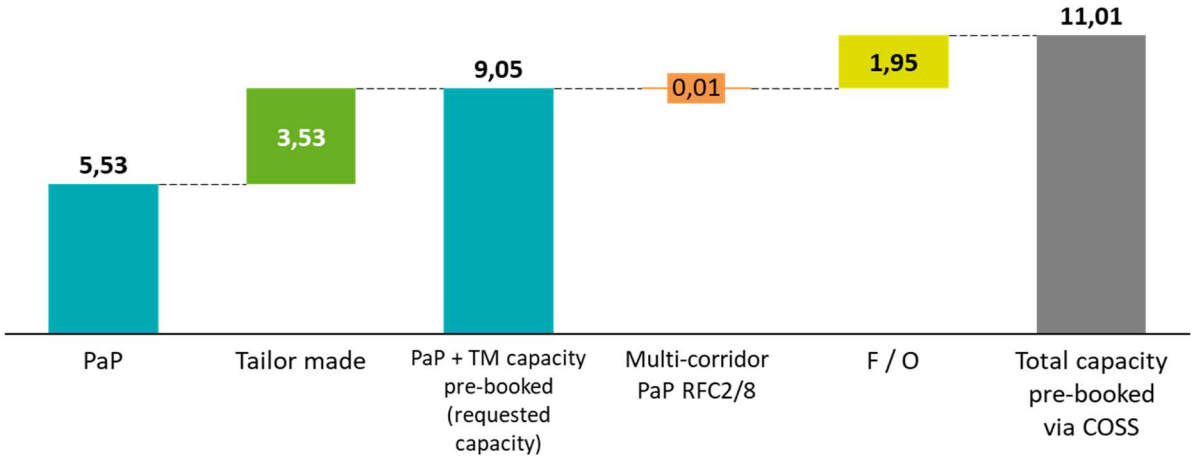


Figure 13: Composition of the requested capacity in 2020 (for TT2021) (in Mio. Path km)

As seen as in the previous TT periods, most of the capacity requested via the COSS was allocated at ScanMed North, were 87% of the offered PaP capacity was requested. Surprisingly, we can see a sharp increase of the Sales rate at ScanMed South by more than 300% between TT2020 and TT2021. But still, the absolute numbers remain still low.

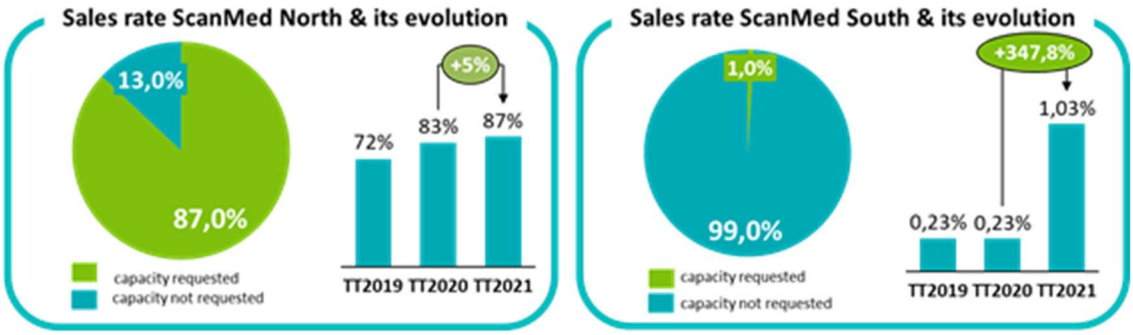


Figure 14: Requested capacity for TT2021 (Percentage of capacity requested)

When it comes to the pre-booking results, these figures need to be analysed together with the whole international capacity that was allocated. Figure 13 shows clearly that the C-OSS has allocated more than 50% of the international freight traffic capacity on the border stations of Peberholm and Padborg. In addition, we can observe an increase of the requested capacity via the COSS at the border stations Kufstein and Brenner with 1% and respectively 2% of the whole allocated freight capacity.

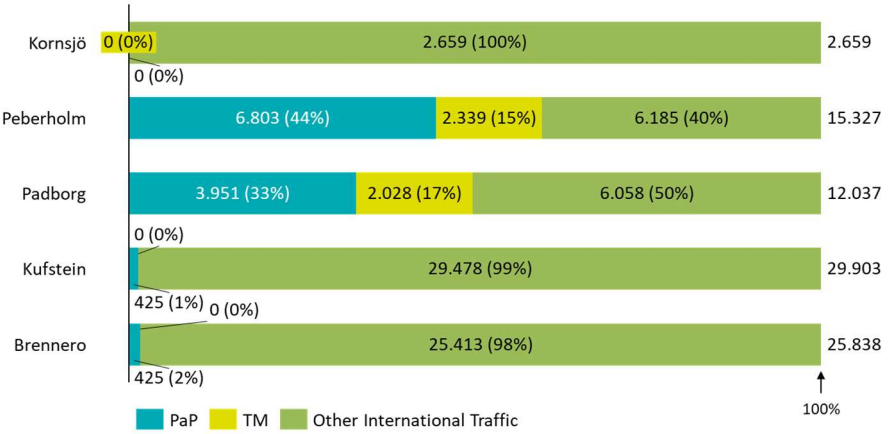


Figure 15: Ratio of the capacity allocated by the C-OSS and the total allocated capacity for TT2021 (Number of allocated running days)

In terms of the number of clients, six customers requested PaP capacity via the C-OSS. For TT2021 ScanMed RFC welcomed one new customer who requested PaP capacity along the corridor.

Reserve Capacity (RC)

Reserve Capacity (RC) is our capacity product for the running timetable to provide the applicants with an internationally harmonized path offer for new traffic needs during the year. RC is offered as a guaranteed contingent of “capacity slots” for international freight paths per day, direction, and a section on ScanMed RFC lines north of Domegliara with an indicated standard running time.

For TT2021, we offered one slot per day and direction (same as for TT2020). The capacity contingent of RC is allocated on the “first come, first served” principle.

Usually, these four advantages of RC can be claimed:

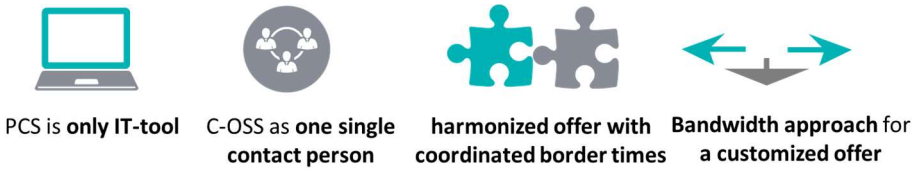


Figure 16: Four advantages of Reserve Capacity

The offered RC slightly decreased between the TT19 and TT20 by 17%. Figure 17 shows that ScanMed RFC could not continue with request for RC. The team is working hard to convince the market to be the sole entry and request point for new recurrent business needs within the running timetable for traffic that starts at the earliest in 30 days.

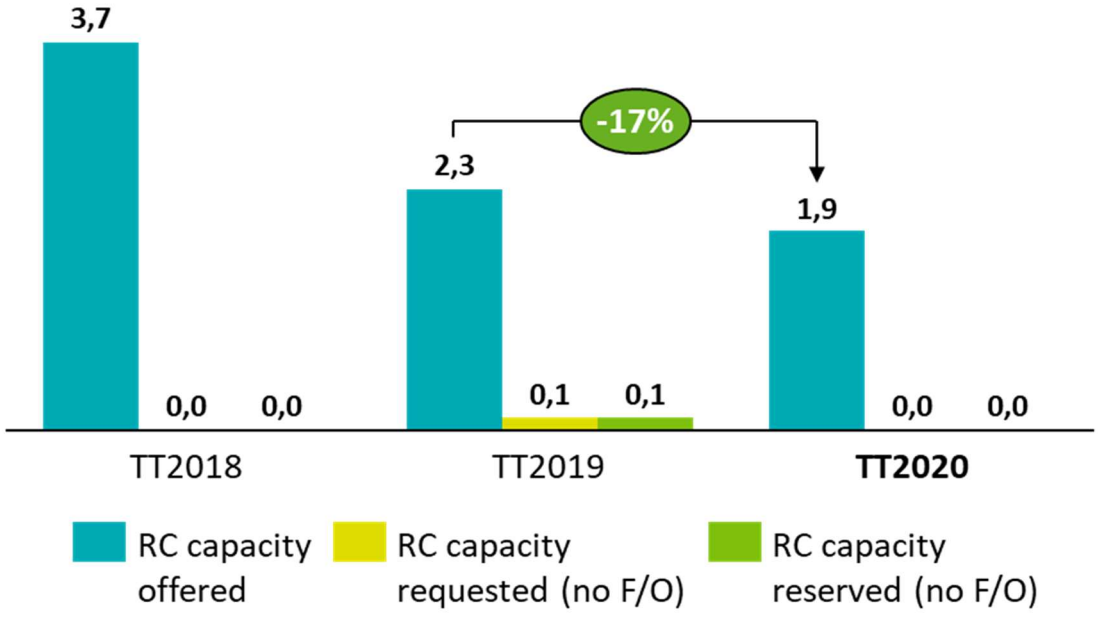


Figure 17: RC Overview between Timetables 2018 and 2020 (in Mio. RC-km)

2.2 Handover between the COSSs

In June 2020, ScanMed RFCs C-OSS manager Stephan Noll became the new major of his hometown Alzenau, Germany. This required a handover between Stephan Noll and the new COSS manager Paul Dippmann. The handover began in April 2020 and lasted until end of May 2020. Interestingly, this handover phase had to be done in a full digital manner as the Corona situation did not allow both to go to the office.
Therefore, both decided to split the C-OSS' tasks into several phases according to the annual timetabling process (e.g. publication of PaPs, pre-allocation phase, wishlist analysis,…).
Moreover, these video conferences with screen sharing were recorded and are still available for watching them again for specific questions that may arise. This digital procedure was a milestone in how we can transfer knowledge from one member to another.

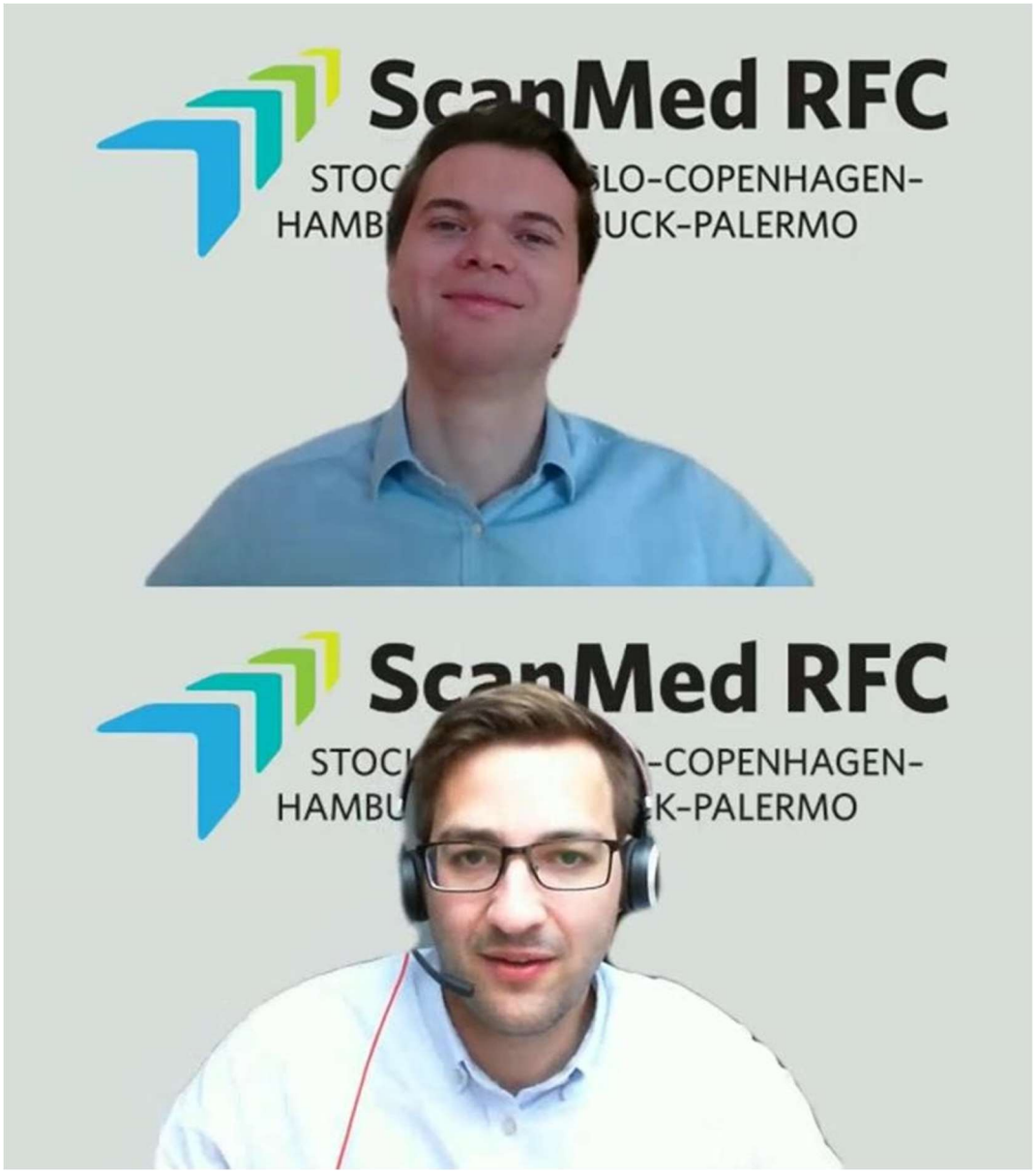


Figure 18: Impression from the handover phase between Stephan and Paul

2.3 Punctuality trend year 2020

The Punctuality of RFC ScanMed improved in 2020 compared to the year before, which again had a slightly improvement as the year before. We use the same measure as previous year, until 30 minutes deviation from the timetable. Optional could be 15 minutes, but we decided to not confuse our customer with a new measure.
The punctuality has increased from 60 % to 64 % at the destination respectively exit point from the corridor. The punctuality at origin/entry point reached 71 % slightly improvement from 70% the year before. Especially the departure figures at Munich and Maschen are negatively influenced by trains arriving from another parts Germany as well as from the Netherland and Belgium. The punctuality of these trains is significantly lower than the average.

Generally, punctuality is higher in North-South direction. One of the reasons is a hgher starting punctuality at the main starting stations in North-South direction (Malmö and Munich than at Verona and Maschen).
12 % of the registered minutes in the Train Information System of RNE were attributed to Infrastructure Managers (same as 2019) and 57% (56% for S-N) to Railway Undertakings.
28% (29% FOR S-N) were due to secondary causes (mainly track occupation) and 3 % due to external reasons (e.g., weather conditions).

The most important aspect for improving quality is the regular exchange with the RUs in the Regional Groups and RAG meetings. Increasingly also other stakeholders are involved to better understand the needs of our customers.

Reliability as the main focus

Stepwise quality improvement
ScanMed RFC, as far as the quality improvements are concerned, has dedicated very much attention:
To the stability enhancement of pre-arranged paths by taking into consideration the planned infrastructure works (“Temporary Capacity Restrictions”)
To the punctuality improvements, made by delay cause analysis, performed in collaboration with the customers. This was possible combining figures for punctuality and reliability into a single performance measure for heavily delayed trains. In 2019 the Corridor started a detailed analysis of a sample of trains with high importance for the customer. This analysis of the RU Key Trains continued in 2020 with success, but only for the southern part. Since the WG North was without a leader it will start later. And both groups (south and north) will continue with regular dialogues between the involved RUs and IMs.

2.4 Customers – ScanMed User Satisfaction Survey 2020

ScanMed RFC investigated Customer satisfaction in 2020, mainly through customer visits conducted by the Corridor One-Stop-Shop Manager the ScanMed RFC specific User Satisfaction Survey and the annual cross-corridor User Satisfaction Survey (USS) coordinated by Rail Net Europe for the Rail Freight Corridors (RFCs).

Feedback from customers based on the costumer visits

One of the main tasks of the C-OSS Manager, after the publication of the PaP Catalogue mid of January, are the promotional activities between January and mid of April. During that time, ScanMed meets its customers in both direct visits and customer-dedicated roadshows. These events 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. For

Throughout customer events, there is an opportunity to give detailed feedback on the performance of the corridor at first hand. This information provides beneficial insight into customer expectations, and this is used to work on the improvement of the corridor.

The customers appreciated the approach to offer longer and heavier PaPs between Sweden and Germany. Furthermore, the approach that the C-OSS Manager is supported during the visits by the national experts from the concerned Infrastructure Managers is warmly welcomed. Another important highlight were the offered PCS trainings. One PCS training for all Applicants was offered in Frankfurt, dedicated PCS trainings were booked by several Applicants on ScanMed RFC.

Feedback from customers from the ScanMed USS

In 2020, ScanMed RFC conducted a corridor-specific USS. In total, 15 RUs (those, which were specifically addressed during the customer visits) were asked to participate in our USS, whereas seven RUs responded creating a response rate of 46,7 %. The main contributor for the response rate was direct contact via e-mail or phone with the RU, so that they filled out the survey before or after the virtual notice. The novelty of this year's survey was to ask specific qualitative questions, but also questions that allowed the participant to evaluate our performance quantitively.

The major positive highlights of the survey from the feedback of the participants are:

- high satisfaction regarding the provided information from the corridor
- 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

The following aspects were rated as "neutral":

- Interest in corridor advertising, Identification with the corridor, Quality of TCR coordination, quality & level of the list of TCRs
- Efficiency of the Wishlist

Space for improvement remains according to the rating of these fields:

- Promoting our TICO offer further
- Offering more PaPs in the North (quantity)
- Increasing TCR-coordination in the North
- Reducing short-term TCRs in the South is desirable

Special attention during the survey was paid on the evaluation of the offered PaP parameters. The list shows, that especially the harmonization between the PaPs of different corridors needs to be improved. This point is followed the by planned and operational speed of PaPs. Interestingly, the dwell time at borders and the stops pattern of the PaPs was evaluated positively.

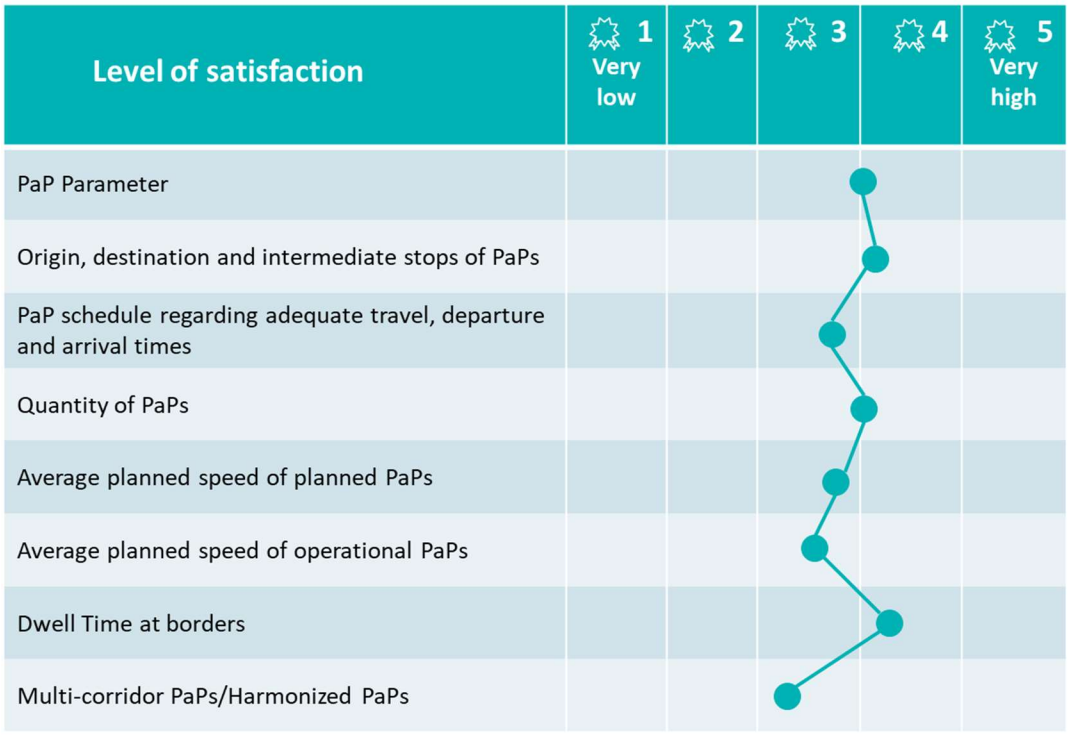


Figure 19: Satisfaction with the PaP parameters

The collected feedback from the ScanMed USS and the customer visits is always collected and the basis for further developments on the corridor. Specific topics and pain points are paid special attention and were put in the concerning working groups.

Sales visits: Key customers visits 2020

In 2020 we changed strategy, not only considering the RU`s as our main customer, but also focusing on freight forwarders and end customer.

UNIL/LKW Walter: UNIL is one of the largest food importers in Norway. They use several freight forwarders and LKW Walter is on of them. By holdings meeting together, we will focus on the fact that rail is the preferred transport mode for UNIL and that it will increase in the future.

Cuveco/Collicare: Wine import from Italy. They have one South – North train pr week and is in the phase of increasing by one more train pr week.

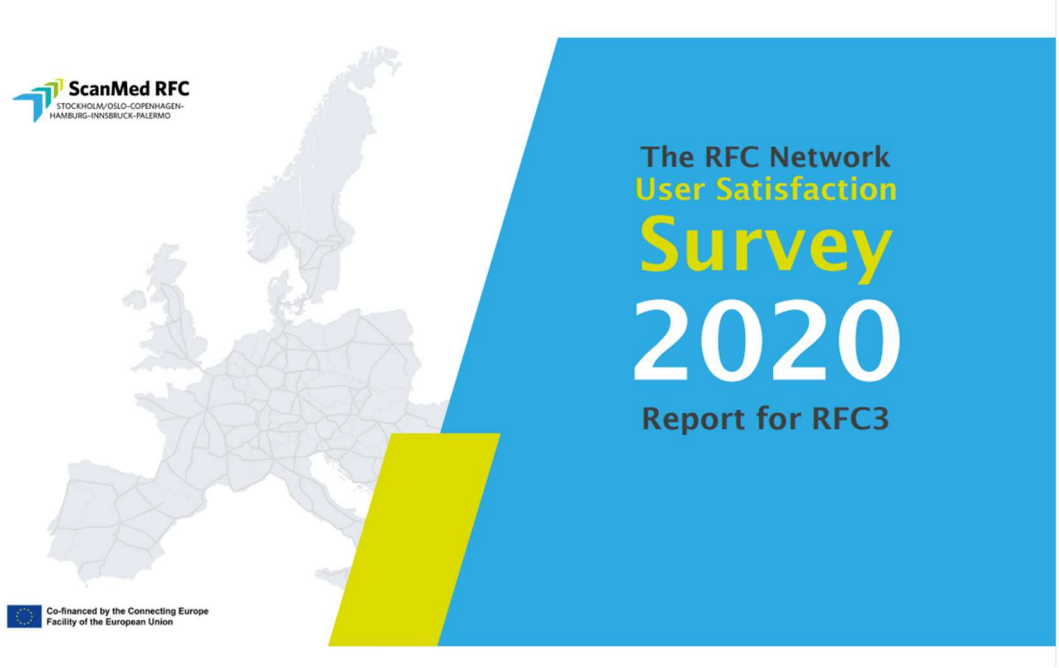
Greencargo: Through 2020 there has been close dialogue with GC, to set up a pap for 2022. Which will run from Oslo – Gothenburg. Many positive meetings have been held and the planning staff at GC have been to PCS training at RFC.

Rail Net Europe Rail Freight Corridor Network User Satisfaction survey

Rail Net Europe (RNE), together with the Rail Freight Corridors (RFC), decided to conduct the User Satisfaction Survey (USS) of 2020 through an online tool named Survio. In short, it meant that the work previously managed by an external consulting partner, was now carried out by RNE together with the RFCs.

The field phase of the study started on the 24th of September 2020 and ended on the 23rd of October 2020.

Nine respondents generated 13 evaluations, the number of evaluations is higher than the number of respondents since one respondent is counted multiple times if her/his organization uses and responds for multiple corridors.



The number of invitations sent was 35 which gives a slightly higher response rate than the previous year.

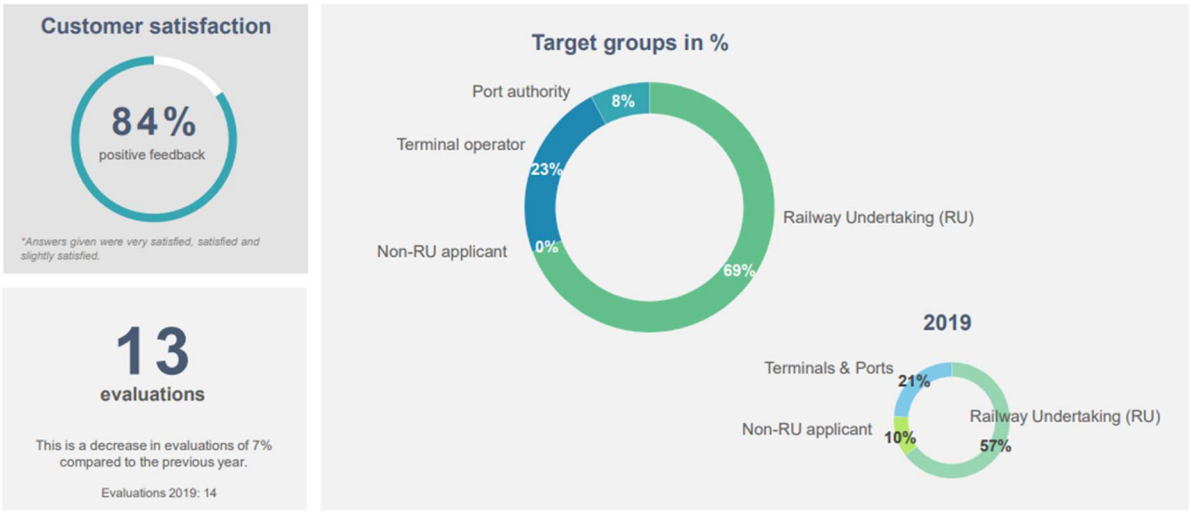
The overall satisfaction of ScanMed RFC is 84%, the respondents answered that they are very satisfied, satisfied or slightly satisfied. This is a 7% decrease of satisfaction when comparing to 2020.

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

The satisfaction with TCRs pointed out that ScanMed RFC should focus on the timetable of alternative offers, the quality of alternative offers and the information on works and possessions.

The amount of capacity requested via the C-OSS is 67%, this is the highest value since the USS was implemented. Among the reasons for not ordering via the C-OSS, we can find that there is no visible added value of PaP/RC use and that there had been no increase in traffic.

SATISFACTION & RESPONSE



RFC User Satisfaction Survey 2020 I RFC 3 Report 51

Regarding the commercial offer – the answers show that ScanMed RFC needs to work on the quantity and parameters of the PaPs, especially in the Northern part of the Corridor.

Train Performance Management was considered by 31% to be generally satisfied. Among the issues to be tackled by ScanMed RFC were the efficiency of measures taken to improve punctuality as well as the RU/terminal improvement.

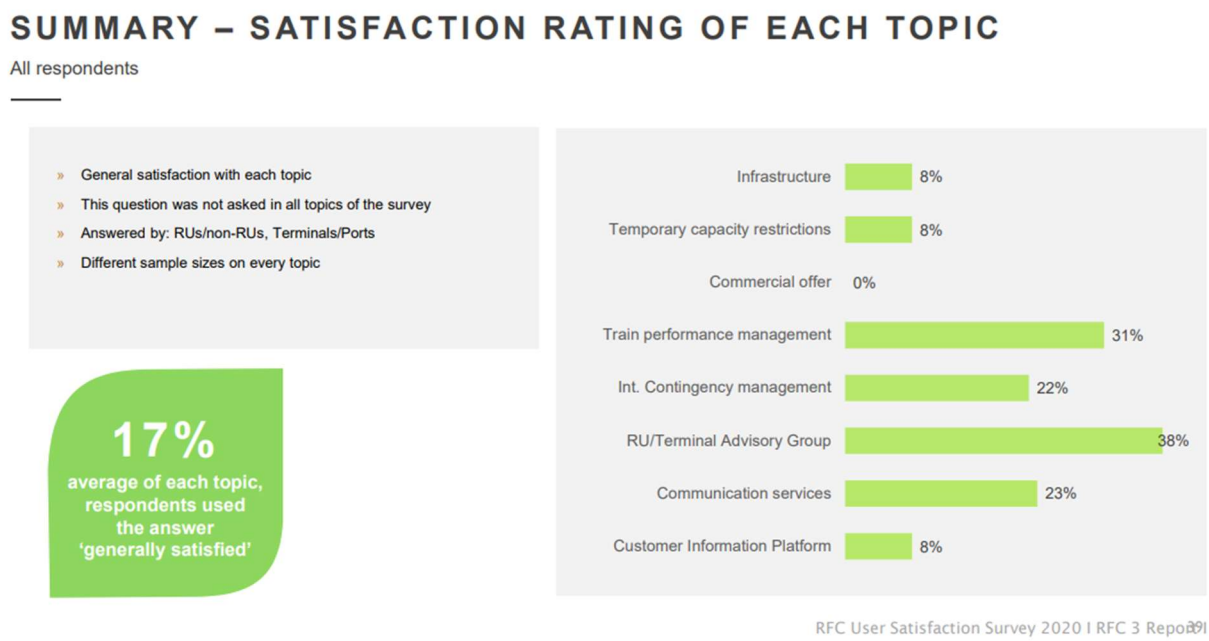
ScanMed RFC has had experience with International Contingency Management over the past years, 22% of the respondents indicated that they are generally satisfied. ScanMed RFC should focus on the quality and usability of re-routing scenarios as well as the implementation of new processes.

The Railway Undertaking Advisory Group (RAG) and the Terminal Advisory Group (TAG) were generally considered as satisfactory by 38%. The consideration of the Advisory Groups input in the Executive and Management Board were among the topics ScanMed RFC should focus on. 92% indicated that they regularly participate at RAG/TAG-meetings.

23% viewed the communication services provided by the ScanMed RFC as satisfactory. Among the topics to focus on is the website as well as the Customer Information Platform (CIP). Several mentions of a TCR-tool and a more proactive customer services related to capacity products through e-mail and phone were provided by the respondents.

The establishment of the South Brenner Axis Task Force is considered as a step in the right direction by 23%, although respondents thought that more could have been done at an earlier stage.

A high number of respondents, 38%, noted that they have no knowledge about the Single Contract of Use (SCU). The result confirms that more needs to be done in this area in the upcoming years.

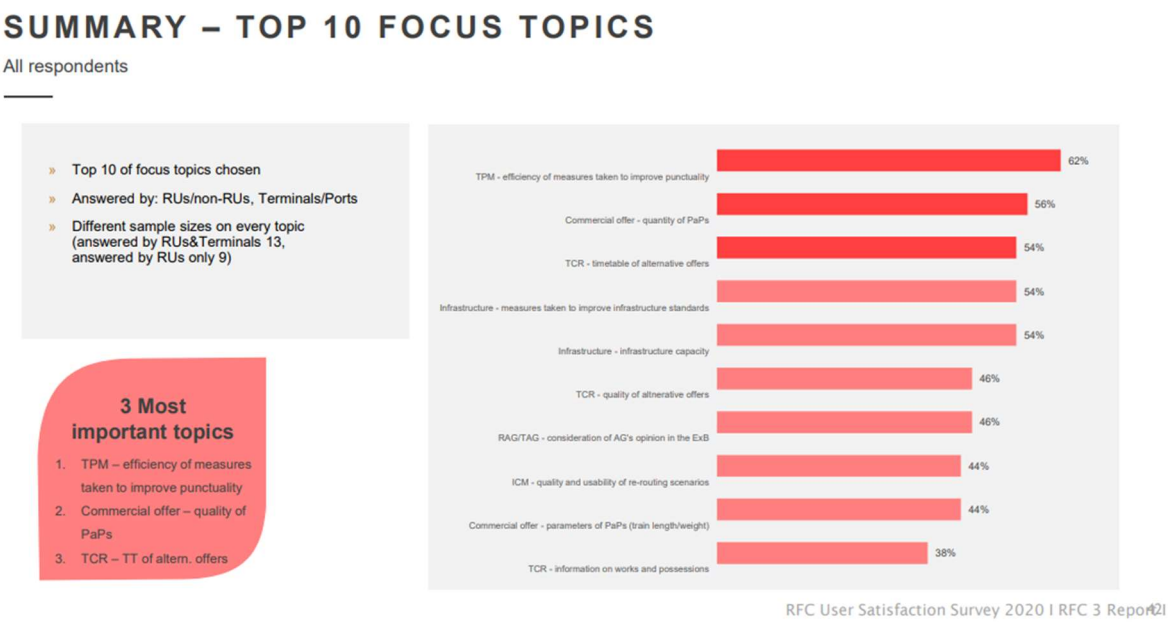


Respondents noted that they were happy with the information and activities related to the current COVID-19 pandemic, but as a note the importance of rail freight needs to be promoted always.

For the question "*Regarding the timetable review TTR project, what do you see as role for the RFCs and the C-OSS in particular?"* the replies were divided equally:

- 44% indicated that the C-OSS should have a role in the drafting of the capacity model
- 44% indicated that the C-OSS should have a role in allocating the rolling planning capacity

CIP was viewed as generally satisfactory by 8%, focus should be on improving the route planning and information documents provided.



3. Implementing ScanMed RFC Strategy

ScanMed RFC Strategy and challenges ahead

The ScanMed Rail Freight Corridor was established in November 2015 and in 5 years of operation we learned a lot. The knowledge we achieved has been an inspiration to the new strategy paper 2021-2024 for ScanMed RFC. During last year's we have taken in due consideration the Rotterdam Ministerial Declaration of 2016: Rail Freight Corridors to boost international rail freight, The Vienna Declaration of 2018: Progress on boosting rail freight and the Berlin Ministerial Declaration of 2020: The future of Rail Freight in Europe.

Our strategy for the next four years will, of course continue taking as a very basis the concerned RFCs Regulation and the Regulation on TEN-T and CNC Corridors. These regulations are currently under revision, for this reason, the present document mostly reflects the European requirements we know from 2010 onwards. Some changes and new aspects have been introduced, like the importance we are giving to the development of a concept of Joint Coordination of Traffic and Capacity, how the measures we are implementing to move more freight to rail can positively influence the achievement of the climate goals, and finally the actions we're putting in place to better meet the market needs (e.g. the business cases). However, once the revision of the concerned regulations is concluded, this will be taken in due consideration and we foresee a revision of the current paper.

The developments of European tools and systems, like the TTR, will influence the way of working in the ScanMed RFC and is therefore it is having a big impact on the current and future strategies. The Timetable and Capacity Redesign (TTR) is a strategic project lead by RailNetEurope (RNE). The project aims to re-design the timetabling and capacity allocation process by harmonizing the process and by digitalization. The TTR will be implemented in Europe by the Timetable 2025. We´ll follow it closely and offer our support in the upcoming years. There will be first wave implement project along the corridor. It´s a strategic opportunity to be taken.

We´ll continue to improve the quality with a result-oriented approach to do a little better every day. Every rail freight train on the corridor is a small step closer to achieve the ambitious climate goal of substantial reduction in transport CO2 emission by 2050. All in close cooperation. Rail freight can play a big part in reducing congestion and carbon emissions in the EU.

The pandemic emergency brought temporary uncertainties. On the other hand, the railway system has proved to be a more resilient mode when transporting goods. The railway system has continued to deliver essential services during the pandemic. ScanMed RFC provided key covid-19 related communication to its customers and users. It highlights how vital rail transport is for our modern society as it is resilient and climate friendly. It is commonly recognized within the sector that two key aspects for the upcoming years will be the right balance between transport modes and achieving the climate goals. A transition to climate neutrality is, in any case, needed to achieve the Green Deal's sustainable growth goals. An interesting challenge will be to enable the transition in the context of the EU recovery plan.

RFC ScanMed during 2020, provided with an input for the Evaluation of Regulation (EU) No 1315/2013 on Union guidelines for the development of the trans-European transport (TEN-T) network. We see the need of a geographical alignment of the ScanMed RFC with CNC. To fully facilitate for intermodal transports, it should be possible to include shippers, in a more formal manner, in the various activities of the RFC. In some cases, the transport is national on rail to a port and then the goods continue on

boat and in the next country on rail again. In these cases, the RFC can´t be much helpful since the goods do not pass the border via rail. We see the option of including shippers in a more active role in the RFC organizations as an occasion to better meet the transport needs.

ScanMed RFC now, is developing a harmonized approach for joint coordination of traffic and capacity among its members and partners also in case of minor disruptions or during the regular service.
This will improve the corridor services' effectiveness and efficiency to ensure that the railway system can become a more attractive transport decision-maker option. It will entail being recognized as a European Contact Point by corridor users for international coordination of traffic and capacity, not only when dealing with an ICM-case but in all operational scenarios.

With all this in mind, RFC ScanMed will continue working as cross-border coordination platform, bringing together key stakeholders involved in rail freight transport (Member States, infrastructure managers, railway undertakings and terminal operators), to help developing international rail freight transport, in terms of quality, reliability and market share.

3.1 Flexible and customized products

In 2020 we continued developing new flexible, and comprehensive products. Thanks to these efforts, we improved the perceived reliability, both in conditions of regular traffic and with disturbances or in case of major international disruptions.

More products, new products

ScanMed RFC acknowledged our Terminal Integrated Capacity Offer (TICO) as an official corridor product, which means that TICO is not a pilot any longer but rather 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.
In 2020, fourteen Terminal and Ports located in Norway, Sweden, Denmark, Germany and Italy participated in the integrated terminal offer. ScanMed RFC offers four levels of commitment and involvement on the TICO product, whereas level 4 means the highest level of harmonization between the PaP and the terminal capacity.

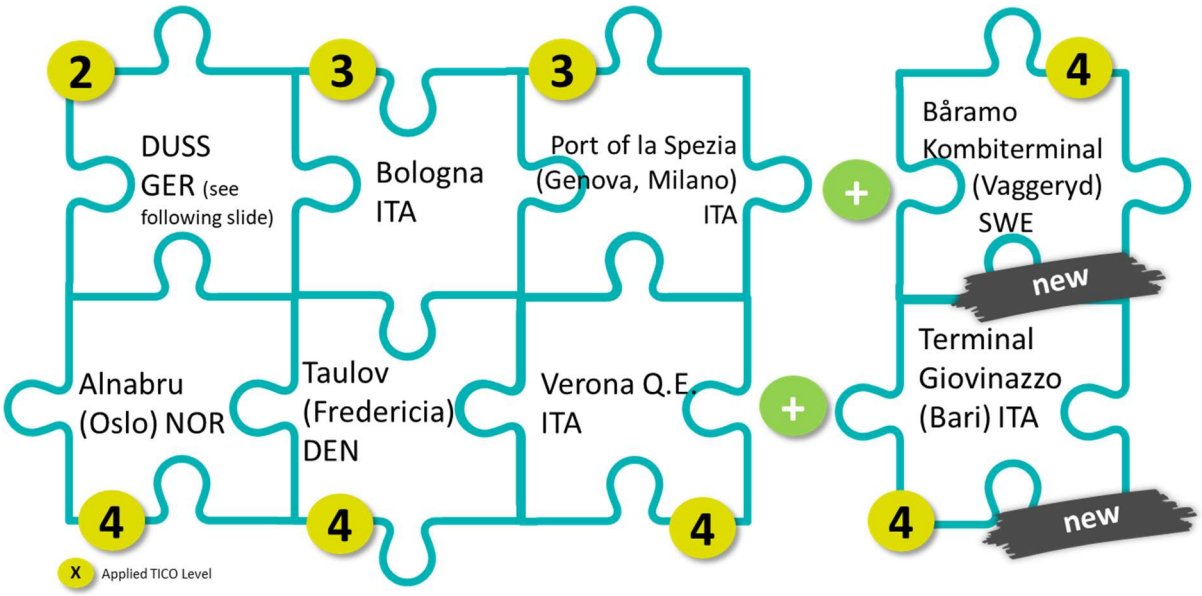


Figure 20: Status Terminal Integrated Capacity Pilot with participating Terminals for TT2021

Most importantly, two new terminals joined the TICO network, Båramo Kombiterminal in Sweden, and Terminal Giovinazzo in Italy. Both joined with the most integrated Level 4. We received the second Terminal Integrated Capacity Request with a PaP from Verona Q.E. to Germany. By doing so the Applicant safeguarded the terminal capacity, which is harmonized with the PaP.

Figure 21: Impression from Båramo Kombiterminal

Flexibility of products

In 2020, ScanMed RFC continued to offer harmonized paths (HaP) with other Rail Freight Corridors to support applicants with these connecting offers - even if these offers are not on principal lines - to link several PaPs in on request. With the offer of harmonized paths (HaPs), it will be easier for applicants to connect ScanMed PaPs with partner corridors' ones. Harmonized Paths have been offered for the link between our corridor and RFC Rhine-Alpine (Bologna-Piacenza) and North Sea-Baltic (Maschen-Osnabrück). Together with the capacity wish list results, these HaPs have been constructed as close as possible to the market demand.

Also, all PaPs have been offered as FlexPaPs. As a FlexPaP, we indicate a PaP, where only the border time is fixed. The rest of the timetable can be adapted by the applicant to his needs as long it stays within the standard running time of the relation. Reserve Capacity Slots are even not offered with pre-constructed times and only with bandwidths. This leads to the fact that the TT expert can construct timetables as close as possible to the request on short notice. Furthermore, Reservce Capacity is not limited to the sharp routing of the corridor, which allows requests with a higher flexibility in term of routings.

3.2 Interoperability specific issues

Railway Noise Mitigation Act

In 2020, from the start of the 2021 timetable period the 13th of December, the *Act Prohibiting the Operation of Noisy Freight Wagons* (*Railway Noise Mitigation Act*) came into force in Germany. Thanks to its member DB Netz who is the Infrastructure Manager of the German rail network where the Rail Noise Mitigation Act now applies, ScanMed RFC has continuously monitored the implementation of the Railway Noise Mitigation Act to inform customers and other concerned stakeholders about the progress.

3.3 Planned Temporary Capacity Restrictions management

Planned Temporary Capacity Restrictions (TCRs), like total or partial line closures of varying durations, speed restrictions, platform closures etc. are fundamental to enable infrastructure maintenance, replacement, and new investments on railway networks. The aim of the activities of ScanMed RFC within this field is therefore to ensure a maximum of available capacity and transport quality for international rail freight on the Corridor while considering the benefits of activities causing the TCR. Though RFCs are dedicated to promoting freight traffic, the interests of passenger transport are also taken into consideration. To cope with these challenges, ScanMed RFC carries out a TCR-Coordination process organised as follows:

1. After the according national processes, basic coordination of TCRs takes place on experts' level between affected IMs. On ScanMed RFC this is intended to be carried out by two regional working groups – TCR Regional North (NO, SE, DK, DE) and TCR Regional South (IT, AT, DE). While TCR Regional South is established since years due to Brenner Corridor activities, in the northern part of ScanMed TCR-coordination was secured by bilateral collaboration of adjacent IMs. During 2020 TCR Regional was shaped with the aim to improve throughout coordination of TCRs especially on the Malmö – Hamburg section.

2. ScanMed RFC TCR WG is the group of the IMs' international experts, taking care of the second level of coordination of TCRs, i. e. to check if all TCRs are covered and coordinated. Thus, negative effects to ScanMed RFC's overall capacity for freight trains on ScanMed RFC's principal, diversionary and re-routing lines are reduced to a minimum value.

To keep the quality of information to its customers on a high level, ScanMed RFC decided beyond the requirements of Annex VII to maintain the twice a year publication of TCRs. As a result, all major and high impact TCRs for TT 2022 were updated and published together with the minor impact TCRs for TT 2021 on August 1st, 2020.

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 2020 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[1] while assuring transparency between the IMs on the Corridor.

3.4 Train Performance Management activities

Punctuality improvements and reliability

The working group Train Performance Management (WG TPM) continuously measures the performance of the international freight trains running on the corridor. The performance is shown by Monthly Reports, which are provided to the members of the TPM Working Group and the Regional Groups as well as published on the CIP Customers Information Platform. These reports contain punctuality figures and the responsibilities for delays.

In the year 2020, the TPM Working Group further developed an approach to analyzing specific trains with high importance for the customer (RU Key Trains). The aim was to establish periodic quality circles with the RUs about real performance issues. By analyzing these trains together with the RUs, the general understanding of operational processes and individual situations are improved. For the Southern part of the corridor, this was done via separate conference calls with the RUs involved in the respective train runs. This year the aim is to organize these conference calls regularly and more frequently and to implement the approach also for the Northern part. Also, in 2020, the two Regional Working Groups carried on discussing diverse operational topics and quality issues together with the RUs. CRM Manager also posted information on ScanMed's website, encouraging RU`s and all other stakeholders to take part in the analysis.

3.5 International Contingency Management ICM

In accordance with the implemented procedures as outlined in the Handbook for International Contingency Management (ICM) and put into operation on the Corridor according to ScanMed RFC Re-Routing options & processes, two ICM cases have been coordinated in 2020 by the declaration of international disruptions along the ScanMed RFC route.

In August, a level crossing accident near Hamburg occurred which caused damages to the infrastructure, whereby the ScanMed RFC line Hamburg - Padborg had to be closed. 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.

In December, the ICM coordination had to be activated once again on ScanMed RFC upon RFI's declaration of an International Disruption on the Brenner line in Northern Italy. This time severe weather conditions caused implications for international train services on the concerned ScanMed RFC 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.

In 2020, besides the real cases, ScanMed RFC has made further improvements of its internal procedures for ICM. The Corridor has put in place an ICM Back-up Responsible. This function allows an immediate activation of the ICM, in the sense that ScanMed RFC can receive a declaration of International Disruption at any time, at any day. In order to test the concept of the ICM Back-up Responsible, ScanMed RFC organised and carried out an ICM simulation. The simulation, and thereby implementation of the ScanMed RFC ICM Back-up Responsible, was considered successful among all the participants who took their defined roles of the ICM process.

4. Corridor cooperation with Users and Partners, and Market study

Corridor cooperation with Users and Partners, and Intermodal Market Study

ScanMed RFC continued the dialogue with customers in 2020 even though mostly digitally, due to covid-19 restrictions for travelling during 2020. We continued fostering the direct exchange with End Users and we improved the integration of our organization as regards the pre-existing regional groups on operational improvements and cross border processes harmonization. The regional working groups (north, for Scandinavia and North Germany; south for South Germany and Austria, Italy) are continuing being the best place where ScanMed RFC can meet up Railway Undertakings (RUs), End Users, MTOs (Multimodal Transport Operators), Terminals, Ports to discuss performances, operational issues, and works planning with a focus on medium to short term issues.

The RAG-TAG meetings were organised as digital meetings, there was a summer session of the RAG in July 2020 where the Brenner Corridor Platform activities were presented. We have discussed possible improvements on Temporary Capacity Restrictions with our RAG Speakers (Andrea Penso – DB Cargo and Henrik Møller Larsen – Green Cargo) and other RUs. We also discussed about the Noise Regulation and possible consequences for Rail Freight Traffic due to German-Swiss legislation.
Finally, we exchanged information on limitations on Dangerous Goods, and progress on the rear-end table issue in Italy.
The summer session of the TAG was organised in a separate meeting. There we've explored the status of harbours and combined transport activities with Tomas Arvidsson (SIFA Swedish Terminals and International Freight Association - RFC3 TAG Speaker); a Project on digitalisation of last mile connection "I-Rail" was presented by Federica Montaresi (Port of La Spezia - RFC3 TAG Speaker); the European project "Railway Interreg BSR Project COMBINE" was described by Inga Gurries and Nikola Košvancová (Port of Hamburg); on the Terminals side we've focused on the development of the 4th module at Verona Terminal and on the construction of the new Terminal of Marzaglia, with Terminali Italia Verona, Verona QE, Quadrante Servizi.
Finally, an interesting use case Italy – Scandinavia – Italy, involving the Terminals Rostock and Verona was presented by Hangartner Terminal / DB Schenker Italy.

In November 2020, the Autumn RAG-TAG joint meeting was held digitally. In the RAG section, there were presentations from DB Cargo on the Xborder methodology and the measures that can be derived from it for the Munich-Verona corridor section (Andrea M. Penso – DB Cargo \ RAG-Speaker, ScanMed RFC), Green Cargo on a 2-way strategy for ScanMed RFC North (Henrik Møller Larsen - RAG-Speaker, ScanMed RFC), Mercitalia Rail on the Verona-Bologna Axes as Gateway between Northern and Southern Europe, and ERFA on supporting Rail Freight—Waiving and Reducing Track Access Charges (Conor Feighan - Secretary General, ERFA).
The TAG section was dedicated to the best practices of multimodality and interoperability in the Baltic Sea Region (Port of Hamburg - Hamburg Port Authority), innovative opportunities of the MegaHub Lehrte, the new terminal in the Hannover region (Kombiverkehr), Port of Taranto as competitive intermodal hub in the Mediterranean (Port Network Authority of the Ionian Seaport of Taranto).

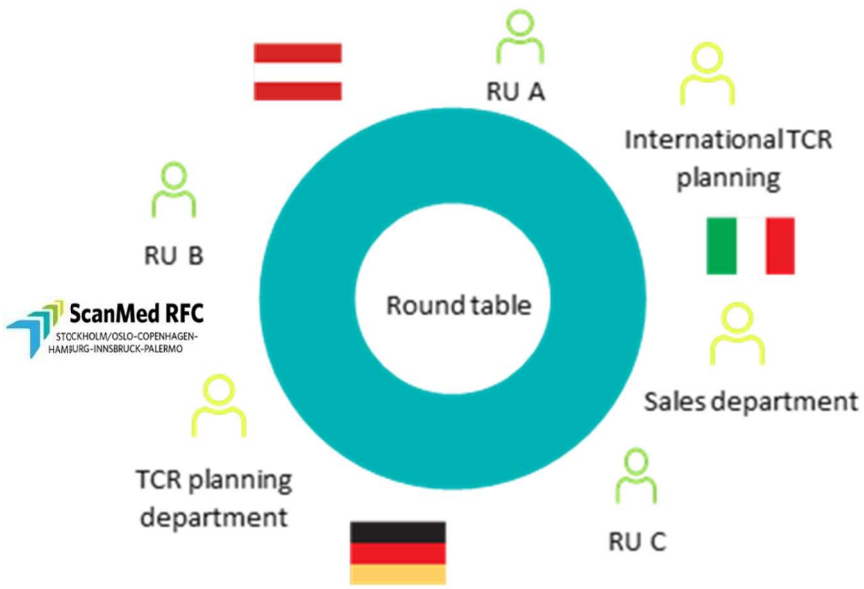
Regional Working Group South / WG Brenner

The Regional Group South already existed before the installation of the ScanMed freight corridor and represents an effective exchange format between infrastructure managers and railroad 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, reductions in border stops 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.

In 2020, three trilateral meetings were hold between Germany, Austria, and Italy regarding the Brenner axis München-Kufstein-Wörgl-Brenner-Verona. The language barrier was overcome by the German and Italian translation. On top of the organization is Gregor Thalhammer from DB Netz AG, who organizes all WG Brenner meetings for both, RUs that are operating in the rail freight business, but also RUs operating in the passenger traffic.
Also, these meetings are a reunion of the TCR planners and timetable experts from all participating IMs. Also, the corridor team is represented by Emanuele Mastrodonato and since autumn 2020 also by Paul Dippmann from ScanMed RFC.



The Regional Working Group South has achieved a tremendous role in the international coordination of TCRs. The major highlights of this platform for the year 2020 can be summarized as the following:

- Presentation of the TCRs between 2020 and 2023
- Checking together the TCR works aroung Ferragosto with the prefecture Bozen, RUs and IMs
- Presentation of the Border Crossing Dwelling Times Report
- Sharing information regarding the winter preparation of DB Netz AG, ÖBB Infra, RFI
- Initiation of possible projects/quick wins that will be tackled by the Brenner axis task force, in fact measures, that can be achieved within a short time frame e.g.:

- Common understanding about the operating organization,
- Transparent and digitalized information flow,
- Technical framework,
- Reliable process structure,
- Understanding of cultural differences for a common steering of traffics along the Brenner axis

In 2021, the Regional Working Group South will continue the intensive dialog with the RUs on construction measures. One focus will be on monitoring the implementation of the trilaterally agreed rerouting measures via the Tauern axis. Due to the total closure of the Brenner axis in summer 2021 as a result of construction work, freight trains will be given detour schedules via Munich - Salzburg - Villach - Tarvisio - Verona in coordination with customers. For this purpose, there will be a close exchange with the customers including the planning and the implementation of the detour transports. Moreover, the Regional Group South will accompany Phase 3 in the piloting of the European train termination signal in 2021.[1]

RG WG North

RG WG North has been without a leader since September 2019.
In October 2020 BaneDK appointed Laura Vestergaard as the new leader, with the CRM Manager as the co-leader. The WG was relaunched in November the same year, and the overall goals for the group are to improve punctuality and reduce disruption at border crossing and measure key trains for RU. We held the first meeting the 24th of November with participants from IM, RU, and Ports.
In that meeting we agreed on what topic should be on the agenda, how many meetings, how we shall arrange our workshop, so we can work together so we get the best out of the workshops and ourselves.

4.1 Corridor cooperation with Users and Partners

In 2020, ScanMed RFC continued the dialogue with customers both by fostering the direct exchange with End Users and by finalizing the integration in its organization of pre-existing regional groups on operational improvements and cross border processes harmonization.
These regional working groups (north, for Scandinavia and North Germany; south for South Germany and Austria, Italy) are the place where ScanMed RFC meet up regularly Railway Undertakings, End Users, MTOs (Multimodal Transport Operators), Terminals, Ports (on ad hoc basis when appropriate) to discuss performances, operational issues, and planning of works with a focus on medium to short term notice works. At the same time, it was conducted bilateral meetings with all parties.

Meeting End-users' needs

ScanMed RFC has continued developing a direct dialogue with End Users (defined as non-RU applicants). The Corridor, with its CRM function, identify key potential priority customers to address and start an information exchange to investigate tailor-made Business Cases with them.
Addressing the freight transport service decision-makers, like End users, or MTOs, meaning the ring in the chain that decides in favor or against the rail, ScanMed RFC wants to tackle an essential aspect for successful strategy implementation.

[1] ScanMed RFC thanks Gregor Thalhammer for the substantial input for the REG WG South.

From the continuous further development of the number of potential Use Cases (or Business Cases), in a virtual circle, ScanMed RFC gathered valuable learnings for its future development. The demand for the Corridor is still to play the role of international logistics facilitator.
To meet this demand, ScanMed RFC needs to prepare a flexible offer and innovate its product portfolio, to allow the customization at several levels. All feedback is compiled in the business cases. All the meetings are held in virtual room due to covid 19.

Longer and Heavier Trains study phase 3, gathering customers' feedback

In February 2020 1st draft of the L&H trains study was started. With phase 1 and 2.

- The report includes a brief summary of the relevant steps prior to the initiation of the 1st and 2nd phases of the study. Subsequently, the progression of the two phases is described, emphasising the "theoretical framework" which has brought the results of the study this far. Description of current infrastructure features (in terms of track length, axle load and maximum speed) along the ScanMed which, in principle, prevent the running of longer and/or heavier trains and the list of planned infrastructure investments aimed at removing these hindrances at different at different future scenarios (e.g. 2020, 2025, 2030). The list is provided in O/D relations

- Identification of operational possibilities and related conditions, which allow longer and/or heavier trains to run in the above listed O/D relations, until the infrastructure investments are completed

It is also stated in the ToR that the Phase 1, as well as Phase 2, is carried out by internal ScanMed resources. As regards the 2nd phase, this includes an estimation of how many longer/heavier trains (and how much longer/heavier) can run when the planned investments are completed.

After the provision of the 1st and 2nd phases of the Longer & Heavier Trains study, ScanMed RFC Management Board took the decision to proceed with Phase 3 with internal ScanMed RFC resources.
The plan for the downscaled Phase 3 was to interview customers when visiting them, gathering their feedback based on the questions as presented in annex 3 and obtain their needs/challenges to run longer and heavier trains on ScanMed RFC.

In addition, the agreed approach for Phase 3 would also allow ScanMed RFC to understand to what extent the Longer & Heavier Train study's conclusions could be of benefit for the customers' future businesses.

4.2 Transport Market Study on Intermodal Costs

Vulnerability competitive analysis

ScanMed RFC, completed the study in the autumn of 2020. With this study, ScanMed RFC will get an in-depth analysis of its position in a competitive context and will understand: the strengths and weaknesses of international rail freight against other transport modes as regards costs; vital elements for the further development of its product portfolio; how to improve its market knowledge.

To facilitate the scaling of results and comparisons between transport modes, the present study will implement a cost-driven approach. The study is being divided into three parts:

- A general analysis applied to rail, road, and short-sea shipping in Norway, Sweden, Denmark, Germany, Austria, and Italy

  - of cost drivers and costs structure for international freight from the perspective of a freight forwarder and of a freight carrier
  - of cost impacting parameters as well the sensitivity of each transport mode to the evolution of these parameters

- A sensitivity analysis for a sample of Origins and Destinations (O/Ds), which are vital to ScanMed RFC.

- Conclusions as regards the objectives of the study and recommendations for further market prospection given winning new freight carriers and forwarders to international rail traffic.

Figure 23: The ScanMed team gathered in Teams when the CRM Manager presents part of the study.

As explained in the competitive risk for rail freight, there are several influencing factors which prevent a higher market share for CT or rail only. And even if this study was mainly concerned with the cost aspect of competitiveness, the final recommendations also include aspects which have an indirect influence on the choice of transport mode.
Nevertheless, this list cannot be regarded as exhaustive, as there are other aspects such as research needs and research funding that cannot be addressed in this context. The recommendations include not only the direct sphere of influence of infrastructure managers, but also, to some extent, that of other actors and state bodies. Part of the Intermodal Cost study is published at our website. RU's and all stakeholders are invited to get in contact with us so we can present the study together.

5. Communication & Events

Communication

2020 proved to be the year where ScanMed RFC went even more digital. Due to the COVID-19 pandemic, almost all meetings have been held virtually. At ScanMed RFC we have been happy to note that the interest for our meetings has been high and valuable partnerships have been formed.

The main communication channels of the ScanMed RFC are the website, LinkedIn, Twitter and e-mail. Our LinkedIn page has seen a 33% growth in followers during the year. A high number of interactions with the posts and organic impressions have all gilded a higher visibility. We have shared important updates related to the COVID-19 pandemic, RAG/TAG-meetings, ICM-cases and other interesting facts during the year. The cooperation with RNE and other RFCs has grown in 2020 and is now more structured. Twitter is still a moderate tool of communication for ScanMed RFC. The number of followers, though it has increased in the last year, is still low. During 2021, a thorough review of Twitter usage should be conducted. ScanMed RFC has also registered a Facebook and Instagram account for use in the future.

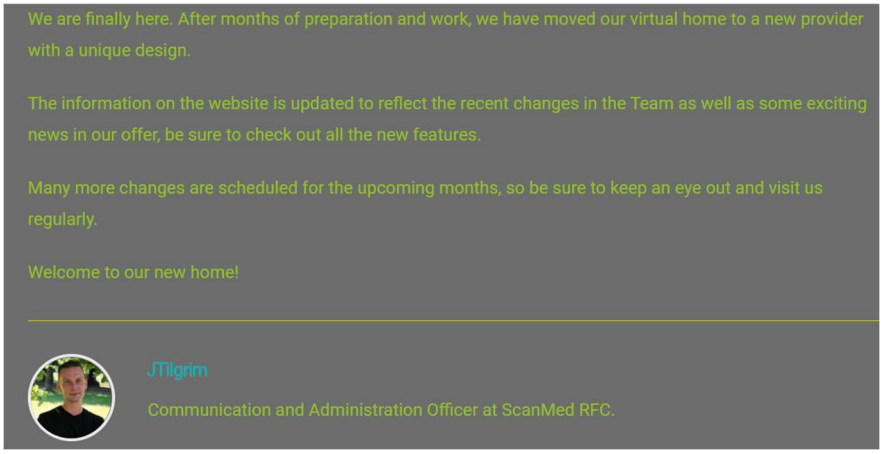


Figure 24: New Webpage Announcement

During 2020, the website of ScanMed RFC was moved to a new host with new technology. The creation of new pages, as well as the technical ease was in focus. The new home page is aimed at being easier to use with a more appealing design. During 2021, a major review of the information provided on the website will be undertaken.

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.

During 2020, focus has also been on the Rail Facilities Portal, the development is still in progress and we are looking forward to the usage in the future.

Events

- ✓ **On the 30th of January 2020**, a workshop was organized by Trafikverket and ScanMed RFC in Stockholm to further improve the use of the ICM-procedure.
- ✓ **On the 27th of February 2020**, the Green Logistics Expo, scheduled in Padua, was postponed. The event was ultimately canceled.
- ✓ **On the 20th of April 2020**, ScanMed RFC and individuals working with Shift2Rail participated at a virtual meeting where the future possibilities of transports on the railway was discussed.
- ✓ **On the 25th of June 2020**, the European Rail Freight Association presented their findings on TCRs at the SERAC meeting.
- ✓ **On the 17th of July 2020**, ScanMed RFC organized a RAG-meeting online. We had a huge turnout and an engaged group of people joining in for discussions.
- ✓ **On the 30th of July 2020**, a digital TAG-meeting was organized by ScanMed RFC. Even though the holiday period was about to start, we had a huge turnout at the meeting!
- ✓ **On the 12th of November 2020**, ScanMed RFC together with the Port of Hamburg, organized a digital RAG/TAG-meeting. Exciting topics were discussed at the meeting and we had the highest number of participants so far.

Figure 25: RAG-TAG meeting in Port of Hamburg

6. Key Performance Indicators

In this paragraph we report the 2020 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.

6.1 Capacity KPIs

				2020 TT2021	2019 TT2020
CAP	Offered Capacity	Volume of offered capacity (PaPs) at X-11 (in Mio. km*days)		13.8	16.6
		Volume of offered capacity (RC) at X-2 (in train km.)		1.9	1.9
	Requested Capacity	Volume of requested capacity (PaPs) at X-8 (in Mio. km*days)		7.6	7.4
		Volume of requested capacity (RC) at X+12 (in Mio. km*days)		AR2021	0
		Volume of requests (PaPs) at X-8		49	51
		Volume of requests (RC) at X+12		AR2021	0
	Pre-booked Capacity	Volume of pre-booked capacity (PaPs) at X-7,5 (in Mio. km*days)		5.5	5.4
	Conflicting requests	Number of conflicts (PaPs)		38	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		AR2021	not applicable
	Integration of the product	Number of PaP-requests including Terminal slots (TICO)		1	1
	Cross-corridor PaP-requests	Number of PaP-requests including at least one PaP-segment on another RFC (in %)		14.3	17.6%
	Cancellation/Modification rate	Cancellations / modification rate of PaPs before TT change (share of not cancelled days)		87%	80%
	Planned speed	Average planned speed of PaPs at X-11 (in km/h)	Alnabru-Göteborg	56	57
			Göteborg-Malmö	66	67
			Katrineholm-Malmö	59	72
			Hallsberg-Malmö	69	73
			Malmö-Maschen	63	64
			Maschen-München	69	67
			München-Verona	53	53
	Ratio of capacity	Ratio of capacity allocated by the C-OSS and the total allocated capacity at TT change	Kornsjö	0%	4%
			Peberholm	59%	54%
			Padborg	50%	54%
			Kufstein	1%	0%
			Brennero	2%	0%

6.2 Operations KPIs

Punctuality

KPI	Definition	Source	Value 2020
Punctuality at origin	Percentage of trains on time (30') at origin / (RFC Entry)	TIS / OBI	71
Punctuality at destination	Percentage of trains on time (30') at destination / (RFC Exit)	TIS / OBI	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

Delay Group	North - South	South - North
Infrastructure Manager	12 %	12 %
Railway Undertaking	57 %	56 %
Secondary	28 %	29 %
External	3 %	3 %

6.3 Market KPIs

Number of train runs crossing the defined border points

Border point(s)	North - South	South – North	Data source
Kornsjö	456	495	TIS
Peberholm	3964	3894	TRV*
Padborg / Flensburg	4715	4719	DB*
Kufstein	11854	11830	DB*
Brennero / Brenner	9540	9235	TIS

* National figures used for this point, due to not completely plausible figures in TIS

6.4 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 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)
- Especially the departure figures at Munich and Maschen are negatively influenced by trains arriving from other 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	Remarks
Malmö departure	89	
Peberholm (run through)	88	
Flensburg (run through)	72	
Maschen Rbf arrival	64	
Munich departure	68	Aggregated from different stations
Kufstein arrival	70	
Kufstein departure	67	
Brennero / Brenner arrival	66	
Brennero / Brenner departure	58	
Verona QE arrival	65	

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 amount of trains

Point	Punctuality S-N	Remarks
Verona QE departure	72	
Brennero / Brenner arrival	73	
Brennero / Brenner departure	61	
Kufstein arrival	62	
Kufstein departure	63	
Munich arrival	63	Aggregated from different stations
Maschen Rbf departure	72	Incl. trains starting in other parts of Germany, NL or B
Flensburg (run through)	62	*
Peberholm (run through)	71	*
Malmö arrival	72	*

* Differences between Germany and Scandinavia have to be further analyzed

Scandinavian Mediterranean Rail Freight Corridor – RFC 3

| Praterstern 4, Vienna 1020 (Austria) www.scanmedfreight.eu |

| emanuele.mastrodonato@scanmedfreight.eu; eva.raymond@scanmedfreight.eu |

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STOCKHOLM/OSLO-COPENHAGEN-HAMBURG-INNSBRUCK-PALERMO

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

BANE NOR

Norway

TRAFIKVERKET

Sweden

ØRESUNDSBRON

Denmark -Sweden

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