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Independent Regulators' Group – Rail

IRG–Rail

Access Group

Report on the state of development of the TTR project and its pilots

15 November 2019

A Aims of the Timetabling Redesign process

1. A project on the redesign of the international timetabling process ("TTR") was launched 2014 by Rail Net Europe (RNE) and Forum Train Europe (FTE). The programme is supported by the European Rail Freight Association (ERFA).

2. The overarching aim of the TTR process is to optimise the usage of existing railway infrastructure in Europe. To this end, the process focuses on addressing several perceived barriers for effective usage of the infrastructure. These include i) temporary capacity restrictions (TCR's) and the coordination of such restrictions, ii) other aspects of the design of the process for allocating train paths, and iii) "commercial conditions" incentivising applicants to refrain from capacity hoarding.[1]

3. Railway Undertakings (RUs) need a reliable process that allocates high quality capacity across European countries. In particular, shippers and some freight RUs look at placing capacity requests close to the period of operation. Therefore demand for rail capacity requires a more dynamic and flexible allocation system that ensures better capacity allocation both in terms of quality and timeframe. On the other hand, most passenger RUs require a clear anticipation of the release of the final version of the annual timetable, so to have a stable timetable at least six months before the date of timetable (TT) change, in order to start selling tickets in advance and improve the competitiveness of rail vis-à-vis other transport modes (e.g. road and air transport).

4. Infrastructure Managers (IMs) want to make their workflow more efficient while designing reliable timetables, so that the impact of modifying allocated train paths on the timetable is minimised. They are seeking therefore to optimise capacity and its availability while allowing for both a stable and flexible timetable.

5. The first phase of the TTR project concluded with the development of a new process for capacity management and allocation. A second phase has started to test and verify the outcomes of TTR; this experimentation phase is planned to last three years, starting from the 2020 Timetable (TT 2020) and is envisaged to finish in time to implement the updated procedures for the 2025 timetable (TT 2015), after the official validation and approval of the TTR project.

6. Three pilot projects have been set up to ensure that elements of the TTR process can be properly tested. These pilots cover three sections of three different rail freight corridors: 1) Antwerp-Rotterdam on RFC2 (North Sea - Mediterranean); 2) Munich-Verona on RFC3 (Scandinavian – Mediterranean); 3) Mannheim-Miranda de Ebro on RFC4 (Atlantic). They have been chosen by RNE in order to test the TTR process on various network sections in terms of length, traffic density, etc.

[1] http://www.rne.eu/sales-timetabling/ttr/

7. The testing phase has been planned to be deployed as follows:

   2018: definition of the capacity model for capacity partitioning in 2018;

   2019: publication of the model and allocation process with TTR rules;

   2020: monitoring and validation of TT 2020.

8. In June 2018 it was decided to add a fourth Pilot project which would cover all the core lines of the Austrian network (ÖBB lines). This additional pilot will be operational with TT 2021.

9. The aim of this report is to monitor the development and progress of the TTR project and its pilots, in order to determine key regulatory questions and challenges that could be raised by the redesign of timetable allocation processes in Europe. The data and information reported in this document come from the activities of the pilot projects in which the Regulatory Bodies (RBs) of the involved countries are frequently participating as observers and also from the engagement of the IRG-Rail Access working group, supported by the IRG Rail Emerging Legislative Proposals working group, with RNE and its members.

B TTR Pilot Projects Monitoring

10. The role of the RB is to ensure non-discriminatory access to pre-assigned paths and relevant service facilities. The TTR pilots play a crucial role in providing this evidence and ultimately evaluating the viability of the TTR process. Initial observations are outlined below for each pilot.

TTR pilot projects (source RNE)

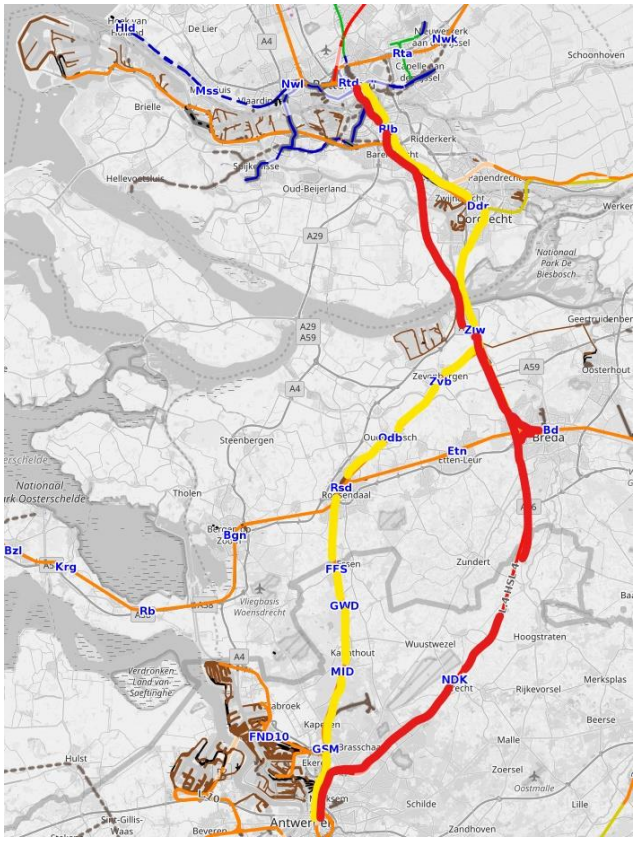
I. Current status of pilot Rotterdam – Antwerp

General description

11. In the Rotterdam - Antwerp pilot, the RUs and the IMs (Infrabel and ProRail) are testing innovative components as part of the TimeTable Redesign Programme. In 2019 a new process for requesting capacity has been introduced in respect of the TT 2020 (rolling planning). It is tested between Rotterdam (NL) – Antwerp (B) (see map). The pilot will be integrated as much as possible with the existing capacity request process for TT 2020 timetable. The Process Information Document (PID) produced by the involved IMs describes the new approach and sets out how it affects the existing processes. The Temporary Capacity Restriction library contains all the information about the capacity that the IMs need for maintenance and for construction works.

12. ProRail and Infrabel have safeguarded capacity for Rolling Planning Requests in TT 2020.

Route map Corridor Antwerp - Rotterdam



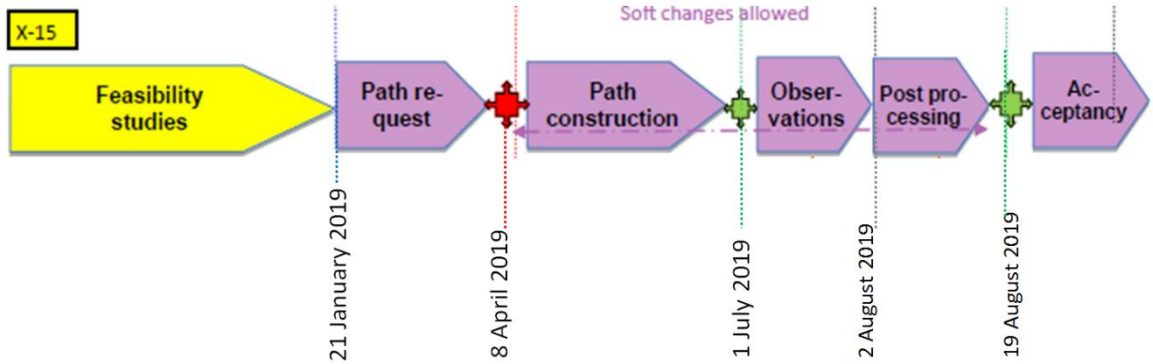
Description of the included pilot lines:

L12	Essen-grens – Y Mariaburg
L12-1	Y. Sint-Mariaburg – Y. Driehoekstraat
L27A	Y Driehoekstraat – Y Schijn
L12	Y.Sint-Mariaburg – Y.Luchtbal
L25	Y.Luchtbal – Antwerpen Caal
L4	Y Luchtbal – Meer Grens
	Roosendaal grens, Roosendaal, Lage Zwaluwe, Dordrecht, Kijfhoek, Rotterdam Centraal
HSL-Zuid	Breda grens, Breda, Rotterdam Centraal

Current situation

13. In 2018 phase 1 included the development of a capacity model in close participation between stakeholders, including capacity partitioning on the pilot line for TT 2020. The pilot provided input to task forces at programme level to develop enabling IT, Legal Conditions, Commercial Conditions and processes. The goal of the current pilot phase 2 is to test capacity requests for TT 2020 based on the capacity models created in pilot phase 1.

14. The time grid is identical to the current TT process. See below:



15. The development of TT2020 showed that the process of path requests was not completely satisfactory. The TTR pilot message was not clearly understood by the RUs, the participation of passenger RUs was poor and some RUs continued to order capacity via their national system.

16. Both IMs concluded that it was necessary to compare allocated trains 2019 with the 2020 requests to define the volume that could be requested in Rolling Planning later on.

17. A pilot information document was published detailing procedures for capacity requests. Regarding IT developments, PCS was adapted for Rolling Planning requests. A new tool was also developed for the capacity model (ECMT) in which the capacity partitioning can be visualized. It shows available Rolling Planning capacity from summer 2020.

18. Regarding Commercial Conditions the relevant RNE Working Group is working on a common proposal to be amended by the RNE General Assembly by end of this year. The graph below shows an overview of the areas being discussed. One of the conclusions is that the majority of the RUs believe that high fees would avoid blocking capacity.

19. At the moment the IMs are trying to determine the volumes of Rolling Planning requests for 2020. In September 2019, work on the Capacity Model and PID 2021 is starting. IMs also expect to get information about the demands for modification, alteration and cancellation of rolling planning requests 2020.

Views of the RBs directly affected by the pilot

20. It is not clear whether the existing Project Information Document is an information document or legally binding. The parts that need to be included in the network statement as an annex are still undetermined.

21. For the time being there are no approved Commercial Conditions. They need to be compliant with existing law. There are some outstanding points such as the scope of force majeure (legal question), the process definition (i.e. applicability of commercial conditions) in case of force majeure on the neighbouring network, the differentiation of deadlines and the level of charges for different products (Annual Timetable, Rolling Planning, Ad Hoc). These different questions should be evaluated and monitored. It would be advisable to take part as observer but also to think along with the IMs in order to get to a compliant situation.

22. In the pilot, multiple Temporary Capacity Restrictions (TCRs) issues that can trigger capacity problems have been detected. For instance a TCR on the High Speed Line to Belgium and a TCR in Germany on Rail Freight Corridor Rhine-Alpine is likely to cause substantial rerouting and, as a result, a capacity problem on the diversionary line. It is thus clear that the rerouting of trains can impact the capacity model on other lines. A question for regulators would be whether action would be required to achieve a better use of the infrastructure. There are also problems related to the stability, rules and measuring of TCRs.

23. The regulatory body's monitoring should cover the actual allocation of rolling planning requests and changes to the demands for modification, alteration and cancellation of rolling planning requests.

II Current status of pilot Mannheim – Miranda de Ebro

General description

24. The TTR pilot on corridor 4 (Atlantic: from Mannheim to Hendaye) is the longest of the three TTR pilots (about 1600 km). It alternates low and high usage density infrastructures, as it stretches through France passing through Paris area. It focuses on the French IM as in Hendaye trains must change for wider gauge, and as in Germany the IM seems more flexible to harmonize its timetable with the French timetable. The pilot uses two capacity bands for each direction, which at the moment are not represented in the timetable as bands (such as TCRs and the Rolling planning would be) but as generic, opening and closing, pre-arranged paths.

25. The traffic from Spain to Germany is a rather low traffic axis for rail freight. For paths stopping in France, the IM may need to mix paths in and outside the rolling planning capacity.

Current situation

26. Within the pilot, the French IM focuses very little on the implementation of a rolling planning capacity, but is more interested in the harmonization of TCRs between the two relevant French sub-networks (each sub-network must in principle arrange the TCRs in an harmonized way within its perimeter). These are the South-West and North-East sub networks. Harmonized TCRs could not be achieved for the pilot during TT 2019 and TT 2020. As a result the project team is currently working on the TT 2021, for which the band during the day are at risk because of TCRs and regional trains. The envisaged commercial conditions may resemble the French incentive mechanism on commercial capacity.

27. Most of the applicants seem doubtful about the principle of rolling planning capacity bands but remain keen to experience the bands as a pilot for the harmonization of the TCRs in order to ensure non-stop pre-arranged paths on the corridor. Nevertheless, they urge the pilot project board to issue the commercial conditions attached to the TTR Pilot on Corridor 4 as quickly as possible.

Views of the RBs directly affected by the pilot

28. The TTR projects aims adequately, among other goals, at harmonizing TCRs between networks, or even sub-networks, in order to preserve capacity for almost non-stop freight trains.

29. The TTR process is a relevant tool to apply article 48.2 of the directive on framework agreements although the French IM does not apply that provision (and this is probably similar for many other IMs in other member states).

30. The rolling planning is an interesting concept though it may be difficult to assess whether it should consist optimally of wide or narrow bands.

31. The rolling planning may be inefficient for the (growing) multimodal freight market, whose applicants tend to behave more like passenger applicants (i.e. they arrange their transport capacity before having sold it, hence they apply for the annual TT, and will not or marginally use the rolling planning system except, maybe, for the multiannual capacity requests).

32. The rolling planning may be insufficient for the conventional rail freight market which still relies on the industrial density of a country, and then regarding the railway network, on the density of its local freight lines and freight terminals, on its capacity to industrially hold freight trains on sidings to enhance the capacity available for freight traffic, on its capacity to group smaller short-hauled trains into longer long-hauled trains or the reverse , on the efficiency of its marshaling yards, etc.

III. Current status of pilot Munich – Verona

General description

Source: DB Netz AG

33. The routing is part of RFC ScanMed. It starts in München/Trudering (GER) and ends in Verona (ITA). The complete route contains the following sections:
    a. München Trudering – Rosenheim
    b. Rosenheim – Kufstein
    c. Kufstein – Wörgl
    d. Wörgl – Innsbruck
    e. Innsbruck – Brenner
    f. Brenner – Bozen
    g. Bozen – Domegliara
    h. Domegliara – Verona

34. The German part from Munich to the border is used by all kinds of traffic operations: long-distance, regional and freight services. It is highly used but not congested. To date all path requests can be met. The situation relaxes some kilometers behind the border with Austria because there are four tracks available.

35. In Austria four tracks lead from Wörgl, the second stop after coming from the German border towards Innsbruck and the Brenner. Two of those tracks directly connect Kufstein on the German border with the Brenner, circumventing Innsbruck. In practice, this allows for freight trains to run with hardly any “interfaces” with passenger traffic going to and through Innsbruck. There have not been any instances of track congestion on the Austrian section of the corridor even though Austria makes use of the possibilities granted by the Eurovignette directive 1999/62/EC and collects additional road charges on the Brenner.

36. The Italian section represents the second main international route (between Italy and border countries) for freight traffic in terms of volumes. The line between the Brenner and Verona is also used by passenger traffic as follows:

    a) regional traffic which increases in terms of frequency in the node of Verona and in the area of Bolzano where there it connects with 2 relevant regional lines: the line to/from Merano and the line to/ from Brunico/S.Candido/Austria (Pusteria valley line);
    b) international traffic on the route Munich-Verona/Venezia/Bologna;
    c) open access passenger traffic with both the trains of NTV and Trenitalia on the route Bolzano-Roma/Napoli.

37. The main bottlenecks of the section between the Brenner and Verona are:

    a) the border station of the Brenner which is affected by congestion problems as a result of the additional safety controls, which increase the stops of freight and passenger trains at stations, and create subsequent difficulties in traffic control for the parking of trains in the station;
    b) the rate of acclivity of the section Bolzano Brenner (South-North direction) which requires double traction and allows trains with maximum 1660 tons.

Current situation

38. On the TTR-pilot Brenner, the participating IMs - RFI, ÖBB and DB Netz AG -provide capacity for dynamic traffic in the form of “rolling-planning”. The IMs provide a complete offer of pre-constructed paths for freight traffic. These pre-constructed paths comprise the overall number of possible paths for freight traffic on the pilot-route out of which the rolling planning offer is selected. Between München Trudering and Verona up to 20 rolling planning paths per day and direction are offered. On this line three IMs are involved which means that all relevant planning has to be coordinated amongst all. This does not only affect capacity allocation but also planning of TCRs.

39. A capacity model for the TTR-pilot Brenner was created in 2018 and will be provided for the TT 2020. For the working TT 2020, the TTR-pilot capacity is not safeguarded on the DB Netz AG pilot section. The capacity amount for the rolling planning is part of the capacity for ad hoc traffic on the pilot line. According to DB Netz AG no conflicts with the annual timetable process are to be expected.

Views of the RBs directly affected by the pilot

40. The German RB would appreciate if the pilot description is implemented in the IM’s network statement to ensure a binding effect. In order to guarantee capacity allocation that is legally binding the pilot description has to be part of the national network statement. To include the pilot description into the national network statement the regulations have to follow the process set out in art. 27 of Directive 2012/34/EU. This means that the network statement must be published four months in advance of the deadline for requests for infrastructure capacity. DB Netz AG has missed the deadline to include the TTR-pilot description in the network statement. A link in the network statement which leads to the publication of the PID on RNE’s homepage in English is not sufficient to implement a new way of capacity allocation in a legally binding way.

41. Furthermore the interested parties have not been consulted as foreseen in art. 27 (1) of Directive 2012/34/EU on the new proposed approach. From the German RB's point of view it is not transparent which stakeholders have been involved in the capacity model preparation and it seems that not all market players have participated in the discussion or had the chance to react on the planned TTR-pilot. According to the German RB's information only rail freight operators have been involved. It is not clear whether regional railway undertakings have been taken into account or if only cross-border traffic has been considered. It appears that at least one regional transport authority has not been informed at all.

42. On the TTR-pilot Brenner for the annual 2020 TT on the German side there is no hybrid situation possible as the pilot rules are not legally binding. This is why no capacity is safeguarded for the pilot (as expressed above). In case of a conflict the national network statement applies. To date no multiannual rolling planning or other features are implemented. Commercial conditions are under preparation but have not been implemented yet. When a concept for timetable 2021 is set up with safeguarded capacity it will have to be examined with regard to non-discriminatory access.

43. For the time being and taking into account the description of the TTR-Pilot implementation, that in most parts lacks details, there is no confirmation whether the TTR-pilot is within the framework set by Directive 2012/34/EU. ÖBB-Infra has published a paragraph on the TTR-Pilot in the network statement 2019 (and 2020). Schienen-Control, the regulator, has notified ÖBB-Infra that the description was insufficient and in turn was assured that this would be remedied. According to Article 38 (2) of Directive 2012/34/EU a multi-annual capacity allocation is not foreseen.2 Long-term capacity allocation is only possible in the course of framework agreements. For the first year of the TTR-pilot, capacity is allocated on a specific train path. For the following years the multi-annual rolling planning applies. This is neither in line with Article 38 (2) of Directive 2012/34/EU nor with the regime of framework agreements according to Article 42 of Directive 2012/34/EU.

IV. Preliminary findings

44. At present and given the preliminary regulatory assessments on each TTR pilot mentioned above, we have observed that the allocation process of the pilot projects has raised several issues in terms of practical and regulatory barriers. They range from the implementation of Temporary Capacity Restrictions (TCRs) to the introduction of innovative components like Rolling Planning under the current legal framework.

[2] According to ÖBB-Infra there isn't any demand for multi-annual capacity allocation as foreseen by TTR.

45. In addition, RNE members are also working on developing new commercial rules which should guide and incentivise all the involved stakeholders towards the optimal use of TTR processes and related timelines. This can also trigger issues in terms of compliance with the legal framework and/or compatibility with existing national schemes.

46. As the TTR pilots have only begun with their own capacity allocation process , it remains to be seen which effects especially the introduction of rolling planning will have on RUs requesting capacity in the future [on the pilot routes].. Reserving capacity to be allocated outside the annual timetabling process could help IMs to fully enable Rolling Planning.

47. An important aspect with regard to the views of RBs directly involved in the pilots is a stronger involvement of the regulatory body in the control of compliance of the capacity model with the Directive.

48. The pilots serve testing elements of the TTR process. The question arises how the success can be evaluated. As the elements of TTR are not fully developed yet the results on the timetable 2020 can only be a first step in assessing the viability of the TTR process. RBs will continue monitoring the progress made on the pilot projects.

C Conclusions and way forward

49. IRG-Rail supports innovation in the railway sector and strengthening of the rail transport mode for the benefit of passengers and freight users. We find that TTR is an innovative project to that effect.

50. IRG-Rail welcomes the TTR process objectives, in particular:

- the clear focus on the needs of the international freight and passenger markets by introducing redesigned timetabling process, including optimised and harmonised deadlines and processes for capacity requests. This is of particular importance for freight operations that can benefit from a more market-oriented approach for the allocation of capacity outside of the annual timetabling process;
- improved reliability, consistency and stability of the timetable thanks to better planning and execution of TCRs and
- making best use of existing infrastructure capacity.

51. IRG-Rail will continue to monitor and support the TTR project as an innovative approach to provide capacity based on market needs, strengthening the railway sector overall.

52. IRG-Rail appreciates the efforts of IMs and railway applicants for changing the capacity allocation procedure to be used in the TT design phase, with the aim to make the passenger and freight rail transport markets more competitive and attractive.

53. IRG-Rail follows with great attention the evolution of the pilot projects and the discussions concerning the legal framework to be developed for supporting the testing and progressive implementation of TTR, such as the modification of the Framework for Capacity Allocation Regulation and the development of commercial rules.

54. At the same time the establishment of the capacity model concerns the interests of all transport modes. Therefore, for the successful implementation of TTR the RBs do expect that all rail market players have the possibility to be duly involved in all the different phases which are needed to test and implement the TTR process.

55. IRG-Rail considers that before deciding to introduce new mechanisms and further actions, TTR needs to be thoroughly tested and evaluated. A system-wide implementation can only follow after all critical components have been tested and evaluated during pilot operations.

56. IRG-Rail will continue its engagement with European and national stakeholders. Based on the progress of the pilot projects IRG-Rail will develop further positions on the TTR project as a whole.

57. To that end, **IRG-Rail considers that a substantive analysis of the TTR concept and thorough, well-documented testing is needed. We believe that any major change in the existing legal framework to implement TTR across the European rail network has to be evidence-based.**

58. IRG-Rail believes that there are still some **outstanding questions** to ensure that the TTR process is properly assessed and can proceed with success.

- Successful implementation of the complete TTR process relies on resolving numerous interconnected issues that require the coordination and agreement on a legal framework by a wide variety of stakeholders. How can RNE's implementation target by the end of 2024 (Timetable 2025) be met?

- Features of the TTR project such as multi-annual rolling planning can have significant effects on the rail market. Have there been impact assessments on the effects of TTR on applicants? Could the desired outcomes of TTR be achieved with existing tools, e.g. adequate reserve capacity, framework agreements or late path requests?

- How will TTR deal with key timetabling challenges such as congested lines, capacity requests on single tracks with mixed traffic, ad-hoc requests or requests on specialized infrastructures for instance?

- How will access to service facilities be integrated into the TTR project?

- According to the legal assessments of RNE and IRG-Rail, the pilots are only partially supported by the current legal framework. However, the pilots must be legally viable to test the innovative features of TTR. How can the pilot projects be better supported by the legal framework? Is this possible when the pilots will get an official status?

- The TTR project currently focuses on freight traffic, and it is not clear how it will be rolled out to passenger traffic and what are the timescales and steps for doing so.

- With regard to the long lead times and requirements to disclose information in the capacity model stage, how are the interests of new entrants safeguarded? Will there remain scope for competition through product differentiation along parameters which affect capacity (e.g. speed, acceleration, stopping patterns)?

59. IRG-Rail plans to continue monitoring the TTR project and engaging with relevant stakeholders. In this context IRG-Rail will also address the update of annex VII of Directive 2012/34/EU aiming to improve the legal basis for TTR pilot projects.