Platform International Rail Passenger Transport

Better rail connections for Europe's passengers

A common agenda

Progress report following the June 4th 2020 Ministers declaration on international rail passengers transport

25 May 2021

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology

Ministry of Infrastructure
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on international rail passengers -
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ERA, executive director, Josef Doppelbauer
Shift2Rail, executive director Carlo Borghini
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Date 25 May 2021
Subject Progress Report following the ministerial declaration 2020 on International Rail Passengers transport

Dear Ministers, dear Commissioner, dear Colleagues,

A year ago the ministerial declaration on international railway passenger transport was adopted by 27 European transport ministers. The declaration showed commitment to cooperate on the development of international rail passenger services and asked to make this part of the EU Green Deal agenda for transport. The platform that was created showed a great dynamic and motivation to work on international rail transport by its members, the sector representatives and the European institutions. The context of the European Year of Rail and the Portuguese EU presidency focusing on railways is also driving the needed changes. The European citizens are expecting results and better accessible international train services.

With this letter we submit to you the first Progress Report following the declaration. The Progress Report is by the platform of member states that was set up following the declaration. The Progress Report has made an analysis of the market situation, the barriers and an inventory of solutions to improve the international rail passenger market. Wider availability of digital (through) ticketing, and cooperation for services to people with reduced mobility are key items that can be addressed at short term (section A). The Progress Report also shows the need for developing a vision from the member states on the network of rail passenger services to be facilitated. Initiatives like the letter of Intent Trans Europa Express 2.0 from 17 May support this (section B). Access barriers for new services should be actively addressed; this includes capacity allocation, technical and other interoperability questions and access to rolling stock (section C). At the level of authorities, enhanced cooperation is required to enable services development; this can include cooperation to enable cross-border public service contracts (section D). The identified measures represent a common opportunity to support restarting the development of international rail passengers market after the COVID-19 crisis.

The Progress Report builds upon the Report from the Platform presented at the occasion of the kick-off event European Year of Rail 29 March 2021. At this occasion, the sector statement was also published, a highly welcome signal for developing a common agenda. We also welcome the developments from the

European Commission, in particular the announcement of the 15 pilot projects for new international rail services and the wider action plan on passenger rail.
We recommend the use of the Progress Report in our common efforts to boost international railway passenger services.

The platform can build upon this Progress Report by developing its Work Program for the next (2) years taking into account the topics included in the management summary of the report. The Work Program will be a dynamic and forward looking plan. Using this Work Program the platform will then monitor and only where necessary contribute itself to the topics included in the Work Program. The platform should encourage the application / implementation of the topics from its Work Program by the relevant stakeholders, where doubling of work must be avoided. The platform will therefore work closely together with sector and consumer representatives and take due account of the sector statement. We do look forward to the publication of the European Commission action plan for rail passengers, to be published later this year. The platform will also continue to work closely with the European Commission, i.a. on the forthcoming action plan and can act as a forum to foster cooperation between Member States necessary for developing international rail passenger services. In addition, the pro-active approaches from Shift2Rail, ERA and OTIF are highly appreciated and we recommend further close cooperation on the platform Work Program.

Bestuurskern
Dir.Openbaar Vervoer en Spoor
Veiligheid en Goederen

Date
20 May 2021

Our reference
IENW/BSK-2021/141706

Yours sincerely,

The Dutch State Secretary for Infrastructure and Water Management,

Stientje van Veldhoven <Van der Meer

The Austrian Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology,

[redacted]

Leonore Gewessler

Acting as co-chairs of the platform in the 2020/2021 period.

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1 Introduction and management summary

The Report of the Platform on International Rail Passenger Transport' (Annex 1) is the result of an initiative of the Ministries of Transport of the EU Member States, Switzerland and Norway. During the Transport Council on June 4, 2020[1] (Annex 2), these European countries embraced the initiative to foster and support the improvement of international rail passenger transport in connection with relevant stakeholders. The countries agreed to work together on a European agenda for international rail connections. As a result of the political declaration, a joint platform of Member States – all EU MS minus Cyprus and Malta + Norway and Switzerland, has been set up with the aim of further developing international rail passenger transport in the EU. The platform is supported by sector parties and the European Passenger Federation (EPF). It also involved representatives of the European Commission, European Union Agency for Railways, Shift2Rail. Panteia supported the MS drafting the report.

The platform presented its first report[2] (Annex 3) during the kick off event Year of Rail 29 March 2021 organized jointly by the Portuguese EU presidency and the European Commission. The presentation of the first report was accompanied by the publication of the sector statement showing a vision and commitments from sector and consumer organizations on international passengers rail[3] (Annex 4).

The Members of the platform invited European Commission, ERA, Shift2Rail and OTIF to consider the findings of this report in the conduct of their works, in particular in view of the intention of the European Commission to present in 2021 an action plan on international rail passengers. The smart and sustainable mobility strategy from the European Commission (December 2020) pointed out the intention to launch 15 pilots for new international rail passengers services. The European Commission has put forward a proposal to establish a new European Partnership on Rail Research & Innovation, whose programme should also be supportive in reaching the goals of this initiative.

The momentum is there for a European agenda on international rail passengers. This was shown by the high commitments and motivation of all partners to work in the platform that was set up. Against the background of the COVID-19 crisis affecting railway passenger transport and the economic recovery plans that are in preparation at European and national level there is a need for a new dynamic in developing international passengers services. This report is reflecting this momentum and is suggesting issues for the European agenda on international rail passengers.

1.1 Status of the document

The document is the result of the discussions among the Members of the Platform. The document contains the work of the platform International Rail Passengers that was formed following this declaration. The document provides an inventory of barriers where improvements are necessary for international railway passenger transport. The document also indicates shared scenario's and options on solving the existing barriers. Not all scenario's or solutions will fit or can be applied in all regions across Europe. Neither does the document include legal or financial obligations.

[1] See Political statement for coalition of the willing on development international rail passenger transport | Publication | The Netherlands at International Organisations (permanentrepresentations.nl)
[2] See Report of the Platform on International Rail Passenger Transport | Publication | The Netherlands at International Organisations (permanentrepresentations.nl)
3 See http://cer.be/publications/latest-publications/sector-stakeholder-statement-international-rail-passenger-services

1.2 Follow-up

Based on the barriers and (scenario's for) solutions described in this report further work is necessary in different areas. Therefore the platform International Rail will develop its workplan for follow-up in order to be able to report to Ministers on the results by mid-2022. The platform will monitor the implementation of the mentioned actions by the different stakeholders and support the actions where necessary and appropriate. When drafting its workplan the platform intends to synchronize its work with the sector partners that are working together in sector mirror group. Also the platform will continue to work closely with the European Commission, ERA, Shift2Rail and OTIF. Duplication of work needs to be avoided and close cooperation is vital for success.

Based on the report, the below topics will be considered for inclusion of the workplan.

Table 1-1 Indicative Workplan

No.[i]	***Actions***	***Remarks***
A.1	Further develop and maintain EU wide standards (static and dynamic EU 454/2011 and EU 2017/1926). Strive to include new types of transport modes (multimodal standards).	
A.2	Enforce or incentivize the implementation of the existing railway specific as well as multimodal regulatory frameworks to enable data exchange	
A.3	Integrate interoperable solutions promoted preferably as open-source tools. Develop and deploy API's in a harmonized and multimodal perspective	Concerns the further development of the TAP TSI and the further implementation of regulation (EU) 2017/1926 (MMTIS). The analysis of the usage of a standard such as EN 12896 (Public transport reference model Transmodel) is currently ongoing.
A.4	Provide feasible solutions for selling (international) tickets by third party vendors or MaaS service providers on fair, reasonable and non-discriminatory commercial principles (FRAND). Agree on timeline for implementation.	Taking into account ticket, assistance and information access for PRM. Also, OSDM should be taken into account
A.5	The development of common and interoperable standards for an open source based approach for ticket sales and distribution with cooperation between the countries, which is compatible with the fourth railway package. Promote the coordination between companies, and enhance coherence with TAP TSI	
A.6	Explore financial support for technical solutions, including for accessibility	
A.7	Investigate how standard software components or Software-as-a-Service solutions based on European standards could help to lower the costly implementation and customization effort of each railway undertakings	

A.8	Align mechanisms internalizing external costs and further frame conditions, which allow customers to take well informed decisions based on transparent and undistorted prices	
B.1	European regular interval timetable ("Europatakt, Eurolink, others")	Feasibility and implementation to be discussed between the States, IMs and Ru's
B.2	Developing TEE 2.0 connections based on steps LOI (i.a. market analysis)	
B.3	Upgrade European timetabling process (TTR)	
B.4	Removal of barriers for international services	In relation with C7
B.5	EC initiative 15 pilots for international rail passenger services	including participation in the Shift2Rail JU and its successor, implementation pilots/demonstration program for the period 2021-2027
B.6	Framework conditions for Night train network	
C.1	Explore optimising the conditions for financial support	
C.2	(high speed) Infrastructure & bottleneck alleviation	
C.3	Develop concept passenger hubs for better intermodality	
C.4	Enhance experience on governance structures for international passenger. Based on experience B2, B5	
C.5	EC initiative Rail connectivity index	
C.6	Rail-air action plan for combined air-rail journeys	
C.7	Issue Logbook extension to passenger	In relation with B4
C8	Promote existing EU tools to fund upgrading of rolling stock	In relation D2
C9	ERTMS deployment and international rail passenger transport	
D.1	Harmonisation internal market	
D.2	Reduce economic barriers / cooperation on infrastructure charges as well access barriers to rolling stock.	Rolling stock part in relation with C8
D.3	Integrate open access services in national network.	
D.4	Increase cooperation MS.	This may include and establishing "national contact points"

1.3 Summary of the results of the platform

The platform has focused on four areas, which are elaborated below.

Customer experience and digitalization

This topic contributes to an improvement of customer experience, which includes aspects such as ticketing, reliability, travel times, comfort, etc., by developing optimized framework conditions so that travelers are motivated to choose trains. In addition, attention was given to ways in which the digitalization of European railway sales and information systems can contribute to this aim. In order to achieve this, the primary focus was on international railway journeys, while actively including offers that are multimodal ready or compatible.

To speed up the developments, the efficient implementation of interoperability standards (TSIs TAP, PRM), and the promotion of unified data for standards of (ultimately multimodal) tickets are recommended. Also, enabling third-party vendors to sell international tickets and developing an open source based approach for ticket sales and distribution systems were identified as important steps. Moreover, financial support for technical solutions should be explored.

Network of international passenger services

The platform discussed with a focus on developing a European rail passenger network the concept of networked multi-country connections with interval clock-face timetables. An initial governmental impetus and the removal of barriers are expected to allow international rail passenger services to flourish. Furthermore, improving the enabling framework and developing an integrated capacity management and timetabling process could boost the competitiveness of railways in a common international approach. In addition the benefits of using already existing concepts with this scope were examined, where the TEE 2.0 concept was found as highly viable.

Nevertheless, it should be noted that consensus on the TEE 2.0 concept is yet to be achieved by some MS. A thorough market analysis and a solid market study should always be made prior new network initiatives.

EU Green Deal: infrastructure bottlenecks and interoperability issues upon TEN-T

The platform emphasized the importance of identifying infrastructure bottlenecks, missing links and interoperability issues (including pertaining to access for disabled persons) that, once alleviated, can substantially contribute to the growth of international rail passenger services. In addition, a rail passenger (specific) governance structure/cooperation is considered to promote and facilitate international rail passenger transport, as well as to support technical measures for enhancing rail passenger specific interoperability. Different cooperation models have been elaborated on in order to better understand their advantages and disadvantages. It was concluded that the best way to start is with a limited number of pilots to learn from.

Regulatory framework

It was concluded that services regulated through Public Service Obligation (PSO) can be used for ensuring regular connections between major international hubs, where open access services are not commercially feasible. In order to achieve effective regulation of international services through PSO, one of the most important challenges is the need for identifying competent authorities at MS level to organize such PSOs, which should complement national policy goals and quality standards.

Harmonization on the internal market is key for further developing international services. Essential is the integration of open access services in national networks. Cooperation between the MS will facilitate the increase and integration of the services.

Based on the work of the four subgroups, the platform has developed recommendations addressing all players and stakeholders, to support the revival of international rail passenger transport and to foster the modal shift towards rail as environmentally friendly alternative to other modes of transport, while boosting intermodal opportunities to provide comprehensive transport for the public. In addition, these recommendations were translated into a checklist for desired framework conditions, setting forth the goals identified and current status.

1.4 Recommendations

The platform has arrived at the following main recommendations:

1. In order to provide passengers with comprehensive access to international train journeys, the advantages of digitalisation and easy access to the rail system must be fully exploited.

2. Realizing the concept of an attractive European rail passenger network, with the regular train services necessary to attract travellers, the development of a European regular interval timetable ("Europatakt") is recommended, following the concept of TEE 2.0 connections. That said, MS should first establish the desired character of such as timetable, taking into account the specific transport needs of the connected MS. Also, a concise analysis of market demand should be included in the approach. An upgraded European timetabling process is necessary to facilitate the future European rail passenger network. In addition, the removal of barriers may be facilitated by elaborating and addressing an international rail passenger services Issues Logbook. Infrastructure Managers' initiatives will substantiate the network with initiatives like EuroLink, which goal is to develop a concept for an international high frequency transport plan for high-speed trains and fast long-distance IC connections with optimised transfers in hubs to connect the most important origin-destinations (ODs). Also, the platform takes good note of the initiative of the European Commission to promote 15 pilot international passenger rail services.

3. The European legal framework provides on a European level a Single European Railway Area with open markets for rail passenger services. Increasing the speed of the development of the Single European Railway Area will facilitate new services and decrease the operational, organisational and financial costs of the international services. Therefore it is recommended to further foster this development.

In addition to the high-level recommendations, the platform created a unique opportunity to discuss relevant topics between a wide range of sector stakeholders, the ministries responsible for transport, the European Commission and other public authorities, thereby creating valuable input for ongoing rail related discussions and projects in Europe. Beyond the conclusion of this report the platform has identified several topics for further discussion, including:

- Aspects of a European regular interval timetable for international rail passenger services under the name of "Europatakt"
- Support and coordination of international rail passenger connections in the framework of the TEE 2.0 concept, based on the LoI of the transport ministers, including night trains
- Promotion of EU tools to fund upgrading of rolling stock
- Development of a concept of international passenger hubs
- Concept of combined air-rail journeys, together with aviation sector representatives
- Compatibility of open access services with regulated national rail networks.

2 Summary topic reports

2.1 Summary A – Customer experience & digitalization

This report is built on a common vision which entails:

1. The customer shall have access to **simple, reliable and comprehensive online platforms** where he/she has access to the full set of timetables, prices, up-to-date and real-time information and can buy tickets for international rail transport services, including domestic (urban, regional, long-distance) and international rail services, and including connections by other means of local public transport services.
2. A greater acknowledgement of the **customer experience** among railway undertakings.
3. Inclusion of **legal, contractual, technical aspects**, and financial incentives in future action.

This subgroup's overarching goal is to contribute to an improvement of customer experience by developing optimized framework conditions to allow for smooth international journeys reaching from planning, booking, ticketing, the journey itself, real-time information to the aftersales support. The group's focus is on railway journeys, while actively including offers that are multimodal-ready or compatible. Four barriers to this goal have been identified, existing investment and measures meant to counter them, other possible approaches and the subgroup's recommendations are provided:

1. **Data Sharing** (caused by insufficient digitalization and implementation of existing legislation).
   Ongoing Measures: a range of legislation, guidelines, and initiatives.
   Possible approaches: standardize data formats and sharing across countries and implement regulation, make available static, dynamic, and real-time data and engineer EU-wide systems, consider the legal basis for responses to parties who do not fulfil obligations, standardize on and create converters from and to NeTEx/SIRI.
   Recommendations: Enforcement or incentives should promote data exchange and standardization, and promote multimodal-ready offers and compatible data standards;
2. **Ticket Selling:** (hampered by inadequate conditions for selling tickets, including for persons with reduced mobility, through third parties and different systems).
   Ongoing Measures: a range of legislation, guidelines, and initiatives
   Possible approaches: Find ticketing and distribution solutions, which fit the many different business models. In the absence of a market-led solution, consider mandatory requirements for transport operators to allow third party sales and clarification of liabilities. Stimulate cooperation between operators through incentives and legislation. Need for a system to assert the rights of disabled persons in all countries.
   Recommendations: stakeholders should assess how the railway sector can provide feasible solutions for selling international tickets by third party vendors or MaaS service providers, and develop an open source based approach with cooperation between the countries that is compatible with the fourth railway package.
3. **Resources** (these are scarce due to undertakers' focus on internal networks).
   Ongoing Measures: no initiatives are identified for this barrier;
   Possible approaches: EU funding and support for digitalization and standardization.
   Recommendations: use EU funding to speed up the introduction and implementation of technical solutions, and have the EC explore other avenues for support (including rail software).
4. **Issues concerning the level playing field with other modes** (VAT, and internalization Mechanisms for external costs.);
   Ongoing Measures: the Sustainable and Smart Mobility Strategy

Possible approaches: reconsider frame conditions, internalization of external costs across competing transport modes,
Recommendations: create price transparency for customers between all possible modes by reconsidering distorting frame conditions. Align external cost internationalization mechanisms and reconsider VAT and fuel taxation treatment across all competing transport modes.

A number of discussion points, such as the controversial topic of passenger rights, are still open, leaving space for further discussion and fine-tuning of the analysis and recommendations. The subgroup is aware that the recommendations formulated cover only part of the whole customer journey and that further action is needed to improve the overall customer experience to a large extent.

2.2 Summary B – A network of international passenger services

This subgroup is one of four (which operate in conjunction) set up by the Platform to identify action to increase the modal split of rail. The common vision defined by subgroup B entails the creation of:

1. **A network of nodes, corridors and multi-country connections** with interval clock-face timetables with trains provided by railway undertakings and adapted to market demands.
2. An initial **governmental impetus** and the removal of barriers and improvement of the enabling framework in order for the European rail passenger services to flourish.
3. An **integrated capacity management and timetabling** process which boosts the competitiveness of railways that is implemented in a common international approach.

Per each of these three topics a series of barriers, enabling actions, and processes are identified:

1. **A network of nodes, corridors and multi-country connections**
   Barriers: First, the technical standards framework conditions in Europe are not yet commonly implemented to a satisfactory level and pose technical, operational and economic challenges for cross-border passenger transport. Second, to ensure a strong network the viability of the connections defined should be analysed by thorough cost-benefits analyses. Other barriers such as related to rolling stock or high ticket prices are addressed in the other sub-group reports.
   Enabling actions: The development of the TransEuropExpress (TEE) 2.0 network based on the integration of timetables and further exploration and application of the EuroLink platform may help define the new network.
   Processes: Any network design should focus on market demands looking at the creation of border-crossing core connections and strong hubs with reliable transfer options and address the current interoperability in rolling stocks.
2. **Governance**
   Barriers: the current existence of a patchwork network with some bilateral initiatives and unequal customer service levels, without a jointly created legal and market framework.
   Enabling actions: Governance needs to develop additional mechanisms (e.g. coordination structure) between Ministries of Transport and IMs, and commercial ventures consisting of RUs.
   Processes: Within the different governance models Member States are encouraged to discuss bilaterally or trilaterally to optimize nodes and core connections and cross-border regional routes based on the TEN-T network. The RUs and other applicants would provide the necessary information and requirements (notwithstanding any commercial secrets of the RUs) to enrich the bilateral discussions and for organizing the multilateral connections.
3. **Capacity management and timetabling**

Barriers: National particularities, lack of common IT standards and processes, and diverging national legislation hinder the implementation of a common process. Moreover, it has to be evaluated whether the European legal framework incorporates measures to base capacity allocation on pre-planned clock face timetables and systematized train paths in a non-discriminatory way. Last, the programme for the necessary investments of states and IM (or other allocating bodies) as well as central European IT systems is missing digital capabilities.
Enabling actions: First, bilateral and multilateral coordination of capacity allocation on TEE 2.0 core and multi-country connections are needed. Second, member states and IMs are encouraged to develop and promote optimal network use and connections, such as demonstrated with EuroLink. TTR and digital capacity management (DCM) are part of the capacity defining digital infrastructure such as ERTMS. Third, it must be explored whether further development of European and national legislations around capacity management is necessary. This may include considering clock face and systematized timetables.

Some open and potentially controversial issues, such as planning parameters are mentioned are last.

2.3 Summary C – EU Green Deal

The goal of this subgroup is to identify infrastructure bottlenecks, missing links and interoperability issues that, once alleviated, can substantially contribute to the growth of international rail passenger services. The group's vision is to help boost international railway passenger transportation by promoting the optimal use of the TEN-T network and its operability standards.

The report argues a market analysis is necessary to define the interesting connections on which the platform could work and facilitate the cooperation between the concerned Member States, and that if rail is to play a decisive role in decarbonizing transport, efforts are needed to further develop the European railway network and to increase its standards, including to the benefit of long-distance passenger rail traffic.

The Member States will/should continue to conduct a constructive dialogue with the Commission and the European Coordinators in the context of the TEN-T policy, with a view to developing the right infrastructure to boost long-distance passenger transport (while taking into account the different stages at which infrastructures in different Member States (MS) find themselves). Ultimately, long-distance international railway passenger services should connect passenger hubs throughout Europe. Infrastructure Managers should, on the basis of market needs expressed by RUs and other reviews, offer attractive long-term capacity between railway hubs. Identification of international rail passenger hubs into or based on the revision of the TEN-T regulation (connected but in addition to the existing TEN TE concept major urban nodes), as well as for the expected outcomes of introducing such hubs on the TEN-T network, is seen as a promising approach.

In addition, a rail passenger (specific) governance structure/cooperation is considered to promote and facilitate international rail passenger transport, as well as implementing technical measures (TSIs and TEN-T standards) to elevate the identified barriers for enhancing rail passenger specific interoperability (achieved by close cooperation between neighbouring countries). Four cooperation models are elaborated on to understand better their advantages and disadvantages: (a) do nothing, (b) starting with some pilots, (c) integrated in Rail Freight Corridors (RFCs) or (d) separate governance. Several pros and cons are listed for each model:

- (A): Pros: No additional structure, budgets, efforts are needed. Cons: the current sub-optimal status quo is maintained, making a modal-shift to rail improbable.

- (B): Pros: MS can tailor-make governance structures per service, line or corridor. Pilots will be organised voluntarily, can be organised within existing structures, and will give employees experience in improving frameworks for international pass rail. Cons are that MS should take initiative themselves, and that a patchwork of different structures might arise over time.
- (C): Pros: this model promotes the transparency, effectiveness, efficiency of the rail system. Cons: RFCs' structures are complicated, and may not be compatible with passenger rail.
- (D): Pros: this model could contribute to transparency and the optimal allocation of resources. Cons: there is limited political support for this model or the associated legal reforms, and experience and clarity on how to organize is lacking, while the model demands more cooperation.

Subgroup C proposes to concentrate – at least as a first step to gain experience- on the light approach to governance as suggested in the option (b However, a series of key aspects, such as the expectations of the passengers, will need to be considered.

Additionally to the governance structure, solutions will have to be found for operability issues such as different phases of the implementation of ERTMS among different MS, especially in cross-border areas. As for capacity allocation, we urgently need a model of implementation which includes cross – border long-term capacity strategies and capacity models. Time Table Redesign is the common objective here. Another issue is that rolling stock is often unable to cross borders easily, but new developments (such as the new role of the ERA in implementing the 4th RP, or co-financing structures to finance rolling stock that crosses borders), could address this problem.

2.4 Summary D – Regulatory framework

In the near future, especially when the current COVID-crisis has subdued, a renewed customer interest in rail is expected. It is important to support and encourage within the current regulatory framework a revival and extension of European rail passenger services in cooperation with the railway sector stakeholders. This report lays out the vision and recommendations on such a framework, on the basis of the different structures and organizational models that are present in Member states' markets. The report discusses four models of organization for and cooperation in international services. It is stressed that open access market initiatives prevail and a related study currently executed by the European Commission is expected to provide additional details.. But if Open Access is not offering the desired services, authorities may consider to foster the required international passenger service via an extended cooperation.

If open access services do not meet market demand, beside other measures PSO regulated services could be used as last resort for ensuring regular connections between major international hubs. Open access could lead to some improvement of service quality and service frequency and a reduction of fares and the budgetary cost for Member States. Consequently, open access might increase the attractiveness and hence the modal share of rail. However, open access regimes may be less predictable, and can be withdrawn easily. One way governments can subvert the risk of a cancellation of services by commercial actors is by using the possibility of cancellation charges. The main challenge remains combining the advantages of open access with the national transport policies/requirements.

Several barriers for the organization of international rail passenger services and recommendations to address them are identified:

1. **Technical specifications** – the reduction of technical differences between countries could facilitate the seamless introduction of new services and improve the existing ones;

2. **National contact points and need for cooperation** –appointing national contact points in all MS's reduces the lack of clarity as to who is responsible for organizing public transport services; **Cross-border services may require some additional support** –In case there is no viable or integrated commercial service available despite sufficient market demand, Member States may provide support for international rail services in a suitable manner
3. **Organization of cross-border** services - if the market situation demonstrates that services cannot be provided commercially, additional cooperation may be necessary. However, cooperation should never be obligatory since States may have different policies on the provision of cross-border passenger rail services;
4. **Experience in operating cross-border services** - Authorities on both sides of the border need to deepen their contacts and exchange experience on cross-border services preferably on the basis of open access and according to market demand;
5. **Implementation of night trains** – reduction of TAC via a concerted reduction of mark-ups by IMs and, if needed, subsequent financial compensation by MS could be introduced - for long-distance international services, including night trains, taking into account the budgetary situation of MS;
6. **Infrastructure capacity issues** - the improvement and the enhancement of the current network and the use of alternative routes could help address congestion and sub-optimal timetabling;
7. **Rolling stock** - Access to rolling stock is sometimes impeded by the peculiarities of the rolling stock market and the financial circumstances;
8. **Quality standards** - International rail services should provide a quality standard in accordance with market demand and therefore passenger expectations.
9. **Air/Rail Cooperation -** Considering the need to extend intermodal cooperation in passenger transport with additional focus on further Air/Rail cooperation, taking up already existing cooperation between rail and aviation undertakings.

3 Annex 1 – Topic reports

3.1 A – Customer experience & digitalization

3.1.1 Introduction

The Platform has set up groups to identify actions for the European agenda in the following areas:

A. Customer experience, Digitalization.
B. Defining a network of International Passenger services, including market analysis, the usage of existing TEN-T corridors and matters of capacity allocation.
C. Green Deal. Identify infrastructure bottlenecks, missing links and interoperability issues that once alleviated can substantially contribute to the growth of international rail passenger services.
D. Regulatory framework, including financial support measures for international rail passenger services. Public Service Obligations, support measures for rolling stock, and framework conditions for infrastructure charging are key topics.

The working areas for the subgroups A, B, C and D should always be seen in conjunction. In particular, the goals of subgroup A are dependent on a better regulatory framework, covered by subgroup D. This especially concerns regulations setting minimum standards and practices for commercial cooperation in providing cross-border services.
In the following paragraphs, the findings and recommendations regarding customer experience and digitalization are set forth.

3.1.2 Vision

The subgroup has defined a common vision to be achieved through the identified measures and plans. The customer shall have access to simple, reliable and comprehensive online platforms where he/she has access to the full set of timetables, prices, up-to-date and real-time information and can buy tickets for international rail transport services, including domestic (urban, regional, long-distance) and international rail services.

Today's international railway standards are not yet fully implemented and therefore have not yet achieved real improvements for the customers. The subgroup recognizes the need for balance between the commercial freedom of railway undertakings and customer experience. Currently, the customer experience for international passenger rail is currently not prioritized sufficiently.

The subgroup's vision involves various fields and levels. Solutions might be necessary at the European, Member State, regional or railway sector level. They should not exclude multimodal solutions. Solutions could involve legal, contractual as well as technical aspects, and financial incentives, depending on which required services are not provided by the open access market.

A positive customer experience depends on far more than the actual journey. It starts with the planning and ends only when the post-trip arrangements are completed, in case they are needed. A simplified customer journey is illustrated in the following picture.

An illustrative example of the current limitations for international railway passengers in the EU was given by an anonymous traveler (slightly adapted):
"Last year, I travelled by train from my home town in the Netherlands to Stresa on the shore of Lago Maggiore in North Italy. A few days later I continued from Stresa to Florence. I travelled back in one day from Florence to my hometown. I had to consult the websites of NS, DB, SBB, FS and Trainline to find the most suitable schedules and the best prices. I discovered that for me a global rail pass would be the best solution. To buy one, I needed yet another website. In the end I paid much less than for a plane ticket. But it took me hours to get the information and book my ticket."

When planning journeys, the customer wishes to get an overview of options, prices, timetables and conditions at one glance. Booking should be easy, without requiring different websites or applications to discover the full set of available services and fares. This is also true for issuing tickets, which should be compatible internationally. The experience during the journey includes many aspects: (real time) information at stations and on trains, ticket validation and inspection, assistance, quality, punctuality, comfort, accessibility, etc. Efficient customer-driven and need-based tracking and aftersales allow for customer support that does not end with the journey.
While this works relatively well for journeys booked through the vending system of a single transport company and within a given country, it is still a major challenge in international passenger rail transport due to the national and regional characteristics of the railway sector (as shown above). The problem may exist even on member state level when several operators are involved and no common tariff scheme / booking platform exists, without prejudice to the competition rules in force.

3.1.3 Delimitation

Subgroup A's focus and overarching goal is to contribute to an improvement of customer experience, exemplified by the simplified customer journey. Digitalization pertaining to the integral European railway network, has the potential to greatly contribute to this aim. However, the subgroup focuses only on digitalization that directly enhances customer experience. Digitalization of technical systems, such as the rail traffic management system (ERTMS), is not in the focus of this subgroup.

For the time being, the subgroup focuses on railway only, rather than multimodal journeys. Multi-modal ticketing schemes for international journeys under the commercial responsibility of railway undertakings exist in few cases based on COTIF/CIV (e.g. long distance coaches or ferries), but can be considered as market-niche. Subgroup A is fully aware of the importance of multimodal travel offers: The proposals made should not exclude multimodal offers, but rather be multimodal-ready or compatible. As the subgroup (and also the platform) consists mainly of stakeholders from the railway sector, and multimodal stakeholders are not sufficiently represented, the work will concentrate on those aspects which are in the reach of the former's competence. However, the general objective of the platform is to make international passenger rail transport more attractive. Subgroup A aims to contribute to this goal by developing optimized framework conditions for an

improved customer experience. This type of promotion of rail transport is also directly related to the multimodal approach: the customer-friendly combination of different modes of transport is intended to be an incentive for travelers to switch from private motorized transport or air travel to public transport, in particular passenger rail transport. It is therefore crucial for the further work of the platform that no exclusive railway solutions are developed and supported.

Thus, subgroup A's main goals are to identify the necessary measures / actions that are needed to enable railway companies and third parties to set up customer platforms in such way as to allow for smooth customer journeys. This includes the positive identification of the responsibilities for these objectives and the necessary measures to achieve them.

3.1.4 Barriers

The following barriers have been identified: data sharing, ticket selling, resources and issues concerning the level playing field with other modes. Regarding passenger rights, the identified barriers are controversial, which is why this aspect is addressed under Chapter 8 "Open Points".

Data Sharing
Data containing real time information, required for smooth international operations and passenger information, are often not available for sharing in practice. This is partly due to insufficient digitalization as well as not yet fully implemented data standardization in the rail sector. Compared to other sectors, such as air transportation and hotel bookings, the lack of a comprehensive solution is particularly striking. Furthermore, data exchange between domestically oriented ticketing systems of the railway undertakings, other operators and ticket vendors, presents untapped potential.

An obligation to make timetable data, fares and reference data available is already covered by EU Regulation[4], while new measures related to the provision of real time data by rail operators are envisaged in the new Recast of Passenger Rights Regulation. However, railway specific approaches currently being developed[5] could be an obstacle unless common and suitable interoperability and multimodal specifications, for Application Programming Interfaces and/or data formats, are agreed upon at EU level.

Even though several information systems are in place already, these are not yet all connected. Also, certain harmonized standards do already exist in specific sectors[6] but are not yet all implemented. Works are ongoing between standardisation bodies and organisations active in rail, aimed at finding a common interoperability ground. A presently restricted availability of real-time data and full digitalization which is still to be achieved[7], can be an actual barrier in practice.

With regard to customer information, common ticket format, inspection systems and handling of disruptions, the customer journey needs further improvements. These areas are not functioning properly across railway undertakings today.

Ticket selling
As the illustrative example at the beginning shows clearly, the process of buying international railway tickets is not consistently customer friendly at the moment. Initiatives to make the process easier, as well as to introduce new ways of distributing tickets through third parties still need to

[4] EU Regulation 454/2011 "Telematics applications for passenger services" TAP TSI and Commission Delegated Regulation (EU) 2017/1926 supplementing Directive 2010/40/EU with regard to the provision of EU-wide multimodal travel information services.
[5] OSDM/FSM
[6] CEN EN 12896("Transmodel"), CEN/TS 16614 (NeTEx) and EN 15531 ("SIRI")
[7] Obligations to share real time travel information are already in place, either under MMTIS (2017/1926), where this data needs to be shared via National Access Points, or under the recast PRR, where both infrastructure managers and railway undertakings will be obligated to share this information with ticket vendors (subject to the adoption by EU lawmakers).

be implemented[8]. This includes digital tickets and the possibility to sell or be part of mobility packages. Each railway undertaking should maintain a high degree of commercial freedom and risk, creating new product parameters.

The identified shortfalls are not primarily technical. Market forces on their own have not yet led to feasible and adequate solutions for selling international tickets (including cross-border and domestic segments). Obstacles remain to ticket distribution in the form of content restrictions and unfair commercial conditions. The main barrier is inadequate level-playing field conditions for the sale of tickets through third parties (like MaaS service providers) on fair, reasonable and non-discriminatory, commercial principles.. Finally, combined air-rail journeys, providing the customer with seamless multimodal ticketing across Europe and putting railways in the center of multimodal travelling, are not yet common and easy to book. This is not only true for air-rail, but for multimodal ticketing in general.

Resources

Railway undertakings are focusing primarily on their own domestic markets, stemming from their respective business models or due to other reasons. Hence, the resources deployed within railway operators for implementation of technical solutions for improving customer experience on international railway trips may be too sparse (IT, manpower, time, money). With the liberalization of the international rail passenger market in 2010, it was expected that more competition would ensue, and help direct the necessary resources for improving customer experience. However, this does not seem to have sufficed so far. Existing means are primarily used for improvements in the national context and actually allocated funds are often very scarce, especially for the implementation of digitalization.

Level Playing Field (framework conditions)

From a customer's point of view, disparities regarding the level playing field between rail and other modes, are striking. Often, air can not only compete on speed, but also on price. This puts railways in an uphill battle, as framework conditions are not treated equally. The internalization of external costs is not ensured in an equal manner across competing transport modes. Also, aviation is exempt from VAT by all Member States, whereas rail is subject to VAT on cross-border tickets in a number of Member States.

Ongoing Initiatives

Many initiatives are already ongoing. The investments made and measures taken should be taken fully into account before defining possible approaches and recommendations. Relevant initiatives enhancing the customer experience of international rail have been collected by the subgroup participants (table in appendix). A selected number of initiatives at the European level is presented according to the barriers they seek to overcome. A short description with the level they comprise (European, State or Railway Sector) and whether they are of legal, technical or commercial nature is included for each ongoing initiative.

<u>Data Sharing</u>

- *EU Regulation 454/2011 "Telematics applications for passenger services" TAP TSI*
  Timetable information and data, fare data and real-time information have to be made available by the railway undertakings according to TAP TSI. Thus, the standards for data exchange for the railway sector are available and mandatory within the EU, as attached as technical documents to the Regulation (EU) 454/2011 (TAP TSI). Also, mandatory instruments to share these data are available, e.g. through the TAP TSI Services Governance Association (TSGA). A change management process, operated by ERA, ensures the further development of the standards.

  Classification: *European level / legal*

[8] Open Sales and Distribution Model (OSDM)

- *EU Delegated Regulation 2017/1926* "Multimodal travel information services" *MMTIS*
  MMTIS provides an enabling framework for travel and traffic information data exchange (including standards; possibly license agreements). It aims to enhance the development of travel information services which facilitate multimodal travel, by providing or publishing all information (making data accessible) in one source (NAP).

  Classification: *European level / legal*

- *Programme Support Action (PSA) for the implementation of a Coordination mechanism to federate the National Access Points established under the ITS Directive (2010/40/EU)*
  This PSA will support enforcement of data sharing obligations and compliance with existing Delegated Regulation of the ITS Directive, one activity will look at strengthening and harmonizing enforcement for the different national access points.[9]

  Classification: *European level / legal*

- *EU Directive 2019/1024: Open Data, Public Sector Information*
  Public Sector Information Directive and the upcoming data act. More real-time data, available via Application Programming Interfaces (APIs), can allow companies, especially startups, to develop innovative products and services, e.g. mobility apps. Publicly-funded research data is also being brought into the scope of the directive: – Member States are required to develop policies for open access to publicly funded research data while harmonized rules on re-use will be applied to all publicly-funded research data which is made accessible via repositories.
  This Directive is without prejudice to provisions laid down in Commission delegated regulations adopted under the ITS Directive.

  Classification: *European level / legal*

- *DATA4PT*
  EU-funded project by a consortium coordinated by UITP with ITxPT, and 9 Member States. Data4PT's overall objective is to support the development of data exchange standards and models, to fulfil the needs of multimodal travel information service providers.

  Classification: *European level / technical*

- *UIC Door-to-Door Guidelines (D2D)*
  Giving customers the possibility to choose a single travel solution, even if it involves multiple transport modes or is provided by various mobility operators, through a single user-friendly interface to plan, book and pay for the entire trip.[10]

  Classifaction: *European level / technical*

- *UIC MERITS database (Multiple East-West Railways Integrated Timetable Storage)*
  A B2B sector initiative allowing the commercialization of integrated timetable data of many European and some non-European countries (Russia, Turkey, Belarus), comprising a few hundred railway undertakings, which are published twice a week.

  Classification: Sector level / technical

- *Shift2Rail IP 4*
  Shift2Rail R&I is carried out under this Horizon 2020 initiative and develops the necessary technology to complete the Single European Railway Area (SERA). Within its Innovation Pillar 4, specific projects overcome all the barriers to perform a seamless door to door

[9] https://ec.europa.eu/transport/content/2020-call-for-proposals-nap_en
[10] *https://uic.org/projects-99/article/door-to-door-415*

travel across Europe, including ticket selling, data sharing and other multimodal travel obstacles.
Shift2Rail IP4 is developing the so called Interoperability Framework, which offers a pan European connection possibility. It goes far beyond the technical complexity of local multimodal connections which already exist and mainly based on bilateral agreements. This technology can accommodate any standard (FSM, TAP-TSI, SIRI-NETEX).

Classifaction: *European level / technical*

Ticket selling

- *DIRECTIVE (EU) 2016/2370*
  Member States may require railway undertakings operating domestic passenger services to participate in a common information and integrated ticketing scheme for the supply of tickets, through-tickets and reservations or give the power to competent authorities to establish such a scheme. If such a scheme is established, Member States shall ensure that it does not create market distortion or discriminate between railway undertakings and that it is managed by a public or private legal entity or an association of all railway undertakings operating passenger services.

  Classifaction: *European level / legal*

- *EU Regulation 454/2011 "Telematics applications for passenger services" TAP TSI*
  International tickets have to be issued by the railway undertakings and ticket vendors according to the TAP TSI. The standards for the ticketing for the rail sector are available and mandatory within EU. The standards are attached as legally binding technical documents. A change management process, operated by ERA, ensures the further development of the standards.

  Classification: *European level / legal*

- *DIRECTIVE (EU) 2012/34*
  Amended by the 4th railway package, the EC shall present a report by 31 December 2022 on the rail market developments on through-ticketing systems, assessing the need for action at European Union level and accompanied if necessary, by a legislative proposal.

  Classification: *European level / legal*

- *Electronic Ticketing Control Database (eTCD)*
  Under the UIC umbrella, a rail sector initiative develops a technical enabler for e-ticketing for all participating railway undertakings, including online ticket control services.

  Classification: *Sector level / technical*

- *Open Sales and Distribution Model (OSDM) / Full Service Model (FSM)*
  A B2B sector initiative (railways and ticket vendors) seeking an open IT- specification, enabling data exchange between companies, focuses on rail but considers multimodality. Aims at facilitating online distribution services to the benefit of the travelers and can contribute to offering door-to-door travel solutions. OSDM: Pan-European tariff distribution platform (replacement of PRIFIS/MERITS). An integration of OSDM specification in the Regulation (EU) 454/2011 (TAP TSI) is under discussion.

  Classification: *Sector level / technical*

- *New EU Regulation on Multimodal Travel:*
  Alongside the revision of the ITS directive and in connection with the delegated regulation 2017/1926 (MMTIS) a new regulation proposal addressing market aspects / cooperation between operators and intermediaries re-selling tickets for multimodal travel is currently being examined by the EC.

Classification: *European level / legal*

- *Regulation (EU) 2019/1150 on promoting fairness and transparency for business users of online intermediation services*
  With the P2B Regulation, the European Union wants to prevent existing and new business models or offers from being blocked, unilaterally influenced or offering entrepreneurs or consumers from being disadvantaged in any way.

  Classification: *European level / legal*

- *Research and Innovation (R&I) Activities S2R IP4 / Crosscutting activities*
  Achieving a technical framework, customer experience applications and multimodal travel services. Enabling the technology to achieve a seamless travel across Europe, making railways more attractive.[11] IP4 technologies, offer the traveler the possibility to access from one interface access to all mobility services across Europe. Not only to book and buy a multimodal ticket from point A to B, but also offering all the services: trip-tracking, after sales, booking or buying ancillary services.

  Classification: *European level / technical*

- *Agreement concerning the Relationships between Transport Undertakings in respect of International Passenger Traffic by Rail (AIV)*
  Agreement on claims handling answering the questions of who handles the claim? Who pays? Who bears the cost? Who has to do something on the spot?

  Classification: *Sector level / legal (commercial)*

- *Boilerplate contracts for air-rail cooperation*
  Model of contracts for air and rail cooperation containing the clauses to be negotiated by the partners. Those boilerplate contracts are being used in the air-rail project of UIC.

  Classification: *Sector level / legal (commercial)*

- *Manual for International Rail Tickets (MIRT)) CIT/UIC and Electronic Ticket Control Database (ETCD)*
  Definition of the legal and functional specifications of tickets (paper and eTickets) and technical specification for paper tickets. There is a need to adopt technologies to exchange ticket control data between ticket issuers and railway undertakings. An integration of these documents in the Regulation (EU) 454/2011 (TAP TSI) is under discussion. The Electronic Ticket Control Database (ETCD) enables real-time control of passenger tickets.

  Classification: *Sector level / legal (commercial) / technical*

- *Agreement concerning Journey Continuation in respect of International Passenger Traffic by Rail (AJC) CIT/CER*
  Agreement permitting to the passenger to continue his/her journey with the next available train, if passenger missed his/her connection due to a delay/cancellation of the previous train, which is operated by another operator participating in the agreement.

  Classification: *Sector level / legal (commercial)*

Public Key Management website (PKMW), Flexible Content Barcode (FCB) and Universal Rail Ticket (URT) Initiatives driven by UIC on enhancing the technical aspects of ticketing (layout, security and reservations systems). An integration of these standards as mandatory specifications in the revised Regulation (EU) 454/2011 (TAP TSI) is already in preparation.

[11] https://shift2rail.org/research-development/ip4/

Classification: *Sector level / technical*

- *Air & Rail (UIC – IATA) MoU*
  Evaluating cooperation opportunities with airline operators, targeting an improvement in the interoperability between rail and air transport solutions

  Classification: *Sector level / legal (commercial) / technical*

Resources

- No initiatives identified for this barrier.

Level Playing Field (frame conditions)

- *Sustainable and Smart Mobility Strategy*
  Anticipates additional legislative proposals for the protection of 'fair mobility' (defined as 'protection for passengers and their rights') and consideration of the options and benefits of going further with a multimodal framework for simplified, more consistent and harmonized passenger rights. The Working Plan of the Strategy also intends to cope with revision of the EU Emissions Trading System (ETS) with respect to maritime transport, aviation and CORSIA; revision of the Energy Taxation Directive; and review of VAT exemptions for international passenger transport which has a potential to create a more level playing field for all modes of international passenger transport.

  Classification: *European level / legal*

3.1.5 Possible approaches

The aim of this chapter is to present an open and broad list of all conceivable solutions for tackling the described barriers in order to cover a wide range of possibilities. The individual solutions are not necessarily compatible with each other and may also contradict each other. The consensus reached by the subgroup on the solutions that are recommended, is shown in chapter 7 "Recommendations". The approaches are listed according to the main barriers they seek to tackle.

Generally speaking, solutions for products, passenger categories, pre-sale time limits, ticket distributions, refunds and refund processes, cancellations, and customer management at disruptions all need to be standardized.

Data sharing

- The requirements for publishing timetable data and tariffs is already organized at EU level, but is not yet fully implemented. The Member States have an important role in regulating how this data is made available on the NAP, to make sure that the data sets are compatible in the national profiles. As a minimum, a national registrar is needed, as well as regulation to ensure that international interoperability is included. An example is Norway, where public transport operators are required to publish data on the National Access Point, and to deliver data to an integration point that will verify data quality and ensure that codes are interoperable across data sets for timetables, real time information, fares and ticketing. A distinction is made between commercial data (not to share) and operational data (to share), using common systems also to ensure the interoperability of data. The Norwegian systems are made for both rail and public transport and are the main sales systems for rail transport. Internally, both rail operators and other public transport are using the NeTEx and SIRI formats for exchanging data. Specific rail formats like TAP-TSI are used when exporting data for use by other countries. Norway shows that most passengers need intermodal information at domestic level. For that reason, the best way forward is to focus on standardizing NeTEx/SIRI for European rail in all regulations, or at

least to enforce the acceptance and harmonization of such formats so that parties do not need to export data in two formats. Another solution could be by creating a shared NeTEx/SIRI to TAP-TSI converter centrally for information flow to the UIC.

- The Member States shall ensure the implementation of the Regulation (EU) 454/2011 (TAP TSI) by all railway undertakings, to share the timetable and tariff (including fare tables for basic fares but also discounted fare types) data with other railway undertakings, public authorities and 3rd parties (e.g. ticket vendors). Railway undertakings shall ensure that the tariff data are accurate and up-to-date. The shared data should include both the yearly planned timetable as basis, and the planned operative modifications, e.g. track closures for which they are responsible as sole or joint carrier, and that are related to transport services available for purchase by the public. A distinction is made between commercial data (not to share) and operational data (to share). This will guarantee access for all railway undertakings, third parties and public bodies, including sanction mechanisms towards parties not fulfilling the above mentioned obligations.
- Railway undertakings shall make available their real-time data for trip tracking purpose in order to provide accurate information to passengers about any disruption that may occur for applications such as interactive maps. It is important for passengers to gather update information of delays, connections and possible alternatives in real time. A domestic example is the intermodal travel planner developed by the 4 Belgian public transport operators (smartmobilityplanner.be). Real-time data from De Lijn, TEC, MIVB and NMBS are integrated in one interface, providing the best possible route to the customer. The data of this Smart Mobility Planner are accessible via an open source, multimodal web application. Other partners and transport modes could be integrated in future. All the data used in this application is free accessible and can be used to create other applications. In some countries the operators (like the NMBS in Belgium) started already sharing real time data for free to third parties (via a license agreement).
- EU-wide systems for the provision of real-time data on the basis of the regulation (EU) 1305/2014 are in place (e.g. TIS[12]), covering the real-time data for international journeys.
- The legal basis for responses to parties who do not fulfil obligations should be considered, this is taken into account by the new CEF PSA-project "federation of National Access Points". The obligation to share necessary data could be a part of every public service contract (PSC). As it is the sectors responsibility to share information, sanctions could also only be implemented on a contractual basis or in contracts, instead of public-law sanctions.
- Standards Converters (NeTEx / SIRI to TAP-TSI and vice versa): Standardize on NeTEx / SIRI for European rail in all regulations, or at least enforce the acceptance of such formats, so that parties do not need to export data in two formats. Create a bi-directional shared NeTEx / SIRI to TAP-TSI converter centrally for information flow between participating organisations, compliant with the Regulation (EU) 454/2011 (TAP TSI). Those solutions should be preferably available as open-source license.

Ticket selling

- Tariff information and ticket sales are complex areas. Many railway undertakings have fare cooperation agreements with regional PTAs, ensuring seamless travel between rail and other modes. In regional public transport there are many different business models, which need to be supported. Also with regard to ticket distribution (or other contract), some common standards are needed. Like there should be minimum standards for international tickets, with regard to products, price calculations, passenger categories, rules for refunds etc.

  Norway decided to create a mandatory national online "store" for interoperable tickets, setting common standards for account/ID based ticketing. This is a result of Norway considering a decentralized model to be too vulnerable. Aspects of the Norwegian model

[12] https://tis.rne.eu/

could be considered at the European level as well. An account based system is developed, using NeTEx/Transmodel as a foundation, which will support different business models within the same solution. A generic way of describing and exchanging travel rights are needed, which should build on Transmodel as well.

- Mandatory requirements for transport operators to allow third party sales are considered necessary for success. However, regulations for commercial conditions must be developed, ensuring fairness and ensuring the income to the PTOs, to avoid higher prices or degraded offer. Many PTOs depend on PSOs, and don't have margin for sales commissions to third parties. Today it is required to have commercial agreements with each rail undertaking to be able to sell their tickets. This should be simplified.
- Member States should stimulate more cooperation between railway operators in order to offer tickets reciprocally and to share data on rail ticketing in such a way that international through tickets via standardized programs will become available and third party ticket vendors or MaaS service providers can sell these tickets, possibly as part of wider travel packages. This could be done through incentives. As it is understandable that railway undertakings might be reserved sharing data, taking into account the resources that have been invested and the potential risk to provide their information to data tech companies.
- In the absence of a market-led solution, any such regulation should secure a mandatory scheme for granting third parties access to passenger-relevant static and dynamic real-time data necessary for journey planning, ticketing, and journey completion, as well as to distribution contracts between railway undertakings and any ticket vendors (whether independent of or vertically integrated with railway undertakings), on fair, reasonable and non-discriminatory terms.
- The MS take note of a possible need for legal obligation to ensure a level playing field on a European level, should the market fail to provide an adequate solution. The principal object would be to ensure an interoperable, non-discriminatory and consistent level playing field, mitigating the risk of unfair contract terms given the likely contractual and material imbalance between railway undertakings and third-party ticket vendors, whether independent of, or related to, railway undertakings. An alternative could be to for the Member States to include in their PSO contracts certain conditions to show willingness to share a minimum of data with third parties. Fair, reasonable and non-discriminatory, commercial principles are still open for interpretation and should be further defined and the conditions to share data to third parties should be specified
- Also, clarification of liabilities is advised (e.g. in the case of a third-party vendor's supply to passenger of information about minimum connection time or in cases where a combined ticket involves the services of more than one RU). In theory, the TAP TSI defines already a framework under which conditions the data have to be shared between railway undertakings and ticket vendors. But the ticketing is linked to a distribution agreement between the railway undertakings and the other railway undertakings / ticket vendor. However, the responsibility here lies within the sector. The recast of Regulation 1371/2007 does not stipulate any such provision.
- Discussions regarding obligations concerning cross-border ticketing are connected with the ongoing revision of Regulation (EU) 2017/1926. The principle of voluntariness has not succeeded. This should be further coordinated on a European level.
- There is a need to modify the vendor systems in the direction of single contingent reservation systems. The reservation possibility should not be discriminative on mid-term between the different types of passengers especially on being inland or international travelers, and having different tickets authorizing them to make (seat or bed) reservation (e.g. classic inland ticket, national global passes, NRT tariff, EURail/Interrail passes, special international offers, etc.)
- These issues are also addressed in the European Commission's Sustainable & Smart Mobility Strategy and we note that the case for a European solution is to be addressed under Article 13(a)2 of the Rail Governance Directive (2016/2370).

Resources

- The MS see a clear need for Union support for implementation of digitalization, consistent with the Smart & Sustainable Mobility Strategy, the New Consumer Agenda and Union support for R&I (e.g., through adequate funding of Transforming Europe's Rail System).
- The need for EU financial support is required, to speed up the introduction and implementation of technical solutions. If actors have already made investments in solutions that, due to broader international solutions, need to be adjusted, the need for financial help should be analyzed.
- Only few IT-suppliers are offering software solutions for rail distribution. This requires a costly implementation and customization effort on the IT-systems of the railway undertakings and ticket vendors. It should be discussed how standard software components or Software-as-a-Service solutions based on European standards could help.

Level playing field

- From the customers point of view it is most important to allow price transparency between all possible modes. Only then, the customer will be able to take well informed choices. Therefore, all frame conditions which currently distort the level playing field and thereby the price perception will have to be reconsidered.
- Internalization of external costs across competing transport modes: The alignment with the objectives of the Green Deal means that a lower VAT, fuel tax, carbon emission trading and employment condition treatment should be considered for green transport modes.
- Legal cf: airline legislation; demand access in contracts and franchises; include obligations in Covid support measures and demands. Compare solutions done in the airline market when these tickets became available. Competition law is no practical solution given the length and complexity of the procedure and legal motivation.

3.1.6 Recommendations

This chapter will outline the consensus of the subgroup on the possible approaches which should be recommended and are broadly supported. A concrete working plan must then be developed by the platform as a whole.

Data sharing

- The EU 454/2011 and EU 2017/1926 legislation point out standards for static and dynamic data. These standards are under development to create opportunities for innovation and development for EU services. This work should be coordinated to support further development and maintenance of EU wide standards, and should also include new types of transport modes. Market actors should strive to work towards multimodal standards for provision of data to 3-parties.
- The legal basis to enable the necessary data exchange is given in both railway specific as well as multimodal regulatory frameworks. The implementation of these obligations should be either enforced, and sanctions for actors not complying be considered, or implementation should be supported by incentives.
- The need for widely accepted data standards is acknowledged. Where possible, standards should be unified, or standards' converters should be considered and promoted preferably as open-source tools. The actors should work towards multimodal ready/compatible data standards.
- Similarly, Application Programming Interfaces (API's) should be developed and deployed in a harmonized and multimodal perspective.

Ticket selling

- The European Commission, with the involvement of the railway sector and interested stakeholders, should assess how the railway sector can provide feasible solutions for selling international tickets by third party vendors or MaaS service providers on fair, reasonable and non-discriminatory commercial principles (FRAND). A timeline for the implementation should be agreed upon. Data for the purpose of enabling ticket sales made available to third-party ticket vendors must be as complete as the data provided to, or made available via, the railway undertaking's own retail/distribution channels through agreements based on FRAND principles.
- Develop a freely accessible approach, with cooperation between the countries, which is compatible with the fourth railway package. This approach should be used for both ticket sales and distribution. The standards of today open for railway undertaking individual solutions are not compatible with a good customer experience. Ticket formats and solutions for ticket inspection must be regulated to make them coherent between companies (like the format for ticket inspection which will be part of the revision of TAP TSI). The announced revision of the Delegated Regulation 2017/1926 in 2022 should promote the coordination between companies, point out further requirements and enhance coherence with TAP TSI (EU Regulation 454/2011).

Resources

- The need for EU financial support is required, to speed up the introduction and implementation of technical solutions. If actors have already made investments in solutions that, due to broader international solutions, need to be adjusted, the need for financial help should be analyzed.
- Invite the European Commission to explore, on a European level, further possibilities for support, consistent with the Sustainable and Smart Mobility Strategy, New Consumer Agenda, the Connecting Europe Facility (CEF), the Recovery and Resilience Fund and Union support for research and innovation should be explored.

- Only few IT-suppliers are offering software solutions for rail distribution. This requires a costly implementation and customization effort on the IT-systems of the railway undertakings and ticket vendors. It should be discussed how standard software components or Software-as-a-Service solutions based on European standards could help.

Level playing field

- From the customer's point of view, it is most important to allow price transparency between all possible modes. Only then the customer will be able to take well informed choices. Therefore, all frame conditions which currently distort the level playing field and thereby the price perception will have to be reconsidered.
- Align the mechanisms for the internalization of external costs across all competing transport modes. Reconsider the VAT and fuel taxation treatment across all competing transport modes. in order to enable customers to choose to greener modes of transport.

3.1.7 Open points

A number of discussion points are identified, leaving space for further discussion and fine-tuning of the analysis and recommendations. These are listed below and show that there is still more need for action.

Passenger rights

As the topic of passenger rights was discussed controversially, furthermore the Recast of Regulation EC No 1371/2007 on rail passengers' rights and obligations has recently been concluded and is about to be approved formally by the European Parliament (status as of 19 March

2021). Therefore, the barriers, possible approaches and recommendations were moved to the present chapter "open questions". The questions and approaches can be taken up again at a later stage by the Platform.

It is widely acknowledged that further improvements on passenger rights are needed[13]. Too many customers still experience disruptions without remedial actions. The recasting of the regulation on rail passengers' rights will ensure better protection and encourage the development of rail transport[14] according to the options chosen during its implementation. Extra efforts are required for implementing the new regulation. Agreements ensuring proper passenger protection could be a solution in the event of missed connection or cancellation, disturbances, rerouting.

Assistance for persons with disabilities and persons with reduced mobility during international journeys is a further barrier which has to be addressed. Currently, for persons with disabilities and reduced mobility it is particularly difficult to get assistance during their journeys, as single points of contact are missing. Most of the countries have One-Stop-Shops (OSS) assisting persons with reduced mobility. The interface specification of systems is specified in the regulation (EU) No 454/2011. However, systematic cooperation between these existing organizations is still missing. An approach would be that common rules for collaboration and contact lists for booking services that are used by persons with reduced mobility should be established on a EU level. Furthermore, a need to increase collaboration with those Member States who do not already participate in the voluntary work around these EU-services (PRM-ABT) has been identified.

Extra efforts are required for implementing and enforcing the Regulation (EC) No 1926 /2007 in order to enhance protection for passengers and to encourage an increase in railway travel. This should be assessed for the likely impact of eventual judicial clarification of aspects of the proposed recast Rail Passenger Rights Regulation.

Additional open points

- Can we apply systems (ticket platforms, information platforms, etc.) which are able to handle new entrant operators easily?
- What is the perspective future of the EURail/InterRail system as the best practice of current European international ticketing (partly reflecting to the illustrative example on page 2)? Can it be a basis of certain integrated flat rate systems and subject of further developments, or will it be one system besides others with a need of embedding into some new integrated system?
- New technical distribution capabilities only based on mobile phones as ticket media such as the check-in – check-out ticketing increase the need to allow the distribution of the full set of available products. Otherwise the passenger cannot trust the ticket issuer, that he has always a valid ticket for his trip.
- As it is developed in air transport, passengers choosing train as a mode of international transport should be able to plan the whole journey using a platform where a passenger can buy, rebook and return tickets and if necessary issue hotel orders. Widening the accessibility of international tickets to create door-to door multimodal solutions for passengers, can be expected to increase demand and increase occupation rates and therefore ultimately be beneficial for all parties, including railway undertakings.

Open points from the Sector Mirror Group

A number of discussion points were identified which the Sector Mirror Group acknowledged as significant but on which it did not prove possible to achieve consensus in the time available, leaving space for further discussion and fine-tuning of the analysis and recommendations. These are listed below and show that there is still more need for action.

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[14] See Position of the Council at first reading with a view to the adoption of a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on rail passengers' rights and obligations (recast) - Adopted by the Council on 25 January 2021

Data sharing

BEUC, EPF and others argue that the cross-border development of rail will necessarily involve a user-centric approach. To this end, enabling consumers/passengers to easily plan their trips through a single transaction by purchasing, for example, a single integrated ticket for connecting trains would be a real step forward for European passengers. However, this can only be achieved if the different stakeholders, such as rail operators and ticket vendors, have access to the static and dynamic data essential to enable combined bookings with different operators. Currently, it is very complicated, if not impossible for European passengers to book international rail tickets in a single, simple, and straightforward way. This barrier greatly hinders the attractiveness and development of rail in general, and cross-border services in particular, to the detriment of passengers. In practice, this data is often not available to be shared and data exchange between the national ticket offices of railway companies, other operators and ticket vendors is lacking. We believe it is due to the lack of sufficient legal obligations to share static and dynamic data. The market initiatives currently underway have proven to be insufficient and do not meet the needs necessary to promote rail and enable efficient distribution by third party ticket vendors. In addition, the existing legal bases requiring data sharing are incomplete, partially implemented and poorly enforced. Thus, it is essential that additional legislative measures be proposed to oblige rail operators to share a minimum set of static and real-time/dynamic data.

Passenger rights

BEUC, EPF and others point out that when passengers use the train, they want to be protected for their entire trip, even when their trips include different legs with different railway operators. Unfortunately, this is not currently the case. The availability of "through-tickets", protecting travelers for their entire trip is extremely limited because rail operators tend to sell tickets for specific segments of a trip. As a result, passengers are very often not entitled to re-routing, assistance or compensation in the event of disruption to the journey. These shortcomings are a barrier to rail's attractiveness, as passengers might consider the train unreliable and instead remain on traditional, more polluting means of transport. Although we recognize certain improvements in the recast of Regulation (EC) No. 1371/2007, which provides that passengers who purchase combined tickets sold by a railway undertaking or its 100%-owned subsidiaries will benefit from travelers rights for their entire journey, we consider this to be insufficient. The very limited scope of application will de facto exclude many connecting tickets (i.e., a combined Lyon>Paris - Paris>Brussels journey operated by SNCF and Thalys respectively, will not be covered). This lack of obligation to offer through tickets and this limited scope is all the more prejudicial in the case of cross-border railway services, which by their very nature usually involve different operators. In this situation, simple incentives to offer through tickets as defined in the reviewed Regulation are not sufficient. Market led solutions have proven to be limited and inefficient and voluntary through ticketing agreements between railway undertakings tend to be disappear. New legislative proposals to make mandatory offers of through tickets, including for international travel, should be considered.

3.2 B – Developing a network and implementing / governing it

3.2.1 Definitions

Core Connection

Core Connections are regular connections between adjacent urban nodes of the core network, which would create a backbone of international passenger network. One example is the line from Prague to Berlin (120 minutes interval) that constitutes the core connection between two hubs with easy connections to various destinations.

EuroLink

EuroLink is a bottom-up initiative from Infrastructure Managers (IMs) Infrabel, DB Netz and ProRail. Meanwhile SNCF Réseau, ÖBB Infra, S práva Železnic, Eurotunnel ADIF, NetworkRail and HS1 have joined EuroLink as well. Talks with BaneNOR, Banedanmark and ACF are ongoing at this moment. The goal is to develop a concept for an international high frequency transport plan for high speed trains and fast long-distance IC connections with optimised transfers in hubs to connect the most important origin-destinations (ODs). A lot of the proposed TEE 2.0 lines could be configured by using the building blocks offered by the EuroLink concept. Because EuroLink is designing timetable concepts 5-10-20 years into the future for this purpose, it is the complement to the 0-5 year's horizon of TTR for formal capacity allocation. EuroLink and RNE are in contact to align both projects.

EuroLink's focus is not only on International Passenger Traffic. A reconfiguration of international transport plans for passenger traffic will inevitably have consequences on the transport plans for freight traffic and domestic traffic. This will also be in scope in the future, to offer both opportunities and possible solutions to bottlenecks (in logistics or infrastructure) as well as an optimisation study for the nodes where national and international transport plans meet. Both passenger transport plans have to serve as a feeder/outflow for different passenger fluxes.

Hubs and nodes

Hubs should be located at the centre of major cities or metropolitan areas, ideally with good intermodal integration with local rail services and other modes of transport, promoting easy accessibility (including PRM) to the whole city or metropolitan area. The concept of passenger hubs builds on the urban nodes but adds additional requirements to facilitate international rail passenger transport. On the other hand nodes in the rail network are connection points were transfers can be made to another core connection.

TEE 2.0

The concept TEE 2.0 is a strategy for strengthening entrepreneurial international passenger rail services with high-speed and overnight rail services. The term "Trans Europ Express – TEE", which was coined by Western European railway undertakings between 1957 and 1995 for particularly high-quality international trains, could be used to designate already existing services that are now being interconnected. The TEE has been one of the first symbols of European integration and it is still one of the strongest brands in international rail travel. In contrast to the original TEE which offered only a few first class trains per day targeted primarily at business travellers, the concept of the new TransEuropExpress or TEE 2.0 will offer connections at frequent intervals for all customers. TEE 2.0 will interlink the individual optimized national systems to form a range of European services designed to reduce international journey times. The concept is based on the current market-oriented framework conditions of the fourth railway package but calls for a more active participation of the states and all stakeholders according to their respective role. The concept TEE 2.0 consists of three components: Firstly, intensified bi- and multinational cooperation to coordinate (clock-face) timetables for a border-crossing network with more connections between hubs and nodes ("Europatakt"). Secondly, *TEE 2.0 trains* offering direct connections on longer routes integrating existing national train runs. And thirdly, a network of night train services.

TTR

The 'Timetabling and Capacity Redesign' (TTR) project of RailNetEurope (RNE), Forum Train Europe (FTE) and European Rail Freight Association (ERFA) aims at an improvement of the current timetabling and capacity management process including the trans-national coordination of

awarding capacity and construction of the timetables. RNE aims for an implementation for the timetable of 2025. Planning capacities in advance provides adequate products to the market, where the needs vary from flexible products booked shortly before the train run for a volatile market (particularly freight traffic) to detailed products available long before the timetable changes (particularly passenger traffic). Also, keeping the rail infrastructure in good condition is necessary to ensure a good performance. However, planning and coordinating construction works and other Temporary Capacity Restrictions (TCRs) is needed to avoid destabilization of capacity products before and after their allocation and thus make timetables more reliable. In TTR, e. g. passenger services get an earlier path allocation than today (draft offer six months and a half before timetable change).

3.2.2 Topic introduction

The interest of passengers in climate-friendly rail services, including for longer distances, has strongly increased in recent years. People appreciate the opportunity of making use of their journey time in digitally well-equipped trains, for instance for working, or of reaching their destination overnight. In particular, the years before the corona crisis has shown that many people would like to use attractive, i.e. speedy through-services for intra-European journeys between the major cities.

Today, international passenger services are limited by heterogeneous national framework conditions, a certain lack of market access and insufficient implementation & enforcement of the European legal framework at national level. Significant modal shift to rail will only be achieved if passengers can easily access services that meet their mobility needs which are attractive to them and offered at a competitive price. Improving international rail passenger transport requires, among other actions, creating the right conditions for the development of a viable and resilient network of such services, taking into account market demands and potential, matters of international capacity allocation, available infrastructures (e. g. existing TEN-T corridors) and market analysis. What would be the features of a European network of services that covers all major passenger nodes and systematically covers all major international traffic flows? What would be the most attractive multi-country connections? What are the most attractive cross-border regional connections? Where and how is the real customer driven market demand?

Mobility, already existing operations, expected demand, technical, operational and economic viability, investment needs in relation to infrastructure, signalling, IT developing (ie ticketing, capacity management) and other elements which are necessary to offer competitive, efficient and commercially attractive services influence the optimal selection and implementation of the different routes. Studies that have already been undertaken in this domain should be taken notion of when making this analysis.[15] Furthermore, the development of these international rail services should be accompanied by interoperable infrastructures which offer robust services and have a high standard throughout.

In this report, the Member States (MS) set forth their preliminary findings with regard to supporting the development of a network of international rail passenger services. The MS centred their works regarding the definition of a network on the concept of the TransEuropExpress (TEE) 2.0 network, which, integrates nodes and hubs through multi-country connections according to market demands. TEE 2.0 foresees the coordination of (inter-)national timetables and is to be enhanced by corresponding cross-border regional connections. Infrastructure Managers initiatives will substantiate the network with initiatives like EuroLink or TTR.

[15] See for example a joint study by various European Councils for Environment and infrastructure (July 2020), accessible via: https://en.rli.nl/publications/2020/advice/improving-international-passenger-rail

3.2.3 Overall vision

A network of nodes, corridors and multi-country connections is envisaged with interval clock-face timetables ("Europatakt") with trains provided by railway undertakings and adapted to market demands offering a combination of both several options for longer journeys without the need of changing trains or with well-timed correspondences per day and high-frequency connections with a limited number of quality changeovers. The concept takes into account the common market approach for an open access European passenger market, catering for an effective and competitive rail market and allowing all RUs to benefit from this approach. The concept makes rail travel more attractive to passengers and allows a more efficient process for international capacity-planning.

"More frequent – faster – everywhere": integrated clock-face timetable will establish a new, transparent principle of infrastructure planning and capacity management at an increasing number of railway networks in Europe. For all types of traffic, the approach of reserved capacity will help to ensure good connections in passenger traffic and reliable paths in goods traffic. The basis might be a clock-face system with trains running every two hours, hourly or even in a higher frequency structure according to market demand. Infrastructure plans derived from the timetable will significantly enhance the capacity of the overall network and can appreciably increase the nationwide system speed. Numerous European countries already have a network of highly frequent clock-face long-distance trains. However, if a clock-face timetable is applied too rigorously it might be both capacity consuming and negatively impact new market players' possibilities to gain access to a competitive timetable and compete on a level playing field when it comes to speed etc. Therefore, the timetabling and capacity strategy has to be designed in a way to incorporate enough flexibility to cater for the different users of the network. In general, a systematized timetable optimises capacity allowing more users to pursue their transport offerings.

The objective of the TEE 2.0 concept or similar services is to bring the customer more direct connections, regular service, higher frequencies, shorter travel times and better transfer connections, which will result in better passenger experiences and increasing numbers of passengers.

3.2.4 Barriers

For a rapid and extensive increase of international passenger rail transport, structural changes are still necessary. The technical standards framework conditions in Europe are not yet commonly implemented to a satisfactory level and pose technical, operational and economic challenges for cross-border passenger transport.

Border crossings are indeed interfaces between different national networks with non-harmonised standards. Those differences, e.g. in terms of ERTMS implementation or electrification, can lead to time loss at the border and higher costs for the railway undertakings; which have to invest in costly multi-system locomotives or EMU's equipped with interoperable systems if a stop at the border to change locomotives is avoided.

In an open market, where several operators compete for capacity on sometimes already congested infrastructure, a harmonised European capacity allocation process has so far not been applied as intended everywhere. The use of the network should be optimized and its reliability ensured, by a strengthened cooperation on allocation (e.g. rules for prioritizing particular services on congested infrastructure) between the IMs. A balance between national and international interests is to be kept in mind.

Furthermore, to ensure a strong network, the viability of the connections defined should be analysed by thorough cost-benefits analyses. The viability of the identified lines should indeed not

be seen as an acquis but should be carefully considered for each line defined within the network as the success of an international passenger network depend on it.

Other challenges, such as the ones linked with the rolling stock or the price of the tickets for high-speed passenger trains, should also be considered. Those points are however developed by the other subgroups of the platform. More details can therefore be found in their reports.
A major barrier is that infrastructure planning is mostly done from a national perspective, in some cases it is not coordinated and not communicated with the RUs[16]. A pan-European view is necessary to ensure the development of a highly efficient network.

3.2.5 Enabling actions

TEE 2.0
The TEE 2.0 assessment for future uptake should fully consider to the creation of a competitive rail market in the last 30 years with rights and duties for various rail actors concerned. While states are responsible for providing infrastructure capacity and framework conditions, transport services are offered by Railway Undertakings (RUs) and other applicants in a commercial manner. Infrastructure Managers (IMs) ensure non-discriminatory allocation of capacity to the RUs and efficient operation of the infrastructure.

An increasing number of European states are establishing clock-face timetables and systematized train paths in order to ensure attractive offerings with higher-frequencies for the travelling public as well as to optimise the capacity of the infrastructure for all users of the network. This approach might be extended to build up a network of international connections ("Europatakt") by the provision of appropriate framework conditions. Therefore, all states should have the possibility to analyse and influence the TEE 2.0 network in an open, transparent, and discrimination-free way. All interested RUs can participate in the network on a commercial base.

In consequence, the TEE 2.0 leverages the clock-face timetables of the European countries to build up a coordinated service network of international connections. This approach is most effective for journeys linking cities that are 4-5 hours apart by rail for the business traveller and up to about 6-7 hours for climate-conscious and leisure travellers. Since already existing commercial long-distance rail services are connected for longer, international journeys, the TEE 2.0 could be an economically viable model for the future of international passenger rail services without needing new subsidies. Critical issues that must be taken into consideration are an increased need of multi-system rolling stock, staffing issues, increased timetable vulnerability of longer lines and more rigid rolling stock and staff rostering.

If the timetables are coordinated between neighbouring states, the next step is to have direct trains with a longer itinerary connecting several nodes and hubs in three or more states. This way, long distance through-services of *TEE 2.0 trains* as flagship products of the concept between Paris and Warsaw via Berlin or between Barcelona and Berlin via Strasbourg without the need for a change of trains could be established when there is market demand without making use of additional capacities. Taking into consideration an attractive travel time is equally important, in some cases even more important. For business and leisure travellers, these services could very soon represent a climate-friendly alternative to air travel once the enabling framework is established.

The network of the TEE 2.0 could be implemented step by step if several railway undertakings and EU Member States support the concept. An initial TEE 2.0 network could be realized in a speedy manner without new infrastructure. At the first stage of development, existing high-speed links could be connected linking major national mobility hubs that offer further connections. The goal

[16] in spite of coordination being mandatory following European legislation (Art. 7e of the SERA Directive)

would be to increase frequencies on existing connections (for example London - Amsterdam or Paris - Berlin) and infrastructure. In parallel after the completion of major European infrastructure works such as the Fixed Fehmarnbelt Link and the Brenner base tunnel, more services could be added. The long-term objective is to increase the number of international travellers by rail on international short- medium- and long-distance travel and establish railway connections between all the European capitals and economic centres according to market demands, offering longer journeys without the need of changing trains. The list of potential connections of the new TEE 2.0 network is attached to this document as Annex 5.

The TEE 2.0 network could according to market demands be complemented by a portfolio of pre constructed paths of cross-border regional routes or *core connections* available for any applicant to request, which are simply regular connections between adjacent urban nodes of the core network, which would create a backbone of international passenger network. These connections would also take into account the TEN-T network, which already identified strategic nodes. But many cross-border connections are not located on the TEN-T network. One of many examples is the line from Prague to Berlin (120 minutes interval) that constitutes a *core connection* between two hubs with easy connections to various destinations. Using the TEE 2.0 approach we can extend these *core connections* identified within or outside the TEN-T network into longer routes, especially when cities are interlinked (such as Berlin, Prague and Vienna).

EuroLink

Another platform that might help defining the network is EuroLink, a bottom-up initiative from IMs Infrabel, DB Netz and ProRail. Meanwhile other IM's have joined this platform (SNCF Réseau, ÖBB Infra, Správa Železnic, Eurotunnel and ADIF) and others will follow soon. EuroLink's ambition is to help align the national networks to optimise capacity and improve international connections by offering high frequency slots, shorter travel times, direct connections and optimised transfers. In this way EuroLink tries to be a part of the answer of the climate debate, congested roads, the problem of short haul flights, but also align with the (intercontinental) aviation market to offer easy combined mobility solutions between the different transport modes.

The EuroLink platform could help to create a vision on capacity configuration, strengthen the structure of the hubs and to optimise connections. The capacity/network design is based on existing and dedicated infrastructure for 2030. Within that scope, EuroLink studies an improvement of a European Network, based on fast and regular connections between major hubs, feeder hubs and transfer points. The goal is to develop a concept for an international high frequency transport plan for high-speed trains and fast long-distance IC connections. The EuroLink design will foresee cadenced train paths that will run on hourly, half hourly or even higher frequencies. Besides that, EuroLink tries to optimise transfers in hubs to connect the most important OD's. A lot of the proposed TEE 2.0 lines could be configured by using the building blocks offered by the EuroLink concept.

EuroLink develops longer term concepts for capacity usage and timetabling 5-10-20 years ahead, optimizing the international network, aligning it with the capacity needs of other national, regional and freight traffic and identifying potential logistical bottlenecks and additional investments. It is a platform working on a Pan-European capacity optimisation study to improve interconnectivity by:

- creating a combination of medium and long distance slots throughout Europe;
- creating hourly patterns as a standard;
- using the shortest routes or infrastructure that grants the fastest journey times;
- creating nodes which foresee in the possibility of alternating paths and optimised transfer times.

A network approach such as EuroLink can help to develop the TEE 2.0 or any other rail service network. EuroLink designs timetable concepts for an optimised network of international rail services and studies the possibilities for step-by-step improvements building on existing transport plans and planned infrastructure projects. Key principles of EuroLink are: high frequencies, shorter journey times, direct connections and optimised transfers.

EuroLink is an open platform where IM's, MoT's and in a later phase also railway undertakings can discuss, study and optimise transport plans for rail to come to a medium- and long-term capacity strategy. These studies can give direction to future network configurations and can help infrastructure managers, policy makers, railway under takings and other stakeholders to create a vision for a European Railway. EuroLink is not (part of) a capacity allocation process. This is where EuroLink is different from and complementary to TTR. EuroLink can aid in designing (the content of) a common strategy content, which can in due time be realized in the actual timetable using the TTR approach (process). IMs and RNE are in contact to align both projects.

3.2.6 Process for developing the network

Any network design should focus on market demands looking at the creation of *core connections and strong hubs with reliable transfer options,* based on the nodes identified by the TEN-T network and market needs by interlinking them into longer routes with attractive travel times in order to offer a wide variety of travel chains within the defined network lines and to other services of the national and regional networks with short and reliable transfer times.

The network defined might differ from the Rail Freight Corridors network, which might not present us with the optimal model for rail passenger transport. European rail freight indeed primarily focus on corridors from ports to industrial areas and markets, whereas in passenger transport the travel patterns are more diverse and free access to certain markets is still lacking.

Building up a network could compose the following steps, beside the analysis of market demand and current offer, discussed later on; in an agile, iterative planning process between the states that has to be open to competition and non-discriminatory:

1. Examine existing and future market demands on the European travel market. Define the most important market potential, especially for city pairs.
2. Use the current services as a possible starting point. Then define step-by-step improvements, learn and re-iterate.
3. Inquire the concept ideas with all stakeholders: by defining these geographic priorities, star-shaped line elements to the nearest neighbouring towns or hubs are created from each country to the next node abroad. These line elements of all countries are collected and compared. The TEN-T network should be taken into account within this step.
4. Integral overview of the network of integrated international train paths and hubs– to provide an overview of the whole network on wider scale.
5. Fine-tune on line level: links are now created to lines and networks and are provided with travel times and/or slots (taking into consideration international freight trains as well). The resulting lines can be examined both in terms of their technical requirements (rolling stock) and their economic potential. A comparison of the lines is required to show the overall network effect.
6. In depth study of the market conditions, rolling stock requirements and infrastructure by states with consulting IMs and RUs. The studies should also focus on implementation and uniform application of existing legal framework.
7. Summary of the results by the states including prioritization on the services and required actions like improving infrastructure measures or adjusting framework conditions. Reformulation of EU

contribution for financing of infrastructure and rolling stock equipment[17] is suggested to boost the network.

Infrastructure managers in consultation with the RUs may aid in the process for steps 1 to 6 above, like in EuroLink. That way we can start with existing expertise, logistical know-how and process skills for the interplay of operators, governmental parties and other stakeholders to come to an actual capacity strategy 5-10-20 years in to the future and develop a step-by-step growth path with systematized train paths to offer for harmonized train paths within the core network[18].

The last phase comprises securing the train paths in line with the network utilization concept and transferring them to the capacity planning system (i.e. TTR). If clock-face systems are applied too strict there's a risk of counter productivity resulting in longer running times for all trains excluded from the TEE 2.0 concept.

The lines identified for the network should be analysed in the framework of the TEN-T Corridors. TEN-T Corridors cover identified strategic nodes and have the objective to be the backbone of the development of a sustainable multimodal transport network. They are therefore a key in the definition of a strong, viable and resilient international rail passenger network.

Improvement of Infrastructure usage:

- Short term: Transport plans have to be optimized for the infrastructure they are running on / Infrastructure has to be used for what it is conceived. EuroLink is conducting this study to build an international structure taking into account existing and decided infrastructure for 2030.
- Long Term: Based on a long-term vision on (inter)national transport plans states and IMs need to further develop their infrastructure to allow an optimal usage.

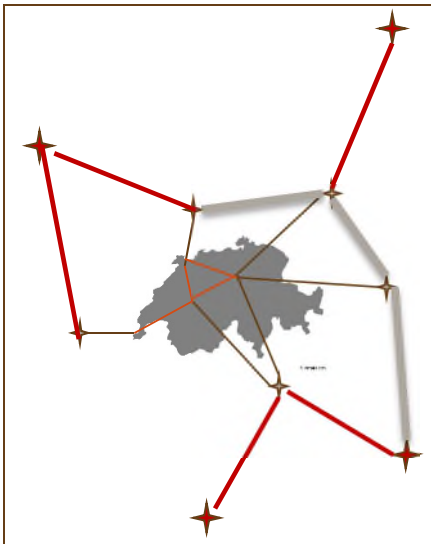
Example Switzerland

From Switzerland, the nearest nodes to reach abroad are Paris, Lyon, Milan, Innsbruck, Munich, Stuttgart and Frankfurt.

These nodes have high relevance from a Swiss perspective, as they can be reached in a travel time of approximately 3 hours from Switzerland. If these nodes are connected to the Swiss railway network, core connections from Switzerland will be created. Within Switzerland, the nodes Zurich, Basel, Geneva, Lausanne and Bern are connected in this way.

These core connections should be served with hourly or two-hourly intervals in daily traffic and offer optimal integration into the international, national and regional networks and timetable. The nodes ensure multiple travel chains to a large number of destinations with attractive and fast transfer connections.

[17] Investment needs in rolling stock should be covered through dedicated existing European funding instruments (e.g. CEF) for the upgrading of rolling stock with multisystem technology for international use.
[18] This phase would also be quite political, so with intensive contact between member states, EC and IMs and with some forms of non-discriminatory information to and consultation with market parties.



Where the used train paths continue beyond these nodes of the core connections abroad, specific trains can continue to operate. These extensions can directly develop tourist potential abroad up to 7 hours travel time from Switzerland.

Some destinations such as Berlin, Amsterdam or Vienna for example could be part of those core connections. Other destinations, such as Grisons with Chur, Bernese Oberland with Interlaken, Valais with Brig and Sion, and Ticino with Lugano and Bellinzona would be part of the tourist regions.

In addition, some other destinations could be reached regularly and with attractive journey times from Switzerland by means of transfer connections from the nodes of the core connections. Such destinations could for example be London, Brussels and Amsterdam, with a change in Paris, or Nuremberg with a change in Stuttgart.

Short- medium and long-distance lines should work as a cohesive network, with feeders and outflow to national services **in nodes** and **hubs** based on passenger flows in order to offer a wide variety of travel chains and to the national and regional services with attractive and reliable transfer times. These hubs and nodes would be based on those of the TEN-T Network and on the "Swiss method", which allows to discuss with all stakeholders and to identify geographic priorities.

Additionally, connecting the network to airports, the combination multimodal approach will provide combined air-rail journeys for customers and will contribute to more sustainable and economic transport within Europe.The lines and the network should offer attractive travel times and good and reliable connections in comparison to European short-distance flights. This also solves the problem of congested major European airports like LHR, AMS, FRA and CDG.

The MS (affected by the first 'roll out') should facilitate the network development which is crucial for success. The IRP platform may help with the coordination. All partners should play their respective roles more actively. We need to strengthen the cooperation between Ministries of Transports (MoT), IMs and RUs:

- Multilateral/Bilateral discussions between MoTs / IMs of two or more countries / preferably pan-European discussions for optimizing nodes / core connections and cross-border regional routes, RUs provide input to these discussions about their long term capacity demand based on the TEN-T network19.

[19] Building the network means linking many more services across many borders in the timetable, so to find optimal solutions that work we need to work together multilaterally – so for instance North and East of France, Germany, Switzerland, Benelux

- International train paths for establishing the core and TEE 2.0 international connections by the joint IMs, like in EuroLink.
- Optimising the network by integrating lines and hubs into a consistent and reliable network by IMs in an independent advisory role to MS and RU's.
- Integration into European network perspective via IRP.
- RUs / applicants making use of the European Passenger Network. IMs offer suitably (e. g. systemised train paths) to fulfil commercial needs of specific market ventures.

Market analysis is an important tool to understand the market demand and to estimate the economic viability of the connections for international rail passenger transport. This *core connection* approach could also help with elaboration of market study, because this would make it easier to define city pairs for study by creating lowest common denominator of border-crossing traffic flow. Nevertheless, it is also worth including important intermediate stations between the urban hubs of the core network (e.g. Dresden on the line Prague-Berlin). Part of the concept should also be journeys of which the long-haul part is done by air and the short-haul part by train. This can be further studied, but regional hubs like Dresden are important both to the traveller and to the operator to have a viable product. The study should also examine the competing air, car and long-distance bus routes in order to get the complete picture. This market analysis of the network should be performed at the European level, in order to have the full vision and avoid duplication of works. Next to the market analysis new routes and business models could derivate from entrepreneurs and innovators.

Meanwhile the interoperable issues between the countries should be deviated to facilitate the operations: like the implementation of ERTMS, removal of redundant national rules, reducing the language barriers, harmonization of Track Access Charges or facilitating a European rolling stock market. Moreover, the budget for ERA should not be reduced as it is necessary to strengthening the efficiency of ERA in the redesign of Europe-wide rolling stock approvals.

3.2.7 Technology and Operations

To date, there is still a lack of interoperability in rolling stocks that needs to be addressed. For this reason, the Member States asked the European Commission in the context of the Ministerial Rail Conference on 21 September 2020, to develop an EU funding programme within the European Green Deal for investments in interoperable (cross border) rolling stock. The investment needs in rolling stock should be covered through dedicated existing European funding instruments (e.g. CEF) for the upgrading of rolling stock with multisystem technology for international use. Such funding must be very thoroughly formulated in order not to be discriminatory. Incumbent RUs might have the resources to invest in new rolling stock whereas smaller RUs and newcomers can only afford leasing. The programme could be extended to overnight trains.

New services and night train traffic would also benefit from the improvement of following framework conditions which are further detailed in the reports of the Subgroups B and C:

- Establishing a level playing field for international rail passenger traffic.
- Better use of ERTMS, not only for signalling and control, but also for the communications.
- Reducing the language barrier (drivers, infrastructure staff, network statements).
- Foster better rolling stock availability.
- Strengthen the efficiency of ERA in the redesign of Europe-wide rolling stock approvals. Given its importance, the ERA budget has to be adapted and raised accordingly and put on the level of responsibilities.
- Improvement of performance issues (quality, punctuality…) of the infrastructure.

and Eurotunnel – London are interconnected. We need to find practical ways to break-up the work geographically without losing overview.

- Harmonization of track access charges need also to be taken into consideration.
- Ensure the necessary link with the results of the current EU Shift2Rail Joint Undertaking and the future EU rail Research and Innovation programme, e.g. in European traffic management, MaaS, addressing the language barrier, and integrate and accelerate deployment of such innovative railway solutions to improve technical interoperability, e.g. by participating in the Shift2Rail JU and its successor implementation pilots/demonstration program for the period 2021-2027.

3.2.8 Governance

Vision

European rail passenger services need an initial governmental impetus as well as the removal of barriers and improvement of the enabling framework to flourish. Only when Member States cooperate and jointly build upon the legal and market framework for an integrated network (wherein both PSO and open access regimes are possible) with equal service level, international rail passenger services will be able to compete with other transport modes in line with the EU legislation. To avoid fragmentation, multi-country legislation should be developed in a European context.

It is clear that only with active governmental policy to support, by removing barriers and improving framework conditions and in a pan European perspective, the creation and development of a solid network can be achieved, instead of a patchwork network with some bilateral initiatives, historic railway operators' cooperation and some commercial services. There is a need to look further than just the other end of state borders and to redevelop networks which are more than just one-border-crossing services. The new international railway structure should be a common European vision on international transport plans.

To do so a joint vision should be developed in which the governments might take the lead to draft the network taking account of existing services, discuss the conditions, and develop the flanking policies and supporting mechanisms. For the realization of the network the RUs then need open access and non-discriminatory market conditions. The governments should collaborate with all the relevant stakeholders, at national and international level, in order to achieve a coherent, market-oriented program, which answers the needs of the market. This overall principle should be incorporated on bilateral or trilateral level Europe wide.

Operating models to run international services

Governance need to develop additional mechanisms between Ministries of Transports (MoT) and IMs on the one side and commercial ventures consisting of RUs on the other side. States and IMs are supposed to take a more active part in this setting. Currently different governance models exist which are described in more detail in the report of Subgroup D, namely: *Open access – franchise model – PSO contracts.*

Establishing a governance model for an International Passenger Rail Network

Within the different mentioned governance models Member States are encouraged to discuss bilaterally or trilaterally to optimizing nodes and core connections and cross-border regional routes based on the TEN-T network.

For example, the inclusion of international services into the national schemes ensures the synergy between international and domestic customers demand and offer regular train connections both nationally and across the border without any additional requests on the infrastructure capacity. Stopping of these international trains in the national centres along the route bring significant quality improvement also at national level and especially for secondary regional centres. This system appears to be particularly suitable for conventional lines, and for middle-to-smaller sized

European Union member states where international and domestic markets are strongly intertwined. This is one of many approaches, how one can build a European Passenger Rail Network. However, other alternatives could also be implemented.

The RUs and other applicants would provide the necessary information and requirements (notwithstanding any commercially sensitive information of the RUs) to enrich the bilateral discussions and for organizing the multilateral connections. Once the services are launched the participating RUs should organize themselves to offer and to operate the European Passenger Network.

3.2.9 Capacity Allocation

Topic introduction

As a bottom-up approach, the 'Timetabling and Capacity Redesign' (TTR) project of RailNetEurope (RNE) aims at an improvement of the current timetabling and capacity management process including the trans-national coordination of awarding capacity and construction of the timetables, as the SERA directive already impose IMs to coordinate their timetables.
Is the problem here rather poor implementation of the existing legal framework in the EU? This in itself helps by reducing unnecessary suboptimalities but doesn't automatically lead to optimal international timetabling. This can be improved if we design the international timetable first and prioritize it in the allocation process. The priorities rules are regarded differently per country: a more holistic view is required to harmonize the country specific approach to prioritization of train paths. Integration of all interest is essential to provide all operators opportunity to optimize their services. Member states and IMs should balance the interests of all operators.

TTR aims at a harmonization of the national capacity management processes throughout Europe. It also aims to implement a process to better plan capacities in advance, provide better products fitting to the different market needs (such as passenger services and ad-hoc freight services), ensures a quick allocation of capacities and overall increases the efficiency and reliability of timetables.

Overall vision

An integrated capacity management and timetabling process which boosts the competitiveness of railways should be implemented in a common international approach:

- Process implementation focussing on passenger and freight market needs with optimised request deadlines.
- Improved reliability and stability including better coordination of temporary capacity restrictions (TCRs).
- Implementation and application of the redesigned timetabling and capacity management process.
- Increased efficiency (capacities, resources) in order to avoid duplication of work and planning efforts.

Barriers

National particularities, lack of common IT standards and processes and diverging national legislation (or different implementation of the relevant EU Directives) hinder the implementation of a common process. These obstacles must be overcome to fully access possible benefits of TTR. Moreover, MS and the sector may first evaluate whether the European legal framework incorporates measures to base capacity allocation on pre-planned clock face timetables and systematized train paths in a non-discriminatory way.

The programme for the necessary investments of states and IM (or other allocating bodies) as well as central European IT systems in missing digital capabilities to realize real-time path

construction, optimization of capacity use and automated timetable coordination is still open. These mentioned investments would both optimize the IM's hard and software[20].

Enabling actions to be taken by MS, EC, sector

Bilateral and multilateral coordination of capacity allocation on TEE 2.0 core and multi-country connections are needed. Implementation of the TAP/TSI regulation (EU 2016/797) is one of the main enablers for both TTR and all kind of international coordination both in capacity management and operations.

However, this will, most probably, not be ready for implementation on a full European level by the end of 2021 as stipulated. TTR has launched several pilot projects to ensure the national implementation although these pilot projects do not yet generally have legal backing and, due to this, not fully provided the desired output. All stakeholders are invited to participate in these projects. It is important to have enough focus on the international aspects of capacity management to ensure cross-border planning processes. The pilot project help to discover national particularities which hinder such processes. These must be avoided or removed to the maximum possible extent. The integration of international services to the national planning processes could be helpful, too. Adequate financing must also be secured for the implementation of TTR, particularly of the digitalization of capacity management as investments in software are more economically feasible than infrastructure. TTR and digital capacity management (DCM) are part of the capacity defining digital infrastructure as ERTMS.

The ongoing discussions on TimeTableRedesign (TTR) contain i. a. options for integrated capacity management, covering all time horizons from long term to short term, covering all traffic segments and providing international coordination, taking into consideration that many aspects are still to be resolved when it comes to common central IT systems, commercial conditions and legal requirements. Supporting that is the Digital Capacity Management (DCM) which - once implemented for all planning horizons – opens up the potential of a higher capacity usage of physical infrastructure at all time horizons for the sector and facilitate flexible response to capacity requirements of RUs / applicants and forms the basis for the European Integrated TimeTable (EITT) as network of National Integrated TimeTables (NITT) ["Europatakt"]. However too rigidly applied EITT will have a huge effect not only on international trains but also on national trains by limiting the flexibility in path allocation.

IMs participate in the FTE meetings, but a more active participation of IM is required for the development of the network. Moreover, member states and IMs are encouraged to develop and promote optimal network use and connections as demonstrated with EuroLink.

The strategy development stage and the capacity allocation stage should be distinguished, since the number of parties, degrees of freedom and range of both opportunities and choices vary a lot between both. Including everything in a one-process-for-everything will make TTR unwieldy, inflexible and potentially unworkable. If Member States and/or operators supply their input 5 years ahead to actually go to market that should be sufficient in time.

In TTR, passenger services get an earlier path allocation than today (draft offer six months and a half before timetable change). To provide this acceleration, pre-planning of capacities and digital support such as DCM for all planning stages is required. Therefore, the partitioning of known capacity needs is reflected in models created for all main lines – the "Capacity Models". These models are created until 1.5 years before an annual timetable, which takes into account the capacity needs of both sides of the border. Therefore, it is crucial, that capacity related activities for international passenger connections are in line with the TTR Regime. Many networks involved

20 For the moment real-time path construction is mainly beneficial for freight RUs due to the shorter time perspective they operate within. Due to this, passenger RUs don't use the German "click and ride" function.

in the TEE 2.0 concept intend to introduce TTR components even earlier or are already running pilots.

It must be explored whether further development of European and national legislations around capacity management is necessary taking into account clock face and systematized timetables. Clock-face timetabling is a method to make rail services more attractive for the users and might help in congested networks. However, clock face timetabling is not a prerequisite for TTR.

On the long run, more destinations may be offered according to market demands. That can be achieved by:

- Optimizing connections by improving the timetable coordination between carriers (EuroLink, TEE 2.0 etc).
- Developing infrastructure in order to offer more connections in each direction through more traffic nodes. There is a need for more capacity for trains with a long-distance destination, with the current popular destinations (in general, independent of modality) being improved first. Taking into consideration that TTR optimizes the existing and planned infrastructure capacities, which is only a component of this goal. EuroLink's optimization study can identify feature constraints and bottlenecks. These studies can be used as advices/suggestions for future infrastructural investments.
- Ensure the necessary link with the future Europe's Rail partnership activities on European Traffic Management Layer to achieve the TTR, converging the sector to work together, and in this respect participate in the Shift2Rail JU and its successor implementation pilots/demonstration program for the period 2021-2027 in order to accelerate deployment of innovative solutions improving capacity allocation.

Possible open and/or controversial issues that require further analysis

TTR provides the means of planning capacities, but the planning parameters need to be provided by the stakeholders of the process. Planning railway capacities must be in integrated process. Most of the rail infrastructure in Europe contains mixed traffic. Both, passenger and freight traffic must be considered with their respective market needs and IMs are legally obliged that infrastructure allows safe operation. These three main aspects are interlinked. The IMs should further integrate all these market needs. Commonly agreed and applied commercial conditions for booking, modifying and cancelling rail capacity has been one of the most challenging tasks in the TTR project and are progressing continuously, with the stakeholders working intensively to achieve a common solution.

In different countries different planning methods are used regarding for instance standard stoppage time, headway, safety margins for crossing and approaching stations, margins for irregularities in operations as well as different management in case of unexpected hindrances or calamities. These differences should be carefully studied and as far as is practical reduced to a minimum.

3.3 C – EU Green Deal

3.3.1 Introduction

The Platform has set up Platform subgroups to identify actions for the European agenda in the following areas:

E. Customer experience, Digitalization.
F. Defining a network of International Passenger services, including market analysis, the usage of existing TEN-T corridors and matters of capacity allocation.
G. Green Deal. Identify infrastructure bottlenecks, missing links and interoperability issues that once alleviated can substantially contribute to the growth of international rail passenger services.
H. Regulatory framework, including financial support measures for international rail passenger services. Public Service Obligations, support measures for rolling stock, and framework conditions for infrastructure charging are key topics.

In the following paragraphs, the MS vision and recommendations regarding the Green Deal are set forth, based on the MS own findings and taking into account findings from the infrastructure managers (IMs) and the sector.

3.3.2 Vision

In order for the EU to achieve its environmental targets as laid down in the Green Deal, international railway passenger transportation can be boosted by making optimal use of the TEN-T network and its interoperability standards. The international rail passenger network should be based on international railway passenger hubs, which integrate international railway connections with other modes of public transport. In order to achieve the efficient operation of international passenger services on the TEN-T network, it is essential to facilitate the correct implementation of the EU rail acquis which targets technical, administrative and procedural harmonization. Either bilateral cooperation or a supra-national structure which improves functioning of the market. Railway passengers and aviation work closely together and offer combined attractive services in a seamless way. For passengers the conditions for such offers are attractive and support intermodality. The European Commission has put forward a proposal to establish a new European Partnership on Rail Research & Innovation, whose programme should also be supportive in its different aspects to match the present vision.

Facts and figures
A market analysis is necessary in order to define the interesting connections on which the platform could work and facilitate the cooperation between the concerned Member States. This should include the identification of the current infrastructure bottlenecks, missing links and interoperability issues to get a clear view on the current situation and possible approaches to make sure the best actions are taken.

3.3.3 Completing the TEN-T network

For rail to play a decisive role in decarbonising transport, efforts are needed to further develop the European railway network and to increase its standards, including to the benefit of long-distance passenger rail traffic. To this end, the Member States have defined together with the European Parliament a cross-border railway passenger network of European importance, as central component of the trans-European transport network (TEN-T)21: the TEN-T core rail network for passengers. This network is a priority in terms of infrastructure development for the Union. When

[21] Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU, OJ L 348, 20.12.2013, p. 1-128

completed, the Union will have a coherent, interoperable and high-performance network, equipped with high standards. This is about building new lines or sections, modernising existing ones, bridging missing links and removing bottlenecks, in particular in terms of capacity. This is also about further digitalising the network, in particular through the large-scale deployment of ERTMS. Although an important focus is set on cross-border links and long-distance transport – at EU level territorial continuity often means creating or improving railway connections between Member States – specific attention is also paid to decongesting urban nodes, efficient connections with other modes within urban nodes, including rail links to airports.

The Member States are thus at the center of the TEN-T policy, identifying together with the European Coordinators and the Commission the issues to solve in priority as well as the measures to implement to this end. This includes the bottlenecks to be removed with a view to fostering long-distance passenger rail transport. The Member States are in particular commenting and approving the Coordinators' work plans, where the priorities for the development of the corridors are set.

In this regard, the Member States will/should continue to conduct a constructive dialogue with the Commission and the European Coordinators in the context of the TEN-T policy (e.g. TEN-T Committee, TEN-T corridor Forums, Work plans) with a view to developing the right infrastructure to boost long-distance passenger transport. This includes sharing the results of the present Platform subgroup, in particular if specific bottlenecks are identified.

In parallel, the Commission is expected to propose in September 2020 a revision of the TEN-T Regulation, as part of the Green Deal initiatives. The position of long-distance passenger rail within the TEN-T can be looked at in this context. The question of further requirements (considering the impacts on i.a. traffic and budget as well) for passenger lines, or the development of passenger hubs, can be discussed on this occasion.

For rail passenger transport, MS identify, in close cooperation with the railway sector, particular impediments, even as the introduction of international rail passenger hubs on the TEN-T network is suggested. Different levels of infrastructure development in different MS persist. Therefore, Member States should show a strong ambition on how to best proceed and on how to reach agreement on implementation deadlines to harmonize cross-border infrastructure developments. Some places lack high-speed infrastructure, and direct connections between major cities and hubs are absent. A long-term consensus is needed pertaining to priorities and investments in (high-speed/performance) infrastructure.

Best practices in this regard depend on national and international political consensus of long-term investment plans or dealt with by the sector on its own. These should be properly financed, when appropriate making use of the EU[22] funding.

The TEN-T core network railway passengers includes presently standards on ERTMS implementation and electrification and defines on top - specially built high speed lines equipped for speeds equal to or greater than 250 km/h & specially upgraded conventional lines equipped for speeds of 200 km/h; (art. 11. 2 of the EU Reg. 1315/2013). Work is necessary to see whether additional TEN T requirements are desirable for the core network passenger corridors, firstly train speed (relation with TSI INF speed classes e.g. D4) and possibly train length. I.a. budgetary impact and benefits of such changes should also be considered.

3.3.4 International railway passenger hubs & urban nodes

[22] The "Proposal for a Regulation of the European Parliament and of the Council establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014" could be an option

Long-distance international railway passenger services should connect passenger hubs throughout Europe. Example could also be a large multimodal hub such as Roissy Charles De Gaulle in France, in order to stimulate air-rail intermodality, as shown in the following. These hubs should be located at the centre of major cities or metropolitan areas, ideally with good intermodal integration with local rail services and other modes of transport, promoting easy accessibility (including PRM) to the whole city or metropolitan area. These hubs could be well the urban nodes as defined in the TenT concept; especially as the number of urban nodes will be revised and extended in the TenT regulation review. Therefor the revised definition of urban nodes should facilitate international railway transport. This, in addition to the rail connection to airports, is already encapsulated in the concept of urban nodes within TEN-T network, and should contribute to replacing short and medium haul flights by rail. The concept of passenger hubs builds on the urban nodes, but adds additional requirements to facilitate international rail passenger transport.

Thus, in any new defined hub system, the main hubs would require intermodal links, with possibilities to transfer from international train to regional trains, bus, taxi, plane in any possible order, as well as certain minimum service levels. Moreover, should aim for the availability of intermodal through ticketing solutions. What is therefore required is the identification of a future service network, including all major international railway services that are needed for this system to effectively compete. Infrastructure Managers should, on the basis of a market needs expressed by RUs and other reviews, offer attractive long-term capacity between railway hubs. Under consideration is currently how an EU Takt could be implemented while respecting EU legislation. Member States should facilitate this. Based on international rail hubs (which must include all EU capitals with rail services) a monitoring system may be defined to show the quality / quantity / impact of international services with connecting hubs up to e.g. 500km. The 500km distance is also relevant in the context of the objective stated in the EC Smart and Sustainable Mobility strategy to ensure carbon neutral collective transport up to 500km by 2030. That means in practice a shift from air and private car to rail or other less-polluting modes.

Example of international hubs in the TEN-T network in relation to the infra bottlenecks.

The key condition for a large city becoming a hub is its interconnectivity with other large cities. In case of the Czech Republic, Prague is well connected to many cities in the region with regular services (mostly 120 minutes interval) enabling also short connections if needed. Similarly, Brno and Ostrava both located on TEN-T corridors are well-connected and may serve as an international hub. The biggest hurdle for the further improvement of hubs is insufficient infrastructure in terms of speed and capacity, especially in direction towards Munich and Wroclaw. Both of them have been identified as a bottleneck. The role of Prague as a railway hub will grow after development of high-speed network in 2030's. Therefore also the railway link to the airport is planned.

Identification of international rail passenger hubs into or based on the revision of the TEN-T regulation (apart from major urban nodes), as well as for the expected outcomes of introducing such hubs on the TEN-T network, is seen as a promising approach. Start of the identification of the hubs could be the list of city pairs, also taking into account the geographical cohesion between regions, from the forthcoming letter of intent Trans Europe Express 2.0 whereas it is important to remember that the largest commercial potential for international rail lies between hubs that are up to 4-5h apart.

Taking into consideration that the hub should also include (a performance plan with) connections of other means of transport (local transit networks) next to the integration with local rail and PT modes. An international long-distance train can be efficiently complemented by though-through connections in the destination country.

3.3.5 Governance structure

In addition, a rail passenger (specific) governance structure/cooperation is considered to promote and facilitate international rail passenger transport, as well as supporting technical measures for enhancing rail passenger specific interoperability. Taking into account that a governance structure should deal with organizational issues, interoperability issues, capacity and traffic management, market issues, etc. whereas the TenT network focus on the infrastructure development. The inception of new or the improvement of existing governance structures requires consideration by MS on what these structures look like in a consensus-model.

International rail passenger transport will increase by a harmonised network (technically, operationally and administratively harmonised); but also with an increased cooperation between the authorities to promote the development of the international rail passenger network.

For the moment the structure of cross-border passenger services is characterised as a patchwork of different cooperation forms and services, like open access operators, bilateral agreements and incumbents running services on historical agreements (renewed regularly - every 5-10 years - depending on the MS) or making use of national PSO subsidies for international services. Up to now the open access regime only few new connections have been launched, however the ambition of the Ministries is to increase this total number or services, the quality and to improve the integration of the network.

It is recognised that the MS cannot transform the international network on their own, but should cooperate closely with their neighbouring countries or within a group of countries to support building up the network, so a closer cooperation of the member states is necessary to promote new services Governance must at least look at:

- Market analysis, monitoring and regulatory framework;
- Infrastructure status / capacity , bottlenecks and planning;
- Interoperability factors determining international rail passenger capacity;
- Cooperation on capacity allocation framework;
- Connections domestic services and intermodal connections
- Innovation.
- Bbut also on financing the required services in PSO contracts.

Although there is no common understanding how an international network should be organised, the Members States recognise that the current patchwork is hindering their ambition – the lack of cross-border connections needs improvement and that a careful analysis of the reasons leading to this situation is needed. Several initiatives at national levels are launched with different success levels. Following cooperation models have been elaborated to understand better the different advantages and disadvantages: (a) do nothing, (b) starting with some pilots, (c) integrated in Rail Freight Corridors or (d) separate governance. As suggested by numerous stakeholders, a long list of arguments is included in favour or against these cooperation models.

(a) Do nothing scenario

In this scenario no dedicated governance structure is established to support development of new international rail passenger services. If any issues arise from railway undertakings or other stakeholders, these will be resolved ad hoc between parties concerned, like the market is currently organised.

Pros

- No additional structure, budgets, efforts are needed, the status quo in guaranteed. No legal amendments to EU Regulation is necessary.

- Deleting current bottlenecks to start international passenger services within the open access regime is priority to many stakeholders: integrating tariffs, common EU access of rolling stock, new infrastructure. This will already provide such a boost to the market, that open access services will take off and no additional incentives via new structures are needed.

Cons

- It is realised that the current situation for international rail passenger transport is sub-optimal. The open access to the international passenger market only resulted in few new services over the last decade. It is not foreseen that this situation will change in the nearby future, especially as the railway undertakings will need all in-house resources over the coming years to survive the effects of the COVID crisis. Therefor it is not realistic that without governmental initiatives many new international services are going to be launched.
- The current situation is sub-optimal. The required modal split to rail is not going to happen if governments do not take action to support the international railway market.

(b) Pilots, without additional legal basis at EU level

Several initiatives at national levels are launched with different success levels. Regarding the discussion as to whether the interconnection of hubs should be achieved through a corridor or network based approach, the latter definitely stands out as the better alternative, however the corridor approach would allow to start the connection between identified hubs more rapidly.

The <15> pilots, as proposed by the EC, can then be an important building block for developing the network. In this respect the last TEN-T revision based on geographical principles perfectly fits to organisation of passenger flows. It should be noticed that once a connexion is identified as interesting after a market analysis, operators might be more willing to invest in this line and cooperate with neighbouring operators, only if this does not happen, governments should take the proposed action.

This (starting informal) governance structure should be there to implement also the foreseen <15> pilots mentioned in the EC communication on smart and sustainable transport strategy and can then be an important building block for developing the network. Financial support from European Commission to launch these pilots will greatly help to accelerate the initiatives as indicated in the EC Smart and Sustainable Mobility strategy.

These bi-national cooperation structures to combine networks via major hubs. Longer traffic streams could be taken care off by a light corridor cooperation of countries.

Pros for starting with pilots

- The Member States can decide to tailor-made the governance structure per service, per line or per country. The pilots can start directly once the bilateral agreement is established.
- Moverover, pilots will be organised voluntary, that is a guarantee of committed stakeholders
- Working in pilots will benefit gaining European experience with improving frameworks for international pass rail.
- Pilots can be organised within existing structures, so no new entities are needed

Cons for starting with pilots

- The member states should take their own initiative and their neighbours should be willing to act in the same speed, same efforts and with same budgets.

- A patchwork of initiatives might arise if each initiative develops its own governance structure, all with their own time horizon, requirements and service levels and ticketing systems. Integrating different services or lines might be difficult and the operators will need to understand per line/country the requirements.

(c) Integrated structure rail passengers with Rail Freight Corridors, amending the RFC regulation on their role and tasks

The example of governance from the RFC Boards is discussed in depth, being a good example for organising international rail passenger services. The amended RFC structure could be responsible for:

- Market analysis and monitoring; Infrastructure status / capacity , bottlenecks and planning A close cooperation/synergy TEN-T governance/rail passenger governance should have to be set up so that infra development and operations go hand in hand.
- Interoperability factors determining international rail passenger capacity
- Cooperation on a capacity allocation framework for international passenger transport
- Coordination on Market regulatory mix (such as quality conditions including access to ticketing systems, infrastructure charging, access rolling stock, economic equilibrium test, non-PSO levies, PSO contracts)

Within the governance structure distinction shall be made between strategic tasks (by the Ministries) and infrastructure, - capacity management and traffic control tasks (by the Infrastructure Managers) and other tasks.

<u>Pros for integrating passenger transport in the RFCs</u>

- The RFC will provide one place to coordinate a capacity strategy for mixed use of international railway lines
- Transparency is guaranteed for allocating infrastructure capacity using the best practices gained over the last years within the RFC's
- RFCs have put in place some good practices: path allocation at corridor level, one stop shop, cooperation of traffic management projects, in capacity management and in contingency management are some examples of practices that can be taken into account.
- The organisation and collaboration within the RFCs allows to highlight several issues, and to bring them to the attention of national and European instances in order to solve them. Moreover, RFCs also allowed to think on a more international scale, rather than to focus only on a national point of view.
- RFCs integrate ministries and IMs from different countries and help them to reach common decisions, offer attractive capacity allocation solutions, and allow trains to use paths along a whole corridor.
- EU-Reg 913/2010 points out that IMs have to take into account all needs of passenger traffic as well. Therefore, it would make sense to enlarge the existing Rail Freight Corridors by including all representatives necessary from the passenger sector.
- Passenger RUs would participate in a specific 'passenger' RU Advisory Group and similar to the Terminal Advisory Group on the freight side there would be a dedicated Advisory Group for parties involved in the transport chain on the passenger side.
- A doubling of corridors would be inefficient in terms of resources as well, as.:
  - Capacity requests for both passenger and freight are dealt with by the IM.
  - TTR capacity models will have to meet the requirements/needs of both sides.
  - Serious conflicts could/have to be discussed in the ExBo, because of political links.
- The only way to combine RFCs with passenger would be to create bi-national cooperation structures to combine networks via major hubs. Longer traffic streams could be taken care off by a light corridor cooperation of countries. Very few freight trains run the full length of RFCs. Most traffic are cross-border. Instead of creating passenger services running with

one train set through three or more countries, customers will appreciate attractive schedules with at least hourly trains during peak times.

Cons for integrating passenger transport in the RFCs

A corridor approach similar to the Rail Freight Corridors is regarded as less practical.

- Rail freight is primarily focused on corridors from ports to industrial areas and markets, whereas in passenger transport the travel patterns are more diverse.
- The RFCs have a well elaborated but complicated structure. Integrating passenger transports within this structure could bring more difficulties than opportunities, both for passenger and freight traffic.
- Passenger and freight traffic follow completely different market conditions as the transport of passengers cannot be compared to the transport of goods. Therefore it is not possible to apply the same structure for both.
- RFCs have a clear focus on freight. Capacity allocation for passenger and freight must be part of the capacity process of TTR. Capacity will continue to be managed by IMs. RFCs are under the responsibility of MS while CNCs are managed by the EC. Having passenger and freight traffic under one roof might lead to complicated decisions on which type of traffic takes priority. The risk should be avoided that passenger transport will be the main focus to the detriment of rail freight
- The RFC mechanism will become too "heavy" for the passenger transport. RFC is a typical corridor/linear approach whereas the connectivity system of national hubs requires more a network solution. Trying to merge those two will lead to confusion.

(d) Separate governance rail passengers only structure with legal basis

A parallel organisation, with a lighter structure and a more pragmatic playing field, could be considered to facilitate international passenger transport and organise this market. This scenario assumes a legal EU basis. Open is whether MS must participate or can use the framework voluntarily.

The advantages – collaboration between actors and international-centred thinking - should be kept in the governance structure that will be put in place for the international rail passenger traffic. In the end the Rail Corridors could be put under the roof of the Core Network Corridors (in the revision of the TENT regulation that is now being carried by the EC, thought is given to enhancing the coherence between the Rail Freight Corridors (RFCs) and the Core Network Corridors (CNCs), in line with this idea). In addition it can be an advantage to have passenger and freight RUs deal with each other directly under the roof of a "rail corridor".

Pros to establish a separate structure

- Clear focus on developing rail passengers transport within a single structure
- New structures will focus on international scale, rather than to focus only on a national point of view.
- These structures will be responsible for the increase of the number of services and the quality level. A single 'window' for all stakeholders to address international railway passenger issues and responsible to organise this market
- This structure will manage to distribute the increasing resources which will decrease issues hindering international railway transport;
- Possible solution for coordination of the activities would be a European coordinator supported by the Commission. The comprehensive catalogue of tasks described here (see governance) would need strong involvement of MSs, NSAs IMs and RUs.

Cons to establish a separate structure

- With separate structure rail freight and rail passengers there is need for cooperation because of overlapping competences (e.g. allocation of capacity)
- The establishment of two organizations in parallel generates a duplication of activities with consequently inefficiency in the use of the available resources and entails additional costs
- Not enough experience in practice to provide examples for an EU legal instrument
- Not yet crystallised whether these structure should be established bilateral or on corridor level. And whether all cross border trains should be included or only the long distance trains from hub to hub
- RFC concentrate on facilitating the rail freight services whereas this structure should also organise the market to assure that the services are going to be implemented
- There is limited consensus within the Member States that this structure is needed and neither is there appetite for legal reform to provide this structure legal basis

To be assessed whether the RFC C-OSS model can benefit international rail passenger services. Within the Ministries there is no preferred governance structure. Currently the EC is developing/proposing some pilot projects as mentioned in the EC Smart and Sustainable Mobility Strategy. These pilot projects can test all kind of issues hampering international passenger transport, including governance structure. Within this pilots projects the governance structure is not defined, but most probably different structures can be tested/evaluated afterwards. These developments are welcomed by the member states and the Ministries support this steps.

After considering the various options and their Pros/Cons, we as the Subgroup C propose to concentrate – at least as a first step - on the Lite approach to governance as suggested in the option (b). This will give enough space for gaining experience and finding the right method how to deal with this matter. Setting a solid structure upfront without analysing experience from real projects may create wide discussion with focus on governance rather than on results.

3.3.6 Technical interoperability

The TEN-T standards are developed to harmonize the different MS standards into a European interoperability standard to achieve interoperable infrastructure on the TEN-T network by 2030 (core network) and 2050 (comprehensive network). However, the TEN-T definition for passenger services is limited to ERTMS and electrification by 2030 for core network and technical parameters (more related to interoperability TSI's with in general have binding implementation date) are not appropriate for efficient, competitive, modern rail passenger services. We would need to consider what are the main passenger flows in EU, what are expectation of the passengers, what they would expect to turn to rail from other modes and having in depth consideration on that we would need to shape such high quality services – regardless the traditional/national operators/undertakings plans. We shall seek best services for our inhabitants and the best conditions for national undertakings which might overlap. If not, the passenger/inhabitants needs will prevail.

When shaping the network based on the above mentioned approach, we would firstly need to adjust the TEN-T requirements for passenger services. This may include adding advanced derogations concerning the grey area between conventional and high speed lines (140 – 160 km/h range). The implementation of such network could be linked to higher EU co-financing for correct implementation of requirements. Where the network is planned to cross the territory of MS, the government of such MS should be incentivized to commit to the timing of modernisation of the respective infrastructure.

There is an insufficient focus on cross border impact of infrastructure condition on international passenger services. This concerns the factors defining capacity for international rail passenger services. Example: intentions to reduce travel time Amsterdam-Berlin train requires confirmation of electricity / voltage change status, platform lengths and axle load limits for speeds up to 140kmph in the Netherlands and 230 km/h in Germany (not only 100kmph).

Difficulties and differences in speed in de deployment of ERTMS across the different member states hamper the development of international train services. This is due to the high costs associated with the rollout of ERTMS but also supplier capacity to deliver solutions and products is not on par with the technical and operational challenges met in the field. Aligning all stakeholders to implement ERTMS on the cross border sections has also proven to be a challenge due to differences in engineering, procedural and legal approaches. This could only be achieved by instituting bilateral/multilateral working groups to discuss and unblock situations. Like the bilateral ERTMs working groups between RFI/OEBB INFRA, RFI /SZ INFRA, RFI/SBB INFRA. Duplication of activities should be avoided.

Existing technical bottlenecks in Europe are different railway gauge in some countries, different catenary voltages, different signaling and command systems. Impact for railway undertakings (in particular OBU requirements) of ERTMS implementation and Class B decommissioning strategy must be defined for international rail passenger connections. Key Financing, testing, authorization framework for ERTMS OBU's must be transparent, and best practices from the RFC's can be copied. Issue log book for rail freight can be good practice for rail passengers also. Are there (horizontal / network wide) interoperability issues defining the capacity for international rail passenger services; Categorized in 'hardware' that cannot easily be harmonised and 'software' which might be quicker to harmonise. Hardware topics are: Different track gauges, axle loads, signaling systems, catenary voltage. Transition strategies must take into account impacts (both trackside and trains).

The examples show that the issues to be solved for international rail passenger operations can go beyond only technical interoperability. Alternative fuel-traction with battery or hydrogen-powered trains can be a good short-term alternative to costly and time-consuming electrification of missing links, like parts of Regensburg – Praha.

Best practices in border crossing include ongoing infrastructure projects, which are aligned between neighbouring countries, ERTMS deployment plans. Harmonisation of infrastructure technical specifications (electrification, axle-loads, etc.), deployment of ERTMS. Ensure the necessary link with the results of the current EU Shift2Rail Joint Undertaking and the new European Partnership on Rail Research and Innovation, e.g. in European traffic management, addressing the language barrier, and integrate and accelerate deployment of such innovative railway solutions to improve technical interoperability, e.g. by participating in the Shift2Rail JU and its successor implementation pilots/demonstration program for the period 2021-2027.

It is important to understand that the international services should be a single service for the passengers, not two separately managed projects. Prague – Vienna services represent an example of good practice, where both companies (ČD and ÖBB) run very similar vehicles and the whole line is presented as the seamless common Czech-Austrian project. It is also well integrated into other services in both countries. Moreover this way of cooperation brings also significantly better quality, which shows that cooperation does not hinder efficient competition and can result in very well-planned and good offers for the customers. There are also other good examples in area of international trains (for example RegioJet trains) that are operated by the same operator on the both sides of the border. Likewise, international high-speed rail passenger services, such as the Eurostar between Amsterdam and London and between France and Spain are often operated by a single party.

3.3.7 Capacity allocation

The Time Table Redesign (TTR) expects to provide great benefits for international rail passenger services especially to allocate the annual capacity in advance allowing the ticket selling compatible with the competitors (planes, buses) as it will be introduced in 2025. Infrastructure capacity for international rail services must be reserved for a multiannual period with attractive characteristics (speed / punctuality) and frequencies taking into account the expected demand as well as timetable requirements for freight services. In addition to the instrument of the Framework Agreement currently in use, the concept of multiannual capacity refers to the rolling planning requests that relates mostly to freight traffic. Also high quality cooperation as regards temporary capacity restrictions (Annex VII and ICM) must be ensured.

TTR – Time Tabling Redesign seems to be a relevant step to improve the coordination the allocation of capacity and to free capacity without huge investments in infrastructure. That issue shall be analysed at already developed services e. g. high speed international trains, special – occasional rail services – e. g. Simplon express etc.

From the operator's point of view, one of the biggest problems is that the plans for closures/reductions in capacity (due to construction and modernization works on the TEN T network) are not announced in sufficient time before the work starts. This issue is also taken up in the rail freight corridors, whereas the legal framework has been defined in 2017/2075/EU (EU Directive 34/2012 annex VII). This situation has had, of course, a negative impact on the reliability of the timetable and therefore on the perception of the attractiveness of rail transport. Extensive modernization works might cause that train services are often forced to take a detour instead of their regular route, which significantly impacts the commercial success of international trains. E.g. a lot of long-distance seamless sections might be interrupted due to the lack of coordination during heavy construction works/closure of lines. This may significantly influence the business case and tends to result in a loss of passengers in favor of other transport modes. Therefore at least minimalistic solution – through trains – should be kept – e.g. Zagreb – Graz (instead of Villach) – Zurich due to Karavanken tunnel closure, or. 2 pairs of trains Berlin – Prague – Wien/Budapest which will remain in operation in 2021 onwards despite the significant detour due to closure of the main line northwards of Brno. Better coordination is needed, both on cross-border and national levels, regarding the long-term planning of closures and keeping the announced deadlines.

Integration of international services in the national timetable might have benefits (and would need to be done in such a way that it complies with EU legislation) but has operational implications which might punish attractiveness of the timetable (for example the current Amsterdam – Berlin services) and which impacts the choice of rolling stock (with possible implications on seat capacity, max speeds, comfort). Therefore, there is a need for vehicle authorization under responsibility of ERA of the rolling stock in the both countries.

3.3.8 Rolling stock

One of the challenges for (high-speed) through-services is posed by the rolling stock which cannot cross the border without difficult adjustments. Today, only few dedicated rolling stock is able to cross the border, thereby making trans-European through-services possible. Due to the higher costs of the rolling stock (additional safety systems, electricity systems, certification, constructed in limited series - border-crossing services are less economically attractive for the railway undertakings.

The most hindering issue in implementation of international connections poses the enormous amount of regulations and restrictions in terms of rolling stock and in terms of providing such

communication. The time-consuming process of getting the vehicle authorization for the rolling stock causes is costly and takes time which might have been used for quicker reaching the desired effect (in this case organizing the international train service). The new role of ERA with the implementation of 4th RP should reduce this timely process. In addition, the lengthy administrative process leads to considerable cost increases.

Financing of rolling stock is primarily the responsibility of the operators. Specific financing can be supported or facilitated (favorable loan conditions, equal for all operators, by public authorities but is in many cases governed by state aid rules. The implementation of new technologies or systems related to safety EU wide accepted will decrease the rolling stock costs for cross border services. This funding must be linked to an improvement in the overall efficiency of the sector. Increased investment needs in rolling stock should be covered through dedicated existing European funding instruments for the upgrading of rolling stock with multisystem technology for international use.

Additional comments could be draw from the discussions:

- Rolling stock costs and associated financial risks are a major barrier for the development of the international open access market. Investors need guarantees to ensure return on their investment. Member States are encouraged to ratify the Luxembourg Rail Protocol which recognizes and enforces securities in railway rolling stock ;International rolling stock is substantially more expensive than domestic rolling stock due to additional national requirements
- We have a common interest to define interoperable rolling stock that is able to use wide parts of the European network
- Within the context of PSOs, innovative means of financing and investment guarantees may be devised. Also, measures to improve the functioning of the second hand market should be considered.

Very important aspect when financing the rolling stock is the stability and predictability of the future market development and governmental support (if applicable). Considering specificities in each MSs, the legal framework applicable and the various approach local situation could led to, further discussions could be considered by the appropriate subgroup. Therefore, as perceived presently by the operators investment without running the service under PSO regime (esp. into the new rolling stock) is extremely difficult and without PSO is possible only on the top main lines, where the demand for transportation is high enough. The market analysis should provide the authority and operators better predictability on the existing or potential traffic flows and justify international train services supported with a PSO. On the other hand, railway operators are commercial companies and their financial health is a good indicator for qualifying for receiving loans. This gives a secondary guarantee that the companies providing public services are strong enough to qualify for mutli year service provision.

Co-financing is an option when investing into the new safer, internationally compatible and "greener and internationally usable" rolling-stock. This means there should be financial instruments and tools, but the work (ability to reach this co-financing) should be organised by railway operators instead of the public authorities to avoid additional tasks for the public authorities.

Iincreased investment needs in rolling stock should be covered through dedicated existing European funding instruments (e.g. CEF, the use of the Recovery and Resilience Facility RRF by the MS) for the upgrading of rolling stock with multisystem technology for international use.

3.4 D – Regulatory framework

3.4.1 Introduction

The Platform has set up Platform subgroups to identify actions for the European agenda in the following areas:

A. Customer experience, Digitalization.
B. Defining a network of International Passenger services, including market analysis, the usage of existing TEN-T corridors and matters of capacity allocation.
C. Green Deal. Identify infrastructure bottlenecks, missing links and interoperability issues that once alleviated can substantially contribute to the growth of international rail passenger services.
D. Regulatory framework, including financial support measures for international rail passenger services. Public Service Obligations, support measures for rolling stock, and framework conditions for infrastructure charging are key topics.

3.4.2 Vision

In the near future, especially when the current COVID-crisis has subdued, a renewed customer interest in rail is foreseen. This pertains to long-distance international services as well as for national services. A positive public opinion on the rail passenger sector especially on national level and more multimodal travel will also lead to an increased demand for international rail services, especially on routes that are otherwise served by short-haul flights. Customer demand for more sustainable modes of transport fits well in the Green Deal and SSMS.

Therefore, the national governments feel the need of developing an integrated vision, within the current regulatory framework. Such framework shall enable the development of an integrated international rail passenger network, connecting all European hubs, with integrated services. Ideally, services would run on regular intervals as much as possible, but the potential to materialize this is limited due to population density, geography, and most importantly customer demand (implying that not all situations are receptive).

In this sub group report, we lay down our vision and recommendations on such a regulatory framework. As the current market organization and commercial framework conditions do not sufficiently foster development of the required services on a range of train lines, the MS' vision includes market support, including financial support measures for international rail passenger services, as well as Public Service Obligations (PSOs), support measures for rolling stock, and framework conditions for infrastructure charging are key topics. We deem it essential that any initiative will contribute to a more level playing field between railways and other modes of transport (i.e. road and air) so that the former will receive a strong increase in the volume of passengers. A significant increase in the amount and diversity of railway services is necessary to allow this increase in railway travelers, as well more attractive customer services.

3.4.3 Background

Lacking implementation of the European regulatory framework and the economic and technical framework conditions for rail passenger transport are not sufficiently conducive to the development of new international services; the number of open access services is marginal at EU level and mostly concentrated on the high-speed lines connecting Brussels to other nearby capitals, extensions from the German national system, the relation Italy – France and from the Czech Republic to the neighbouring countries. Especially in countries that do not dispose of separate cross border e.g. infrastructure for international rail passenger services, these open access services are not picking up. Some Member States consider that the current open access regime does not yet bring about a level of service offer that corresponds to the positive trend of

increased demand, due to a number of remaining barriers of legal, administrative, economic, organisational, technical or operational nature. Before the COVID-crisis a limited number of initiatives had been launched and some new initiatives were planned, especially on the high speed network.

3.4.4 Structure of the report

To understand the bottlenecks when organizing cross-border passenger transport, this report outlines the different structures and organizational models of the market that are currently present.. Showing these models already makes clear that since national rail services represent the vast majority of market share in Europe compared to international services, the market in most cases is organized from a national perspective, with national tools, instead of an international perspective. The identification of barriers and bottlenecks leads to some recommendations as to what should be analysed further. However, caution is warranted when interpreting the following models, for a number of reasons. First, different participating countries find themselves at different stages of market openness, and are characterized by different interests and railway-related modus operandi. Second, the timeframe on which these models are based is still quite limited since truly integrated inter-European railway networks in some MS are still in their early phases. This fact warrants caution when diagnosing the reasons for current challenges and, subsequently, suggesting solutions.

3.4.5 Market organization and structure

Cross-border rail passenger services in Europe typically encounter multiple regulatory regimes – and hence market conditions – along their routes, and are consequently complicated to organize. The following example, of the service Zurich – Budapest, provides for an illustration:

The Zurich – Budapest service is promoted to the customer (marketing and sales) as one service, and operated as a common project of (incumbent) national railway operators. However, it is organized internally by the different operators in the following way:

- *The Swiss part of the route is integrated in the Swiss national concession of SBB.*
- *The Austrian stretch in Vorarlberg and Tirol falls under the national PSO contract of Austrian incumbent ÖBB.*
- *The stretch Salzburg – Vienna – Austrian/Hungarian border falls under an open access regime and is run by ÖBB.*
- *The Hungarian part of the route is integrated in the national concession of Hungarian Railways MAV.*

As shown in the Zurich – Budapest example, the inclusion of international services into the national PSO schemes ensures the synergy[23] between international and domestic customer demand and may offer regular connections both nationally and cross-border without the need for any additional request for infrastructural capacity. However, when the service is organised on operators' level (as the Zurich-Budapest service), the authorities cannot influence the service level, unless the service is part of a PSO contract or concession obligation (authorities can only influence the PSO leg, especially if they would provide the financing). In most cases several models for organizing the international passenger market (i.e. open access, PSO) are encountered. From the operators' perspective (subgroup A focuses on passengers perspective), this typically leads to the following models for organization of international services:

[23] Alternatives exist as well, based on discrimination-free sharing of timetable and fare data, ticket re-sell agreements and increased competition to drive innovation and cost-effectiveness.

- An integrated model, where the operator integrates the international service into the national network
- A national/regional operator runs the service under PSO contract, up to the first local railway station after crossing the respective border.
- The operator runs the national services under PSO contract, and extends these services on a commercial basis over the border
- The service is contracted by neighbouring authorities in two separate cross-border PSO contracts
- Open-access operators with on-the-track competition organize the services on both sides of the border. Alternatively, the same single operator caries out the entire service (i.e. on both sides and across the border(s)).

Where open access market initiative has not developed and is unlikely to develop in a way that is required by the Member States the authorities can cooperate in order to organize PSO contracts for international services as outlined below. We stress that open access market initiatives prevail; an additional analysis of Open Access conditions could foster more details – The EC execute currently this study. But if Open Access is not commencing, authorities could cooperate following to foster the required international passenger service:

1) Cooperation on operators level, two PSCs:

   Both services, in MS A and B, are organized under a PSO regime, with different public service contracts (PSCs) awarded by each MS's competent authority. The authorities oblige the operators to work together, such as on exchange of rolling stock, connecting services, etc. (the depth of this cooperation may vary, authorities only define a general framework for this cooperation).

2) Cooperation on authority level, two PSCs:

   Both competent authorities, in MS A and B, work together beforehand in the definition of the services to be awarded in two different PSCs. The services are awarded by the competent authority of each MS for its particular scope, involving either two different operators or a single one. Consequently, the cooperation takes place at the level of the authorities before awarding the service contract and not at the level of the operators (main difference to 1)

3) Cooperation on authorities' level, one PSC:

   Both competent authorities, in MS A and B, plan and define the services together in order to award one single PSC:

   a) The authorities sign a contract defining the details and obligations which need to be imposed on the potential operator. Consequently, one of the authorities awards the bilateral PSC (for both territories).
   b) The authorities award a single bilateral PSC together, each authority being responsible for its territory, to a single operator and through a single contract.

4) In the franchise model, in line with the PSC Regulation, on-the-track competition is foreseen, but within the framework and conditions set by the competent authority (similar to general rules within a PSO approach and in line with Regulation 1370/2007), in order to assure that the service fits in the national transport policy. This may include ensuring regular departures throughout the day, as opposed to clustering towards peak hours, establishment of connections to other regional and interregional services, or better utilization of infrastructure capacity.

Advantages of both the PSO regime and Open Access

First and foremost, it should be noted that any implementation of a PSO service is only possible if the market situation indicates that open access services do not meet passenger demands.

If open access services do not meet established demand, PSO regulated services can be used for ensuring regular connections (e.g. all day 120 minute intervals) between major international hubs. Integration in national timetables and network and stopping at regional stations provides a significant quality improvement at national level and especially for regional centres. This however is of course due to the desired travelling time of direct high speed connections between such international hubs, forbidding too many regional stops. Moreover it should be elaborated on how open access services could be better integrated in the other public transport services. Last but not least: up until now clear consensus on the use and desired nature of PSOs or Open Access Regimes between MS is lacking, and this deficit will need to be addressed if further progress is to be made.

One of the most important challenges is the need for competent authorities to commit railway undertakings to fulfil national policy goals and quality standards, which in many cases can only be fulfilled by applying the rules of the PSO regulation. It means, for example, acceptation of national integrated tariffs, ensuring connecting services in key railway hubs (incorporation of services into national integrated timetables – Takt) or optimizing the use of infrastructure capacity.

Open access, on the other hand, could lead to some improvement of service quality and – at peak times - service frequency and a reduction of fares and the budgetary cost for Member States. Consequently, open access might increase the attractiveness and hence the modal share of rail. However, services in open access regimes are typically less predictable, can be withdrawn easily, and often imply competition for capacity on prime time on congested tracks when there is no separated infrastructure available. Also, open access could drive up fares and result in a decline in the quality of service. Ways by which governments can subvert the risk of a cancellation of services by commercial actors is by introducing cancellation fees or obliging RUs to obtain a train path long in advance. The main challenge remains combining the advantages of open access with the national transport policies/requirements (e.g. integration into a national timetable).

3.4.6 Barriers

Focussing on the barriers for the organization of international rail passenger services, several prominent issues are described below.

Technical specifications

Technical specifications and consequently equipment are still not the same in all countries, although there are a number of exceptions (technical systems are fully compatible between Sweden and Norway and between Slovakia and the Czech Republic). National technical rules can make internationally operating rolling stock more costly, however the industry is becoming more experienced in finding more cost-effective solutions. Despite an important decrease in recent years, national rules are in many cases still an important barrier and Member States should ensure transparency and notifications of such rules as per the EU legal requirements.

National contact points and need for cooperation

At present, outside a PSO approach authorities are not obliged to cooperate to develop cross border services. This voluntary aspect makes that quite often services are cancelled or the service level is reduced over the years. Within the different countries, it sometimes is just unclear who is responsible for organizing international passenger services: the ministries, PSO contractors, or

regional authorities. This makes it difficult to address the competent authorities regarding international services in neighbouring countries, not only for operators, but even for authorities themselves. It has proven difficult to understand who is responsible for organising/facilitating cross border PSO contracts on the other side of the border.

Cross-border services may require some additional support/PSO compensation
Given the linear increase in access charges with distance and the absence of financial incentives on these segments, many international connections could prove economically unviable without PSO eliminating existing barriers, or granting a subsidy which can take the form of a compensation or targeted discount on track access charges and markups. Commercial open access services are particularly successful on stretches of separate high speed infrastructure (and especially point to point connections) with large passenger demand, which facilitates to compensate additional costs for rolling stock certification, technical requirements, staff, and infrastructure access, that come along with cross-border services. Due to different tariff levels, passenger demands and mobility policies, it can happen that one MS needs to finance the service via PSO, whilst across the border open access service without any PSO compensation is possible.

Organization of cross-border tenders
How to organize a tender procedure for an international service, where two (or even more) countries are involved, can be an intricate question. It is therefore very important to understand that Regulation (EC) No. 1370/2007 covers no procedural details for tender procedures, and that procurement systems differ widely between MS. Best practices from the current tender procedures are the German regional tenders in regional cross-border services or services between Sweden and Denmark.

Experience in operating cross-border services
Operators with experience in international connections have an advantage, as they have already been cooperating for years with operators in neighbouring countries and can integrate international services more easily in their national timetables and funding schemes. However, the 4th railway package has the aim that any operating actor can operate cross-border more efficient in the future, since the transfer of trains across operators has become much easier and trains can easily be integrated into the MS' national systems.

Implementation of night trains
Night trains are particularly interesting for both national and international connections. However, it is generally difficult to make night train services profitable, as they entail high capital and maintenance costs, have few places per carriage, and seats in sleeping cars can only be sold once per journey. In addition, demand for night trains often varies over the year, and there are relatively high infrastructure costs due to the long distance. As most countries do not have PSO compensation schemes in place and investment costs are high, commercial viability of new services is difficult to achieve, however only a few new open access services have started in recent years, with some more announced for 2022.

Infrastructure capacity issues
In general, the availability of adequate infrastructure is key when it comes to defining service levels and the use of operators. One example is international high-speed trains, which are separated from other passenger and freight trains only where separate high-speed lines are available. Most MS have different regimes on capacity allocation, such as granting international passenger trains priority over freight, or granting local trains priority, or assigning a minimum number of paths per hour per line section to freight trains. This mixed picture shows that

developing each new service involves a patchwork of rules and that there is no 'one size fits all' concept (need for alignment between national/international and passenger/freight services). Especially in countries with mixed infrastructure, capacity is often already fully allocated on the 'popular' connections, which makes it more difficult to organize new services.

As many of the foreseen international services will run on the most congested routes, this has a major impact on organization, either as PSO or as non-PSO/open access services. If long-range international services come in addition to other services and use separate infrastructure, they can easily be installed or cancelled on an open access basis (no need for regular services), whereas if those services are integrated in the basic domestic supply and replace existing services, there is an intrinsic necessity to provide those services regularly.

Rolling stock

In general, acquisition of rolling stock is one of the biggest obstacles for establishing passenger services. Rolling stock for international services is generally more expensive than for domestic use due to additional technical requirements and limited editions. Also, the (second-hand) market for such material is very limited. Still, the issue of rolling stock lies at the absence of Single European Railway Area. Because of this absence there exists a discrepancy in MS infrastructure and their rules and systems with regard to railways, which drives up the cost of rolling stock acquisition since rolling stock is fabricated per country, resulting in high supply costs and small pools of (second-hand) rolling stock.

Quality standards

High quality of services is the key for revitalizing international rail passenger transport. However, it can be argued that the main quality check derives from the passenger: if passenger demand is not picking up, this could imply an insufficient level of service. MS authorities can influence service levels through PSO contracts, in which quality requirements are specified. Often the quality is measured based on KPIs on several quality standards such as punctuality, transit time, and customer satisfaction. Alternatively, basic quality standards are given by legislation (information systems for passengers, PRM transport or technical parameters of vehicles). However, standards might deviate between different countries. It would be desired to consider in a next phase, after formulating the recommendations and defining the necessary steps, to establish and review KPIs.

3.4.7 Recommendations

The recommendations by the MS are directly connected to the barriers as set forth above, so as to provide ideas of how to overcome them.

Authorities on both sides of the border should cooperate

It takes two to tango, if the market situation demonstrates that the service cannot be provided commercially, competent authorities on both sides of the border should cooperate (analyse the obstacles, introduce transportation plan) in order to define, regulate and finance the required services. If the service is not commercially viable on either side of the border, an agreement is needed between both MS. As international PSO contracts may require financial support from different countries, this assumes equal financial possibilities and/or willingness on both sides of the border, which is not always the case. Cooperation should never be obligatory, as MS may have different policies and viewpoints as to what services should be provided by the market and what under a PSO. The current platform initiative from the MS already is a positive action. However, common initiatives could be developed in order to secure that cross border services are organized on both sides of the particular border. Additional legislation appears not necessary since Regulation 1370/2007 and Directive 2012/34 (regarding train paths) can be regarded as sufficient.

National contact points
In order to overcome the lack of clarity as to who is responsible for organizing public transport services in adjacent countries, national contact points might be appointed even within already existing structures.. These national contact points could be responsible for international network development in case of a cross-border or multi-country PSO, and organizing cross-border PSO contracts, and could be in regular contact with neighboring counterparts.

Cross-border services may require financial incentives
In the short term, financial support, if needed, can derive from the implementation of the Regulation (EU) 2020/1429 to promote a sustainable rail market and accordingly lowering track access charges.

In the long run, international PSO contracts could be financed or subsidized via an EU fund for new services, perhaps comparable to the Marco Polo program for promoting new intermodal rail freight services. The terms and conditions should be drafted at a later stage. Also, EU legislation that promotes the extension of national PSO contracts to the nearest hubs across borders, instead of stopping at the border town within the home country, could be envisaged. In addition, some adjustments to charging principles could be introduced for long-distance international services, including night trains, provided that appropriate financial incentives are introduced to compensate IMs.

Experience in operating cross border services
Authorities on both sides of the border need to deepen their contacts in order to exchange experience in organizing cross border services and / or building it up.

Technical specifications
It is recommended that the technical differences between the countries are reduced in order to facilitate the seamless introduction of new services and improve the existing ones. It is important to implement the existing relevant legislation across Europe (such as interoperability rules and taxation) to remove market barriers and to ensure the full establishment of the Single European Rail Area.

Infrastructure capacity issues
Infrastructure on the main lines to the hubs is quite often already congested. Additional services are difficult to integrate in the existing timetables. The modernisation and the enhancement of the current network, especially through the deployment of ERTMS and digitalisation, should be the priority for capacity issues as it will have a strong impact on the quality of all rail. One possible way to tackle this challenge is by using alternative routes. The results of the TTR project and the need for coordinated prioritization rules should be taken into account.

Services - Rolling stock
The different technical specifications on country level mentioned above lead to considerable additional costs for adjusting new rolling stock for cross border services. One solution could be that MS agree on providing compensation through PSO frameworks or that state guarantees that are compatible with EU state aid rules, what can be granted to operators in order to obtain better interest rates. Such schemes still allow the operator to be the owner. Alternatively, operators lease rolling stock, either through the state or directly from an independent rolling stock leasing company (‘rosco’). To ensure non-discriminatory access to publically funded rolling stock, there can be provisions on taking over rolling stock after changing operator in the PSO contract or other equivalent measures. Another option could be to use the upcoming revision of the 2008 State Aid Guidelines in order to streamline the rules and revise an EU wide framework for the financing of rolling stock. Rolling stock used for open access traffic is usually financed by the rail operators without support from the state. Possible ways of resolving these challenges are the pooling of

rolling stock or a horizontal support scheme to lower the operating and/or investment costs in line with state aid rules. However, where open-access market services are not sustainable, it may be necessary to establish new PSO contracts to purchase a better quality rolling stock. This would eventually lead to overall better service.

Quality standards
Standards set in contracts by different competent authorities concerning cross border services should be coordinated beforehand, but only when this can be regarded as appropriate and when it is in relation to PSO/PSC.

Other recommendations especially on rail/air cooperation
Air/Rail frameworks. In order to reduce short-haul air passenger transport within Europe (such as short flights connecting to a larger international airport), a wider European legal / economic / logistics Air-Rail framework, involving MS, airlines and railway undertakings, could help to incentivise more efficient air-rail connections. Currently, several railway undertakings have already set up Air/Rail cooperation with airlines: NS (railway undertaking) and KLM (airline) are working together on the execution of an "action agenda Air/Rail" in the Netherlands. Also Austrian (airline) and ÖBB-PV AG (railway undertaking) work together in offering domestic "flights" (with flight numbers) on trains. In France, SNCF has agreements with twelve airlines to ensure connections for passengers between Paris airports and twenty train stations. Belgium bears similar examples. Most recently in Germany DB Fernverkehr AG (railway undertaking) and Lufthansa (airline) have also established a cooperation branded "Lufthansa Express Rail". Current barriers include questions of liability, compensation and handling of delays, baggage handling and ticketing.
Some countries are conducting a market analysis on international rail passenger connections. Focus of the study is to examine which connections are likely to be provided in open access, and which connections might need PSO contracts. Moreover these studies should provide also insight in the taxation level between the modes, to assure the level playing field.

Whereas air/rail cooperation concentrates on the long haul (from the rail perspective), the integration between rail and other public transport modes and bikes, MAAS models and car sharing, should be integrated as well, to facilitate last mile transport.

4 Annex 2 – Report Platform IRP

29th of March 2021: at the occasion of the EU kick-off event Year of Rail,

Version 1.00

The European Year of Rail 2021 as well as the European Green Deal present the appropriate timing for in-depth consideration of the means for a broad revitalisation of the European rail passenger market. Within that the current initiative on the TEE 2.0 concept might be one of the significant frontrunners.

The European railway undertakings and infrastructure companies experienced significant economic losses in 2020 (e.g. the sector noted between 40% and 70%, and on international routes even over 95%, revenue losses) due to the effects of the COVID-19 crisis, where cross-border rail passengers transport was confronted with new barriers justified by the health crisis.

The call for a substantial role for railways in the EU Green Deal was underlined by the declaration of Ministers on international railway passenger transport from the 4th of June 2020. The declaration stressed the importance of a European agenda for international passenger rail services and working together between the countries concerned. This ambition of developing a European agenda on railway passenger transport is also highlighted by the Commission's Strategy on Sustainable & Smart Mobility as presented on 9th of December 2020.

The German Presidency of the Council of the EU presented the TransEuropeExpress (TEE) 2.0 concept at the Ministerial Conference on "Innovative Rail Transport – connecting, sustainable, digital" on the 21st of September 2020. This initiative has led to a Letter of Intent from March 2021 showing nearly 40 existing and possible new international rail passenger services. This Letter of Intent describes a network of TEE 2.0 connections, which signatories consider important. The efforts of the IRP address instruments that can be used to support this development, within the framework of applicable European legislation. Therefore, following the Declaration of Ministers on International Railway Passenger Transport from the 4th of June 2020, a platform of Ministry representatives was set up and cooperation with the sector was developed.
In the Sustainable & Smart Mobility Strategy, the Commission announced its intention to work towards creating enabling conditions for transport operators to offer travellers by 2030 carbon-neutral choices for scheduled collective travel below 500 km within the EU. The strategy contains a proposal on the revision of the energy taxation directive; The strategy also calls for support of <15> pilot international rail passenger services by 2030 and stresses the demand for new and innovative solutions; the strategy underlines the intention to propose legislation in 2022 to support the development of multimodal digital mobility services and also announces a revision of the technical specifications for rail interoperability in 2022 to integrate digitalisation and modernisation regarding rail rolling stock, rail infrastructure, command and signaling systems (ERTMS), and operating rules for train running. This revision will be incremental for cross-border rail traffic. In addition, it will deliver a more efficient management of infrastructure in times of saturation, and is expected to lead to cost reduction within a highly complex, national technical and safety rules-based European rail system.

The European Commission is evaluating the TEN-T regulation 1315/2016 and the regulation on rail freight corridor 913/2010. The European Commission also intends publishing in 2021 revised interpretative guidelines on the application of the land PSO-regulation which will include the issue of cross-border passenger rail services.

The UN ECE Inland Transport Committee approved on the 26th of February 2021 the establishment of a new Group of Experts tasked with drafting a new legal instrument on international rail passenger hubs, on the basis of its Terms of Reference as contained in ECE/TRANS/2021/6, Annex II.

The platform is working on four areas:

A. Customer experience and digitalisation
B. Network of international passenger services
C. EU Green Deal: infrastructure bottlenecks and interoperability issues
D. Regulatory framework

The platform is preparing an integrated report covering the above mentioned four areas. After finalisation of this integrated report, it will be sent to the Ministers and to express further support to development of a European agenda for international rail passenger services.
Sector representatives from railway undertakings, infrastructure managers, railway industry, passenger and consumer organisations, travel agents and third party ticket vendors have set up a sector mirror group to work with the platform[24]. This group aims to develop common positions on a range of issues relating to the development of international rail passenger transport.

European bodies, such as Shift2Rail Joint Undertaking, participated to the activities to ensure the necessary link with future rail research and innovation to support concretely international passenger mobility and services. Railway undertakings and infrastructure managers are encouraged to work together in the framework of Shift2Rail and its successor programme to ensure the alignment of the research and innovation programme to the objectives defined above, including demonstration activities to accelerate the market deployment of innovative technical and operational solutions in the period 2021–2031.
There is a wide variety in the development of international railway passenger services and infrastructure networks in different parts of Europe depending on for example: customer demand, geography, population density, economic integration between cross-border regions, etc. The international rail passenger market share was 7% of the whole EU rail passenger market in 2018 and shows significant growth potential. Developing competitive international railway passenger services including those leading to a shift from air to rail may lead to considerable reduction in CO_2 emissions.
People choose their mode of transport based on five factors: availability, punctuality, quality, accessibility and price. Looking at the current offer of international train services we consider there is room for further development with regard to all these factors in order to achieve the international train's fullest potential.
Based on these considerations the four subgroups have already done a substantial amount of work and comprehensive discussion to develop a wide-ranging report on the different topics they were assigned. The final report will provide an important insight into these topics which are considered vital in the context of the further development of international rail passenger traffic.
The COVID-19 crises and the related travel restrictions have led to very substantial losses in international rail passenger numbers. Beyond the major damages created by the COVID-19 crisis, it also offers opportunities for the development of new railway services and innovative market concepts.
In this context the subgroups focus on the following topics. These reflect preliminary results of the platform, but do not preclude further discussions in the platform and subgroups.

[24] Reservation:
Switzerland, as a Non-EU Member, concluded a bilateral land transport agreement with the EU. PSO prescription and market opening regulations differ from the ones within the EU. Switzerland therefore states a general reservation regarding statements and recommendations concerning market opening and competitive tendering. In national and international rail passenger transport, Switzerland's focus is primarily set on the cooperation model.

Subgroup A

- The customer is to have access to simple, reliable and comprehensive online platforms where he/she can check timetables, prices, up-to-date and real-time information, make reservations and buy tickets for international rail transport services, including national (urban, regional and long-distance) and international rail services. Solutions might be necessary at the European, State or Railway Sector level. They involve legal, contractual as well as technical aspects (and possibly financial incentives) and should not exclude multimodal solutions.
- The implementation of the existing obligations for all railway undertakings as defined in Interoperability standards TSI TAP for extensive (real time) data exchange of service-related data is important for achieving the objectives and should look at the multi-modal dimension.
- The European Commission with the involvement of the railway sector and interested stakeholders should assess how the railway sector can provide feasible solutions for selling international tickets by third party vendors or MaaS service providers on fair, reasonable and non-discriminatory commercial principles. A timeline for the implementation should be agreed on. Data made available to third-party ticket vendors must be as complete as the data for the purpose of enabling ticket sales provided to, or made available via, the RU's own retail/distribution channels through agreements which are Fair, Reasonable and Non-Discriminatory (FRAND).
- The services for Persons with Reduced Mobility Assistance Booking Tool (PRM-ABT) should be enhanced by deeper cooperation.

Subgroup B

- The concept of a European regular interval timetable ("Europatakt") with more frequent connections based on lines to be combined in nodes in a non-discriminating manner makes rail travel more attractive to passengers and allows a more efficient process for capacity-planning. Based on demand analysis, all stakeholders – within their respective roles – should work together to identify attractive connections at slots to be offered, linking to national and regional services.
- TEE 2.0 connections should be developed and organised by interested railway undertakings, especially in terms of rolling stock availability.
- The discussion between European Commission, EU Member States and RailNetEurope (RNE) on an upgrade of the current European timetabling process, based on the Timetable Redesign (TTR, project of RNE), should take into account the needs and interests of national and international rail passenger and freight services in an open access market and should aim for an implementation for the timetable in 2025 as aimed for by RNE. The European legislator should be asked to foster this approach and welcome the development of an international non-discriminatory capacity strategy by the interested parties for rail passenger services between hubs based on / integrated with the national clock-face timetables.
- The concept TEE 2.0 should be further developed according to market demand by its supporters, amongst other things with the aim of achieving attractive travel times and good and reliable connections in comparison to European short-distance flights. Implementation of a concept such as TEE 2.0 requires removal of barriers for the setting up and operations of international services. The results should be published.
- The European Commission should present a proposal, as stated in the Sustainable & Smart Mobility Strategy, to establish at least 15 pilots of international rail passenger services, taking into account market development, technological innovations, existing concepts such as the TEE 2.0 and the basic principles of the Single European Railway Area. The European railway sector should be encouraged to develop and promote European High-Speed Rail / long distance services connecting European capitals and major cities according to market demand. The platform is preparing a recommendation for these pilot lines.
- Discuss within the platform the framework conditions for development of a sustainable and competitive European Night train network.

Subgroup C

- The European Commission should be invited to explore on a European level further possibilities for optimising the conditions for financial support for all actors if necessary

to achieve the defined objectives, consistent with the Sustainable & Smart Mobility Strategy, New Consumer Agenda and for Research & Innovation(R&I).

- The European Commission and the Member States should continue to work on the development of appropriate infrastructure and on the Infrastructure bottleneck alleviation program, as coordinated by the TEN-T program for the core network corridors and the TEN-T comprehensive rail network.
- Railway undertakings need good infrastructure to be able to offer high-speed connections between capitals and major cities.
- The availability of the envisaged rail connectivity index will allow to assess the level of integration between urban hubs by international rail passenger transport at European level. This initiative is highly welcomed.
- The European railway sector and the aviation sector should foster a common European wide action plan, aiming specifically at a multimodal approach to make combined air-rail journeys easier to access for customers.
- The existing European interoperability issue logbook for rail freight may be extended with topics related to international rail passenger traffic.

Subgroup D

- The gradual harmonisation of regulatory and implementation practices among European regulatory bodies to favour regulatory convergence and certainty in the EU internal market should be encouraged.
- The European Commission and the Member States are encouraged to look into possibilities to further reduce economic barriers to develop new international rail passenger services including lowering access barriers to rolling stock.
- Establish a methodology to better align open access services into an existing national network based on an integrated clockwise timetable.
- Member states should increase cooperation and organisation on authority level and enhance regular contact with neighbouring counterparts ("national contact points").

The platform looks forward to the finalisation of the subgroup reports in due time to be included in the final report of the IRP to Ministers in June 2021.

The platform very much welcomes the statement published by the sector mirror group on the occasion of this event as an important contribution.

The platform also wants on this occasion to thank the European Commission for its good cooperation and support. The Chair hopes this good cooperation will continue, especially looking forward to the upcoming strategy and action plan of the European Commission referring to European Rail Passenger Transport.

Finally the platform looks forward to the conclusion of the report of the IRP and its subgroups, to be presented to the Ministers in June 2021.

5 Annex 3 – Political statement

International rail passengers platform

2 June 2020

The European Commission presented its proposals for Green Deal 11 December 2019. Part of it includes reduction of greenhouse gas emissions in the transport sector. International passenger rail transport is presently not performing to its potential within EU. Domestic rail markets are much further developed than international rail passenger market; at national level infrastructure and timetables / frequencies of services are planned at a higher standard than for international services.

International rail has potential to increase its modal share for distances from 300-800km. There is an open market in the context of the 4th railway package for railway undertakings to offer rail services, however obstacles exist to live up to the potential. Other ongoing initiatives relevant for the development of international passenger rail include upcoming study commissioned by EC as requested by European Parliament, development of the TEN T network, Shift2Rail programming, development of rail passenger rights and market initiatives.

The potential of international passenger railways was discussed at a high level meeting between Member States and third countries representatives and European Commission 15 November 2019.

The signatories want to express their will to work together to facilitate growth of international rail passenger market.

In the short term international passenger services by rail are severely reduced by COVID-19 measures and continues to fulfill critical functions for passenger transport. For the medium term the development of international passenger services is an opportunity to contribute to the Green Deal.

Considering

- The UN 2030 agenda for the sustainable development which is the global framework addressing i.a. the need of resilient infrastructures, sustainable cities and climate action;
- The EC Green Deal initiative from 11 December 2019, COM(2019)640 to transform European economy to become carbon neutral;
- The European Court of Auditors Special report n° 19/2018: A European high-speed rail network: not a reality but an ineffective patchwork highlighting shortcomings for international passenger railway services;
- The proposal from the European Commission from 4 March 2020, COM(2020)78 to designate 2021 as European Year of Rail;
- The Dutch position paper from 30 January 2020 on the need of a European agenda on international rail passenger transport;
- Initiatives from the market to develop international passenger services. E.g. Eurostar London to Amsterdam, High speed services Milan – Paris, domestic and international night services;

- Recognizing that the value of international passenger services increases with improved network connections;
- The support from European rail sector parties and European Passenger organizations to cooperate on a European agenda for international railway passenger services (tbc);
- The involvement of the users perspective is key in any improvement efforts in international rail passengers transport;
- Public and political calls to develop a wider international rail passengers network; • The proposal from the European Commission to enhance Rail Passenger rights which is being discussed between EU Transport council and European Parliament;
- The need to develop better and accessible services to passengers based on a European innovation, e.g. the Shift2Rail agenda in the railway sector or the Payment Service Directive 2 in the financial sector;

The Ministers, signatories

- Express their commitment to support a European agenda for international passenger rail which builds upon the existing EU initiatives and should offer the legal and otherwise framework for attractive alternatives to make railway become an attractive alternative in distances in which it is not currently competitive and work together in this context with all EU Member States, European Commission, European Railway Agency, Shift2Rail and OTIF;
- Decide to establish a platform of Member States and third countries in close cooperation with European Commission with the aim of cooperation on improving international rail passenger services and including international rail passengers as part of the EC Green Deal initiative in a comprehensive way. The platform shall take due account of the work of other initiatives;
- Wish to assess, within the context of the aforementioned platform, the functioning of the relevant market for international rail passenger connections of capital cities as well as of other relevant ones. Existing corridors in the framework of the TEN-T network may be used. The assessment will include demand patters, present service levels (transport times, frequencies, prices, etc.), public service obligations, infrastructure capacities, timetabling options and interoperability questions.
- The platform intends to cooperate closely with infrastructure managers, railway undertakings, competent authorities, other sector representatives and European passenger organizations;
- Invite railway sector and relevant 3rd parties innovation platforms at European level to establish a high level platform with strategic aim of improving the cross-corridor conditions for international rail passenger services. This will include initiatives of digital solution allowing to easily book and buy tickets and user-friendly and effective multimodal trips;
- Intend to establish a calendar for monitoring the progress on the aforementioned actions within one year.

6 Annex 4 – Sector stakeholder statement

General

The European Rail Sector stakeholders[25] support the work of the International Rail Passenger Platform and the willingness of its members to improve international rail passenger services. They commit to contribute to the ongoing work of the Platform and to advise on the way forward for a European agenda for the development of international rail passenger services.

The rail sector realizes that the status quo is not an option: the international transport systems of Europe need to be adapted to face the challenges of the ongoing and accelerating climate crisis. An interconnected and competitive network of rail passenger services will underpin the economic, social, and environmental sustainability of our continent. It will advance realisation of the Green Deal, securing modal shift whilst enhancing sustainable mobility; strengthen European cohesion by reinforcing connectivity and fair development, not only in the most densely populated areas but also with less well-connected regions.
The rail sector is aware that improvements are imperative in the way international rail services are offered, marketed, and performed. Rail should become the backbone for international travel for passengers: improvements to the availability and online distribution of tickets, travel information, onboard services and better support during disruptions are required. Additionally, a fully integrated and harmonized infrastructure network is needed, ensuring frequent high speed passenger services connecting key passenger hubs.
Rail plays a key role in the delivery of Europe's goals of cutting greenhouse gas emissions, reducing air pollution, and relieving congestion. The sector will support the European Commission and the Member States in achieving the goal of the European Green Deal of reaching climate neutrality by 2050. We emphasise that railway undertakings have already developed international passenger cross-border products and services and we commit to work collaboratively in a fair, reasonable, and non-discriminatory way, and to take an active role in the further developments to achieve the mutually beneficial goals in the international rail passenger area. We are also committed to the full achievement of the Single European Railway Area. All parties involved have a key role to play in removing the barriers that exist related to digitalization, infrastructure, rolling stock, and legislation.
Looking at the short to medium term, the Covid-19 pandemic has reinforced the need for reappraisal of the whole transport sector, and the particular contribution that rail can make to building back better. The Covid-19 pandemic produced from its earliest stages a real shock for the transport sector with a massive reduction of transport volumes, resulting in heavy losses in revenue. The rail sector was also hit hard[26], and it will take several years to get back to former levels of ridership. Adequate, flexible, and non-discriminatory support to railway undertakings, infrastructure managers and ticket vendors will be needed throughout the European Union without distorting competition, taking into account the specificities of the railway sector commensurate with the revenue loss in 2020, 2021 and beyond due to the expected slow recovery, is needed to support the development of the

[25] Encompassing representatives of railway undertakings (CER/ALLRAIL/UIC/CIT) and infrastructure managers (EIM/CER/UIC), railway suppliers (UNIFE), passenger and consumers' organizations (EPF/BEUC), travel companies (EU Travel Tech/ECTAA) and distributors (EU Travel Tech/ALLRAIL)
[26] The estimated loss of turnover in rail passenger services in EU27 for 2020 appears to be close to EUR 24.5 billion or -42% compared to 2019. In December 2020, the estimated average loss reached the record amount of more than EUR 550 million per week or -50% compared to the turnover of December 2019.

international railway passenger transport market and the competitiveness of the sector vis-à-vis other modes of transport. Even so, rail demonstrated its vital role in ensuring resilient, reliable, and safe transport of both rail passengers and freight. Building on this foundation, and by responding innovatively to new market opportunities, the railway sector can be at the heart of sustainable mobility and cross-border connectivity in a greener Europe.

Specific

1. Making international passenger rail the preferred mode of transport

The development of more attractive and new concepts for international services and their connectivity must first be based on sound market analysis to inform estimates of their long-term viability and therefore sustainability. The sector is ready to work with Member States and European institutions in undertaking this essential work. In addition, the sector supports the European Commission's intention to have 15 pilots operational by 2030 and is ready to work with all relevant stakeholders to achieve their successful implementation. We support the ambitions set out in the Smart and Sustainable Mobility Strategy (SSMS), especially its targets to double and triple high-speed rail traffic by 2030 and 2050 respectively, as well as to use the full potential of economically sustainable night trains for international train passengers. For rail to increase its market share, services must be tailored to the needs of users. The sector is ready to seize the opportunities to replace short-haul flights and medium-distance road journeys by attracting passengers to rail and offering convenient links between key passenger hubs. To provide easy access to simple, reliable, and comprehensive information to customers, digitalisation will be an enabler (through an increased use of e-ticketing and a better access to dynamic travel information for instance). There is a need for action at European level to ensure transparency and to create a level playing field between Railway Undertakings and third-party vendors or Mobility as a Service providers, for selling tickets on fair, reasonable and non-discriminatory (FRAND) commercial principles. In order to tap the full potential of this increased digitalisation, all market players, from railway companies to third-party ticket vendors or trip planners, should have access to the same quality of static and dynamic data through FRAND agreements. At the same time, it is important to avoid, through adequate EU action, market asymmetries, current and potential, or for any player to establish themselves as gatekeepers.

Rail's safety, sustainability, reliability, comfort, convenience, connectivity, and affordability, together with shorter travel times, will make its services more attractive to passengers, encouraging significant modal shift. The sector is ready to cooperate more closely with the air sector with the aim of integrating air-rail journeys. Finally, it is acknowledged that further improvements have to be made on passenger rights. We therefore commit to explore common principles of a multimodal framework for passenger rights that is simplified, and harmonised.

Concretely, the rail sector commits to:

- be the backbone of a seamless and integrated multimodal transport system in close cooperation with the other transport modes, in particular by linking major urban centres with high-speed rail connections and connecting peripheral urban areas with city centres;

- implement e-ticketing for all passenger services, provide dynamic travel information, with the aim of completing digitalization in rail transport and provide easy access to simple, reliable, and comprehensive information to customers of rail services, whichever distribution channel they have chosen to buy their tickets;

- promote technological innovation and the implementation of new digital solutions for providing better services and attract new passengers;
- implement the existing regulation and obligations for all railway undertakings together with taking concrete steps to implement the ongoing sector-based initiatives such as Open Sales Distribution Model (OSDM)/Full Service Model (FSM)[27];
- support initiatives based on the digital markets act, digital services act and the sustainable and smart mobility strategy at European level to ensure transparency and to create a level playing field between Railway Undertakings and third-party vendors or MaaS services' providers, for selling tickets (international and national services) on fair, reasonable and non-discriminatory (FRAND) commercial principles, and cooperate actively with the European Commission for the preparation of such initiative;
- increase the booking horizon for international passengers in order to be competitive with air transport;
- develop more rail-through tickets and promote the use and awareness of journey continuation agreements with all the rail sector actors, which assist passengers who have missed a connection due to delay or cancellation of the previous train;
- cooperate more strongly with the air sector with the aim of integrating air-rail journeys and promoting rail as an attractive low-carbon alternative for many journeys;
- support measures aiming at strengthening rail passengers' rights.

2. Providing good quality infrastructure and capacity

Enhancing interoperability, coherent timetabling, and capacity management as well as completion of missing links and removal of bottlenecks are prerequisites for seamless cross-border journeys.
The TEN-T network is the basis for most international rail passenger services which addresses the above-mentioned points. Its further development shall contribute to better interconnection of the existing international passenger network. Therefore, the timely completion of the TEN-T Network by 2030 and 2050 is a priority as well as contributing to the cohesion of the European Union.
Looking at the TEN-T network beyond 2030, the development of a high-speed network connecting all EU capitals and major cities will be important to further increase international passenger services and reach the targets indicated in the SSMS.
Capacity management related activities– timetable-based capacity dimensioning, planning and safeguarding - will help railway infrastructure managers to accommodate forecasts of growing market demand. Initiatives such as 'Eurolink' or the Timetabling and Capacity Redesign (TTR) process will play a vital role in this regard. The sector commits to support the TTR process which will allow for a more flexible planning of railway infrastructure capacity while at the same time increasing its quality.

[27] OSDM/FSM is the Open Sales Distribution Model and Full Service Model, developed by the railway undertakings, ticket vendors and UIC. This initiative delivers exhaustive specifications for an open, plug-and-play IT framework for ticket sales, reservation and price distribution of rail tickets.

3. Making railways more competitive vis-à-vis air and road transport

In order to deliver the economic and consumer benefits of competition, a fair level playing field is essential. Creating a level playing field for all international passenger transport modes by implementing user-pay and polluter-pay charging, e.g., abolition of VAT on international train tickets in all Member States and with an equal treatment of fuel taxation will make pricing more transparent and railways more competitive. For this reason, we commit to pursuing the internalisation of our external costs and call on the Member States and European institutions to put in place an alignment of tax treatment between competing transport modes together with the development of additional measures likely to meet the objectives of the Green Deal. We call the legislators to help us create this level playing field with other modes of transport, by applying internalization of external costs for all modes of transport and harmonizing VAT on rail tickets.
The rail sector also calls upon the Member States and European Commission to carry out the homogenous[28] implementation and enforcement of the existing relevant legislation across Europe, including further work to develop common principles governing passenger rights across different modes, to remove market barriers and to ensure the full establishment of the Single European Rail Area.

4. Investments in railways

Targeted smart investments in accordance with the market and societal needs are crucial for the successful realization of the international rail passenger network as they result in infrastructure improvements, interoperable rolling stock, and power and signalling systems, creating opportunities for more international destinations connected with long-distance trains. We strongly support the intention to explore all possibilities and financial resources that will back up interoperable and seamless cross-border rail connections and services.
Long-term investment planning and coordinated infrastructure maintenance and development are needed to provide high quality international rail passenger services all over Europe. A stable and long-term financial framework is key for the railway industry in this regard. It is essential to speed up the implementation of cross-border infrastructure projects by making use of the existing financial tools and incentives. Public investment into TEN-T and rail infrastructure, consistent deployment of ERTMS, homogenous electrification, long distance interoperable rolling stock financing, 5G deployment and enabling a high frequency European high speed rail network connecting major urban centres is essential to realise international rail passenger services.
Public investment into collaborative research initiatives (e.g. Europe's Rail Joint Undertaking within Horizon Europe) is key for the delivery of new technologies/solutions that will contribute significantly to the attractiveness and competitiveness of rail transport. The Sector looks forward to working with the public authorities in consolidating Europe's leading position in rail research and innovation through the new Europe's Rail Joint Undertaking.

5. Conclusions

The sector's stakeholders look forward to working collaboratively with authorities, Ministries and European institutions to achieve the completion of the Single

[28] E.g., different national rules for Covid-19, language requirements, interoperability rules, and taxation.

European Railway Area, supporting market opening and ensuring interoperability. This achievement will provide the backbone of sustainable, interoperable long-distance connections that will ensure climate neutral collective transport for journeys up to 800 km by 2030.
The sector will continue working closely in the International Rail Passenger Platform to achieve the overarching targets for the development of the international rail passenger services.

7 Annex 5 - TEE 2.0 potential connections

Possible TEE 2.0 routes that are to be discussed with the railway undertakings[29]

Phase 1: implementation in the near future

- Munich – Bregenz – Zurich – Milan
- Berlin – Prague – Vienna – Graz (– Zagreb)[30]
- Berlin – Strasbourg – Barcelona – Madrid – Málaga
- Paris – Brussels – Berlin – Warsaw
- Amsterdam – Brussels / Paris / London[31]
- Amsterdam – Brussels – Paris – Lyon – Barcelona – Valencia – Murcia
- Hamburg – Berlin – Prague – Bratislava – Budapest[32]
- Brussels – Luxemburg – Strasbourg – Berne – Milan
- Prague – Ostrava – Warsaw (– Gdynia)[33]
- Venice – Graz – Vienna – Bratislava – Kosice
- Milan – Venice – Ljubljana – Zagreb – Budapest[34]
- Frankfurt – Munich – Linz – Vienna – Budapest[35]
- Barcelona – Nice – Milan – Venice
- reintroduction of the night trains[36]
    - Copenhagen – Berlin – Prague – Bratislava – Budapest
    - Brussels/Amsterdam – Cologne – Berlin – Prague/Warsaw
    - Amsterdam – Cologne – Zurich
    - Paris/Brussels – Mannheim – Berlin/Vienna
    - Zurich – Milan – Rome
    - Zurich – Barcelona – Madrid
    - Stockholm – Copenhagen – Berlin
- <further routes> ...

[29] Some of the connections mentioned in this annex already exist. Further TEE 2.0 routes might be added by mutual agreement of the connected states.
[30] Vindobona service restarted in June 2020, more frequent in the future, primarily after construction of high-speed infrastructure; an extension to Zagreb via Maribor may be considered
[31] Existing service
[32] Existing service Hungaria
[33] Long-term horizon for further reduction of travel time after the completion of the high-speed network. These improvements may lead to many additional TEE links by extension of these lines, e.g. Warsaw – Prague –Munich, Warsaw/Prague – Vienna – Rome
[34] Additional line via Graz – Vienna may be considered to reduce travel time
[35] Rerouting via Nuremberg may be considered to reduce travel time
[36] as stated in the TEE 2.0 presentation

Phase 2: implementation by the mid-2020s

- Hamburg – Basel – Milan
- Copenhagen – Hamburg – Amsterdam
- Amsterdam – Munich – Vienna
- Amsterdam – Berlin – Warsaw
- Amsterdam – Cologne – Basel – Rome
- Paris – Strasbourg – Stuttgart – Munich – Vienna – Budapest
- <further routes> …

Phase 3: implementation by the end of the 2020s

- Berlin – Innsbruck – Rome
- Stockholm – Copenhagen – Hamburg – Brussels – Paris
- Hamburg – Bordeaux – Madrid – Lisbon
- Copenhagen – Berlin – Prague
- Prague – Dresden – Frankfurt[37]
- Prague – Vienna – Graz (– Ljubljana – Venice)[38]
- Berlin – Prague – Vienna[39]
- Prague – Dresden – Frankfurt (– Strasbourg –Paris)
- Stockholm – Copenhagen – Berlin – Munich
- Oslo - Malmö – Copenhagen
- (Helsinki –) Tallinn – Riga – Kaunas – Warszawa (via Rail Baltica)
- <further routes> …

[37] possible first trains in late 2020s, systematic offer on the high-speed rail in the 2030s
[38] late 2020s after completion of high-speed sections in Austria
[39] Sprinter connection with 4 hours travel time