Federal Ministry
of Transport and
Digital Infrastructure

TEE 2.0

International high-speed and overnight rail services to promote climate change mitigation

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Secretariat of the Federal Government
Commissioner for Rail Transport

www.bmvi.de

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Societal change in travel behaviour – wider clientele

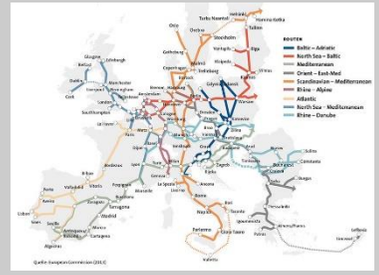
Changes in travel choices due to effects such as

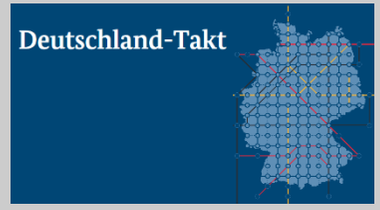
- greater awareness of climate change (“flying shame”)
- shorter journey times thanks to growing high-speed networks
- direct links to and from smaller towns and cities located along the routes of the mainlines

Opportunity for new message from railways – new TEE network
High-speed trains over long distances (passing through 4, but at least 3 countries)

The ***TransEuropExpress* 2.0**, or *TEE* 2.0 for short, is thus a symbol of cohesion and further European integration.

Opportunity presented by the establishment of clock-face timetables
TEE 2.0 and attractive overnight services can be integrated in the clock-face timetables and will not use any paths at the expense of freight trains.





Bundesministerium für Verkehr und digitale Infrastruktur

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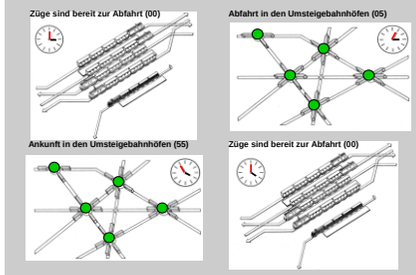
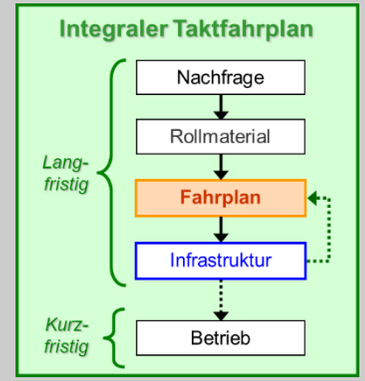
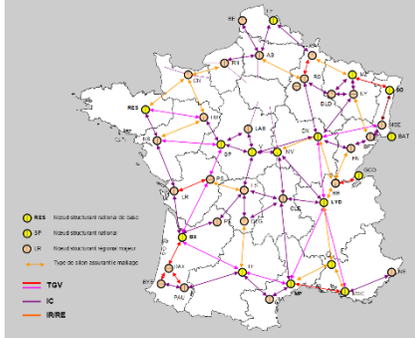
TEE 2.0

Clock-face timetabling such as the “Deutschlandtakt” to form the basis of new *TEE* network

- “More frequent – faster – everywhere”: clock-face timetable will establish a new, transparent principle of infrastructure planning and capacity management.
- For all types of traffic, reserved capacity will be available that ensures good connections in passenger traffic and reliable paths in goods traffic. The basis will be a clock-face system with trains running hourly or half-hourly.
- Infrastructure schemes derived from the timetable will significantly enhance the capacity of the overall network and appreciably increase the nationwide system speed.
- Numerous neighbouring countries are using such planning methods or already have a network of highly frequent long-distance trains.
- The concept *TEE* 2.0 will interlink the individual optimized systems to form a range of European services designed to reduce international journey times.







Supplementary steps for the blueprint of a Europe overnight train network

Objectives for the blueprint of a Europe overnight train network

- Identify possible rolling stock and production blueprints for the lines identified
- Identify the necessary planning steps for the way forward

Planning bases for overnight train lines

- Maximum speed 160 – 230 km/h (Talgo: 250 km/h)
- Existing overnight trains operating satisfactorily (Austria/Switzerland – Germany) will not be re-addressed. Rather, it will be assumed that they will be evolved and continue to operate

The development of additional overnight trains is to be welcomed, but their economic challenge is not to be underestimated: sleeping berths can only be sold once per journey, whereas on *TEE* 2.0 trains, it will be possible to market one seat several times for shorter journeys. In addition, the space required per passenger is significantly greater.

Quelle: https://blog.oebb.at/die-nightjets-der-neuen-generation/

EuroNight

Outline of the concept *TEE* 2.0

The concept *TEE* 2.0 consists of three components:

- a **network of *TEE* 2.0 lines** offering direct connections on longer routes integrating existing national train runs,
- a **network of night train services**,
- intensified bi- and multinational cooperation to **coordinate (clock-face and conventional) timetables** for a border-crossing network with more connections between hubs and nodes (“**Europatakt**”).

Infrastructure Managers will substantiate the network with initiatives like EuroLink or TTR.

The Sustainable and Smart Mobility Strategy of the European Commission foresees 15 pilot lines international rail passenger services by 2030.

Proposed typical Characteristics of the *TEE* 2.0 connections

Route – the *TEE* 2.0 connects Europe

A *TEE* 2.0 *shall* connect at least three states. The focus is on the capital cities and economic centers.

Speed – the *TEE* 2.0 enables attractive, short journey times

A *TEE* 2.0 shall reach a speed of at least 160 km/h over a substantial part of the route or an average speed of 100 km/h in relation to the whole route of the train.

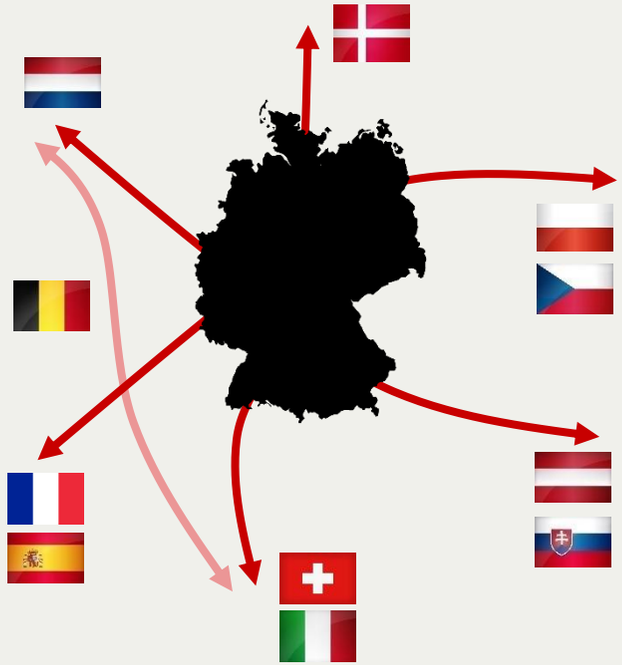
Comfort – relaxed travel on the *TEE* 2.0

A *TEE* 2.0 offers a higher level of comfort (free WLAN, air conditioning, catering and, if necessary, sleeping and couchette cars or other comfort features on night trains) compared to conventional passenger trains.

Contents

The concept *TEE* 2.0 was developed in three steps complemented with a night train network

Step 1: **Connecting** lines of **«Deutschlandtakt»** to European destinations



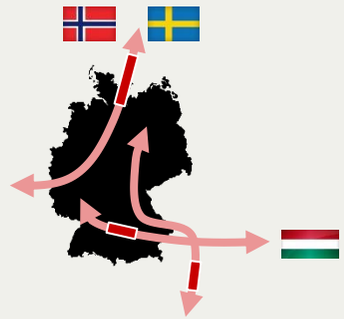
Completed with some tangential lines.

Step 2: temporal dimension: **Enlarge** the network with commissioning of **new infrastructure**

Fehmarn Belt Fixed Link

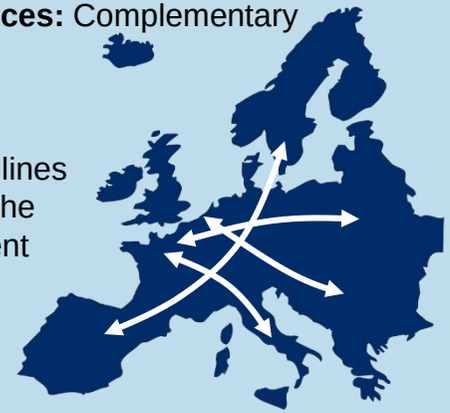
Stuttgart 21 and the new Stuttgart – Ulm high-speed line

Brenner Base Tunnel



Night services: Complementary network

Added with lines defined by the letter of intent



Step 3: **Additional lines in Eastern and Southern Europe**

Added with lines defined by the letter of intent

Step One of the *TEE* 2.0 concept: Routes mostly in Central and Western Europe

TEE 1 / TEE 2
Paris – Berlin – Warsaw/Krakow

TEE 3 / TEE 4
Amsterdam – Basel – Rome

TEE 5 / TEE 6
Berlin – Frankfurt – Lyon – Barcelona – Madrid – Malaga

TEE 7 / TEE 8
Amsterdam – Brussels – Paris – Lyon – Barcelona – Murcia

TEE 9 / TEE 10
Berlin – Munich – Rome

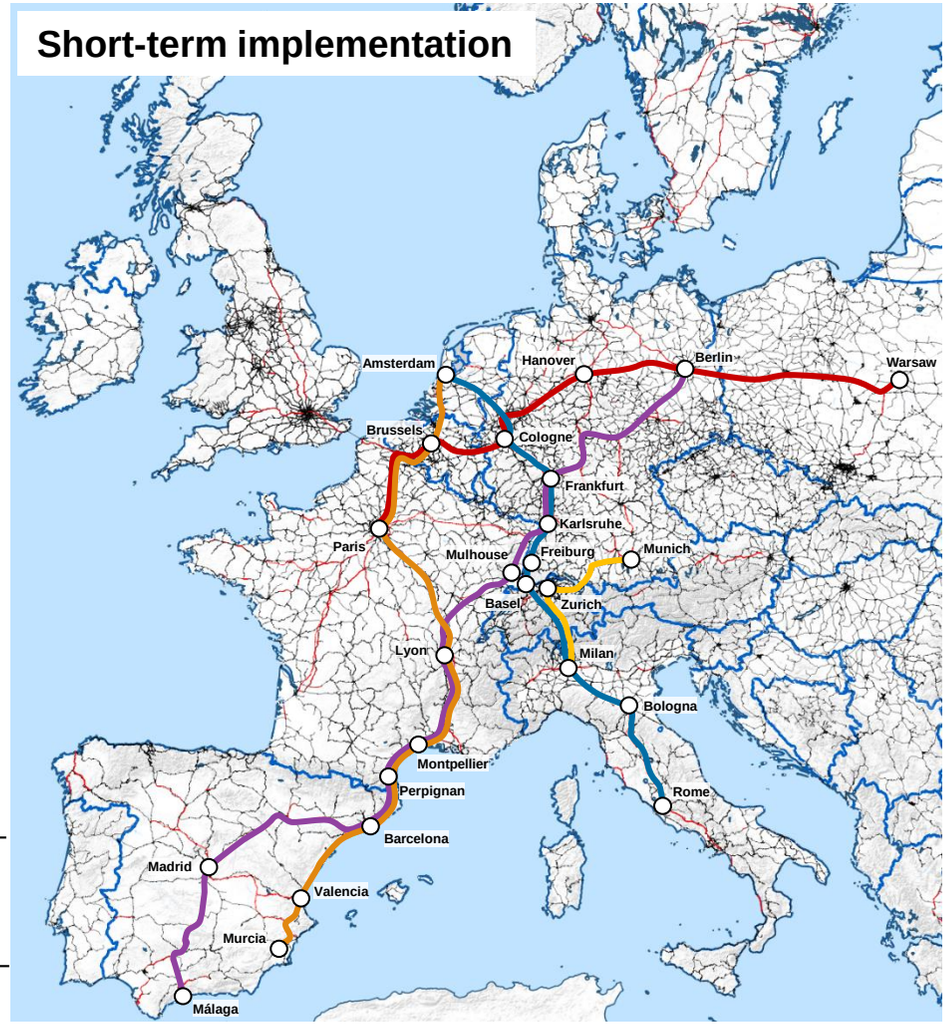
TEE 11 / TEE 12
Paris – Munich – Budapest

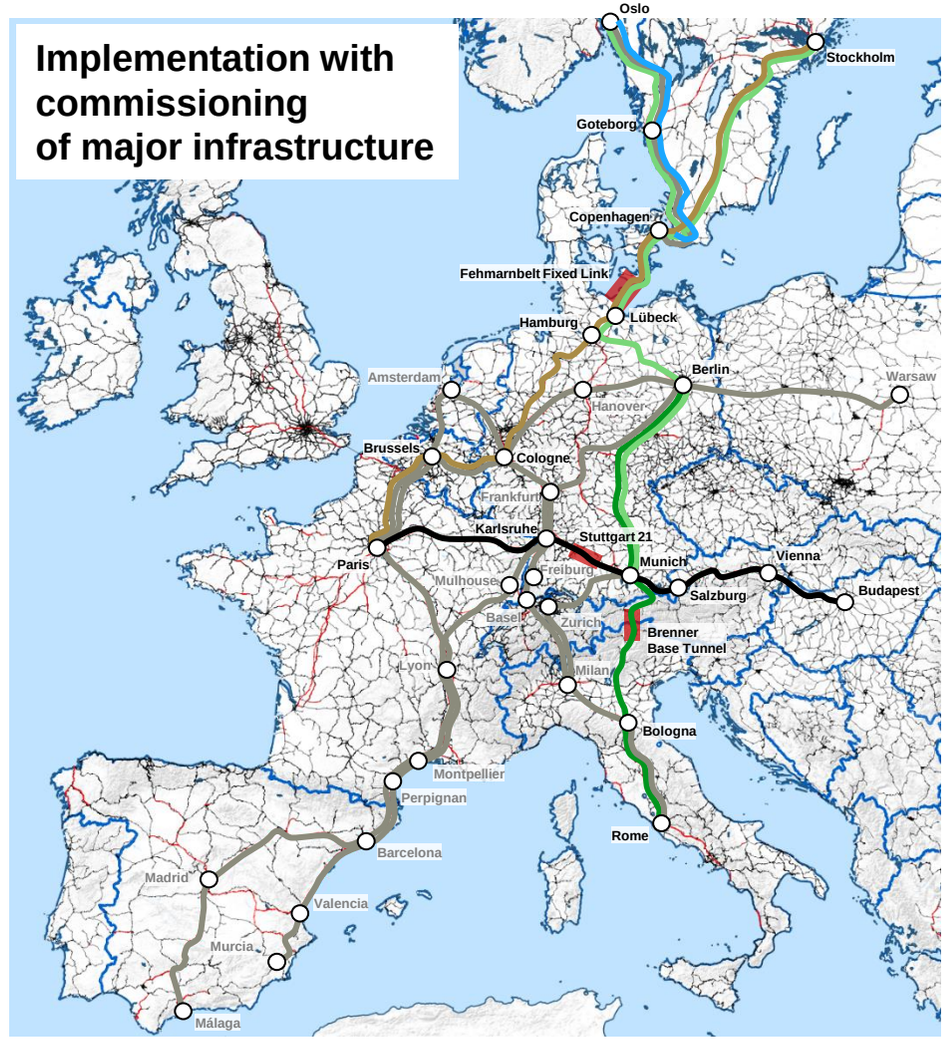
TEE 13 / TEE 14
Paris – Brussels – Hamburg – Copenhagen – Stockholm

TEE 15 / TEE 16
Stockholm/Oslo – Copenhagen – Berlin – Munich

TEE 17 / TEE 18
Munich – Memmingen – Lindau – Bregenz – St. Gallen – Zurich – Lugano – Milan

TEE 19 / TEE 20
Oslo – Goteborg – Malmö – Copenhagen





The evolution of the *TEE* 2.0 network will use major TEN-T infrastructure projects under construction

TEE 9 / TEE 10

Berlin – Munich – Innsbruck – Bologna – Rome

TEE 11 / TEE 12

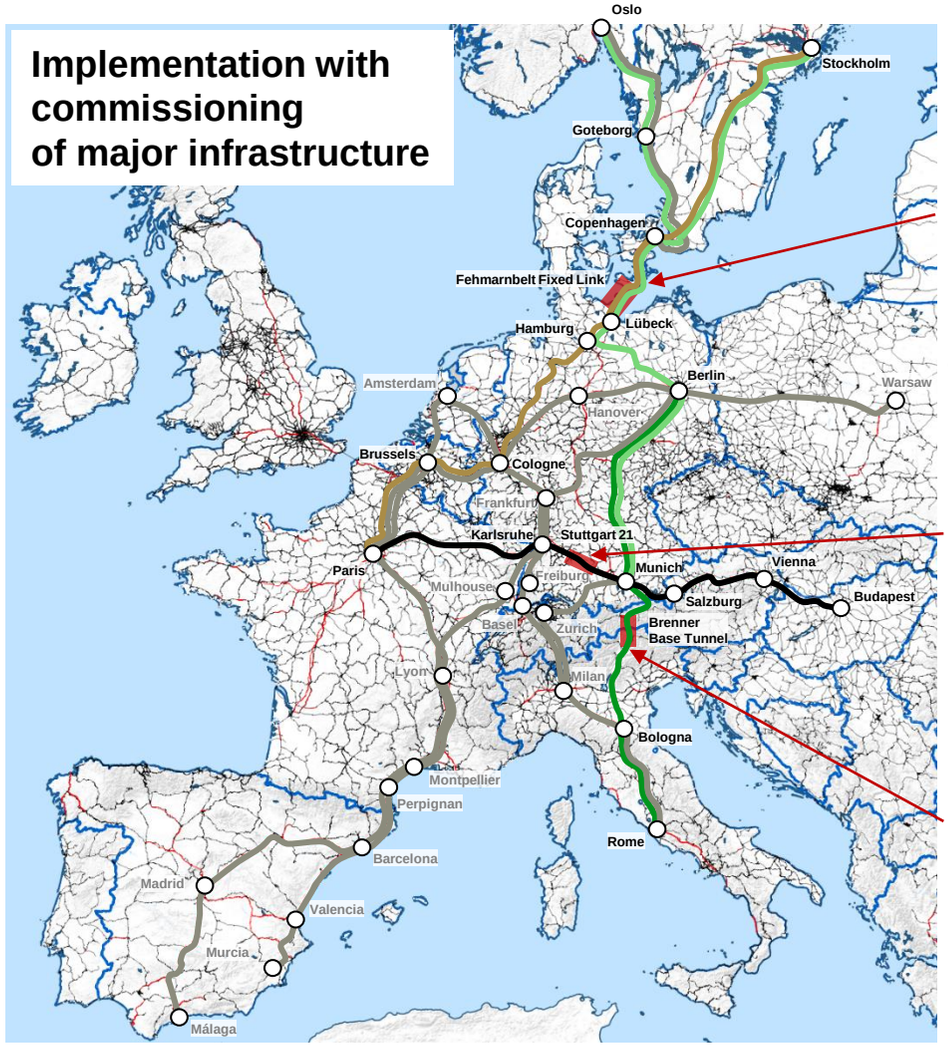
Paris – Strasbourg – Stuttgart – Munich – Vienna – Budapest

TEE 13 / TEE 14

Paris – Brussels – Hamburg – Copenhagen – Stockholm

TEE 15 / TEE 16

Stockholm/Oslo – Copenhagen – Berlin – Munich



Links to and from Scandinavia

Once the fixed Fehmarn Belt Fixed Link between Germany (Puttgarden) and Denmark (Rødbyhavn) has been commissioned, it will be possible to reduce journey times on this route

East-West corridor via Southern Germany

Services between Paris and Budapest will benefit from Stuttgart 21 and the new Stuttgart – Ulm high-speed line because (a) trains will no longer have to reverse and (b) it will be possible to reduce journey times.

Base tunnel on the Brenner artery

The Brenner Base Tunnel will likewise make it possible to operate trains between Berlin, Munich and Rome at high speeds on most sections, thereby enhancing attractiveness.

Overview *TEE* 2.0 Lines 1 – 20

	near future	mid-2020s	end-2020s
TEE 1/2: Paris – Berlin – Warsaw/Krakow	X		
TEE 3/4: Amsterdam – Basel – Milan – Rom		X	
TEE 5/6: Berlin – Strasbourg – Lyon – Barcelona – Madrid – Malaga	X		
TEE 7/8: Amsterdam – Paris – Lyon – Barcelona – Valencia – Murcia	X		
TEE 9/10: Berlin – Munich – Verona – Rom			X
TEE 11/12: Paris – Munich – Budapest		X	
TEE 13/14: Stockholm – Hamburg – Paris			X
TEE 15/16: Oslo/Stockholm – Berlin – Munich			X
TEE 17/18: Munich – Bregenz – Zurich – Milan	X		
TEE 19/20: Oslo – Malmö – Copenhagen			X

Step two of the concept *TEE* 2.0: Routes mostly in Southern and Eastern Europe

TEE 21 / TEE 22

Venice – Ljubljana – Graz – Vienna – Prague

TEE 23 / TEE 24

Vienna – Ostrava – Warsaw – Gdansk/Brest – Gdynia

TEE 25 / TEE 26

Malmö – Copenhagen – Hamburg – Berlin – Prague – Bratislava – Budapest

TEE 27 / TEE 28

Venice – Graz – Vienna – Bratislava – Zilina – Kosice

TEE 29 / TEE 30

Milan – Venice – Ljubljana – Zagreb – Budapest

TEE 31 / TEE 32

Berlin – Dresden – Prague – Vienna – Graz – Zagreb/Ljubljana

TEE 33 / TEE 34

Frankfurt – Nuremberg – Munich – Linz – Vienna – Budapest

TEE 35 / TEE 36

Barcelona – Montpellier – Nice – Genoa – Milan – Verona – Venice

TEE 37 / TEE 38

Brussels – Luxemburg – Strasbourg – Basel – Milan

TEE 39 / TEE 40

Prague – Dresden – Frankfurt – Paris

Overview *TEE* 2.0 Lines 21 – 40

	near future	mid-2020s	end-2020s
TEE 21/22: Venice – Ljubljana – Graz – Vienna – Prague			X
TEE 23/24: Vienna – Ostrava – Krakow – Warsaw – Gdynia/Brest	X		
TEE 25/26: (Malmö –) Hamburg – Berlin – Prague – Bratislava – Budapest	X		
TEE 27/28: Venice – Graz – Vienna – Kosice	X		
TEE 29/30: Milan – Zagreb – Budapest	X		
TEE 31/32: Berlin – Prague – Graz – Zagreb	X		
TEE 33/34: Frankfurt – Vienna – Budapest	X		
TEE 35/36: Barcelona – Nice – Venice	X		
TEE 37/38: Brussels – Luxembourg – Berne – Milan	X		
TEE 39/40: Prague – Dresden – Paris			X

Step three of the concept *TEE* 2.0: Additional Routes (Part of LoI or directly demanded by countries)

TEE 41 / TEE 42

Budapest – Bratislava – Ostrava – Warsaw

TEE 43 / TEE 44

Tallin – Riga – Kaunas– Warsaw

TEE 45 / TEE 46

Prague – Ostrava – Katowice – Warsaw – Gdansk – Gdynia

TEE 47 / TEE 48

Hamburg – Frankfurt – Basel – Milan

TEE 49 / TEE 50

Copenhagen – Hamburg – Amsterdam

TEE 51 / TEE 52

Amsterdam – Cologne – Munich – Vienna

TEE 53 / TEE 54

Amsterdam – Hannover – Berlin – Warsaw

TEE 55 / TEE 56

Hamburg – Hannover – Frankfurt – Mannheim – Saarbrücken – Paris – Bordeaux – Hendaye – Madrid

TEE 57 / TEE 58

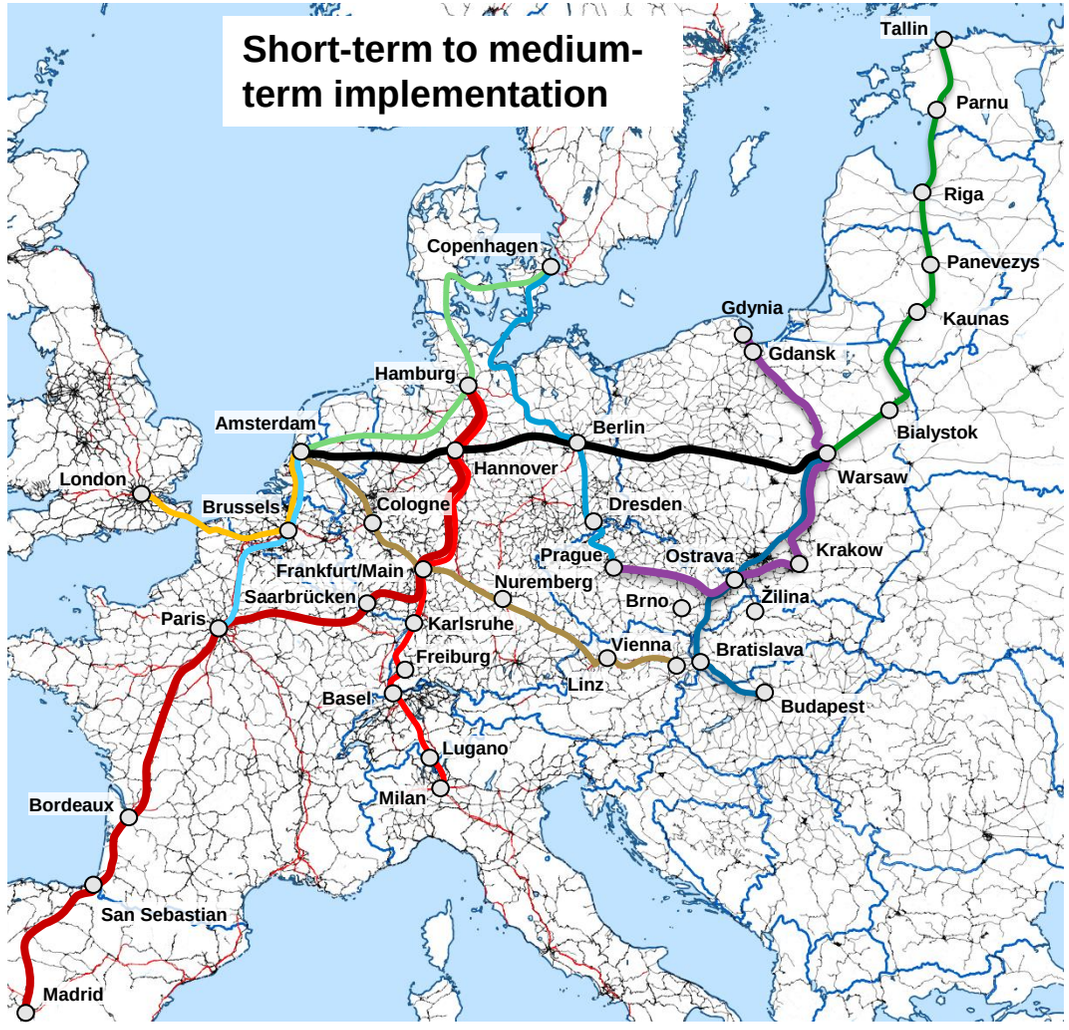
Copenhagen – Berlin – Prague

TEE 59 / TEE 60

Amsterdam – Brussels – London

TEE 61 / TEE 62

Amsterdam – Brussels – Paris



Overview *TEE* 2.0 Lines 41 – 62

	near future	mid-2020s	end-2020s
TEE 41/42: Budapest – Bratislava – Warsaw	X		
TEE 43/44: Tallinn – Riga – Kaunas – Warsaw			X
TEE 45/46: Prague – Ostrava – Warsaw – Gdynia	X		
TEE 47/48: Hamburg – Basel – Milan		X	
TEE 49/50: Copenhagen – Hamburg – Amsterdam		X	
TEE 51/52: Amsterdam – Munich – Vienna		X	
TEE 53/54: Amsterdam – Berlin – Warsaw		X	
TEE 55/56: Hamburg – Paris – Bordeaux – Hendaye – Madrid			X
TEE 57/58: Copenhagen – Berlin – Prague			X
TEE 59/60: Amsterdam – London	X		
TEE 61/62: Amsterdam – Paris	X		

TEE 2.0 overnight network

21 / 22
Paris – Brussels – Cologne – Berlin

23 / 24
Brussels – Prague/Warsaw

25 / 26
Amsterdam – Milan – Venice/Genoa

27 / 28
Frankfurt – Strasbourg/Zürich – Mulhouse – Lyon – Barcelona

29 / 30
Berlin – Rome/Nice

31 / 32
Paris – Strasbourg – Munich – Vienna – Budapest/ Zagreb

33 / 34
Paris – Brussels/Amsterdam – Hamburg – Stockholm

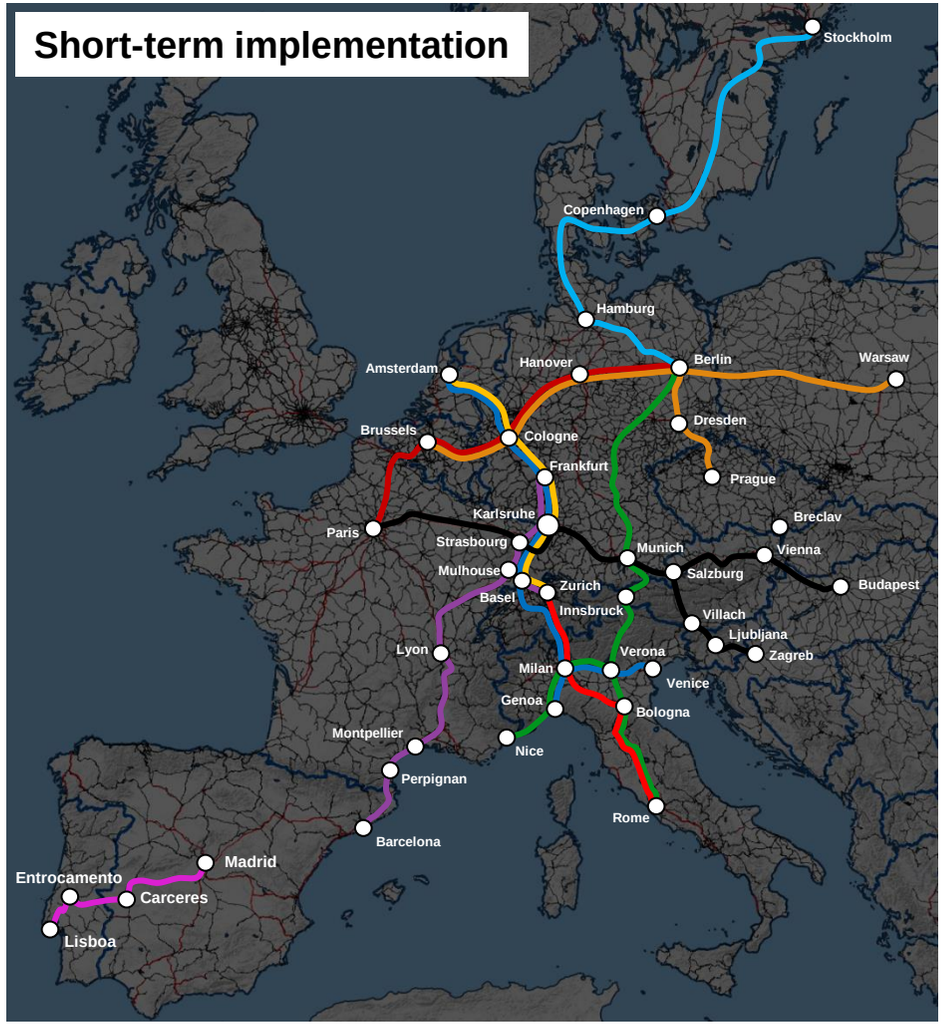
35 / 36
Stockholm – Copenhagen – Berlin – Prague – Vienna/Budapest

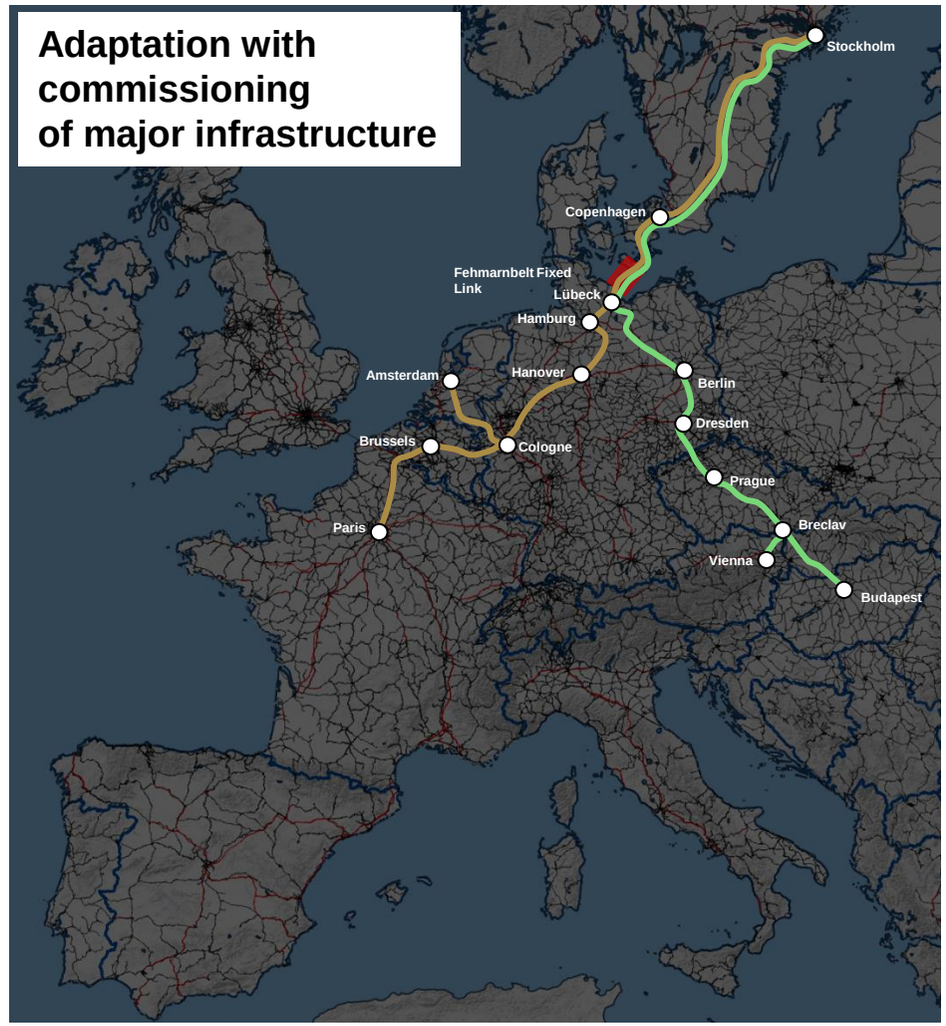
37 / 38
Zurich – Amsterdam

39 / 40
Zurich – Rome

41 / 42
Stockholm – Berlin

43 / 44
Madrid – Lisboa





Overview *TEE* 2.0 Night-Lines 21 – 44

	near future	mid-2020s	end-2020s
EN 21/22: Paris – Berlin	X		
EN 23/24: Amsterdam/Brussels – Prague/Warsaw	X		
EN 25/26: Amsterdam – Genoa/Venice	X		
EN 27/28: Frankfurt/Zurich – Madrid	X		
EN 29/30: Berlin – Munich – Rom/Nice	X		
EN 31/32: Paris – Budapest/Zagreb	X		
EN 33/34: Stockholm – Paris/Amsterdam	X		
EN 35/36: Stockholm – Wien/Budapest	X		
EN 37/38: Zurich – Amsterdam	X		
EN 39/40: Zurich – Rom	X		
EN 41/42: Stockholm – Berlin	X		
EN 43/44: Madrid – Lisboa	X		

Contents

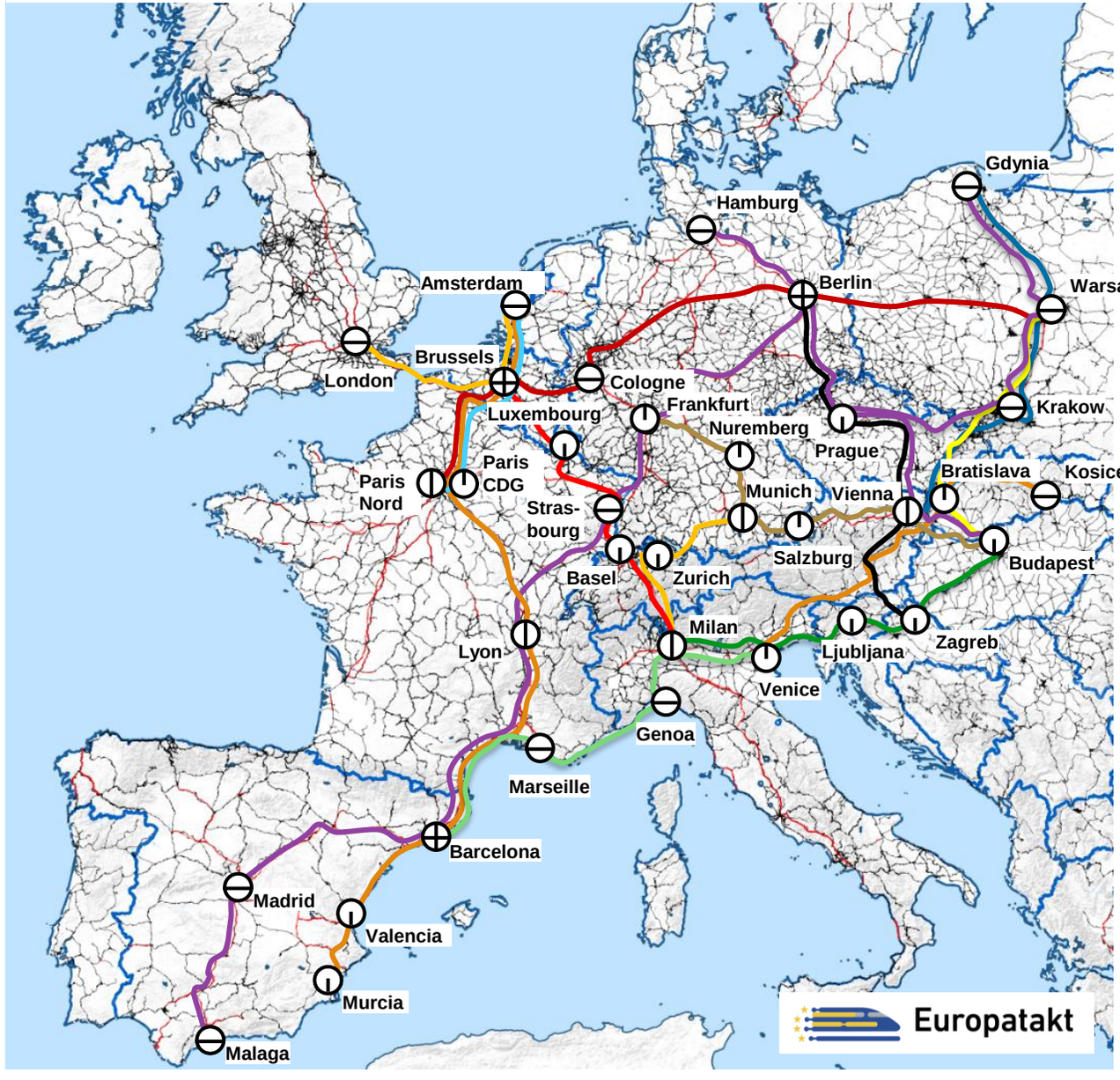
Digitalisation is a key enabler for the concept *TEE* 2.0

- **European Rail Traffic Management System (ERTMS)** simplifies the equipment of trains operating across borders and increases the capacity of the existing infrastructure.
- **Digital Capacity Management (DCM)** facilitates the coordination of timetables through automated and digitized train path construction and capacity allocation.
- Digital Booking Platforms as the **Full Service Model (FSM) / Open Sales and Distribution Model (OSDM)** makes it easier for the passenger to discover the advantages of rail transport and to buy tickets for international journeys.

TEE 2.0 is a joint project for the European integration

- An attractive range of services could be created using today's infrastructure and timetables.
- The TEN-T infrastructure projects will be used to reduce travel times.
- For business and leisure travelers, these services could very soon represent a climate-friendly alternative to air travel.
- Since implementation requires coordination between states, infrastructure managers and railway undertakings an implementation in near future would appear conceivable.
- Facilitation by the states appears to be helpful regarding speedy implementation.
- European Ministers of Transport welcomed the concept *TEE* 2.0 and signed a Letter-of-Intent to support it.
- The International Rail Passenger Transport (IRP) Platform discusses the necessary framework conditions to realize the network.

Node times of selected major stations served by the *TEE* 2.0 lines (short term implementation) as Basis for an Europatakt



Basis of the presentation:

- Node times represent approximate times and do not indicate service frequency
- The node times only concern the *TEE* 2.0 lines and give no indication of other timetable structures
- Only a selection of stops is shown, the *TEE* 2.0 lines stop at far more stations
- Further elaboration by the stakeholders (States, Infrastructure Managers, Railway Undertakings) is necessary

The network might be used to build up frequent services on subsections of the longer lines as first step of an Europatakt.

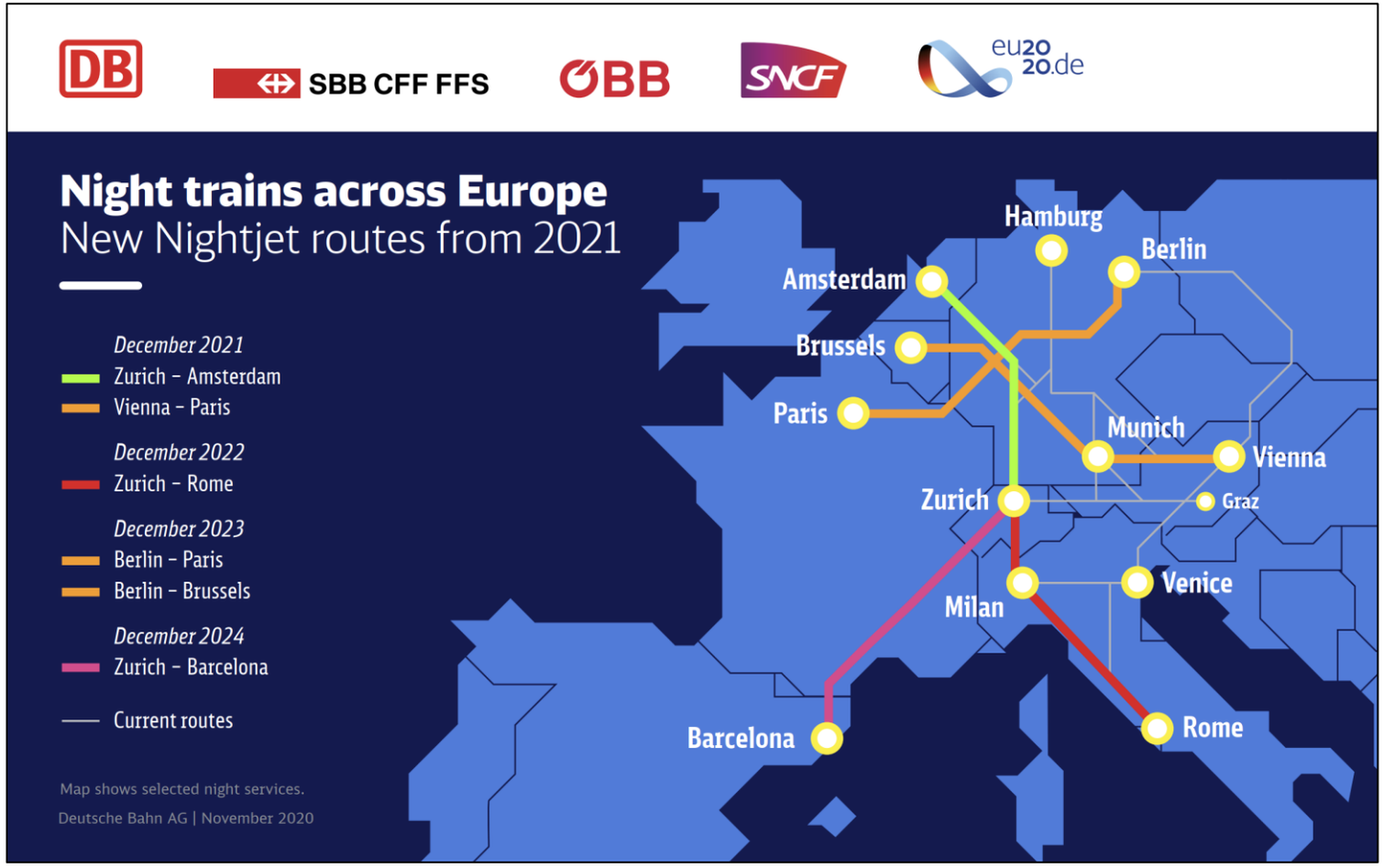
Node time display (short term *TEE* 2.0 Lines)

- Serving on the hour
- Serving at half hour
- Serving at minutes 15 and 45
- By overlaying lines service at minutes 00, 15, 30 and 45

Next Steps and Realisation of the concept

- The concept is based on the current market-oriented framework conditions of the Fourth Railway Package, but it calls for a more active participation of the states and all stakeholders according to their respective role.
- All interested RUs can participate in the network on a commercial base.
- Methodology and lines presented in the blueprint study are a first preliminary proposal.
- States, infrastructure managers and railway undertakings are invited to participate in the further development of the network:
  - Development of route proposals and market analysis
  - Elaboration of the routes
  - Proposal for frequencies stops, and rolling stock

8 December 2020
Joint Statement Night Train Services



ÖBB SNCF DB SBB CFF FFS eu2020.de

TOWARDS A BETTER FUTURE

Joint Statement to expand Night Train services in Europe

As part of the overall efforts within the European Union to reduce carbon dioxide emissions and support sustainable travel, night trains can form an ideal supplement for cross border services.

DB, ÖBB, SBB and SNCF have joint forces to support the development of further night train services in Europe.

We believe, that:

- Developing night trains helps to reduce CO_2 emissions and supports the Paris Agreement of 2015 on climate protection
- Night trains can become a key element of a sustainable and environmentally friendly mobility and its integration in a global daily European rail network is important
- Cross-border night train services are operationally challenging and require a joint effort and political support

DB, ÖBB, SBB and SNCF have signed a Memorandum of Understanding to set the framework for a future collaboration for night train services.

The parties plan to offer new night trains such as

December 2021: **Vienna-Munich-Paris and Zurich-Amsterdam**
December 2023: **Vienna/Berlin-Brussels/Paris**
December 2024: **Zürich-Barcelona**

Our efforts will be part of a larger scheme to work towards better international services within Europe.

Dr. Richard Lutz CEO DB | **Andreas Matthä** CEO ÖBB | **Vincent Ducrot** CEO SBB | **Jean-Pierre Farandou** CEO SNCF

13 December 2020
Opening new Zurich –Munich service

Bundesministerium
für Verkehr und
digitale Infrastruktur

17 May 2021
Virtual Signing Event Letter-of-Intent *TEE* 2.0

TEE 2.0

Letter of intent[1]

International high-speed and overnight rail services

We, the undersigned ministers of transport, desire to further promote international long-distance passenger rail services in Europe and to this end seek to establish through high-speed[2] and overnight rail services between the capital cities and between the commercial and cultural centres of Europe. We therefore express our commitment to the political support for a strategy for a new Trans Europ Express, or TEE 2.0 for short, as a symbol of further European integration and a contribution to affordable and climate-friendly mobility for the citizens of Europe.

To this end, we intend to:

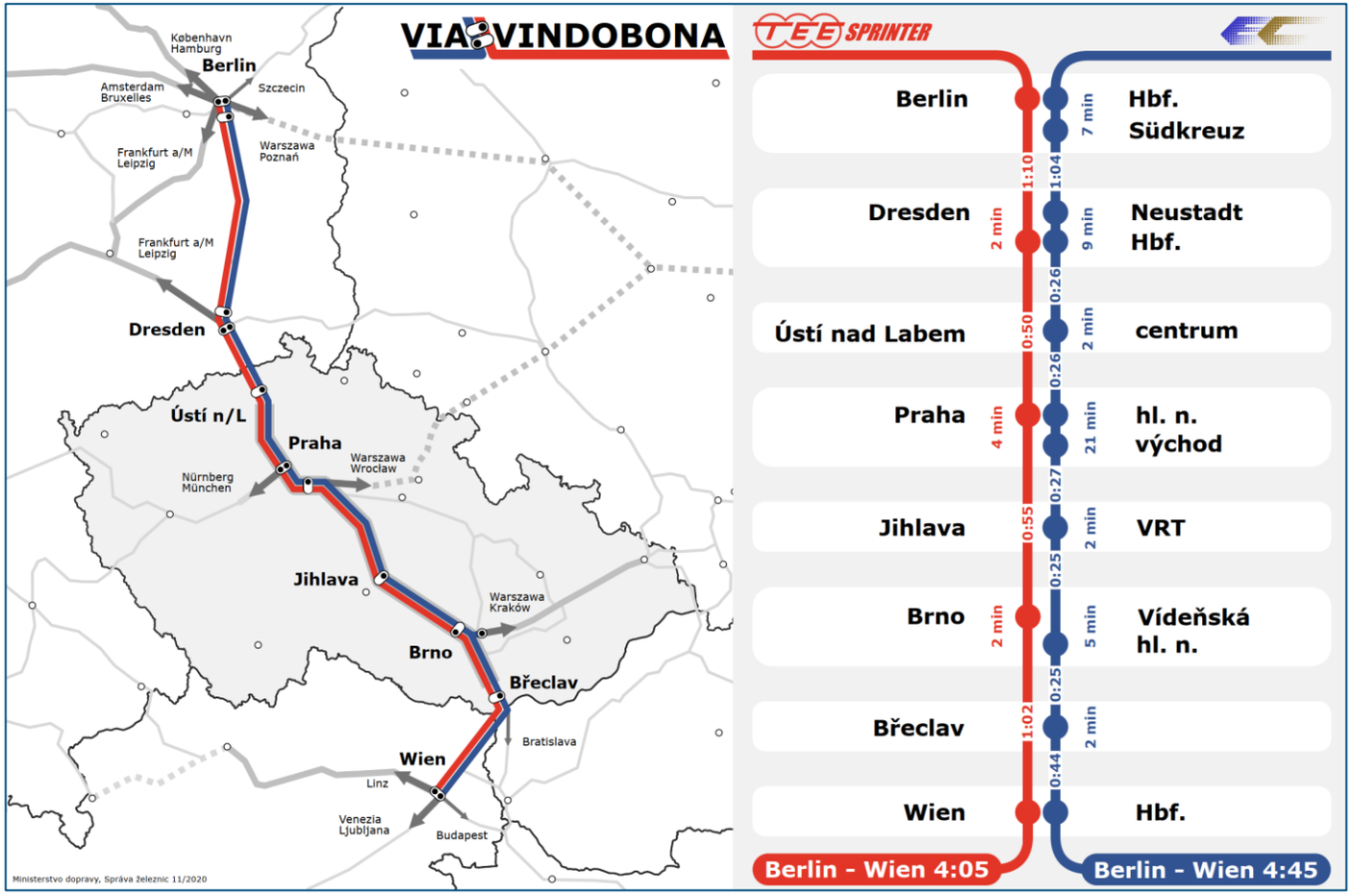
1. monitor and provide political support to the stakeholder railways in developing international long-distance passenger services within the scope of the TEE 2.0;
2. cooperate and, if necessary, facilitate talks on international services with the stakeholder railway undertakings, infrastructure managers and states;
3. discuss how the creation of regular interval services and their interlinking to form a European clock-face timetable can be simplified;
4. lobby for further technical and operational improvements that are necessary for the operation of international rail services;
5. request the European Commission to propose the launch of an EU financial assistance programme for investment in rolling stock that can operate across borders in support of the objectives of the European Green Deal;

[1] The letter of intent aims to contribute to and reinforce the follow-up of the "Political statement for coalition of the willing development international rail passenger transport" presented 4 June 2020 during the Informal Videoconference of the EU Transport Ministers and with view to the informal ministerial rail conference of the German Council Presidency on 21 September 2020.

[2] A TEE 2.0 train should reach a running speed of at least 160 km/h on most of its route or an average speed of 100 km/h relative to the total length of the train's route.

Signatory States: AT, BE, CH, CZ, DK, DE, ES, FR; GR, HR, HU, IR, IT, LT, LU, LV, NL, NO, PL, PT, SL

17 May 2021
MoU Via Vindobona Berlin – Prague – Vienna



Gemeinsame Absichtserklärung
zwischen
dem Bundesministerium für Verkehr und digitale Infrastruktur
der Bundesrepublik Deutschland
und
dem Ministerium für Verkehr
der Tschechischen Republik
und
dem Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie
der Republik Österreich

über die Zusammenarbeit bei der Weiterentwicklung der Eisenbahnverbindung Berlin – Praha – Wien

Společné prohlášení o záměru
mezi
Spolkovým ministerstvem dopravy a digitální infrastruktury Spolkové republiky Německo
a
Ministerstvem dopravy České republiky
a
Spolkovým ministerstvem ochrany klimatu, životního prostředí, energetiky, mobility, inovací a technologií Rakouské republiky

o spolupráci při dalším rozvoji
železničního spojení Berlin – Praha – Wien

„Via Vindobona"

Das Bundesministerium für Verkehr und digitale Infrastruktur der Bundesrepublik Deutschland, das Ministerium für Verkehr der Tschechischen Republik und das Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie der Republik Österreich, im Folgenden „Ministerien" genannt, haben die Absicht, aufbauend auf der „Vereinbarung zwischen dem Bundesministerium für Verkehr der Bundesrepublik

Spolkové ministerstvo dopravy a digitální infrastruktury Spolkové republiky Německo, Ministerstvo dopravy České republiky a Spolkové ministerstvo ochrany klimatu, životního prostředí, energetiky, mobility, inovací a technologií Rakouské republiky, dále „Ministerstva", vycházejíce z „Dohody mezi Ministerstvem dopravy České republiky a Spolkovým ministerstvem dopravy Spolkové republiky Německo a

Bundesministerium
für Verkehr und
digitale Infrastruktur

Thank You!

A more detailed version of this presentation is available:
https://www.bmvi.de/SharedDocs/EN/PressRelease/2021/048-scheuer-travelling-germany-europe-environmentally-friendly-train.html

EUROPEAN YEAR
OF RAIL 2021

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Photo: Deutsche Bahn AG / Patrick Kuschfeld