Orient/East-Med
Core Network Corridor Study

Final Report
Annexes

December 2014

Content

Disclaimer

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 1 –
Fulfilment of TEN-T Technical Parameters

5 December 2014

Tables

Disclaimer

Study on the Orient / East Med Core Network Corridor – Annex 1a

Fulfilment of TEN-T Technical Parameters

Rail Compliance Test 2013

5 December 2014

Legend

Compliance with TEN-T regulation 1315/2013

Technical parameter is compliant

Technical parameter is compliant for core pass. line

Technical parameter is not compliant

Need for reversing passenger trains

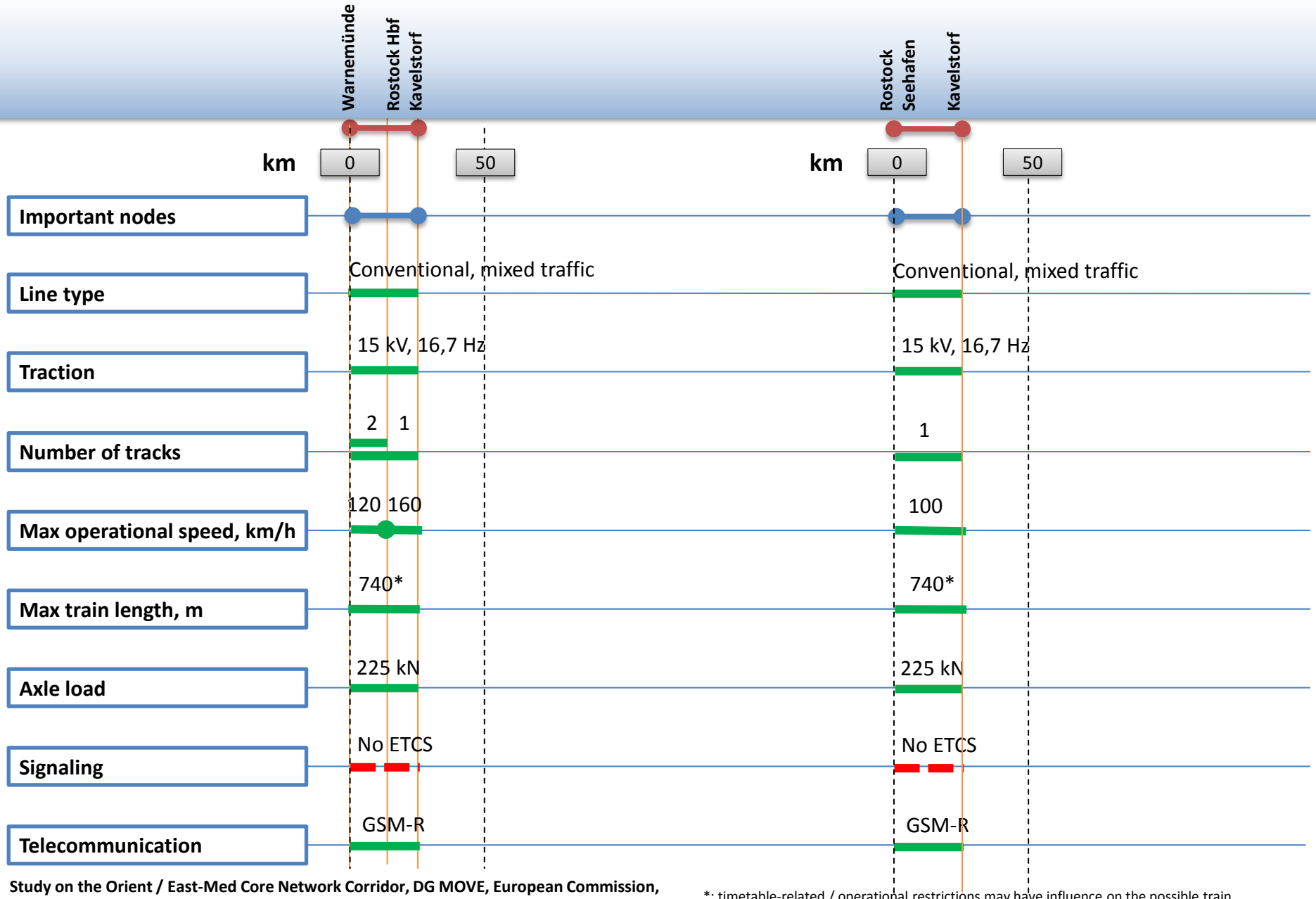
Technical Requirements for Rail according to Art 15 (*ECMT Class IV)*

- Electrification: *to be electrified by 2030 (including sidings where necessary)*
- Axle load (Core freight lines): *22.5 t by 2030*
- Line speed (Core freight lines): *100 km/h by 2030*
- Train length (Core freight lines): *to allow for 740m trains by 2030*
- ERTMS / signalling system: *to be equipped with ERTMS by 2030*
- Track gauge: *1435mm**

**) Along OEM corridor, track gauge is 1435mm everywhere and therefore not depicted in the following illustrations.*

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013

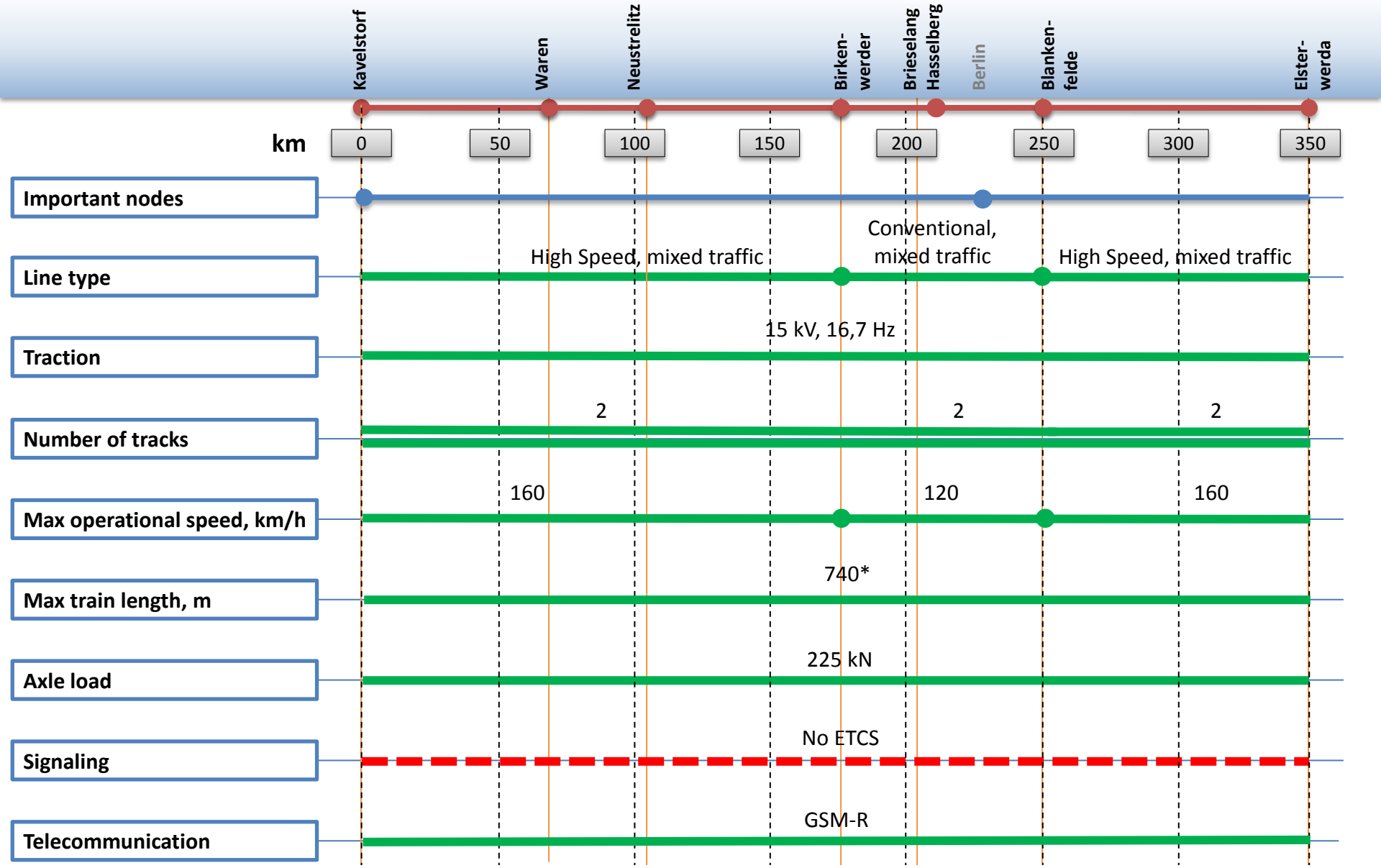


Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission, Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

*: timetable-related / operational restrictions may have influence on the possible train length.

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013



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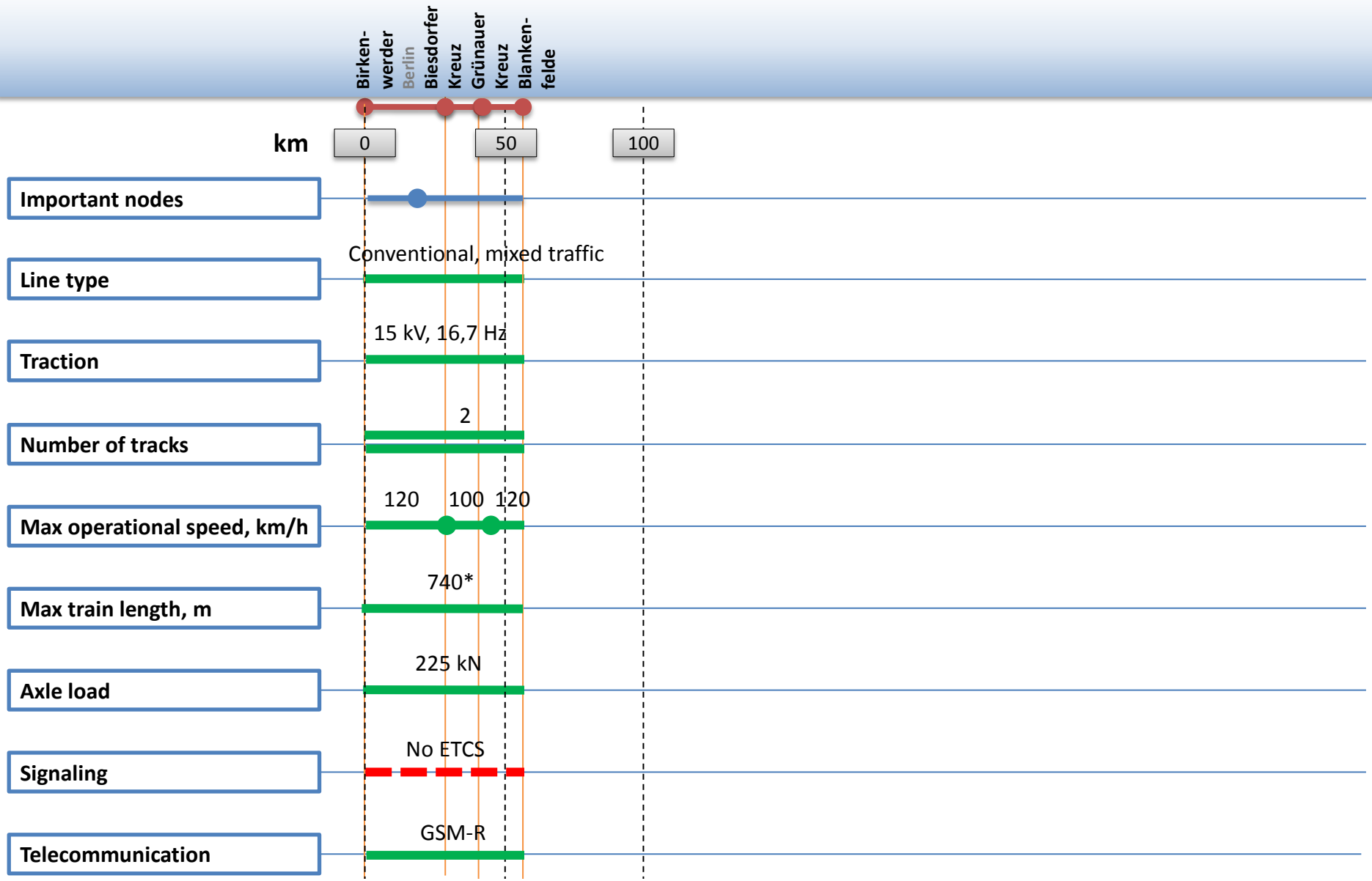
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013



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Fulfilment of TEN-T Technical Parameters

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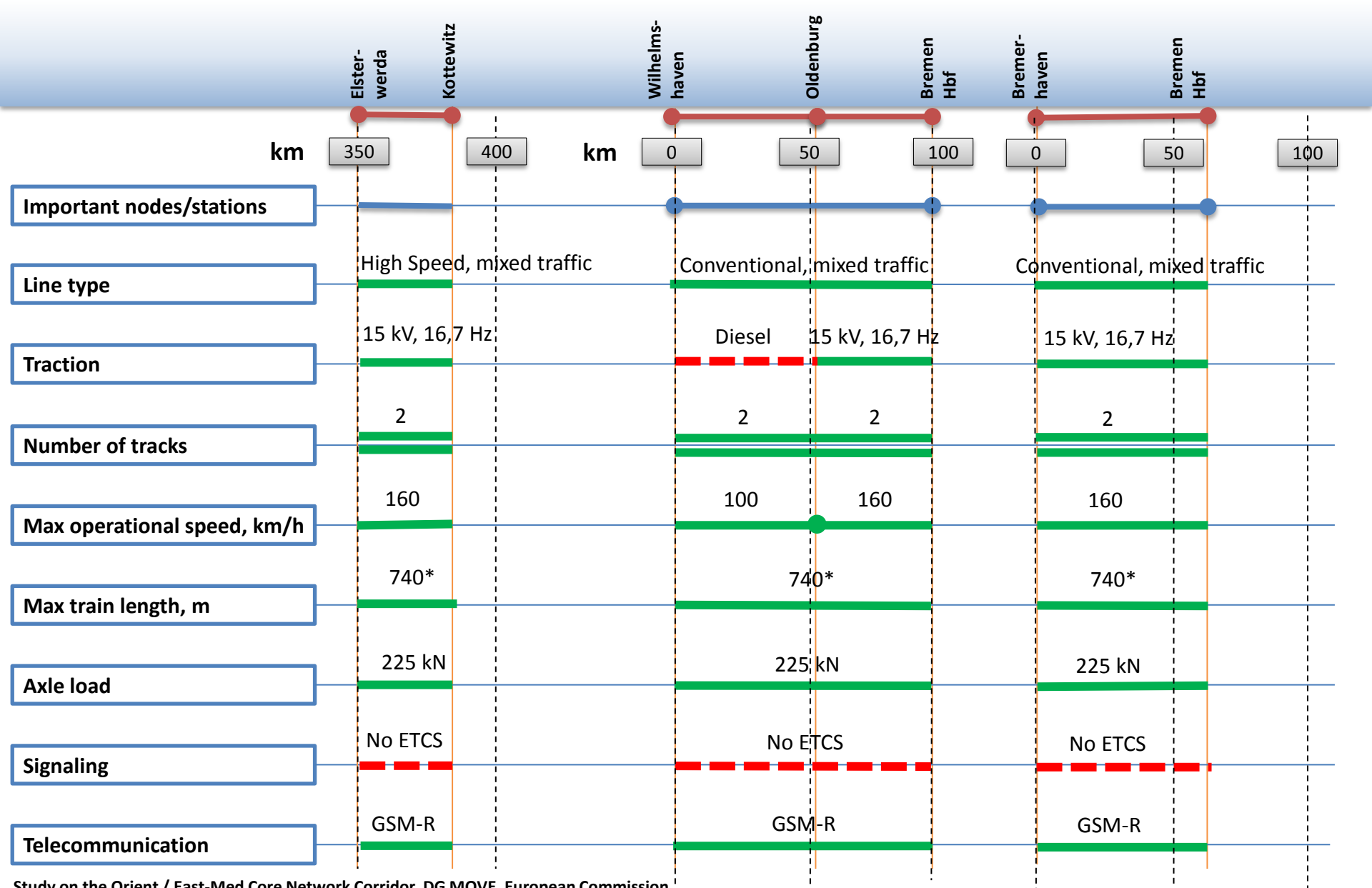

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Fulfilment of TEN-T Technical Parameters

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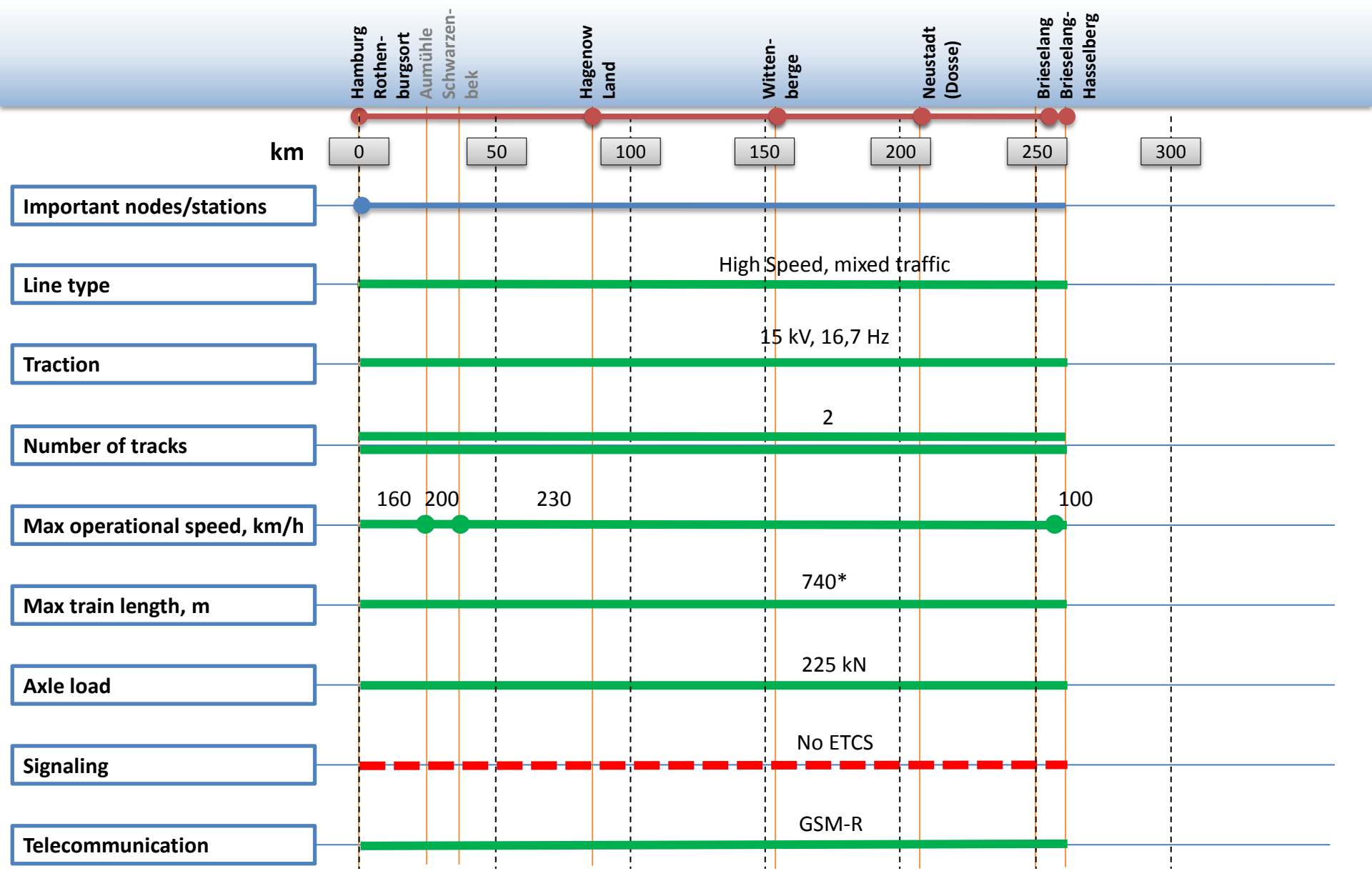

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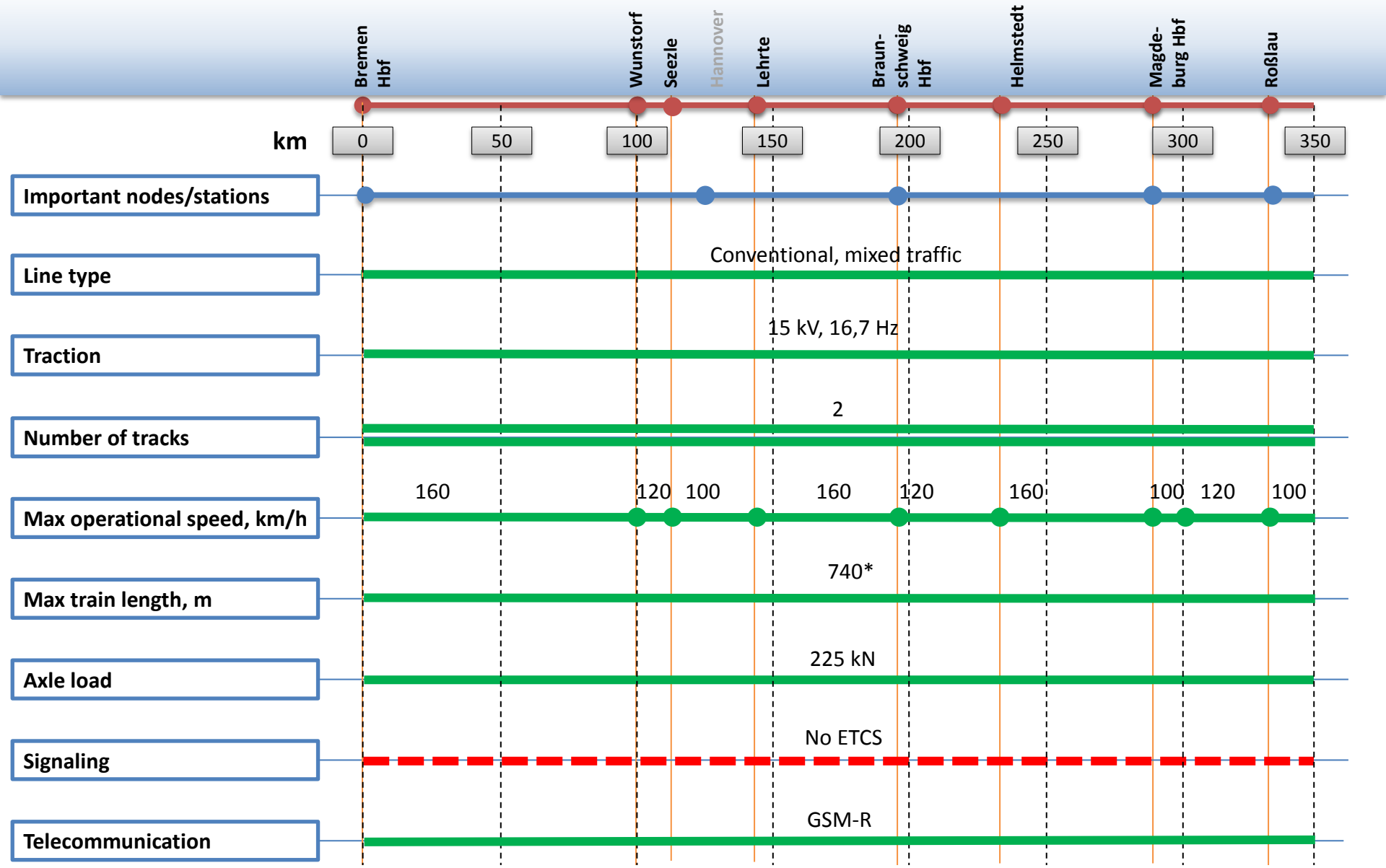
*: timetable-related / operational restrictions may have influence on the possible train length.

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission, Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

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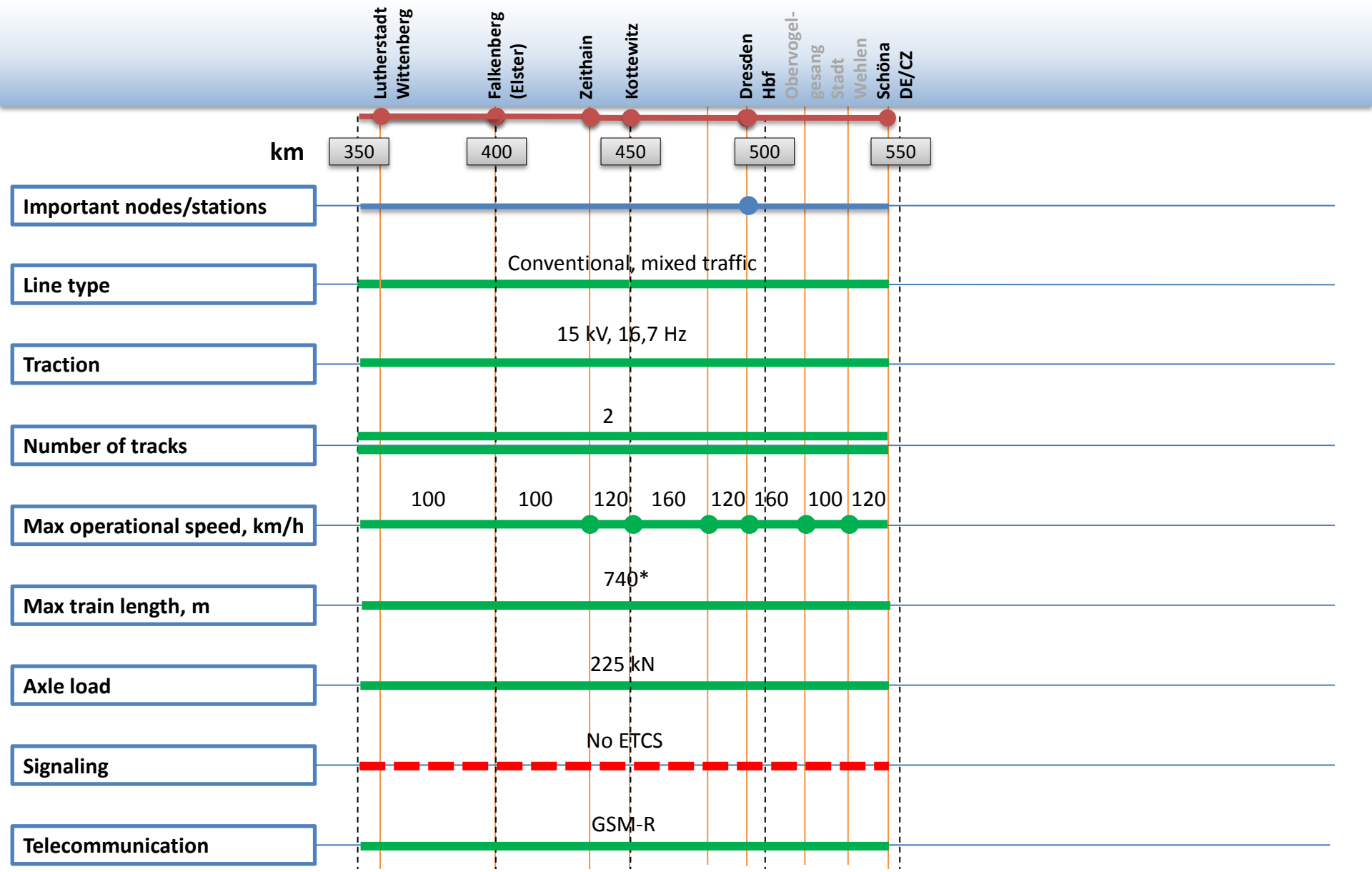
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission, Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

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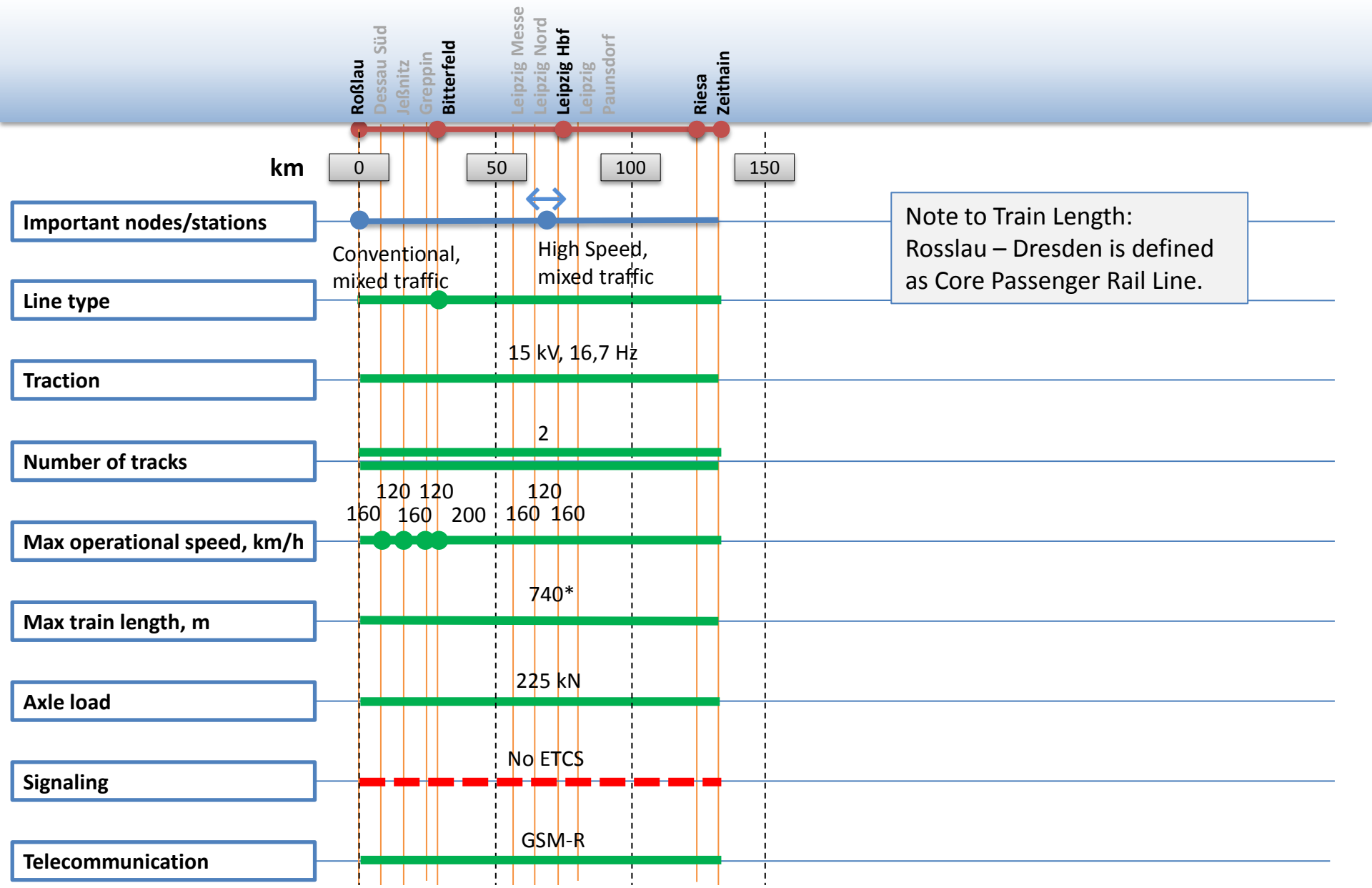
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Rail Status: 2013



Note to Train Length:
Rosslau – Dresden is defined as Core Passenger Rail Line.

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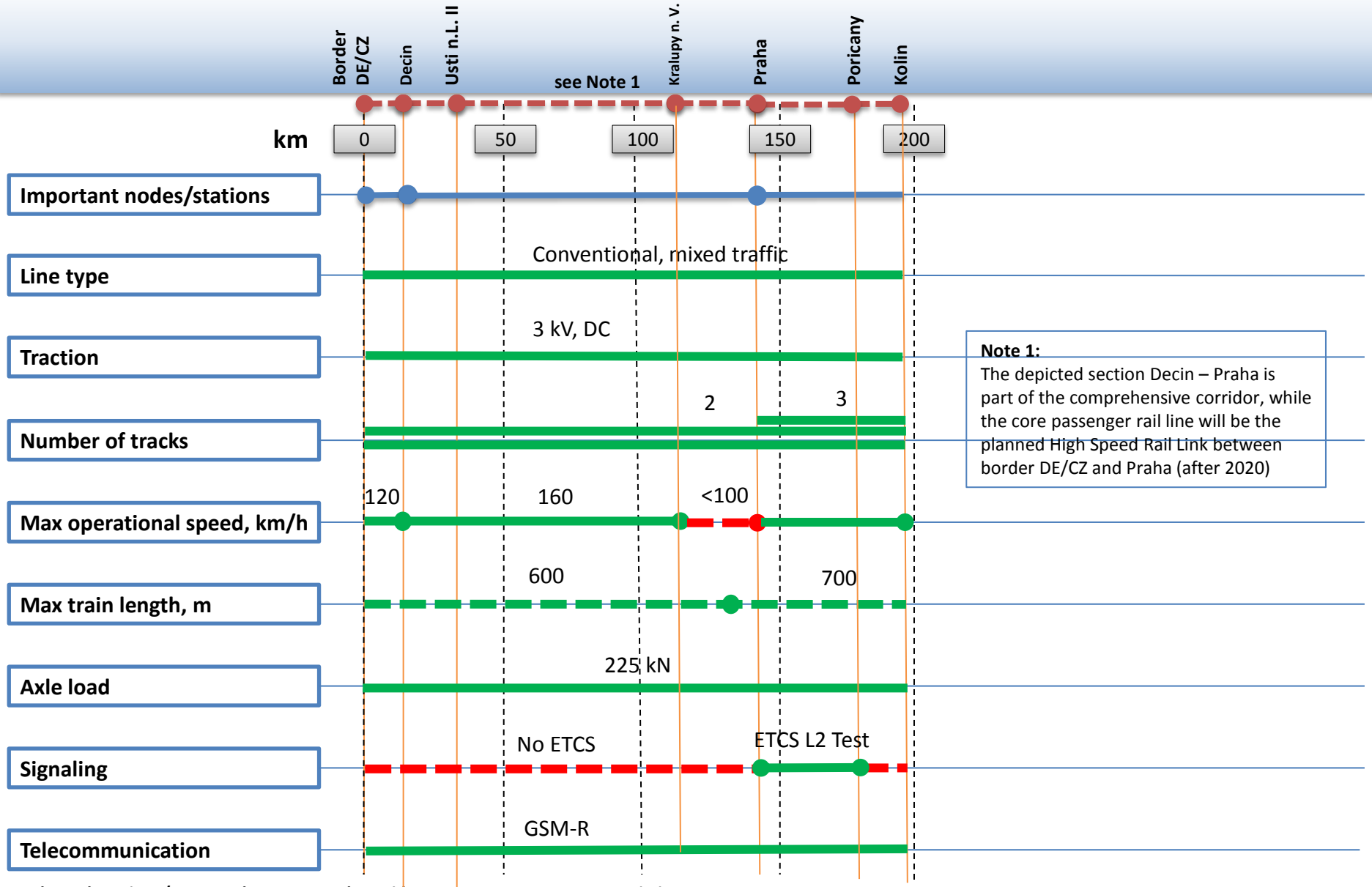
Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Rail Status: 2013

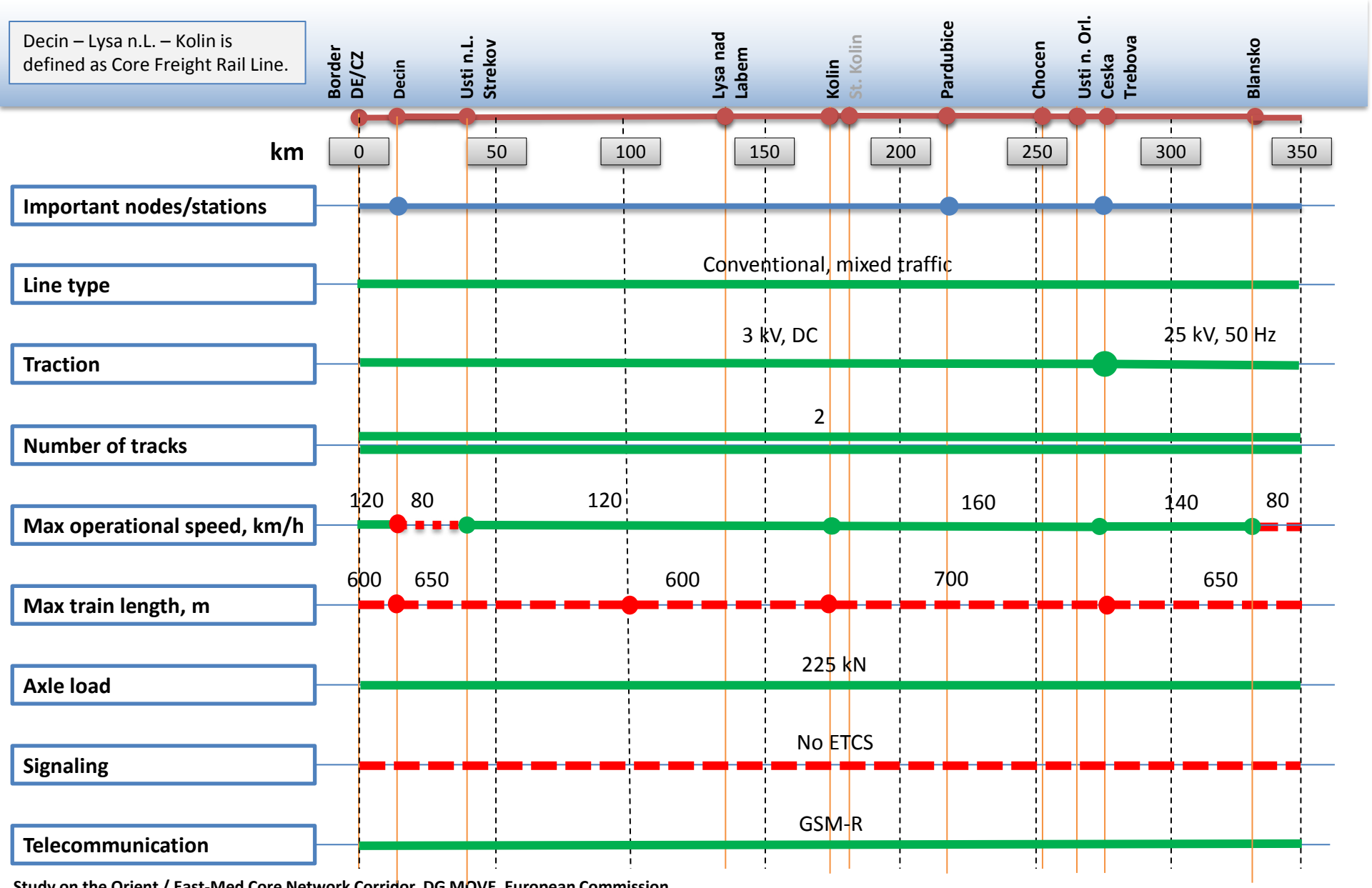


Note 1:
The depicted section Decin – Praha is part of the comprehensive corridor, while the core passenger rail line will be the planned High Speed Rail Link between border DE/CZ and Praha (after 2020)

Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Rail Status: 2013

Decin – Lysa n.L. – Kolin is defined as Core Freight Rail Line.



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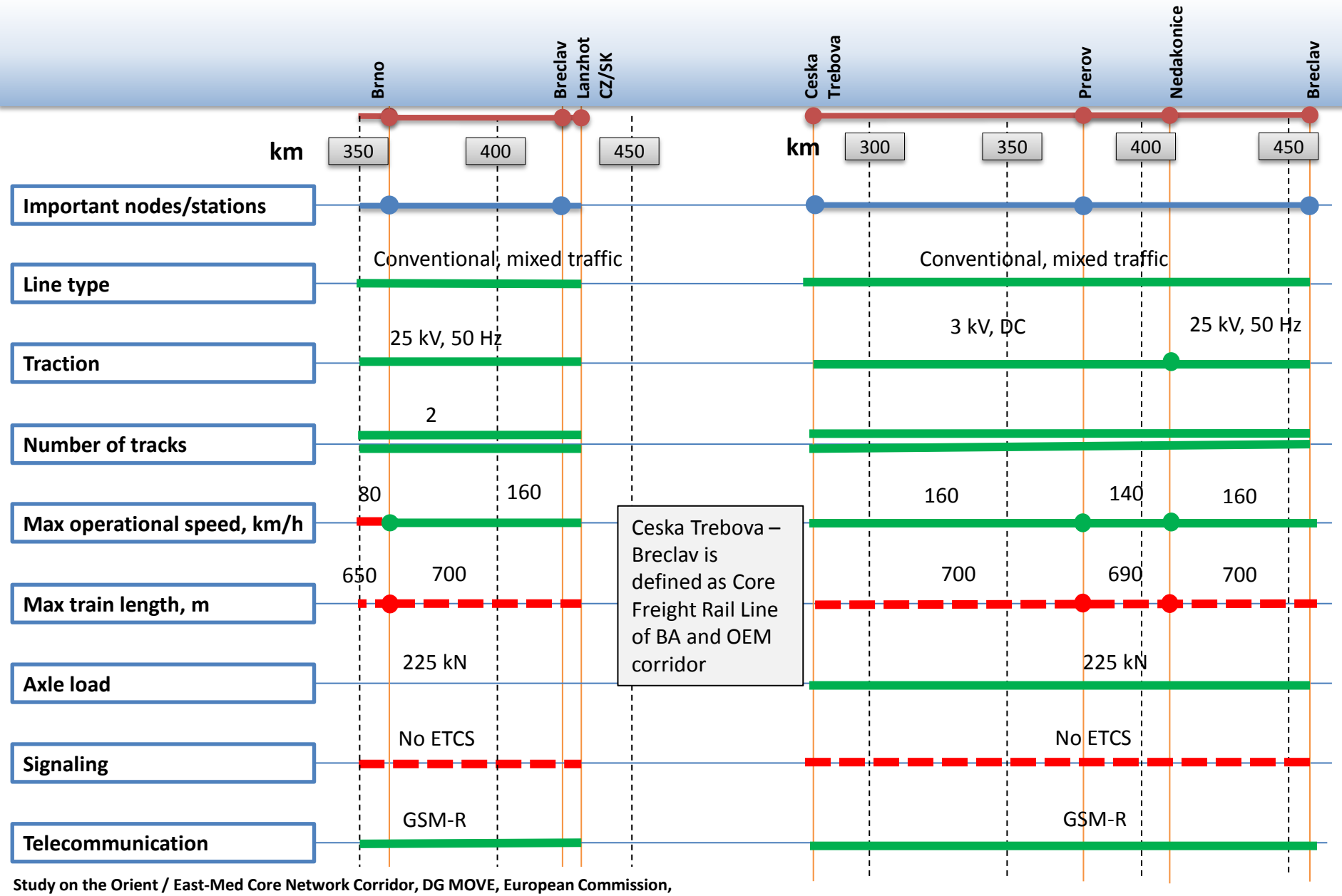
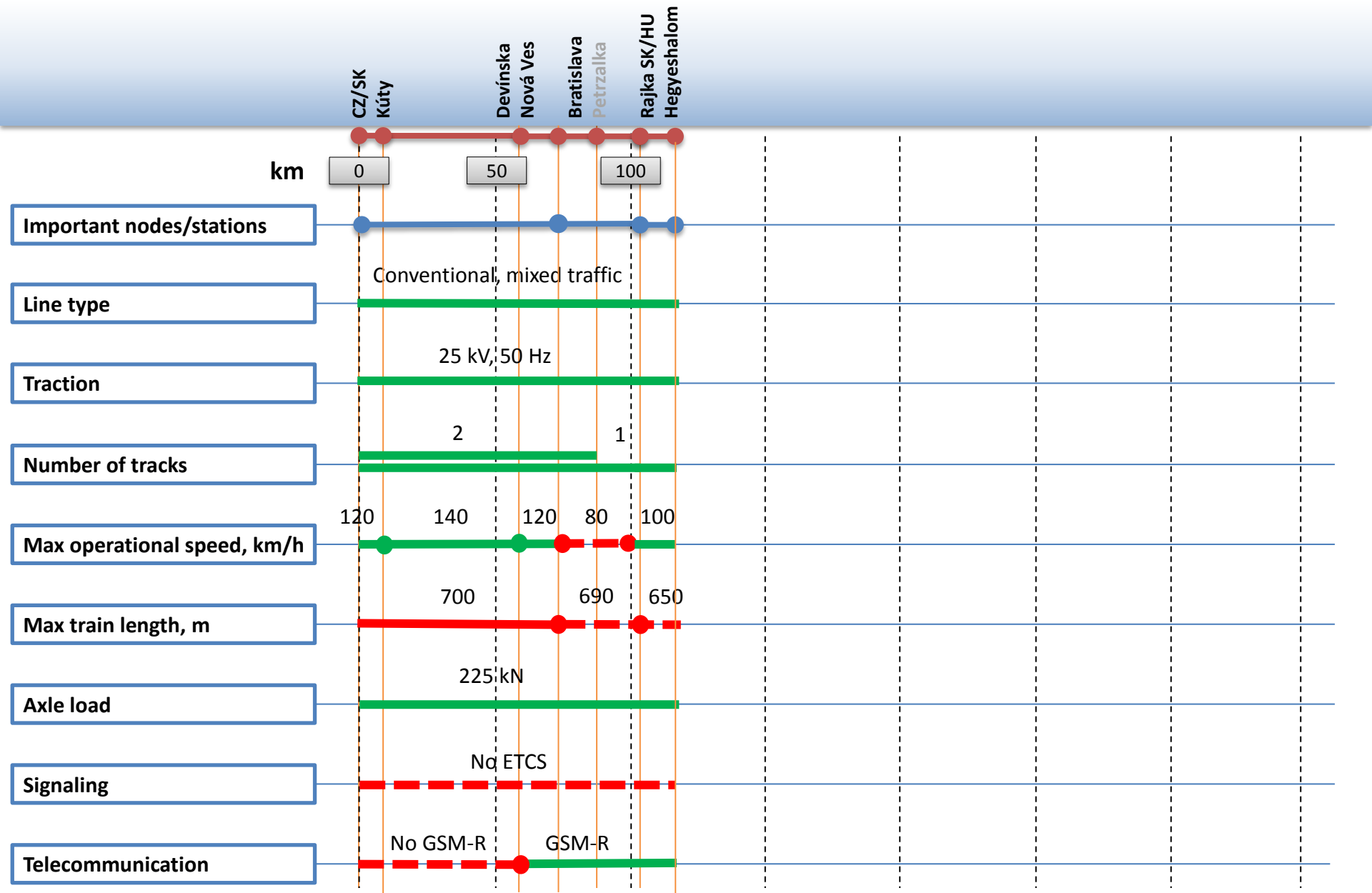
Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Rail Status: 2013



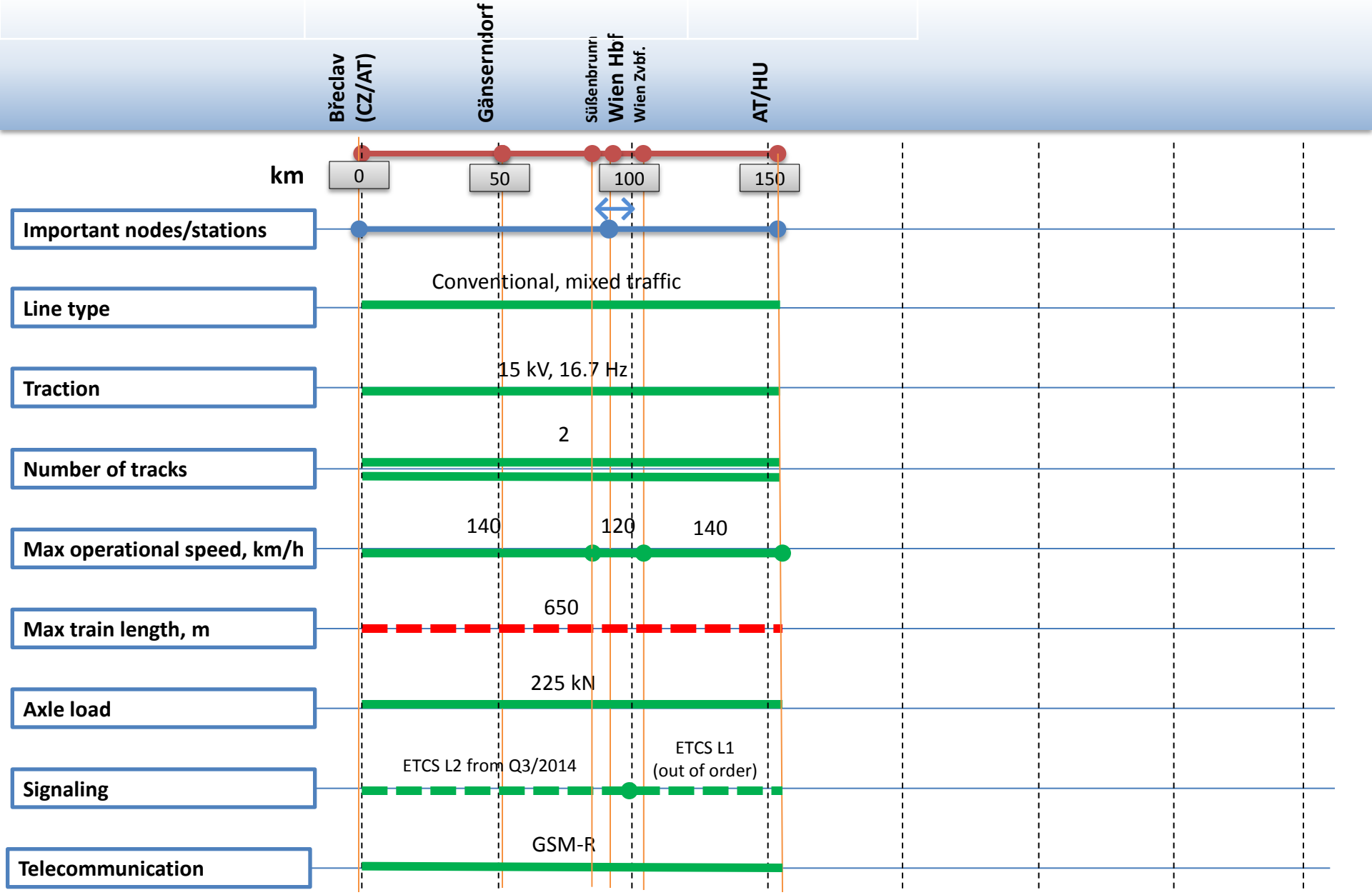
Fulfilment of TEN-T Technical Parameters

Country: Slov./Hung. Mode: Rail Status: 2013



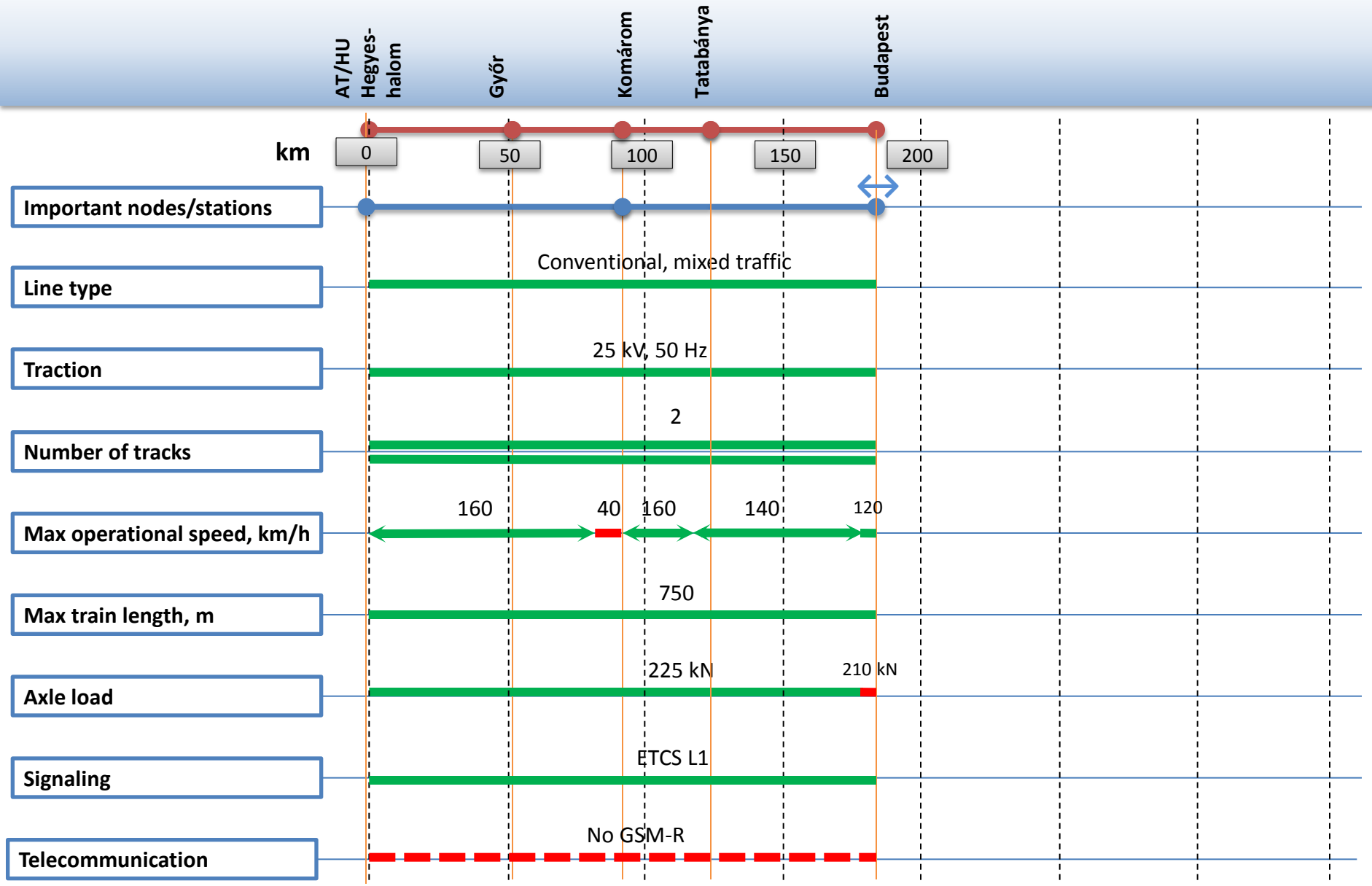
Fulfilment of TEN-T Technical Parameters

Country: Austria Mode: Rail Status: 2013



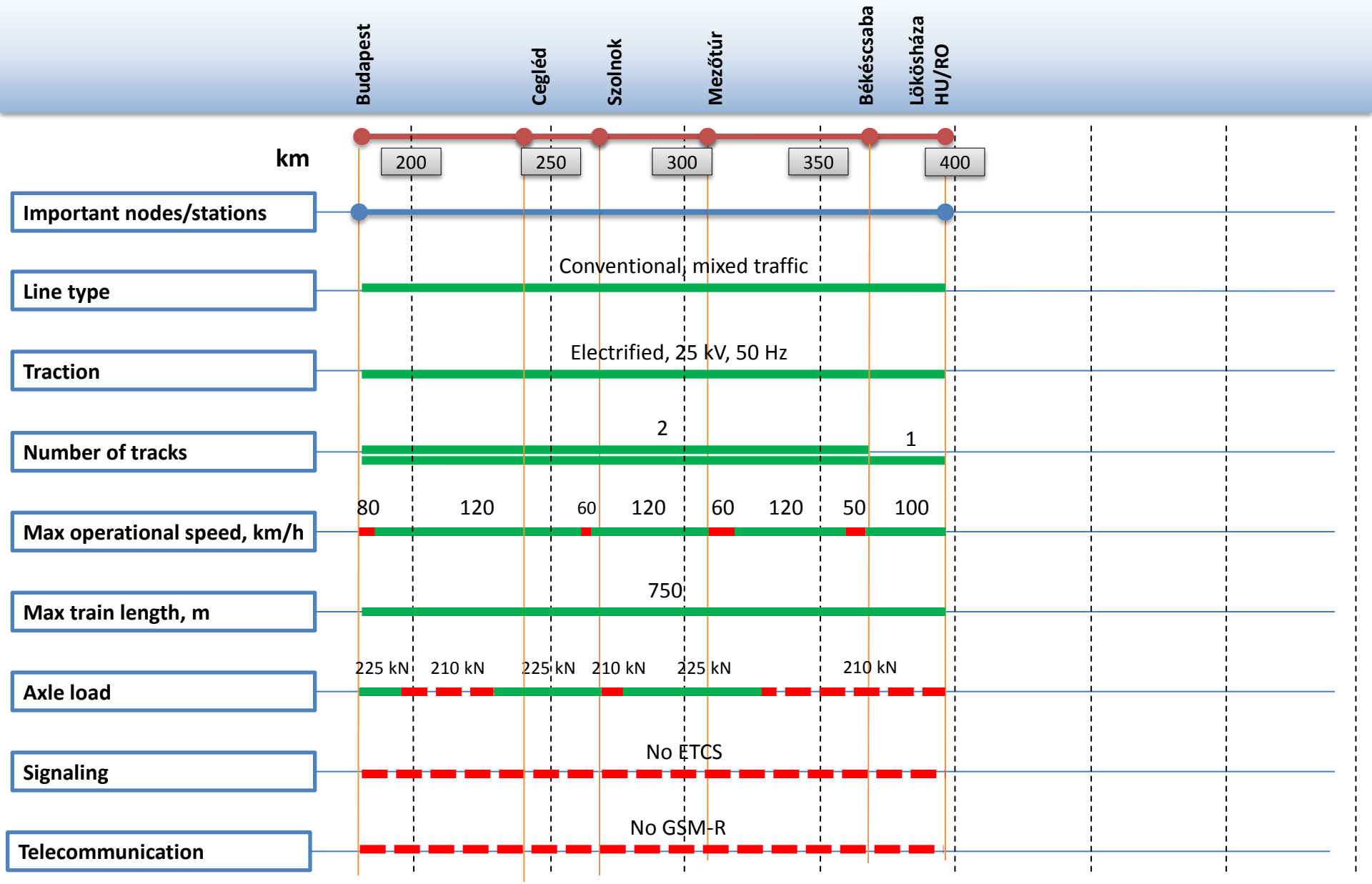
Fulfilment of TEN-T Technical Parameters

Country: Hungary Mode: Rail Status: 2013



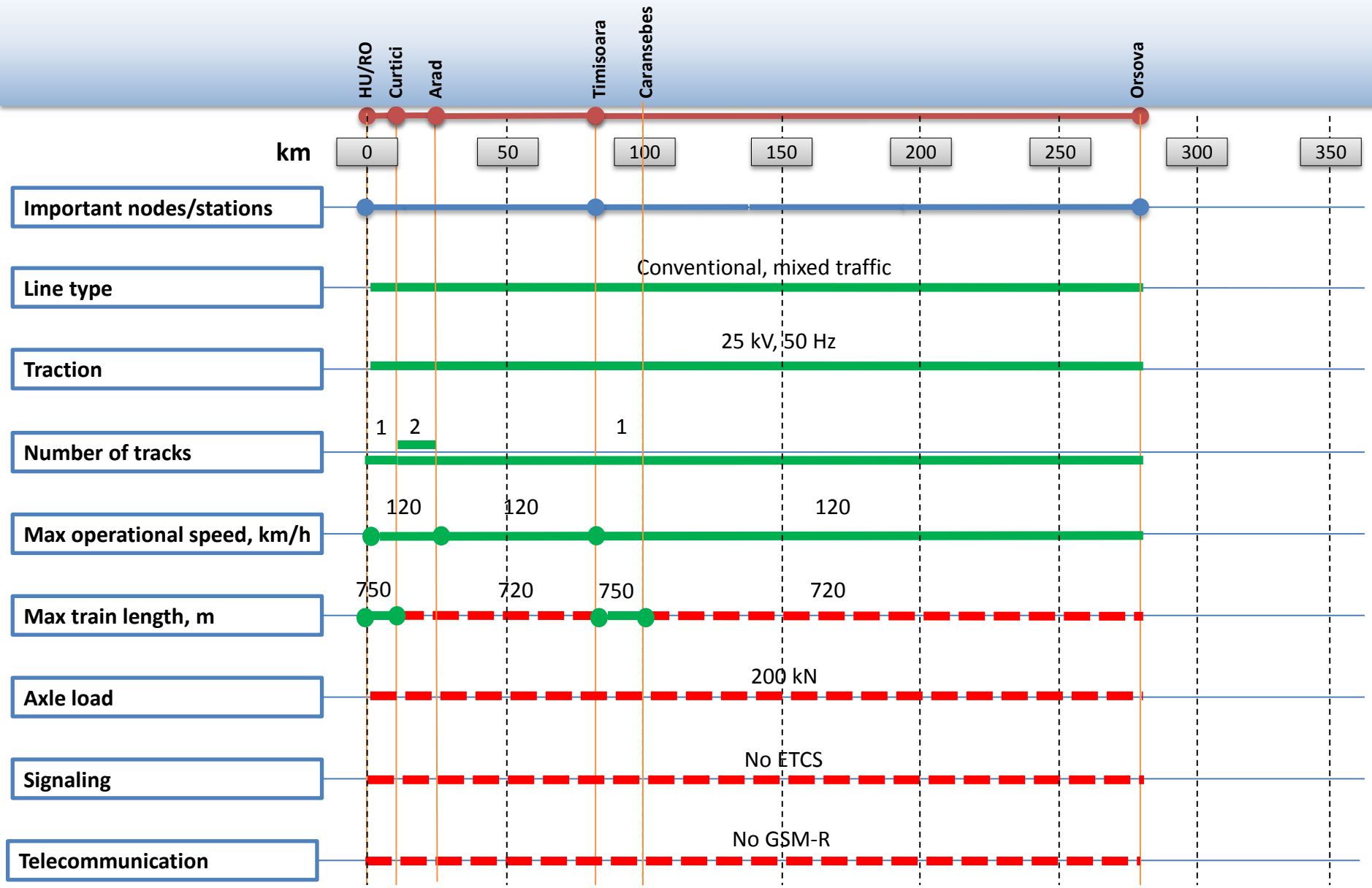
Fulfilment of TEN-T Technical Parameters

Country: Hungary Mode: Rail Status: 2013



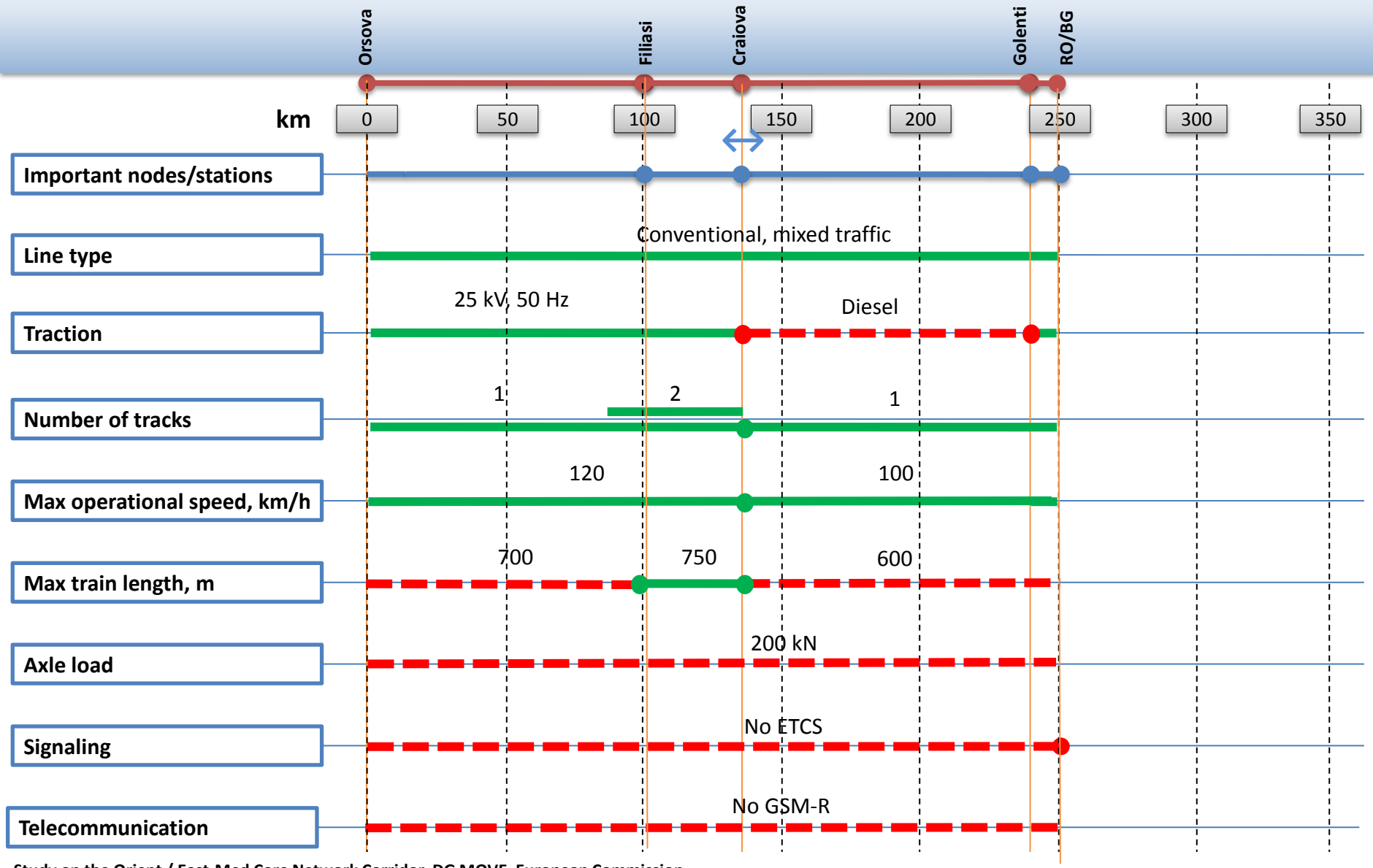
Fulfilment of TEN-T Technical Parameters

Country: Romania Mode: Rail Status: 2013



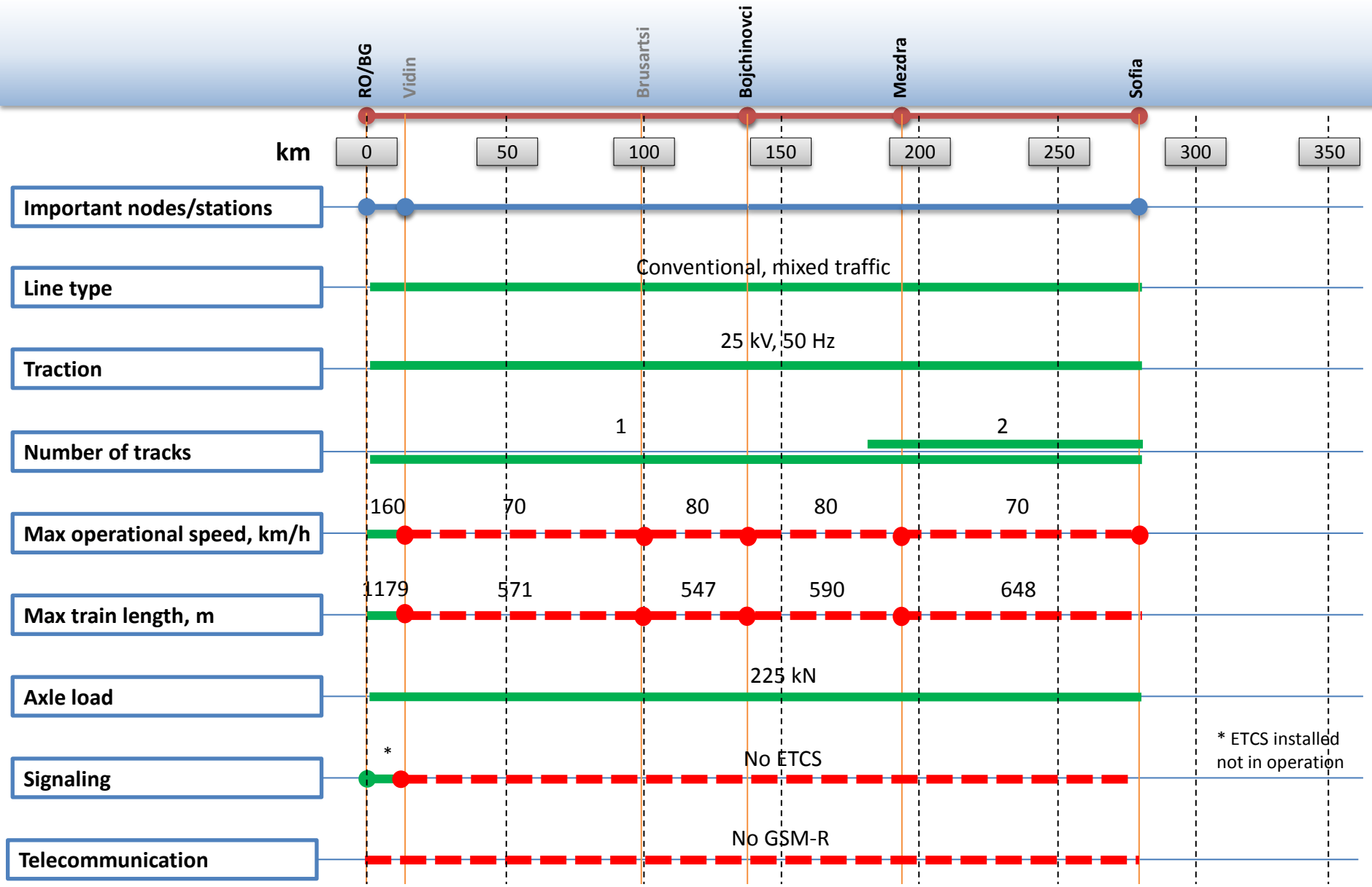
Fulfilment of TEN-T Technical Parameters

Country: Romania Mode: Rail Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Rail Status: 2013



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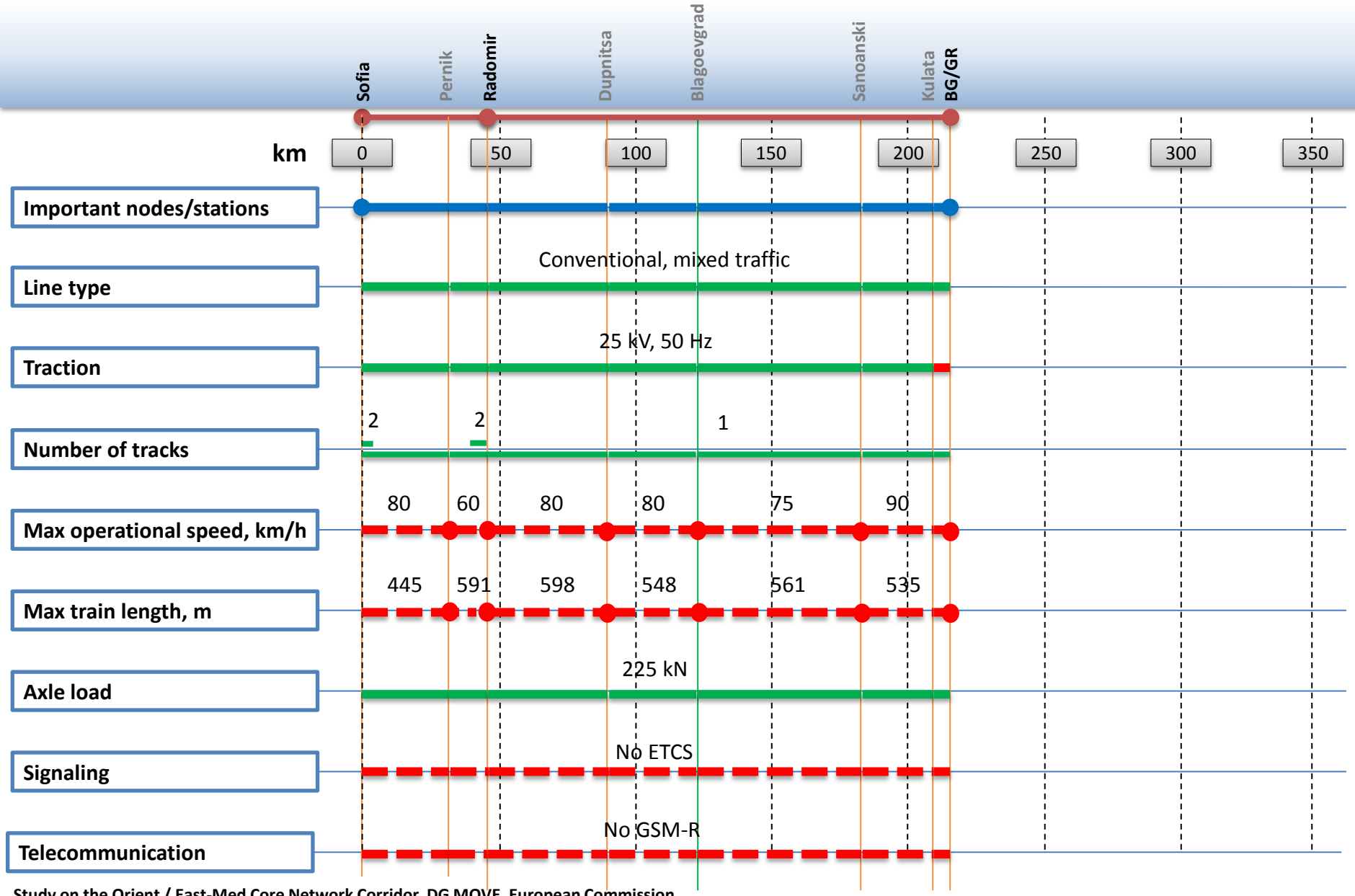
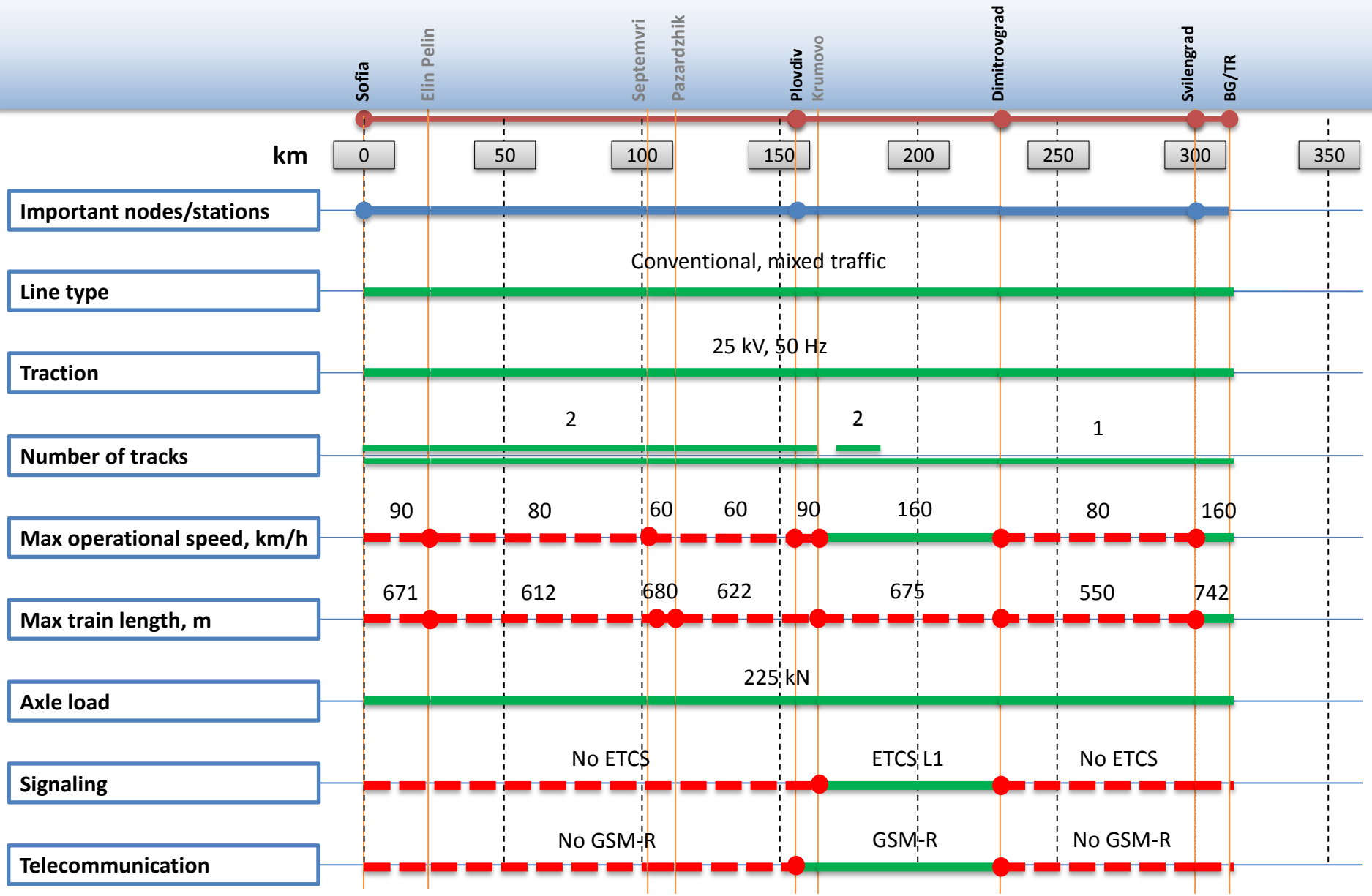
Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Rail Status: 2013



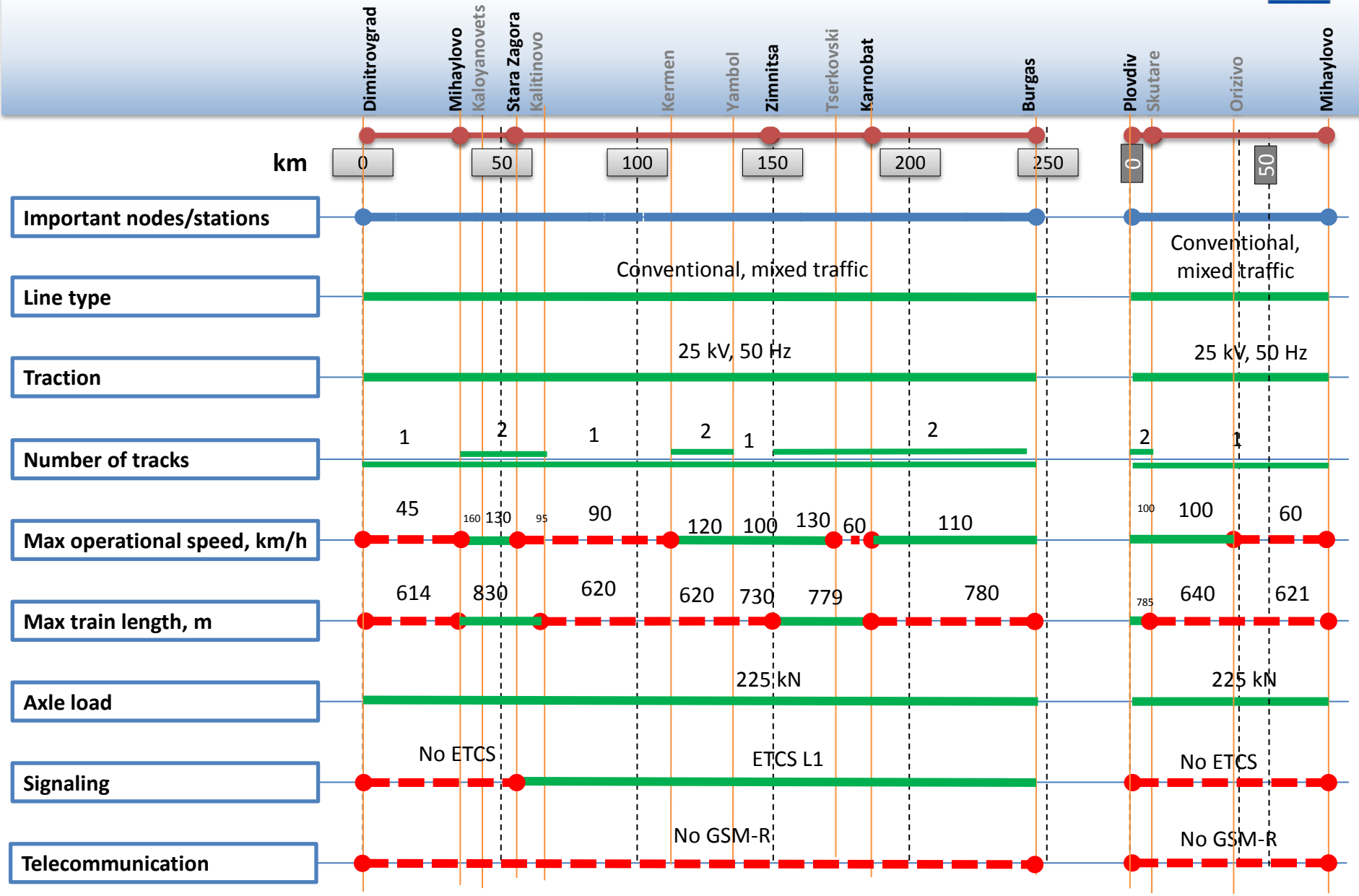
Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Rail Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Rail Status: 2013



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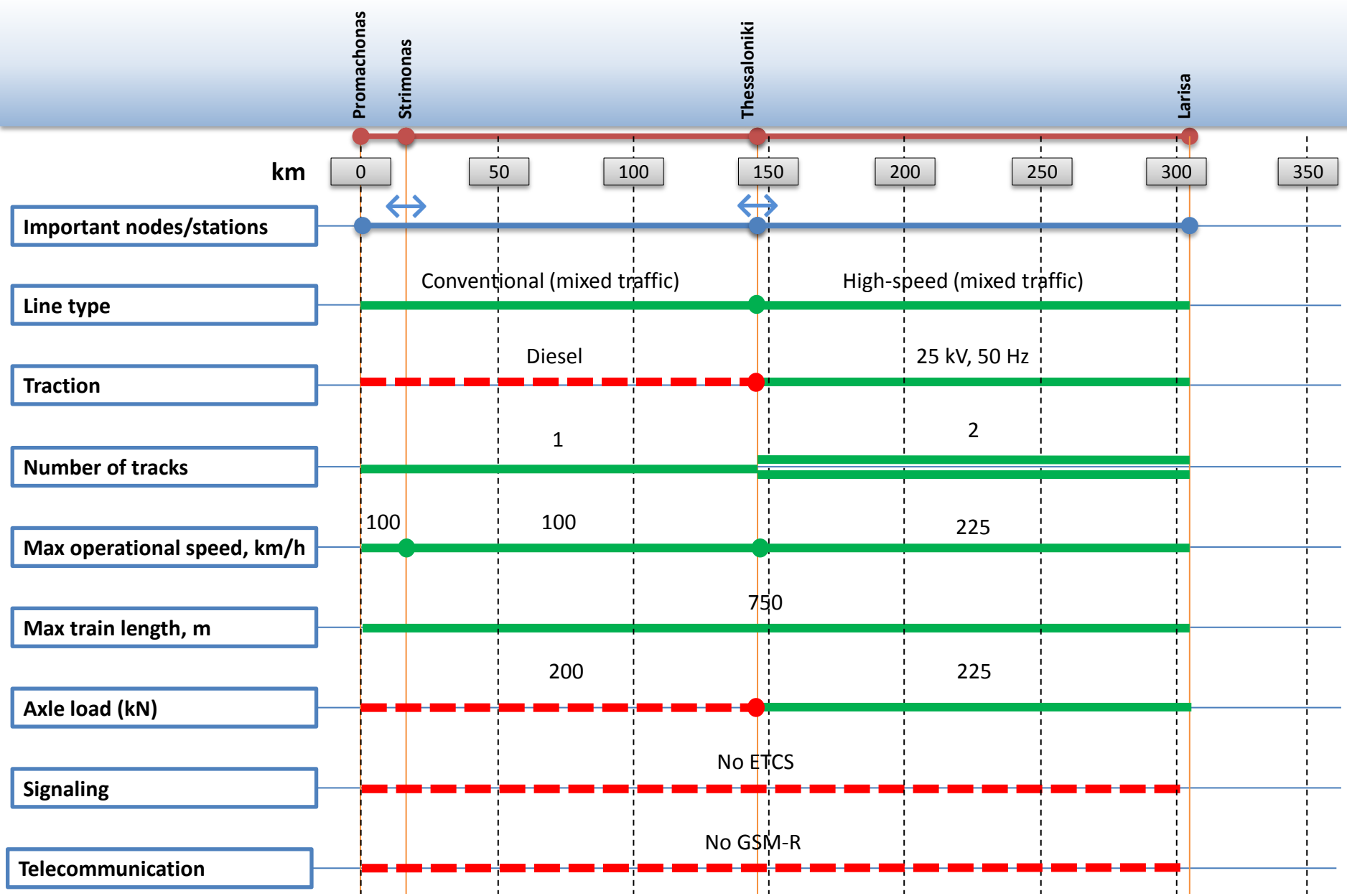
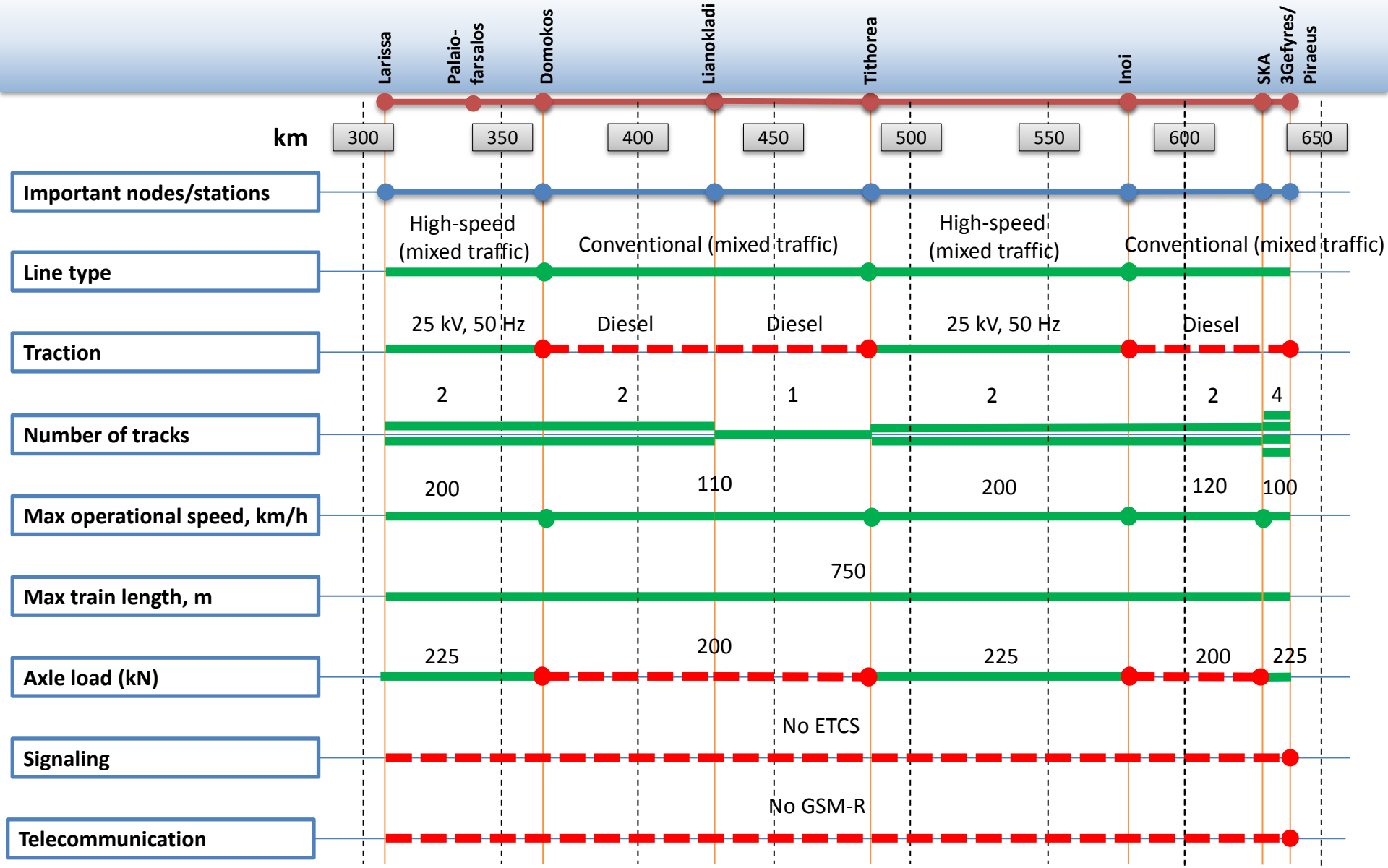
Fulfilment of TEN-T Technical Parameters

Country: Greece Mode: Rail Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Greece Mode: Rail Status: 2013



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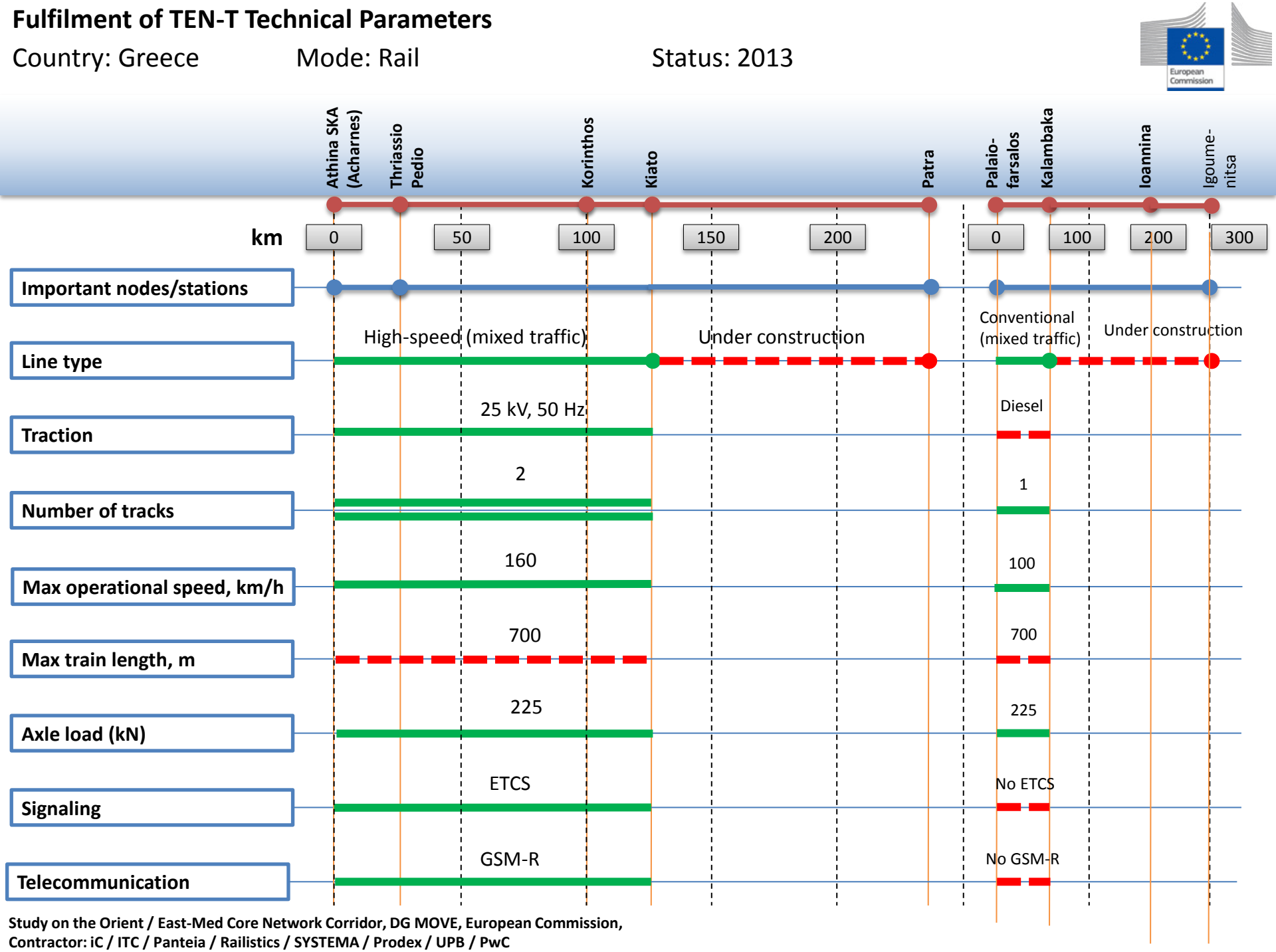
Fulfilment of TEN-T Technical Parameters

Country: Greece Mode: Rail Status: 2013



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Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

Study on the Orient / East Med Core Network Corridor – Annex 1b

Fulfilment of TEN-T Technical Parameters

Compliance Test IWW (Status 2013)

5 December 2014

Legend

Compliance with TEN-T regulation 1315/2013

Technical parameter is compliant

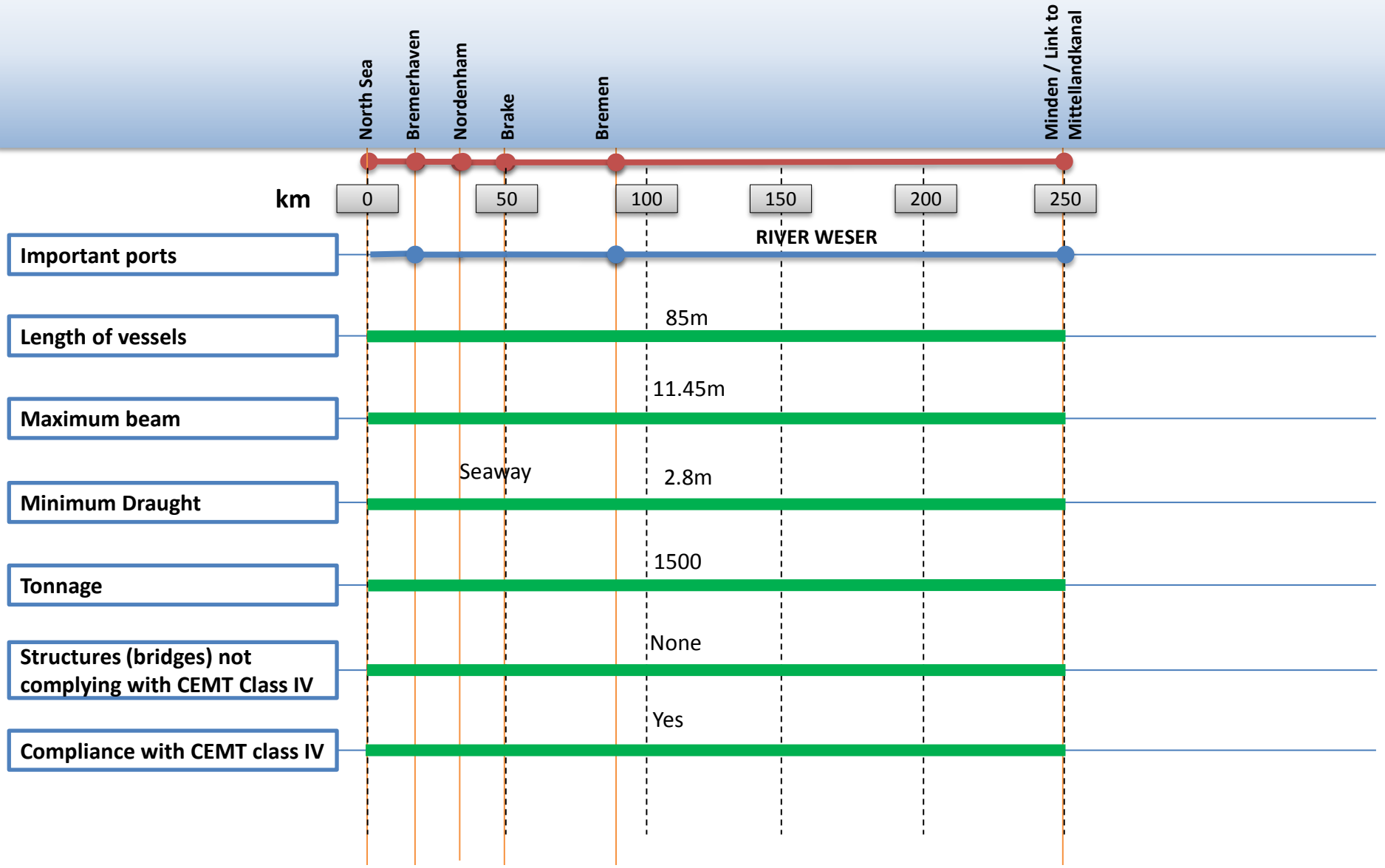
Technical parameter is not compliant

Technical Requirements for IWW according to Art 15 (*CEMT Class IV)*

- Length of vessels and barges: >80-85m
- Beam: >9.50m
- Draught: >2.50m
- Tonnage: >1000-1500t
- Height under bridges: >5.25/7.00m

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: IWW Status: 2013



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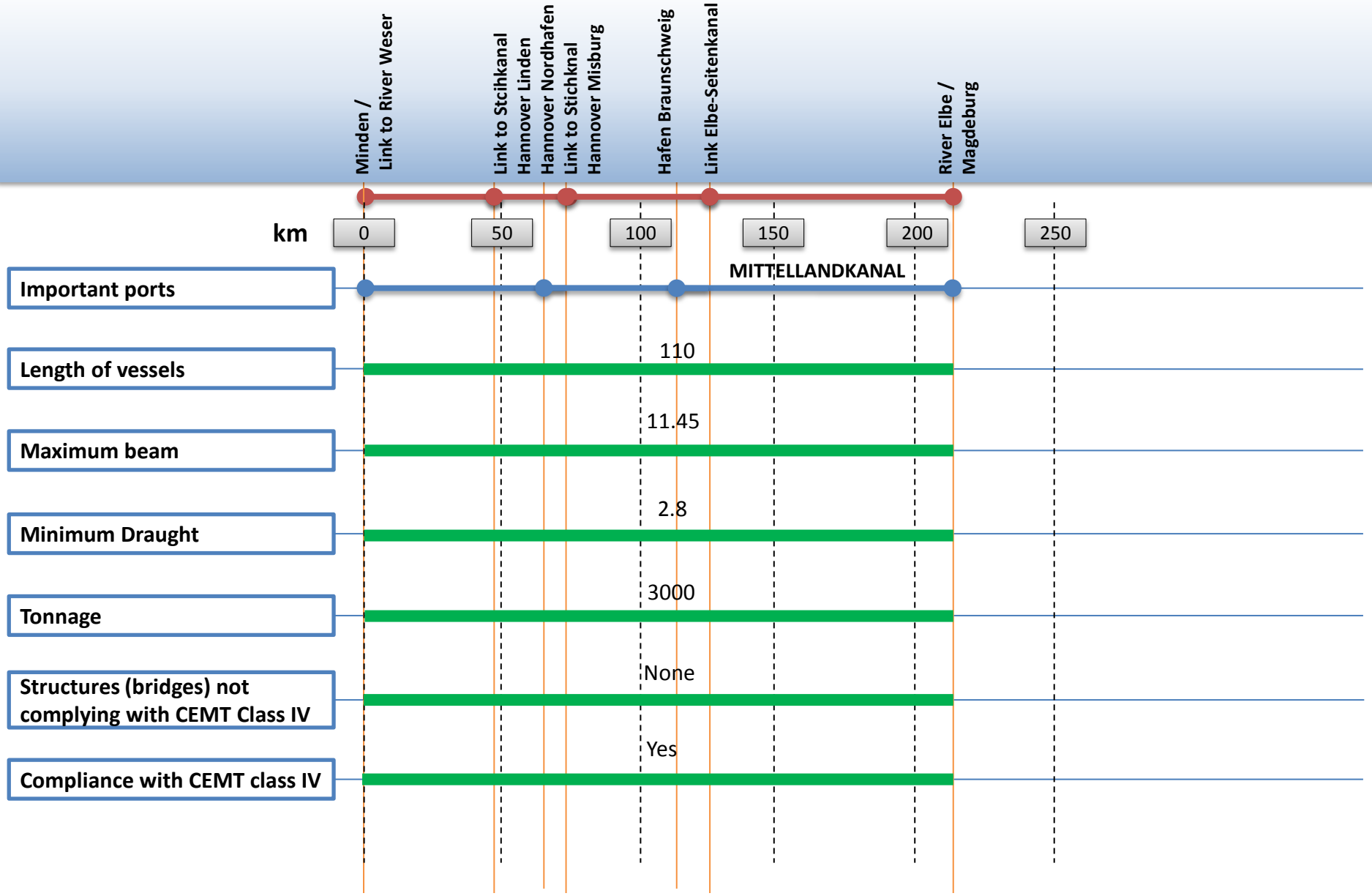
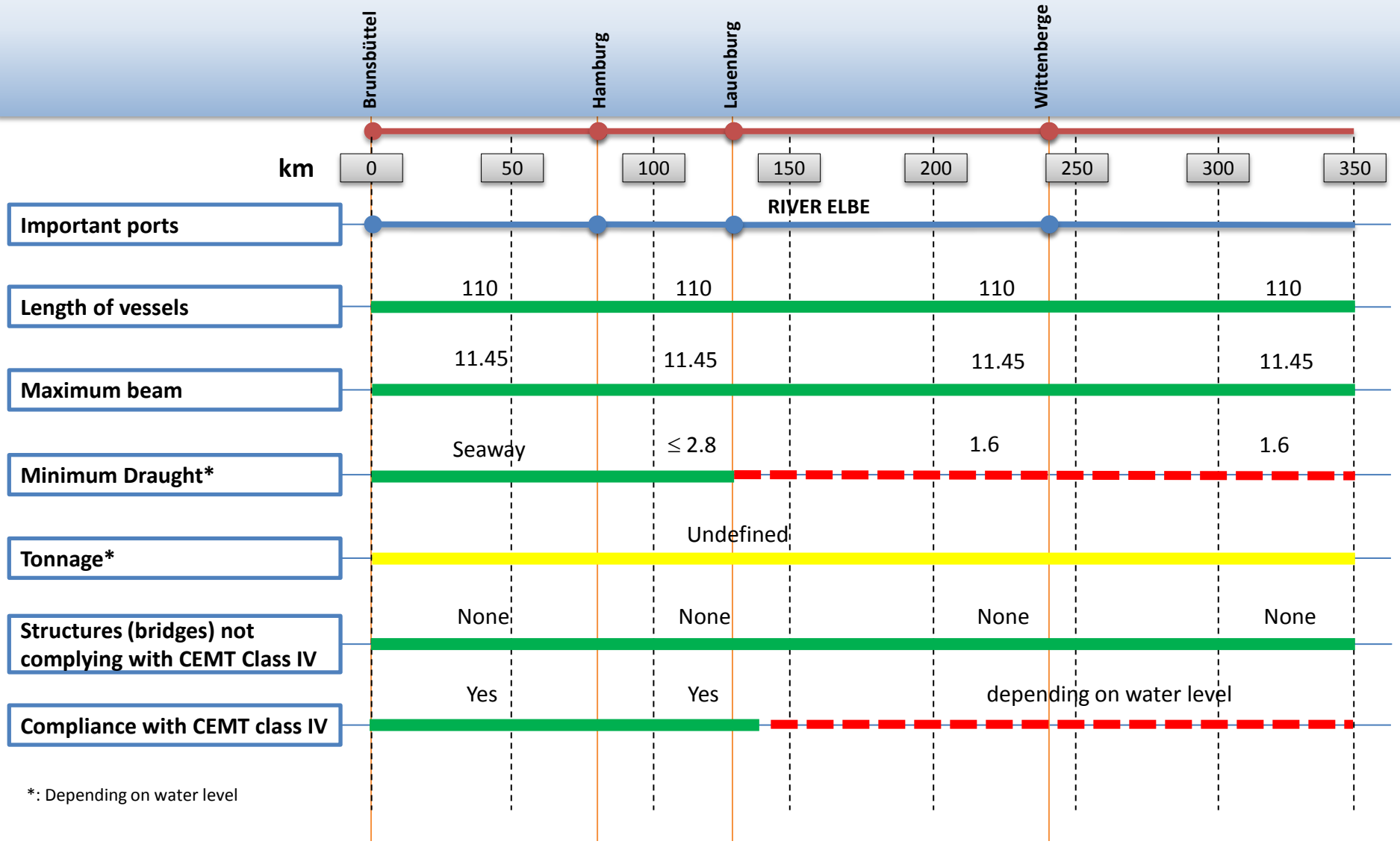
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: IWW Status: 2013



Fulfilment of TEN-T Technical Parameters

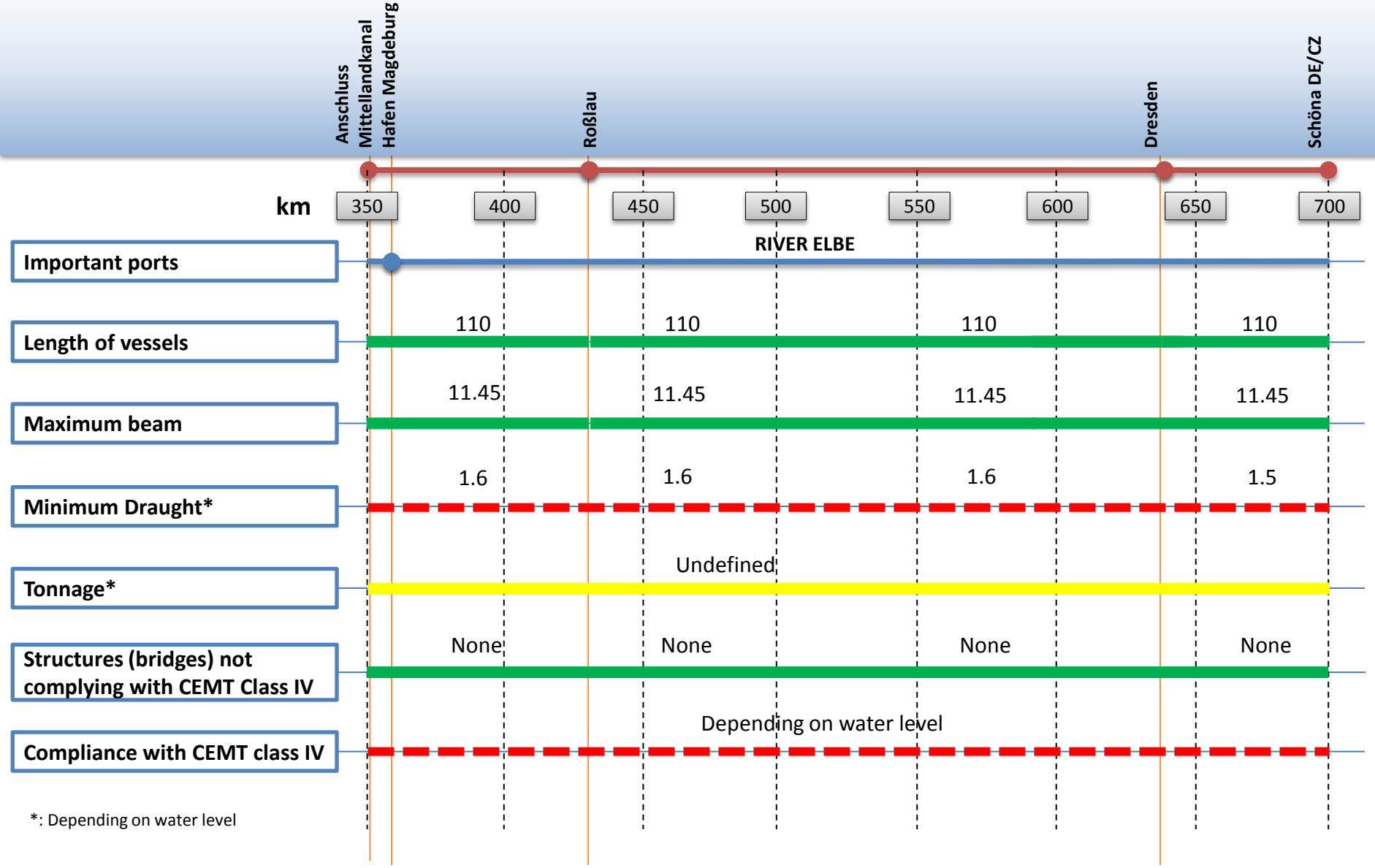
Country: Germany Mode: IWW Status: 2013



*: Depending on water level

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: IWW Status: 2013



*: Depending on water level

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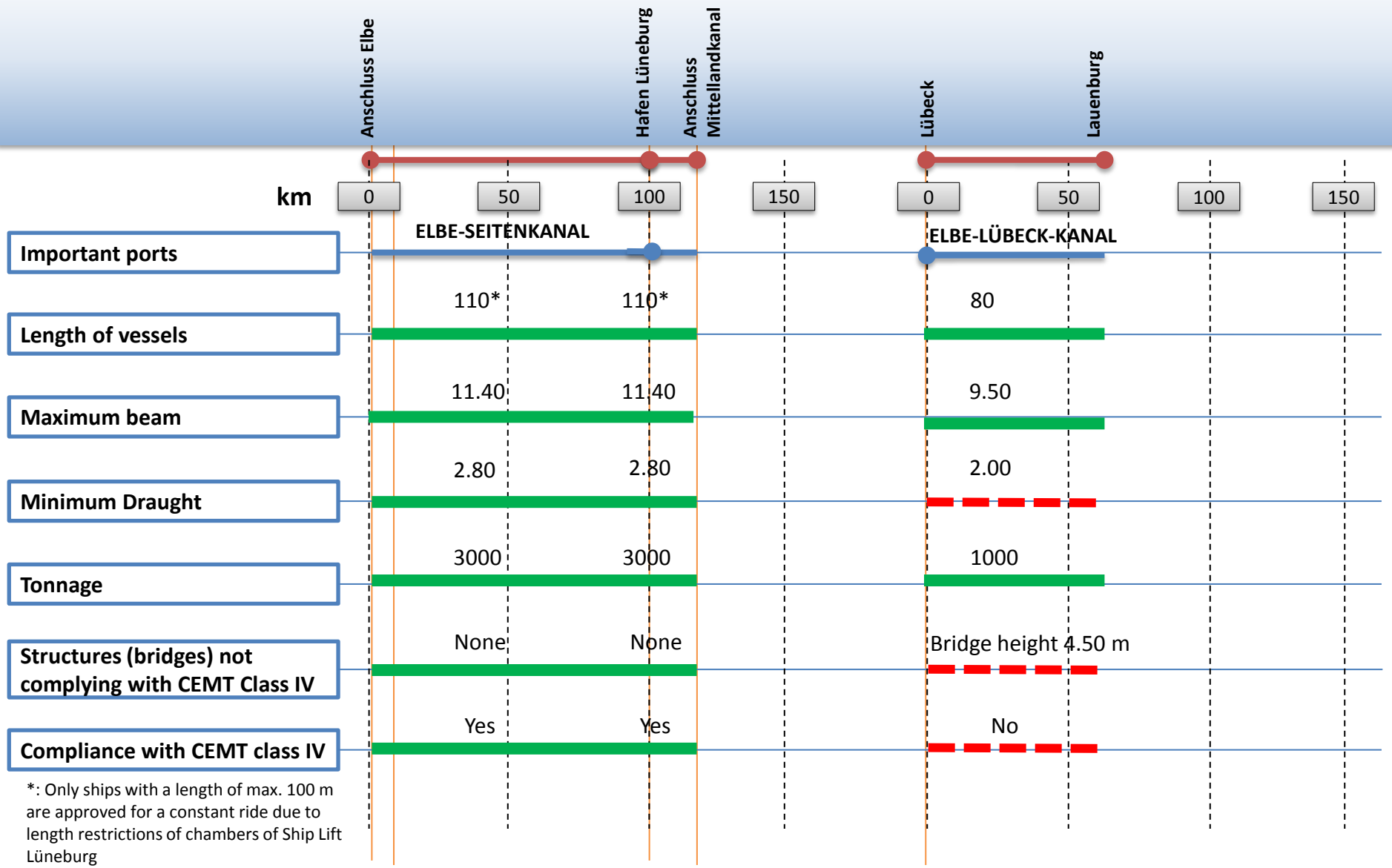
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: IWW Status: 2013



*: Only ships with a length of max. 100 m are approved for a constant ride due to length restrictions of chambers of Ship Lift Lüneburg

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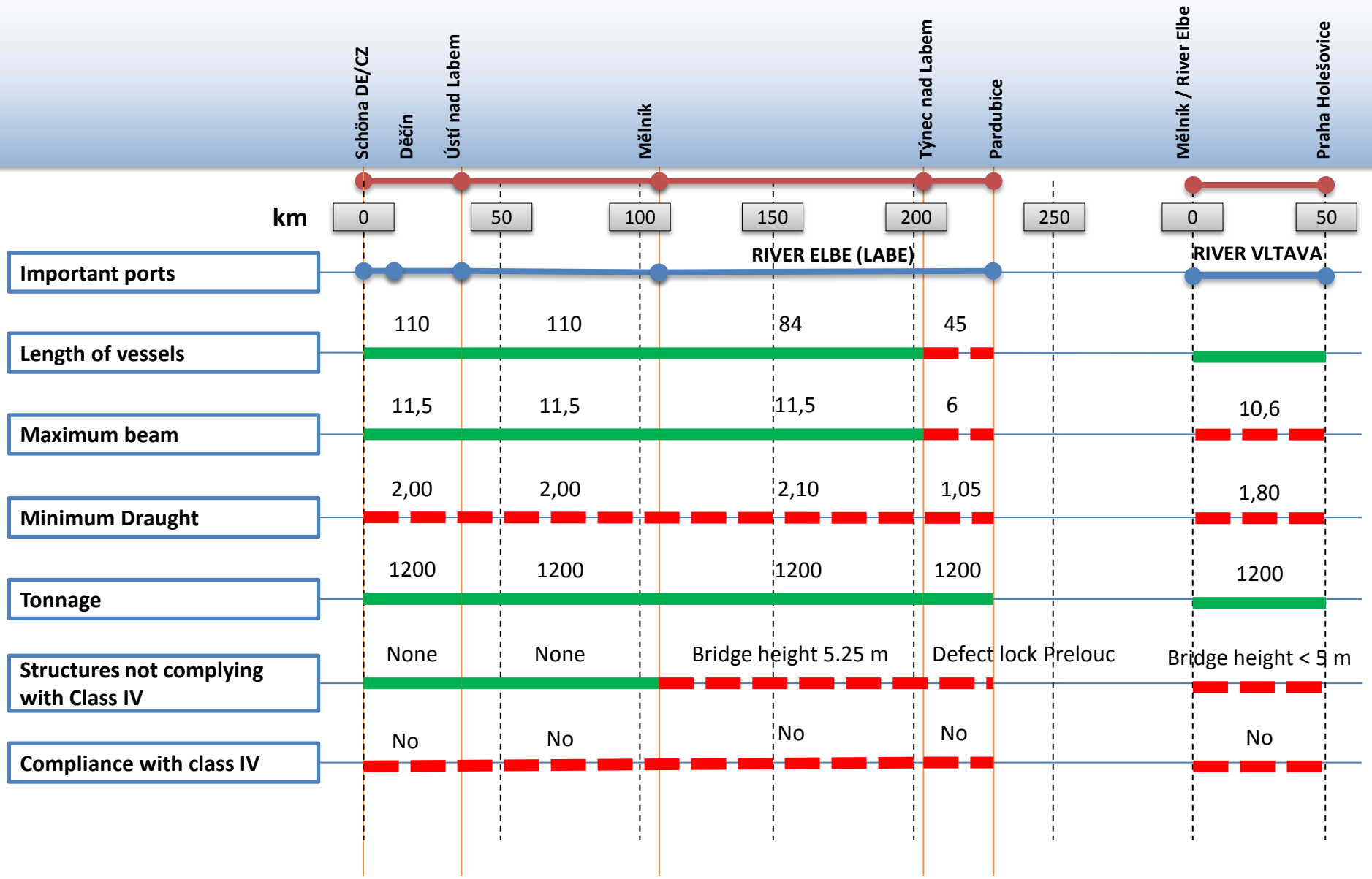
Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: IWW Status: 2013



Study on the Orient / East Med Core Network Corridor – Annex 1c

Fulfilment of TEN-T Technical Parameters

Compliance Test 2013 - Road

5 December 2014

Legend

Compliance with TEN-T regulation 1315/2013

Technical parameter is compliant

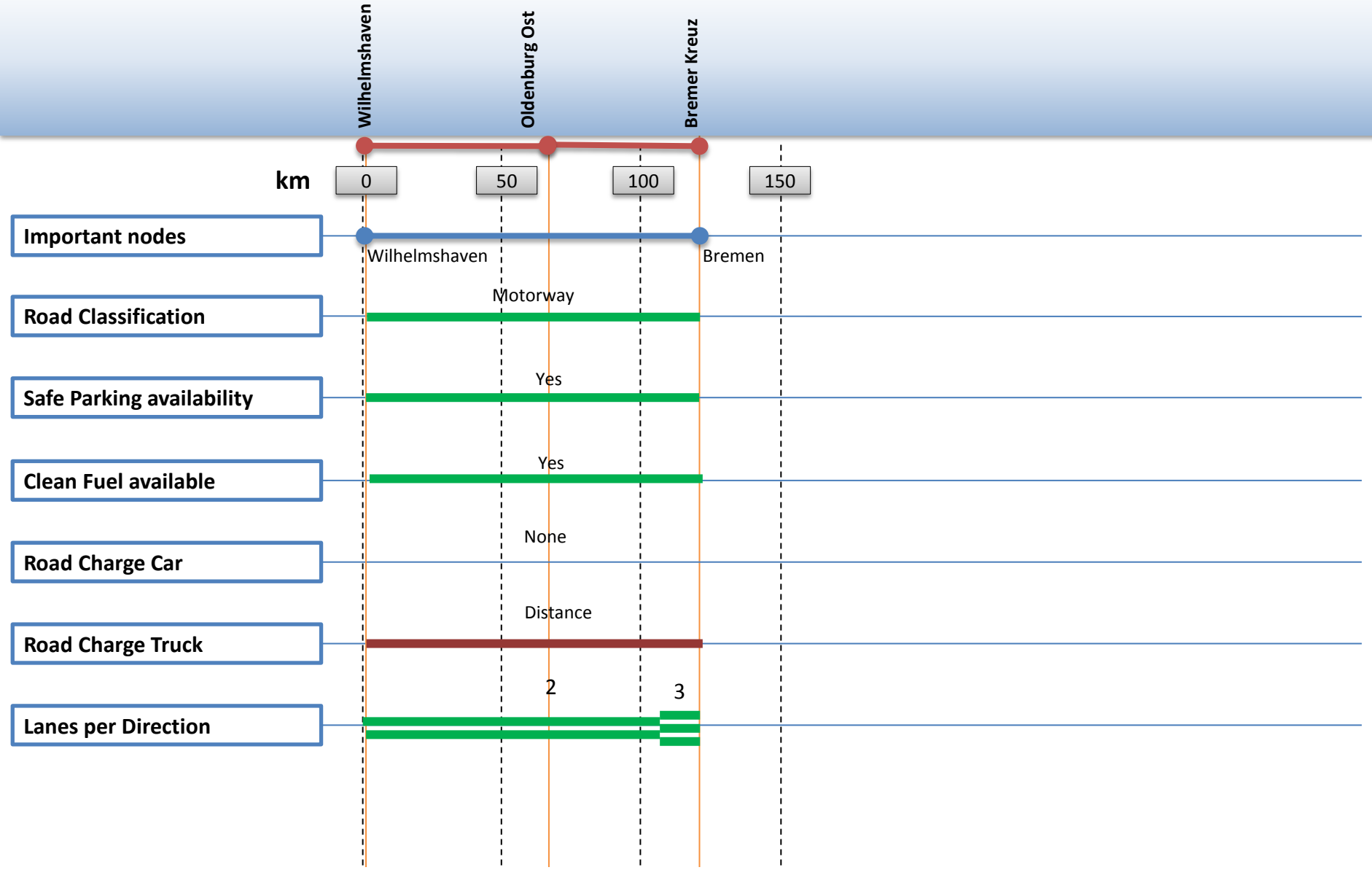
Technical parameter is not compliant

Technical Parameters for Road acc. Art 17 pp.

- Roads have to be either an express road or a motorway, *by 2030*
- Sufficient parking areas, at least every 100 km, *by 2030*
- Availability of alternative clean fuels *by 2030*
- Use of tolling systems
- ITS and their interoperability with other systems

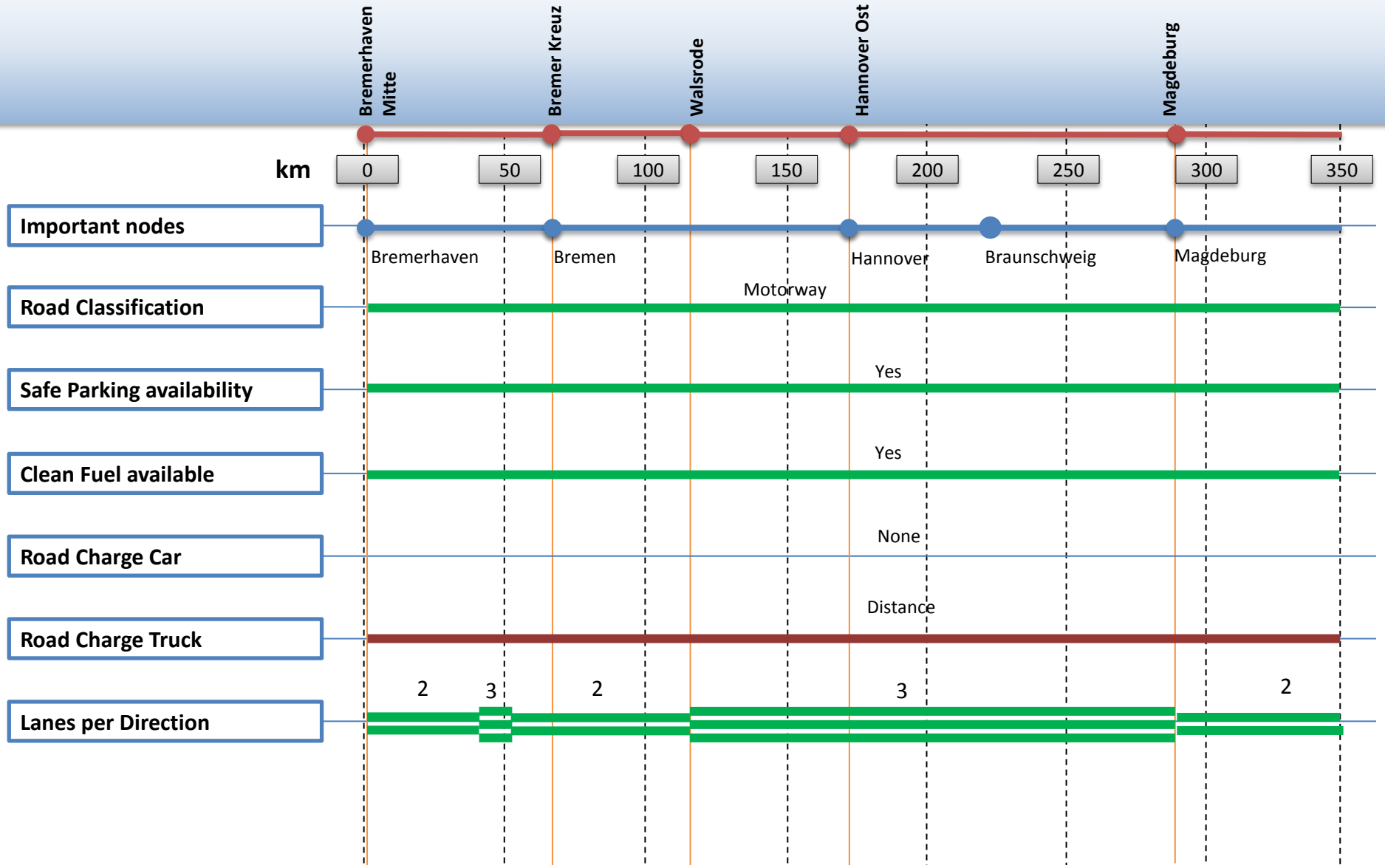
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Road Status: 2013



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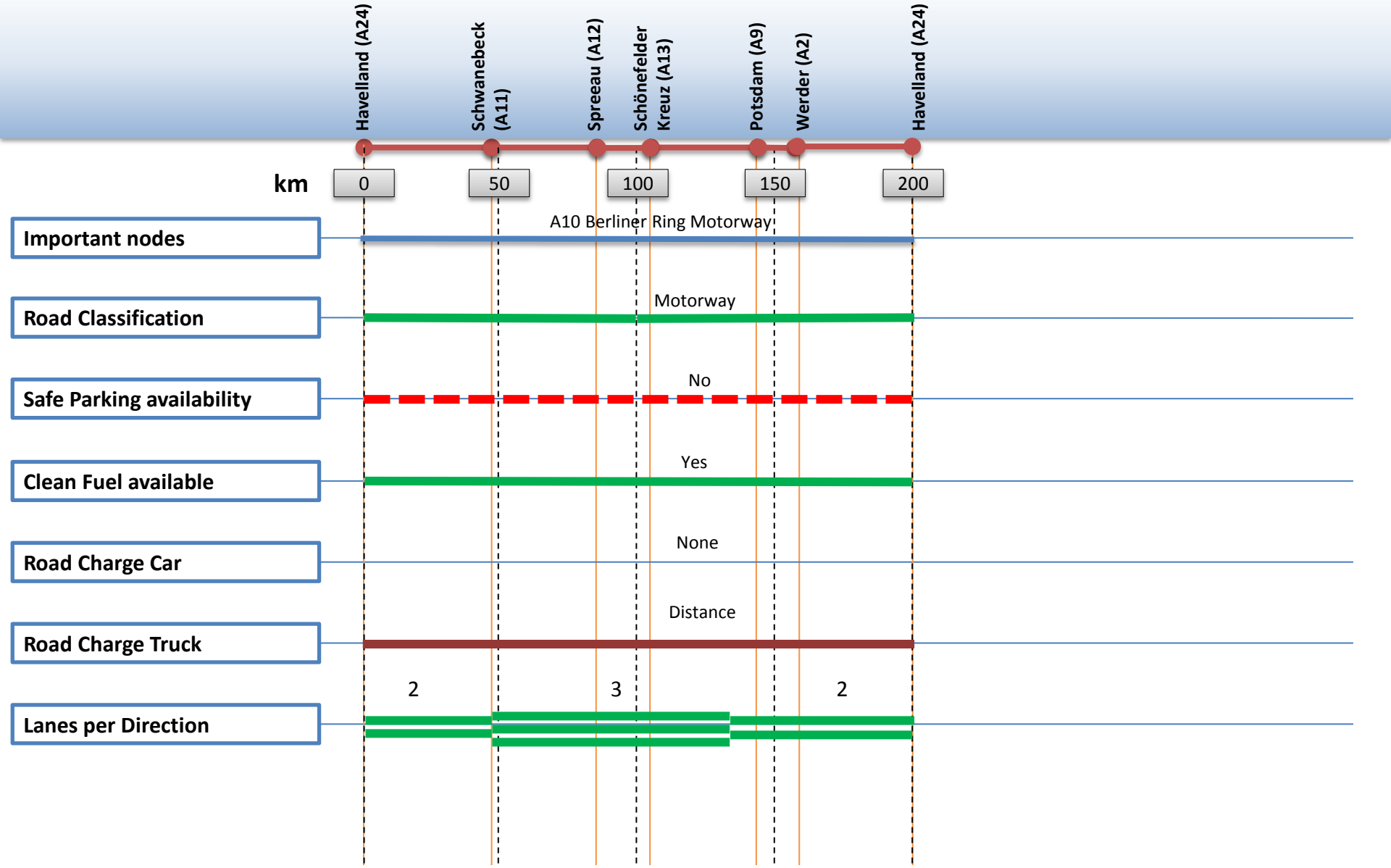
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

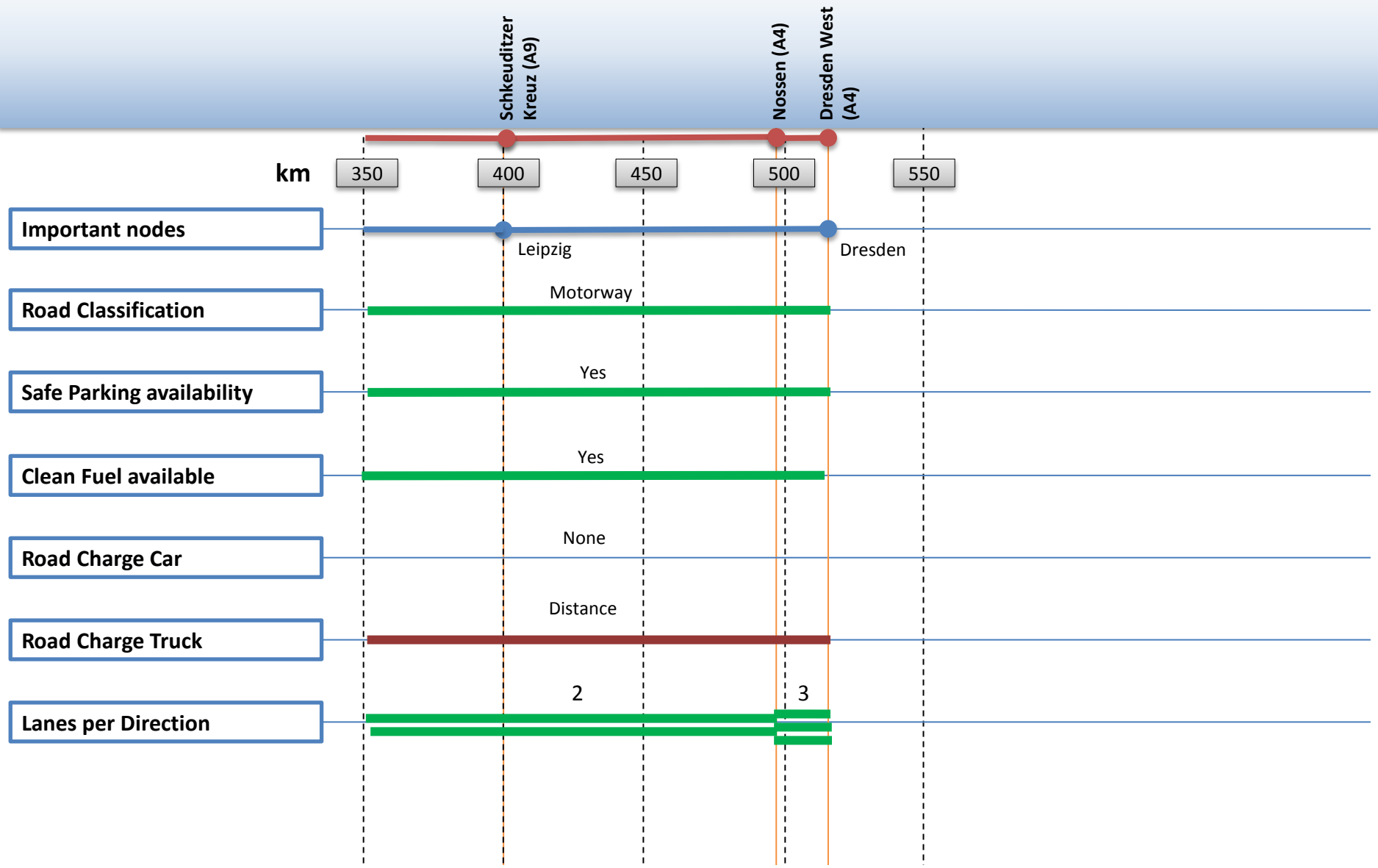
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Road Status: 2013



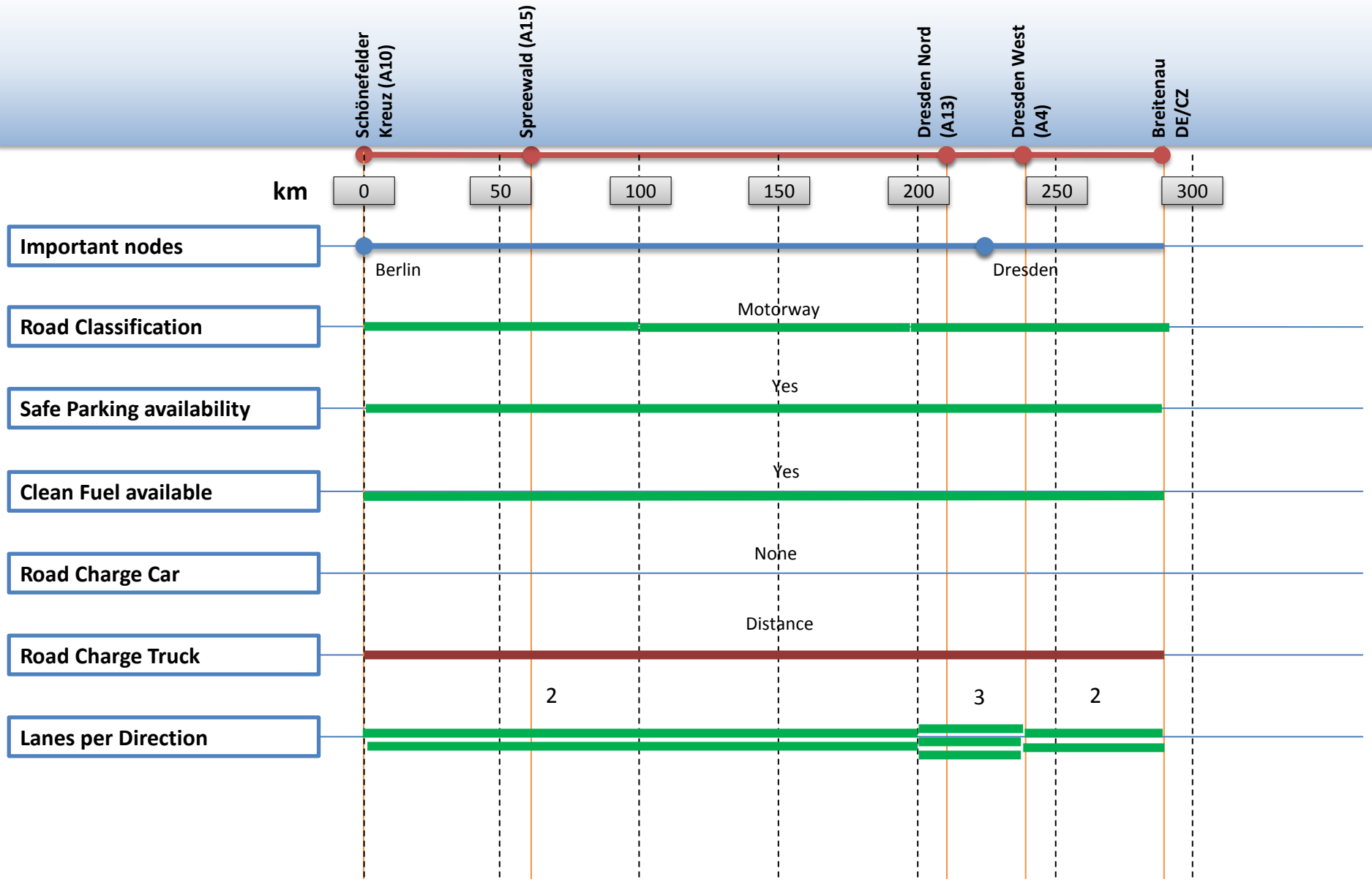
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Road Status: 2013



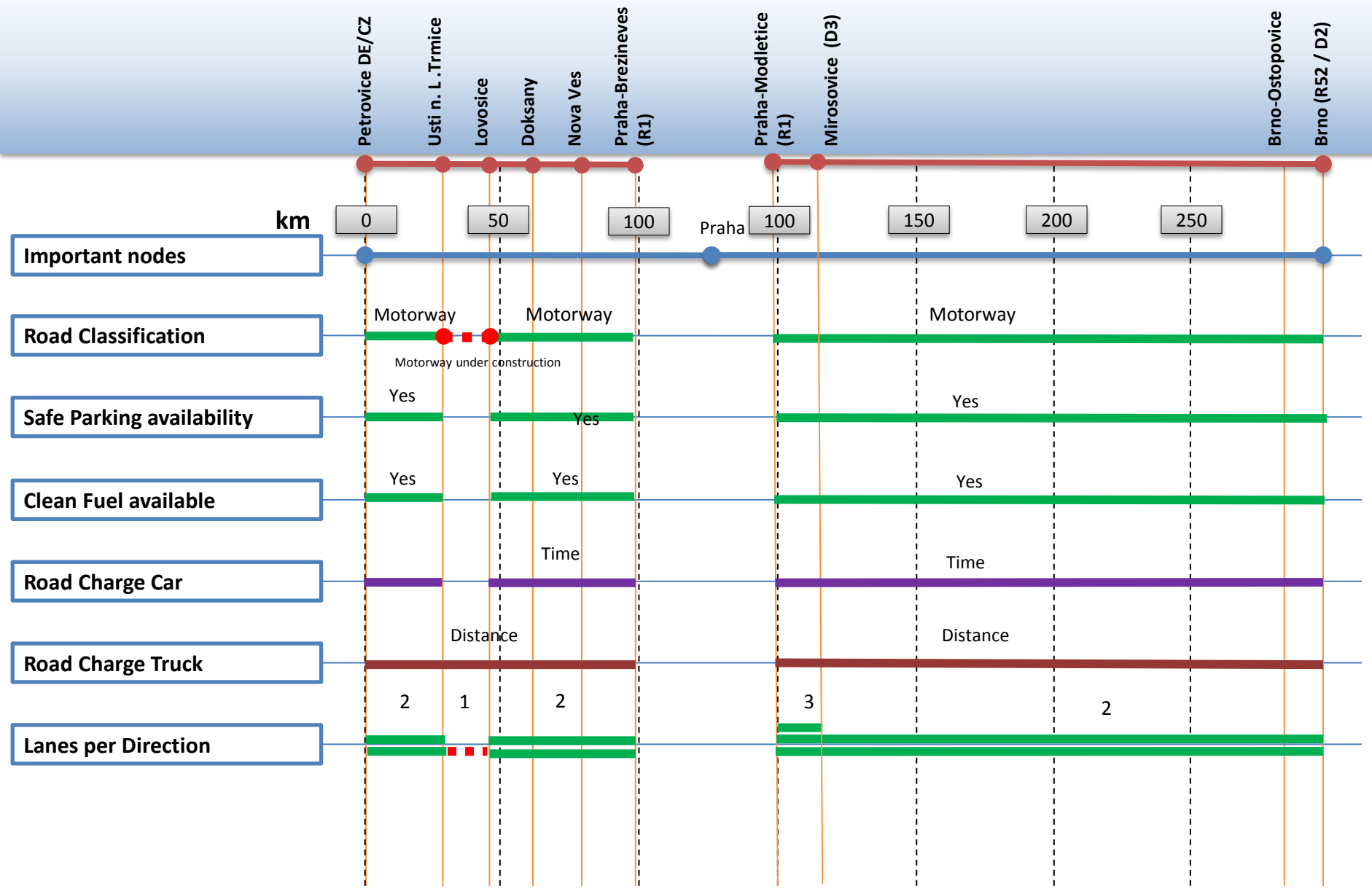
Fulfilment of TEN-T Technical Parameters

Country: Germany Mode: Road Status: 2013



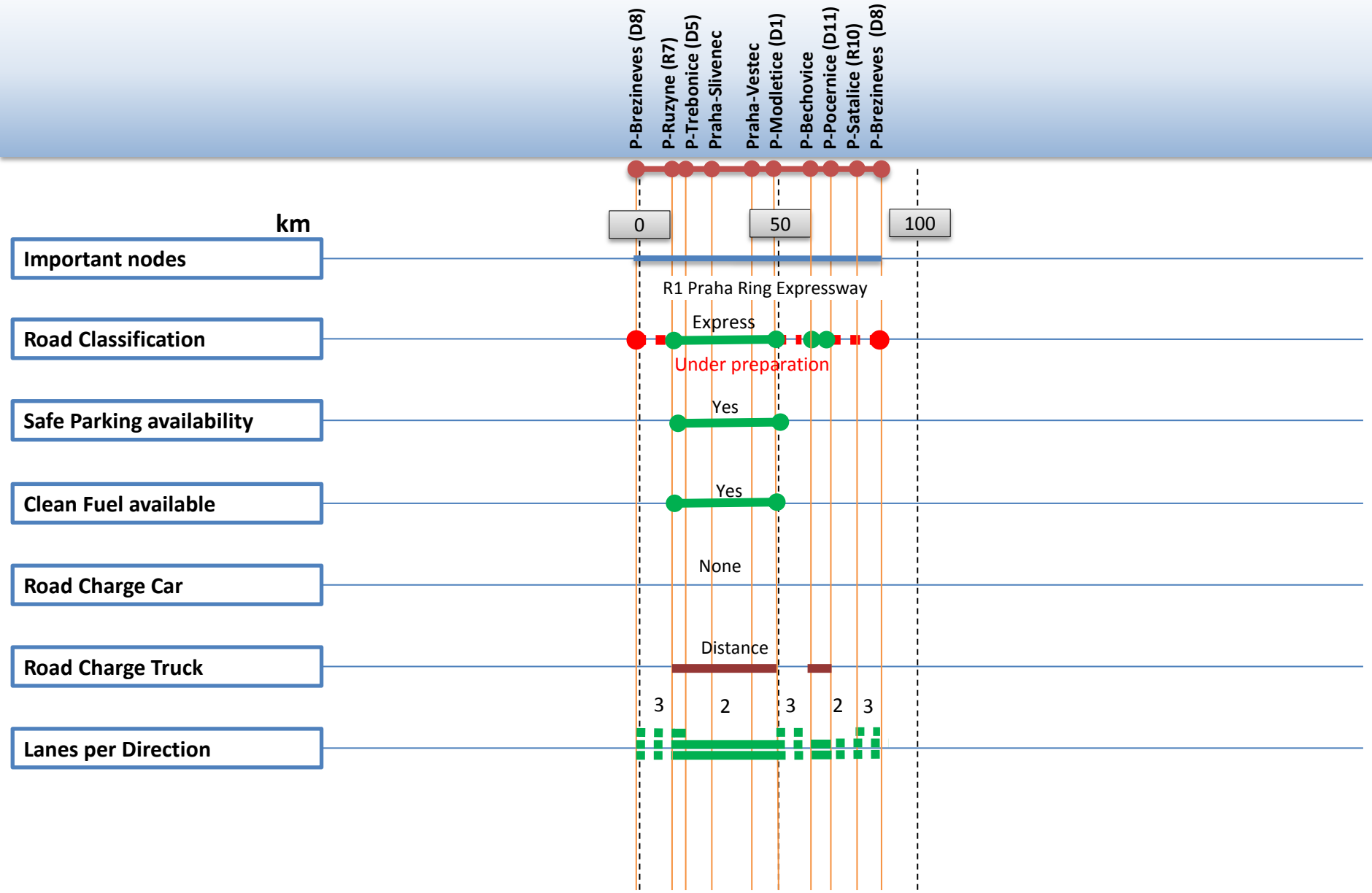
Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Road Status: 2013



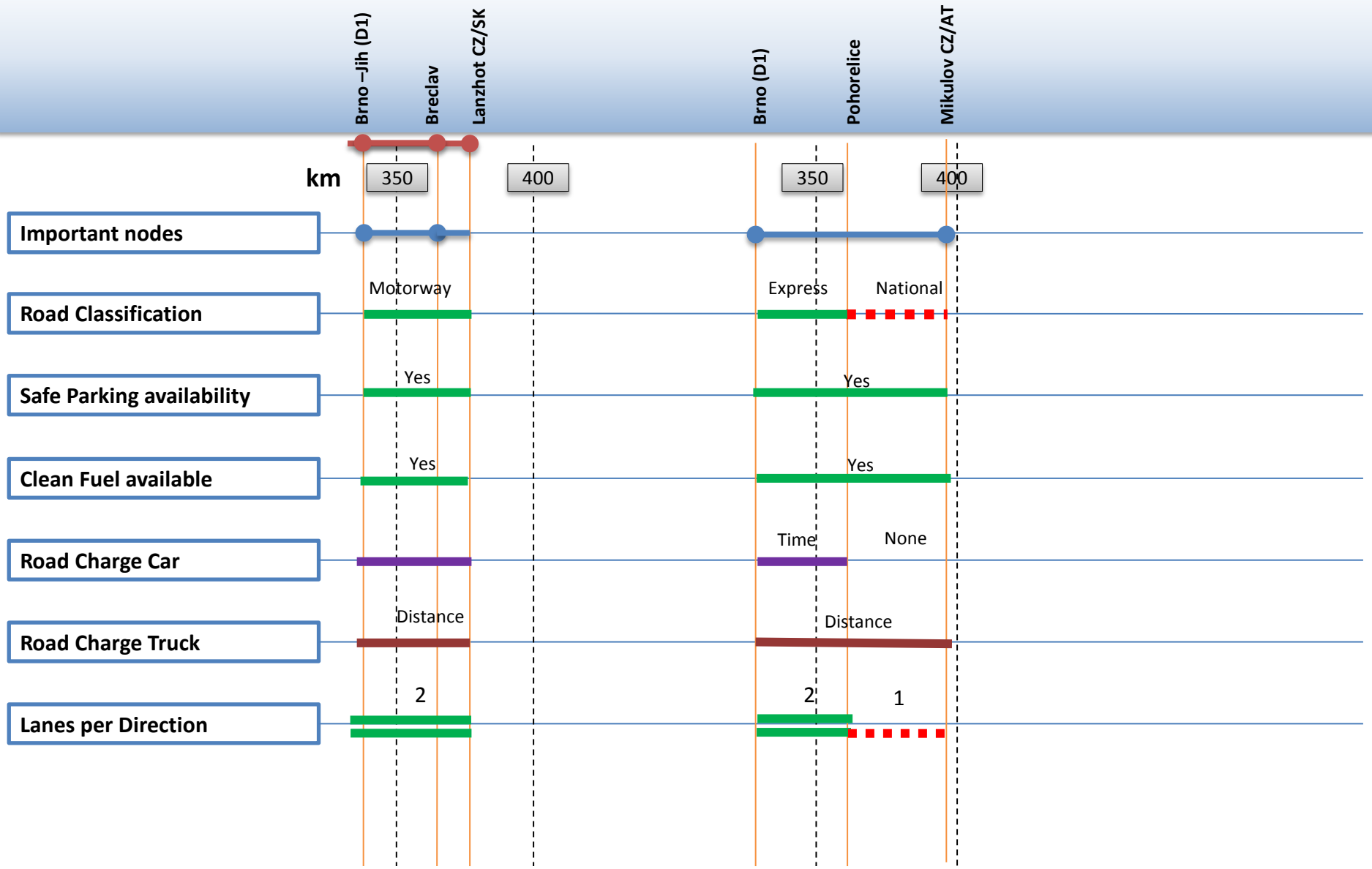
Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Czech Rep. Mode: Road Status: 2013

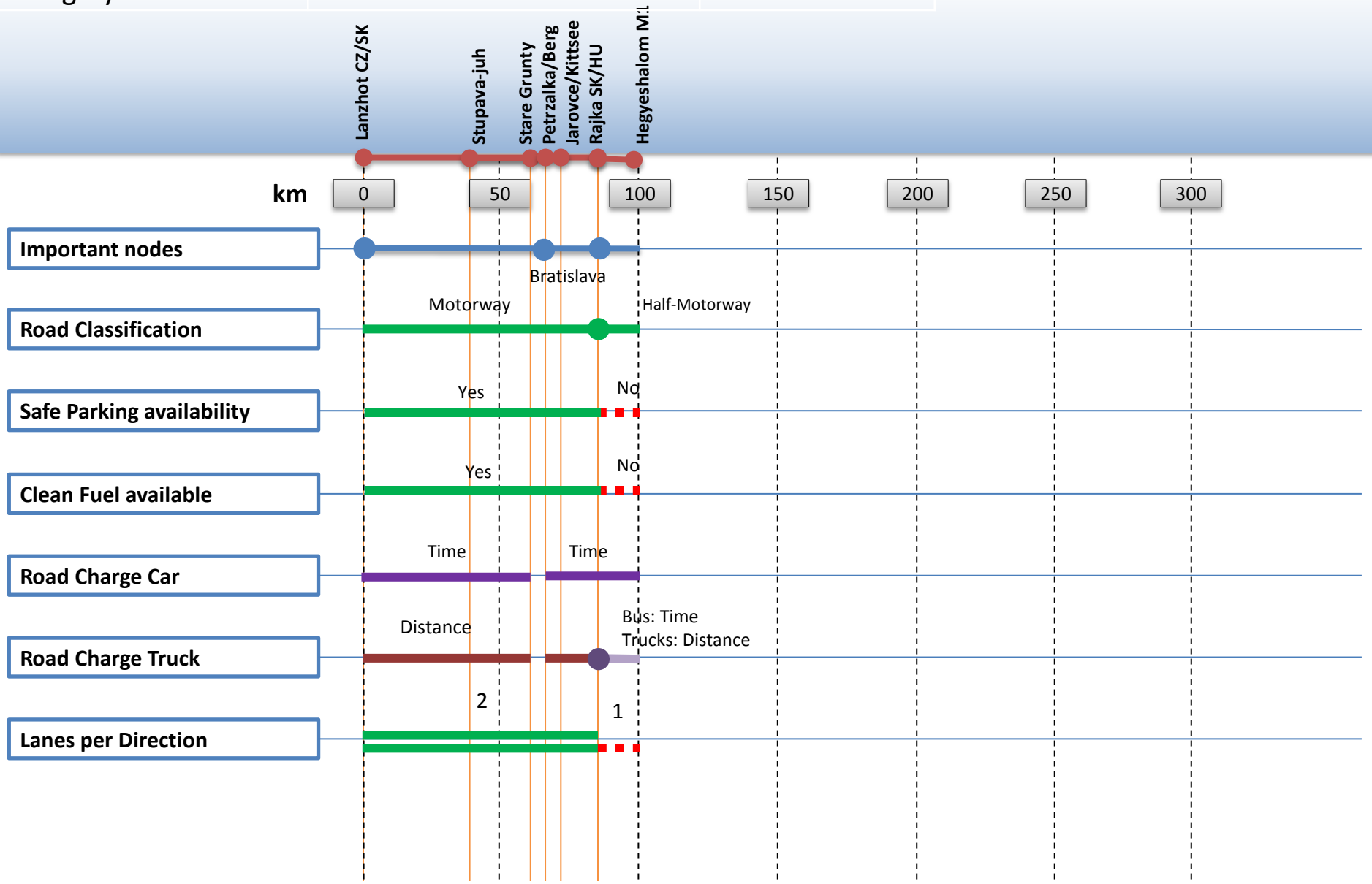


Fulfilment of TEN-T Technical Parameters

Country: Slovakia/ Hungary

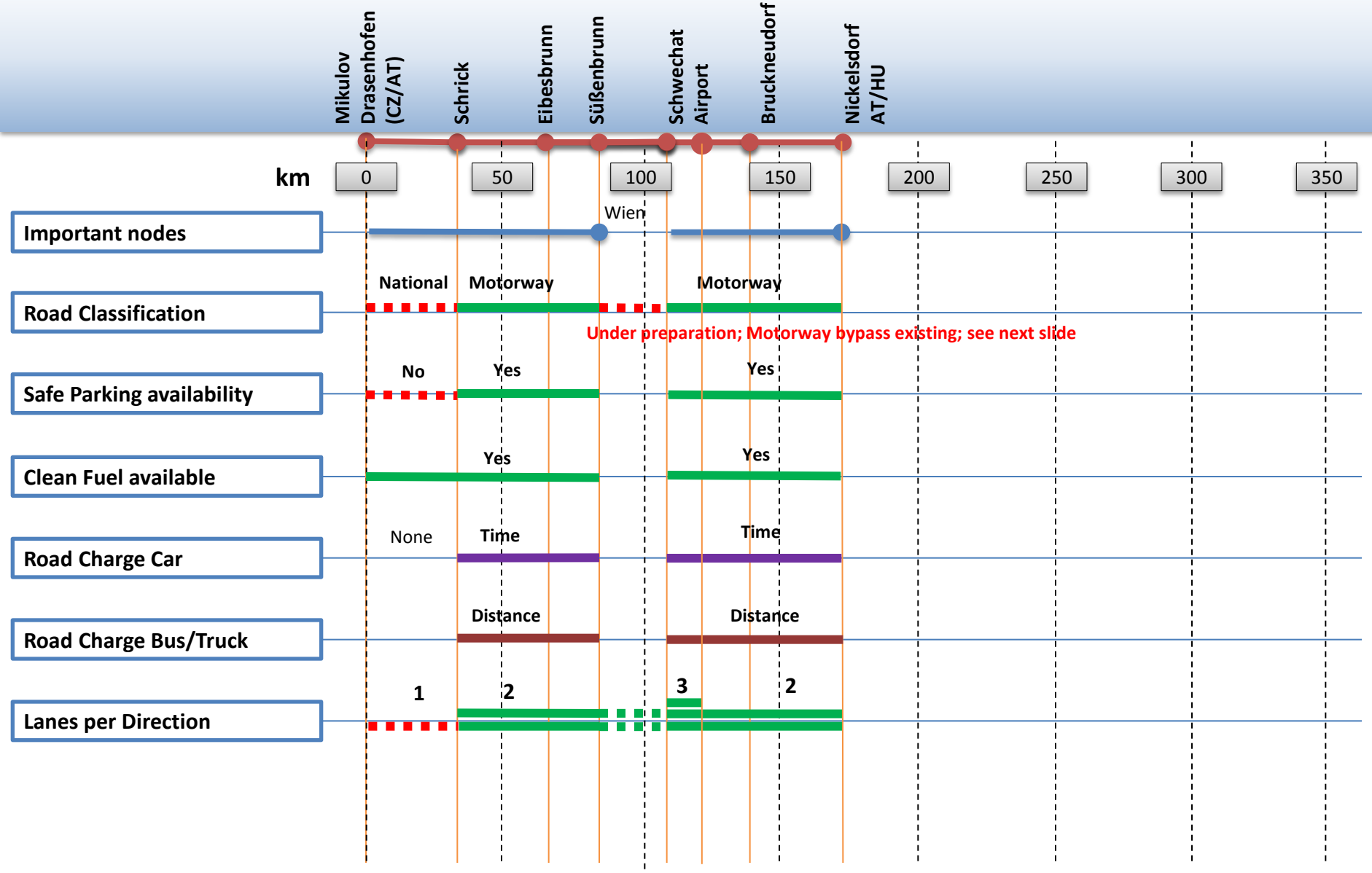
Mode: Road

Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Austria Mode: Road Status: 2013



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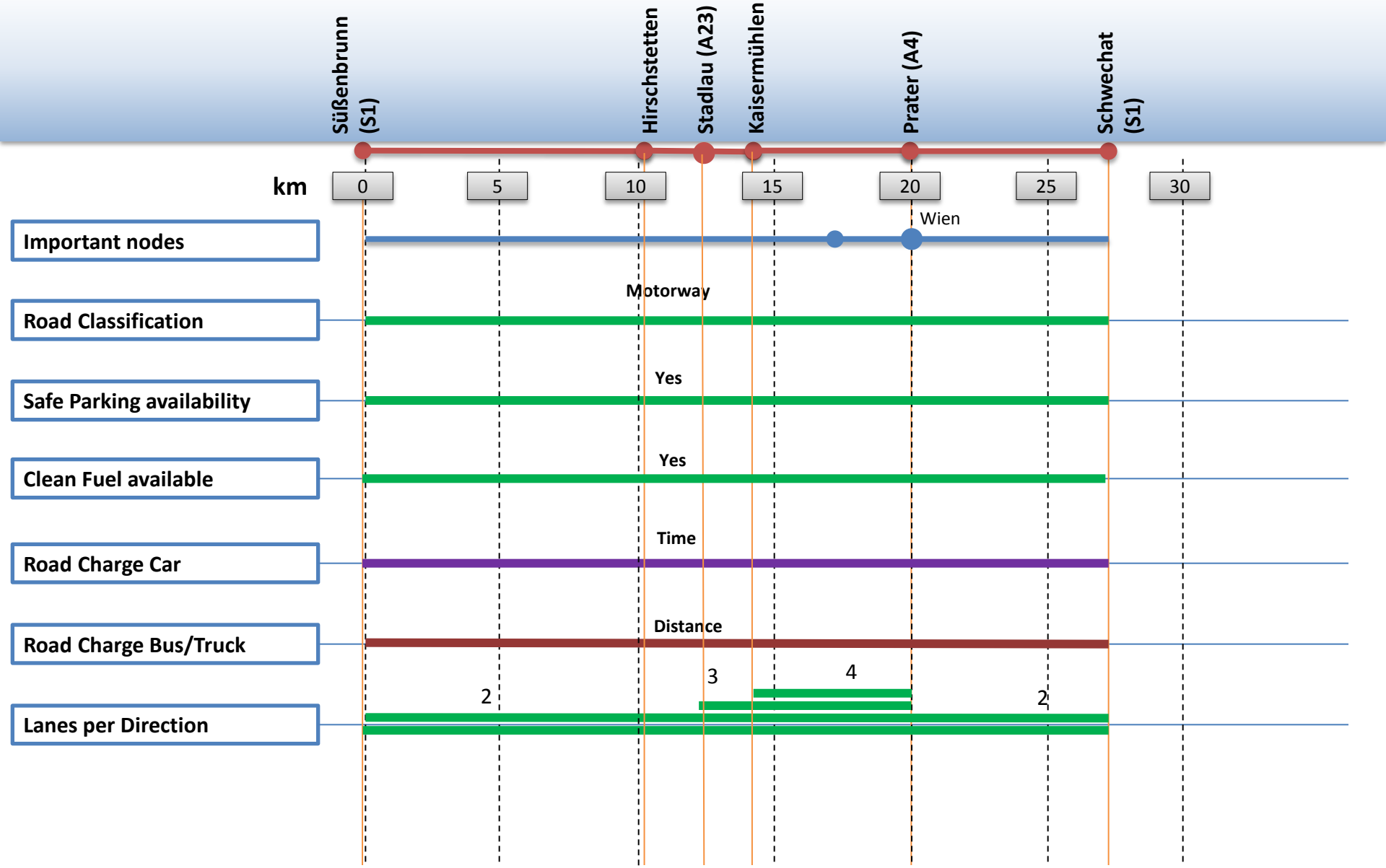
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

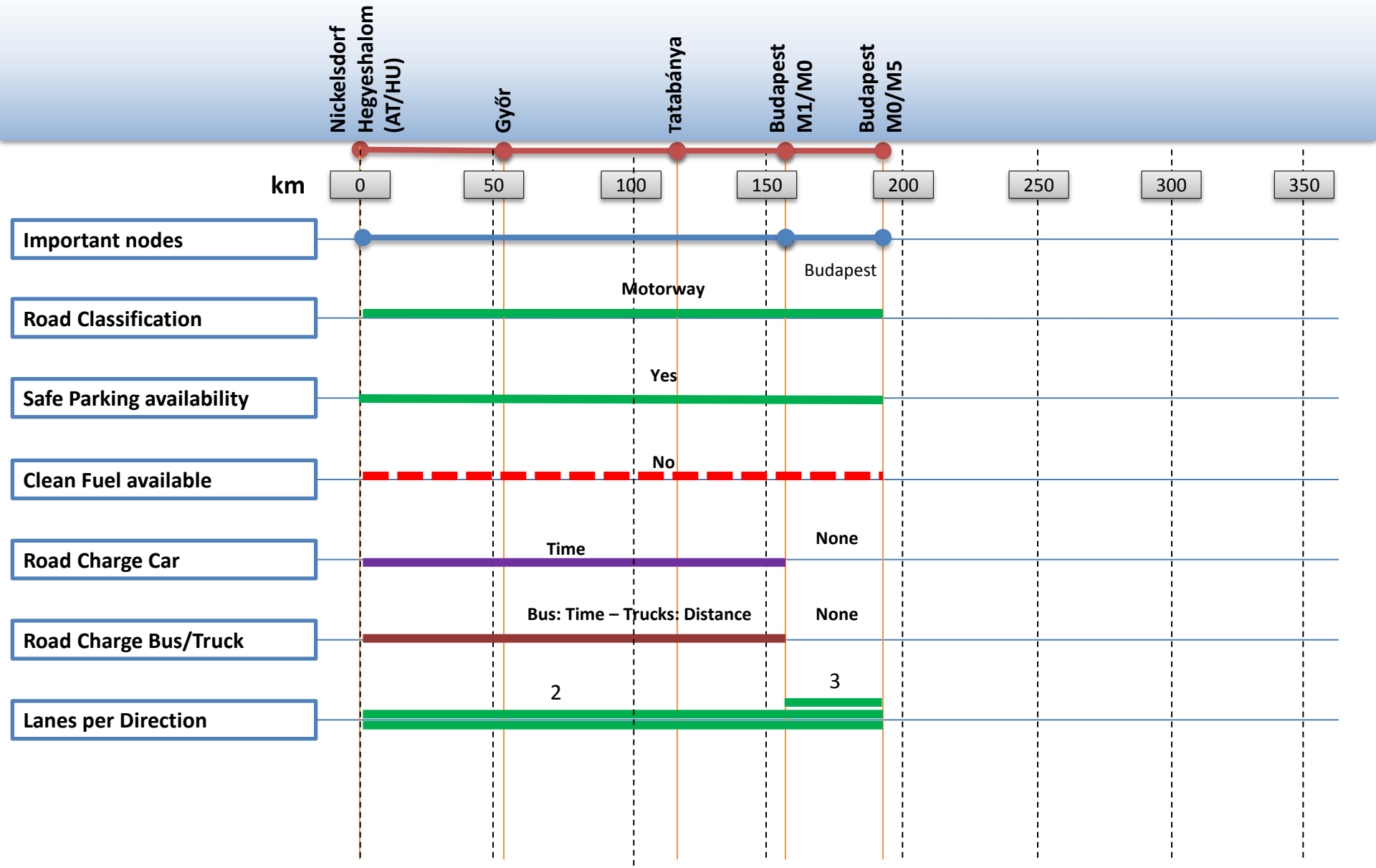
Fulfilment of TEN-T Technical Parameters

Country: Austria Mode: Road (Alternative) Status: 2013



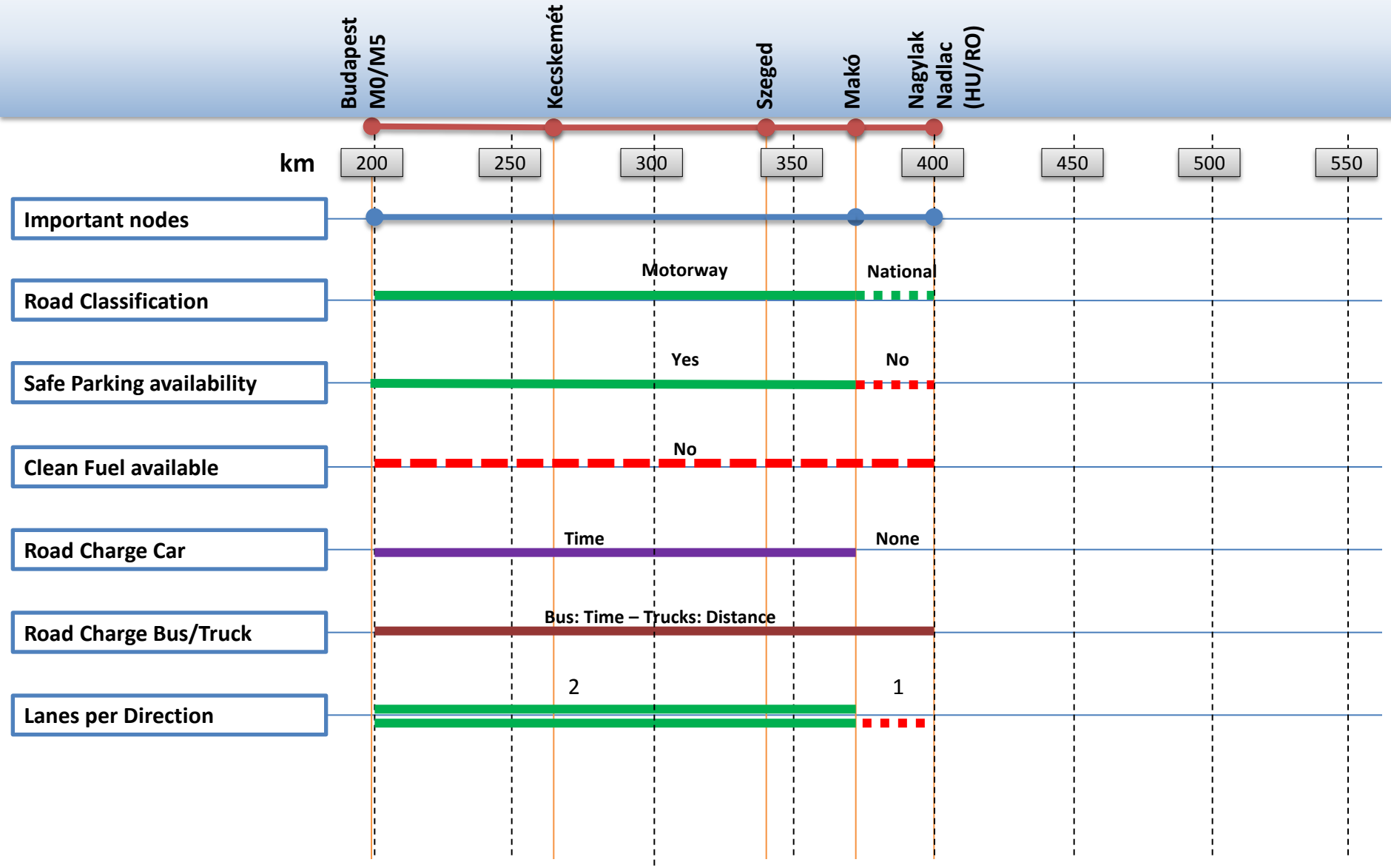
Fulfilment of TEN-T Technical Parameters

Country: Hungary Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

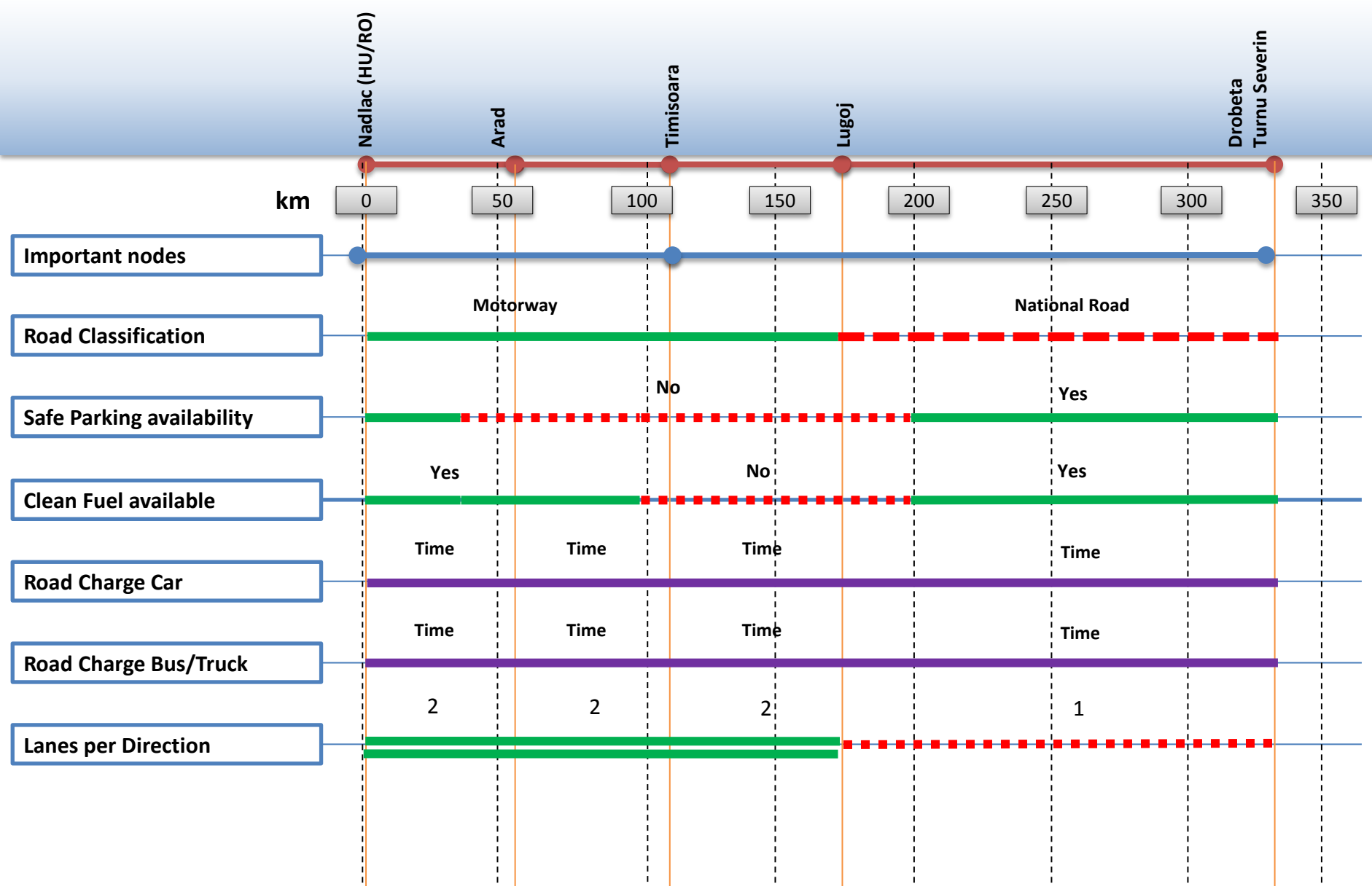
Country: Hungary Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

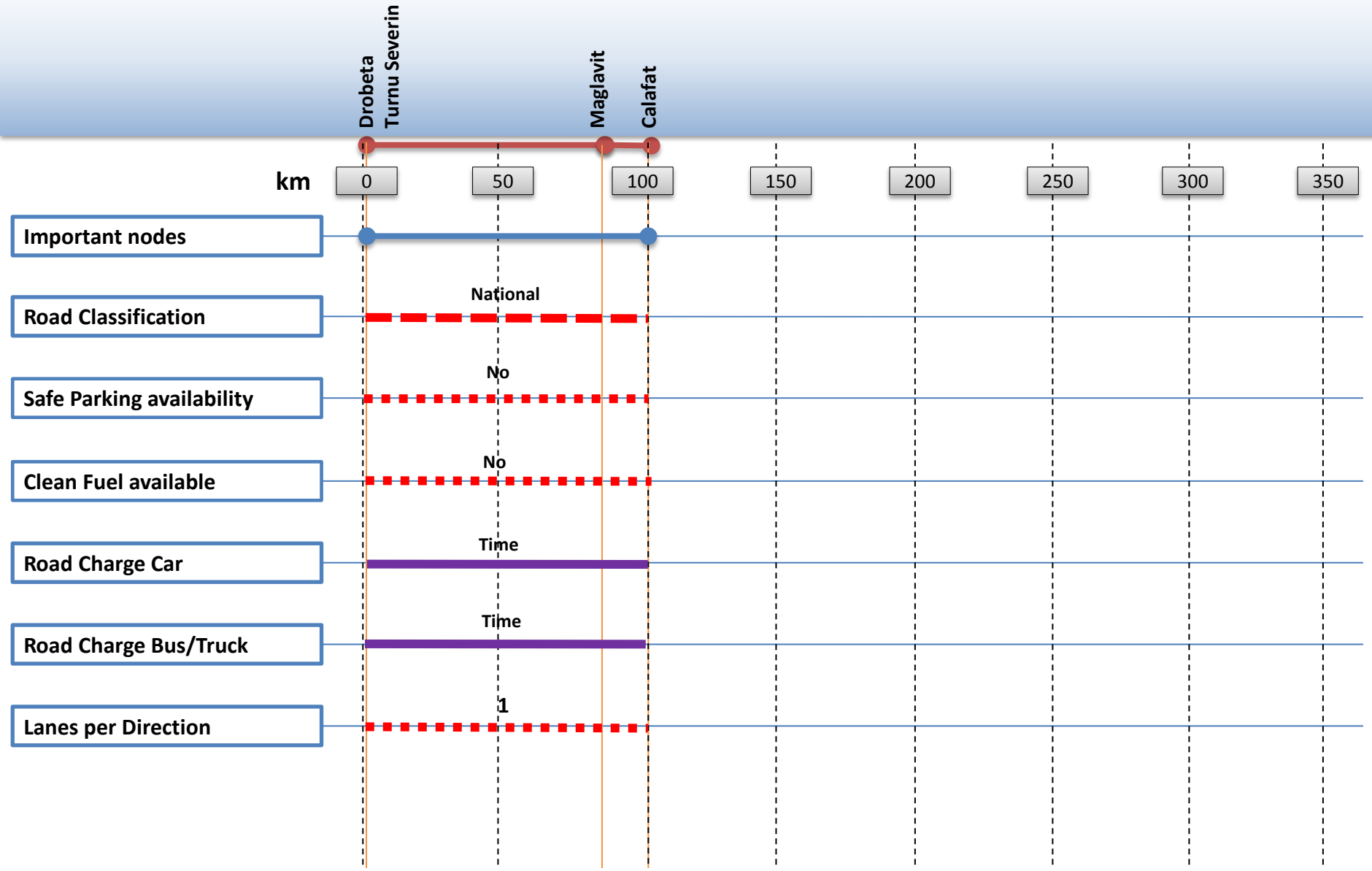
Fulfilment of TEN-T Technical Parameters

Country: Romania Mode: Road Status: 2013



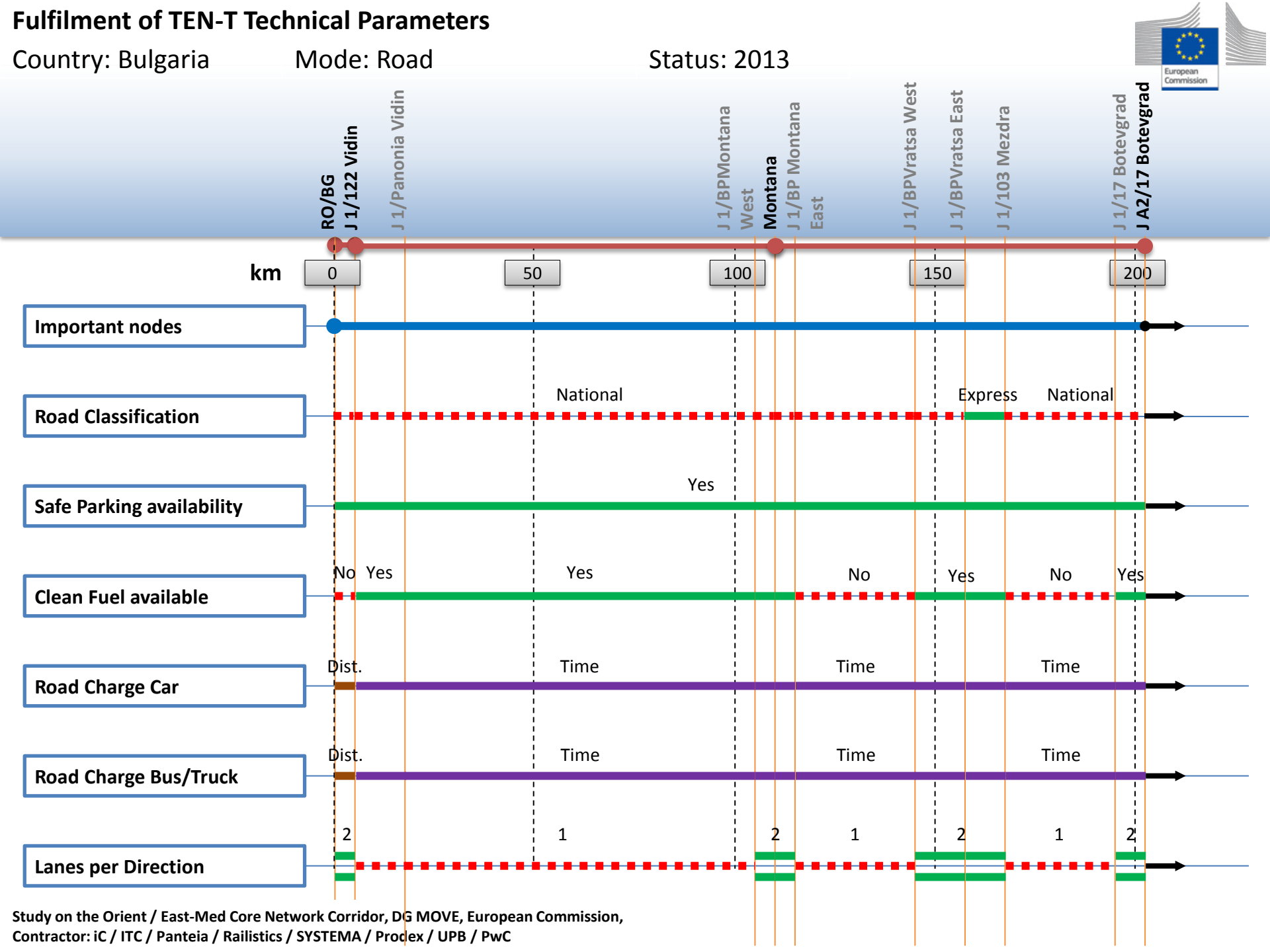
Fulfilment of TEN-T Technical Parameters

Country: Romania Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
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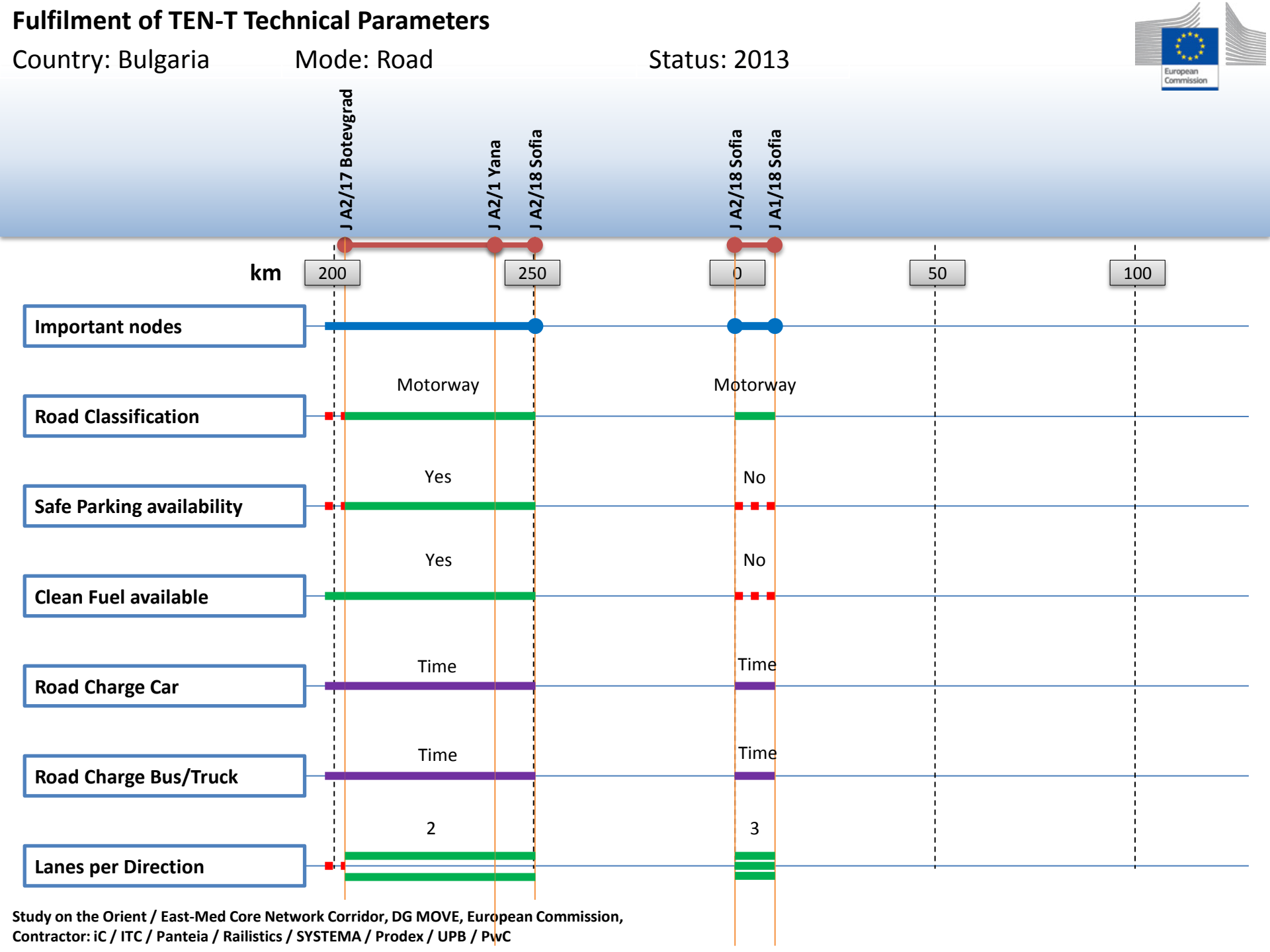
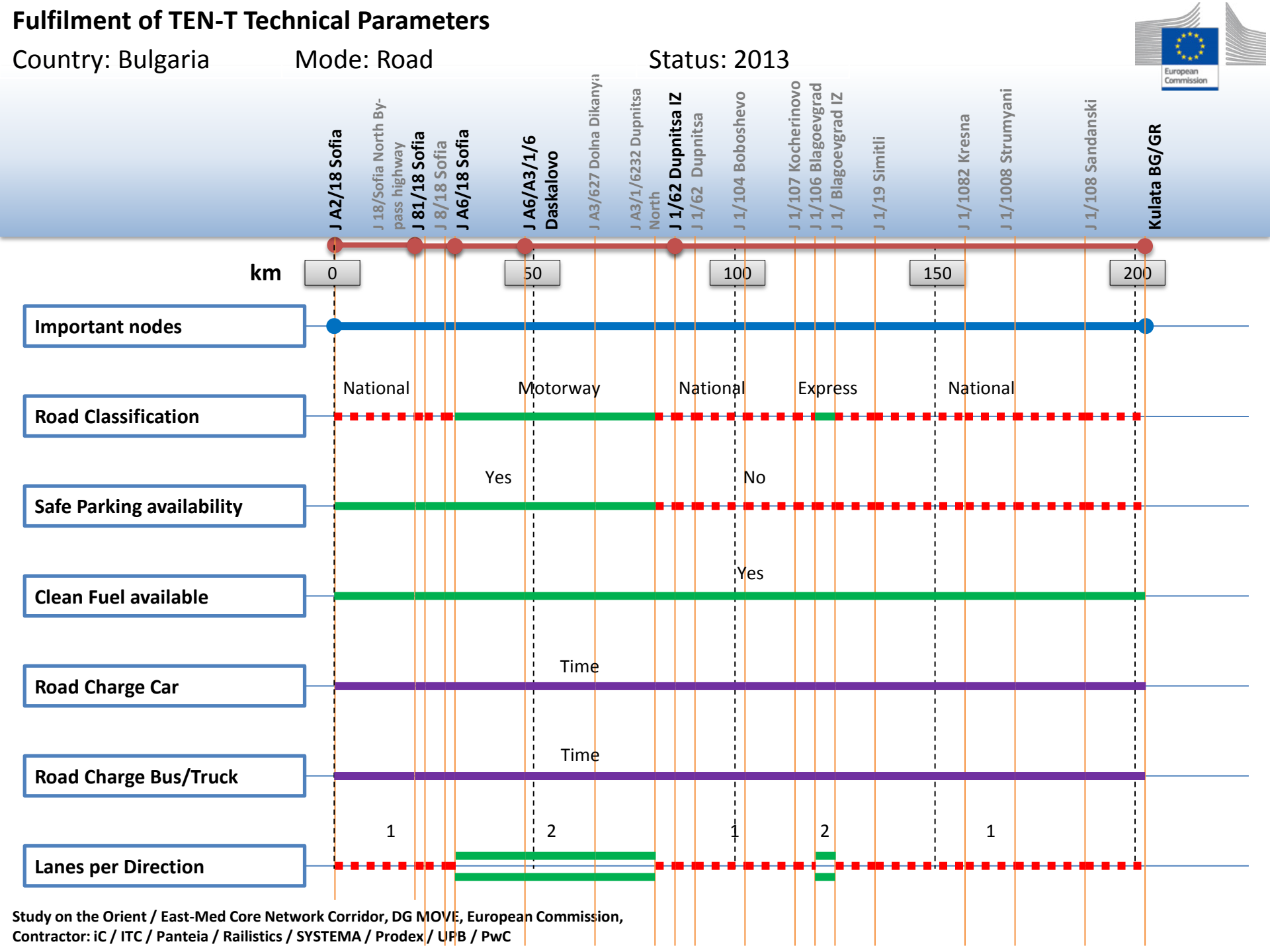
Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

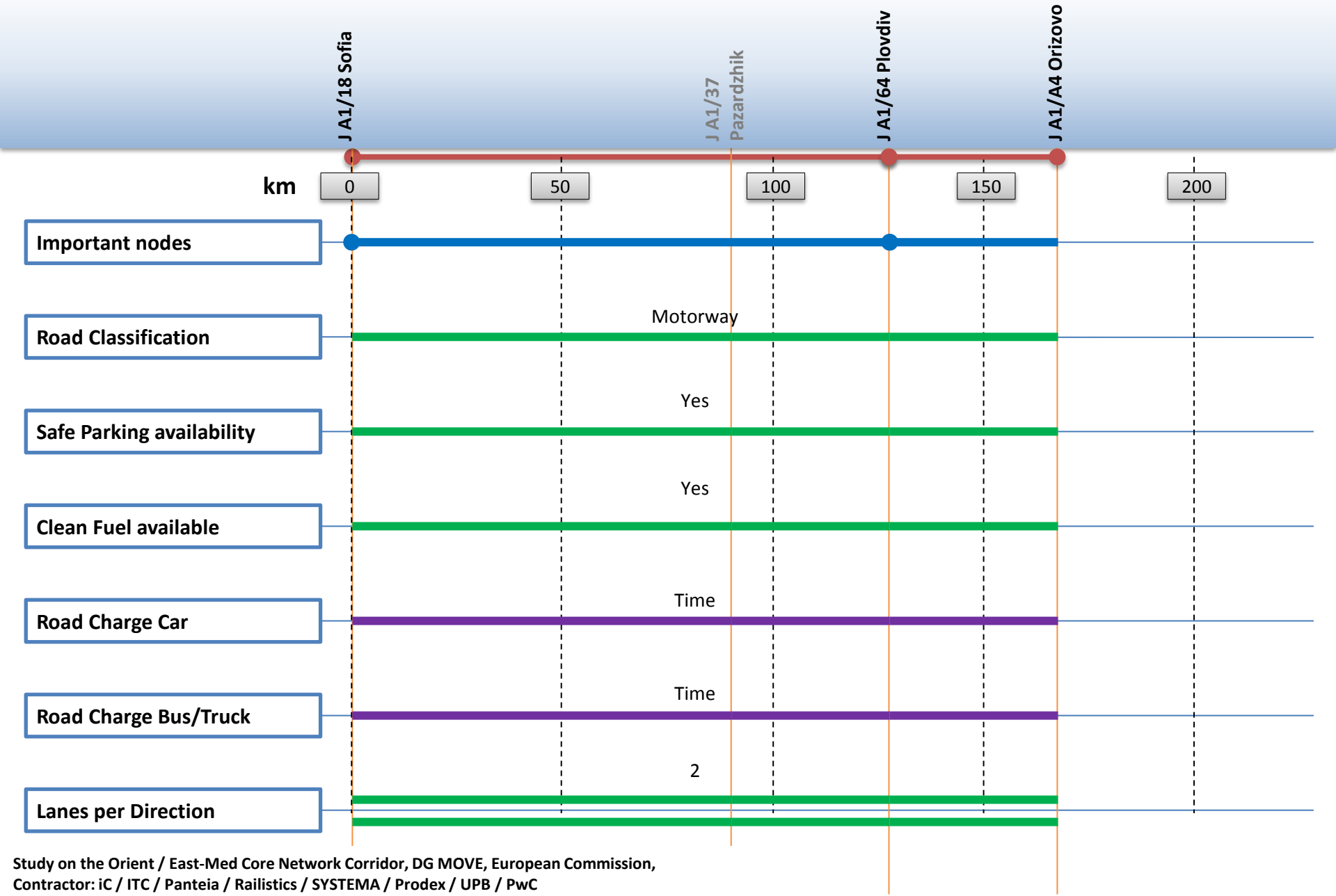
Country: Bulgaria Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

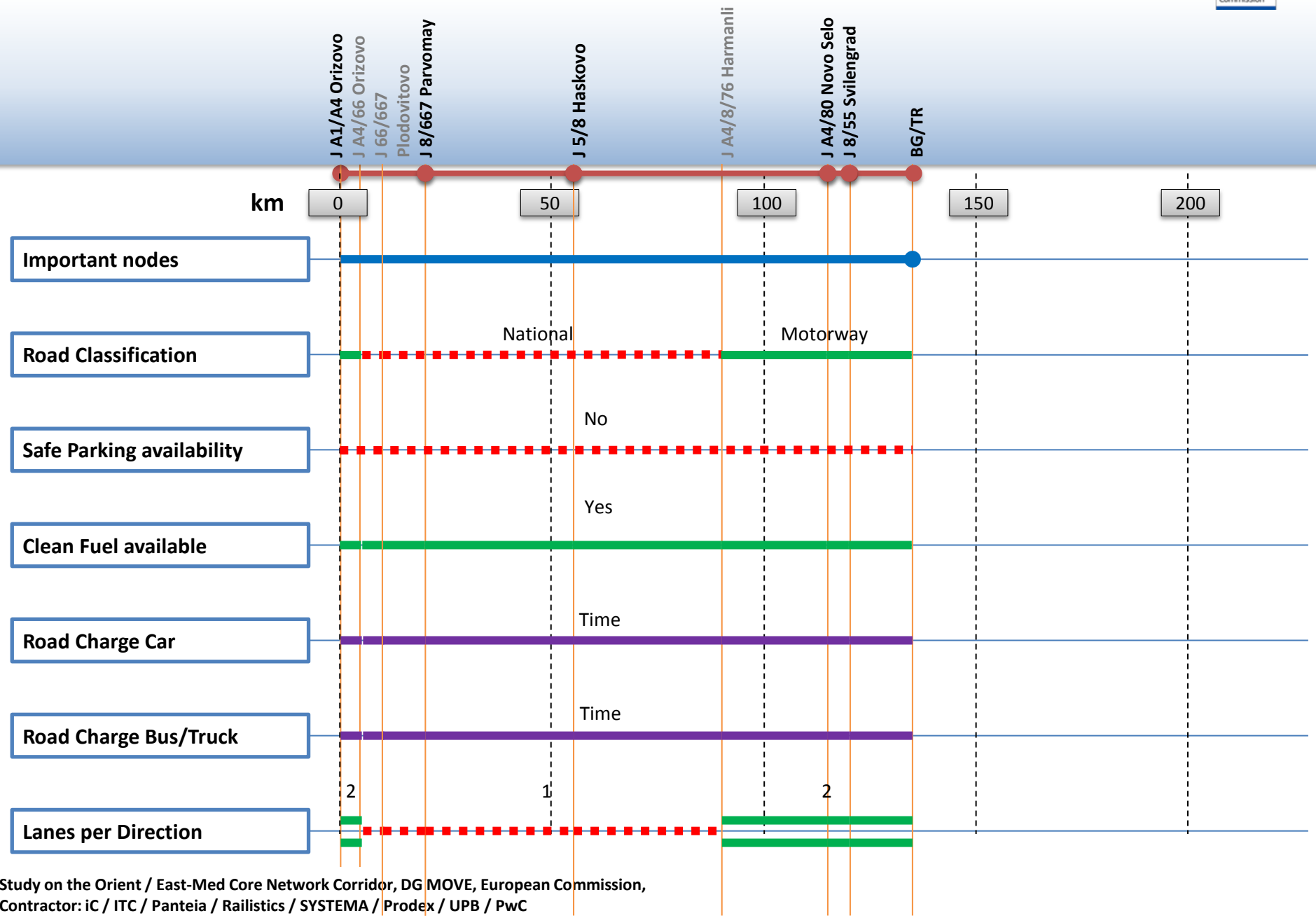
Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

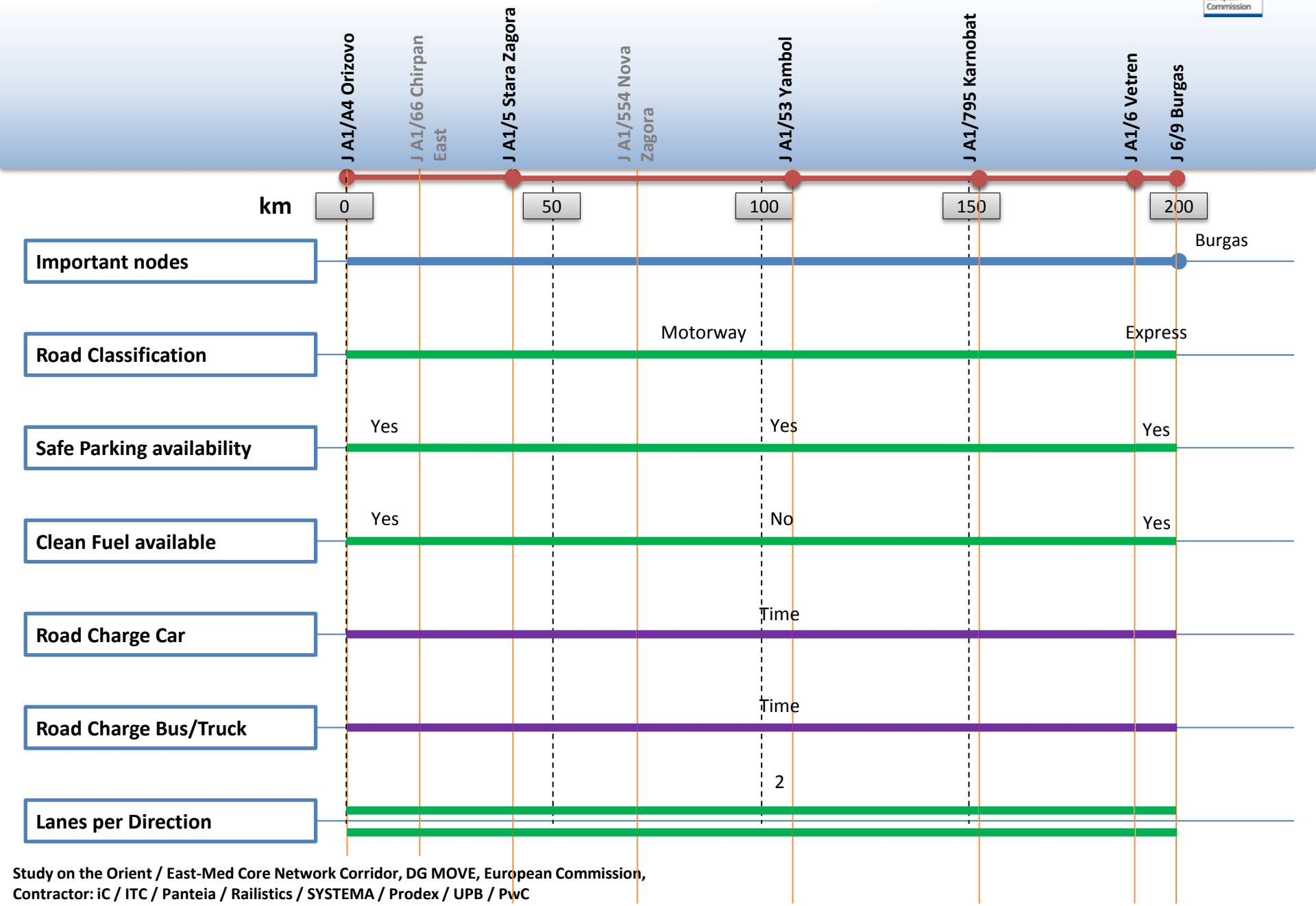
Country: Bulgaria Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

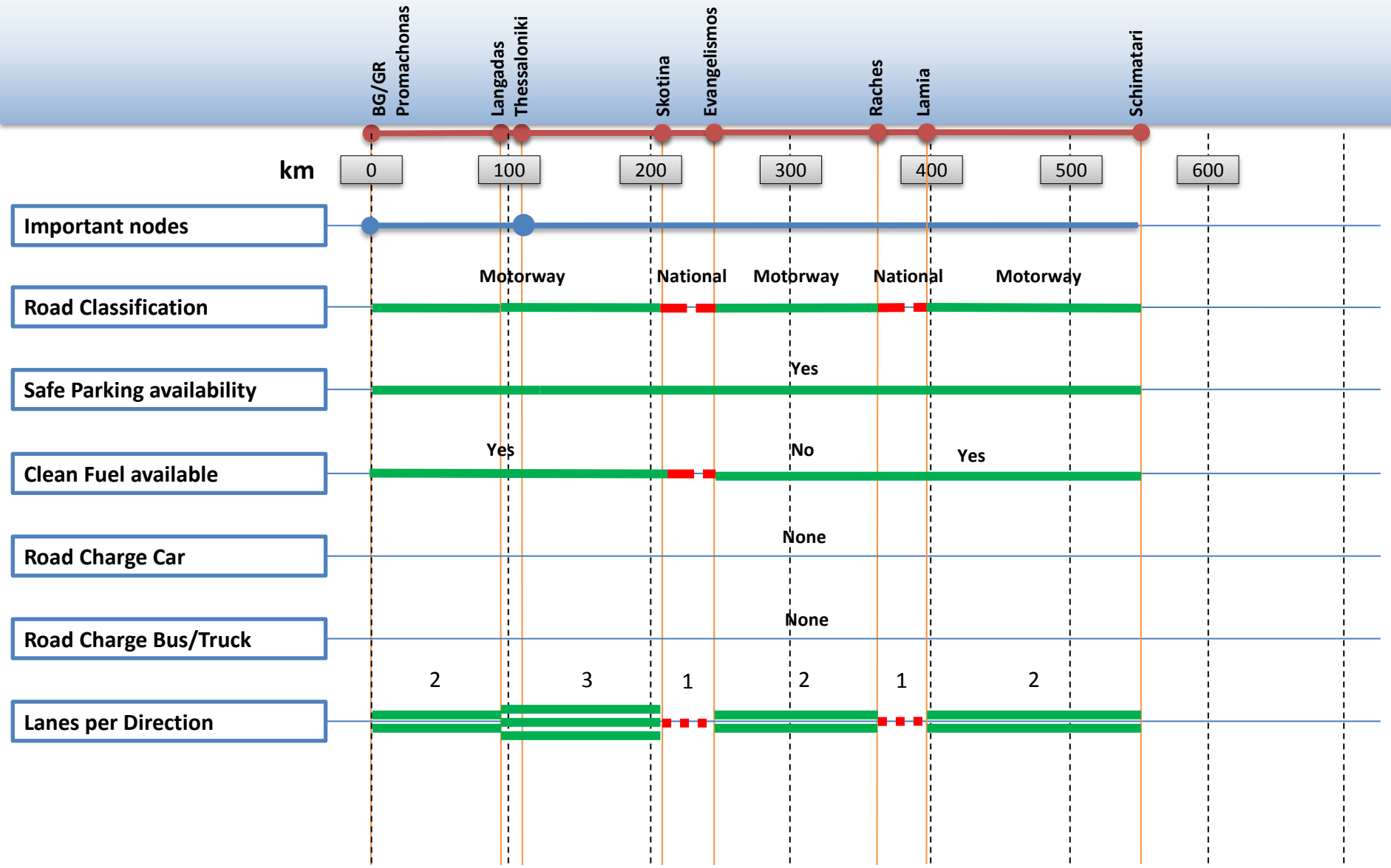
Fulfilment of TEN-T Technical Parameters

Country: Bulgaria Mode: Road Status: 2013



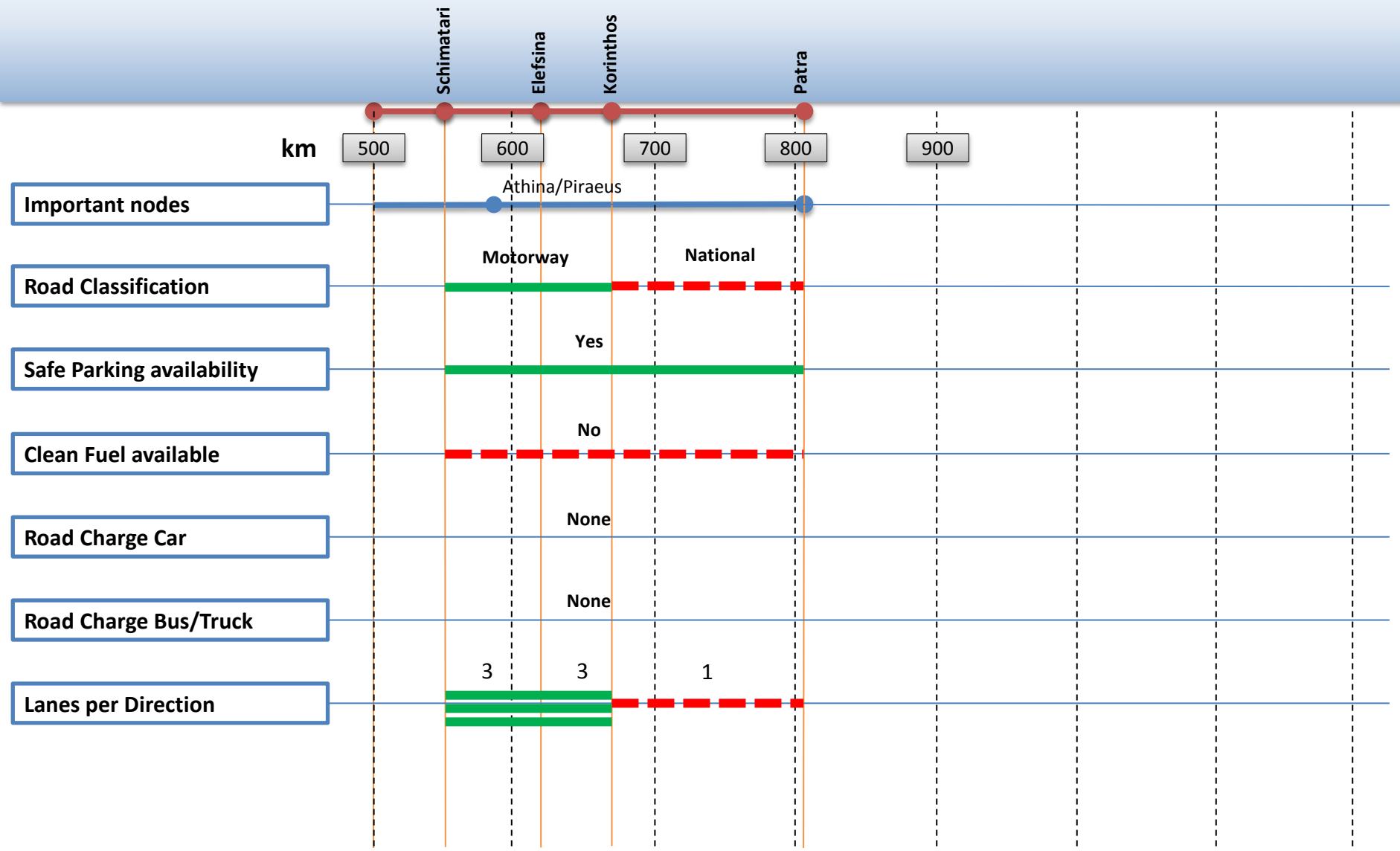
Fulfilment of TEN-T Technical Parameters

Country: Greece Mode: Road Status: 2013



Fulfilment of TEN-T Technical Parameters

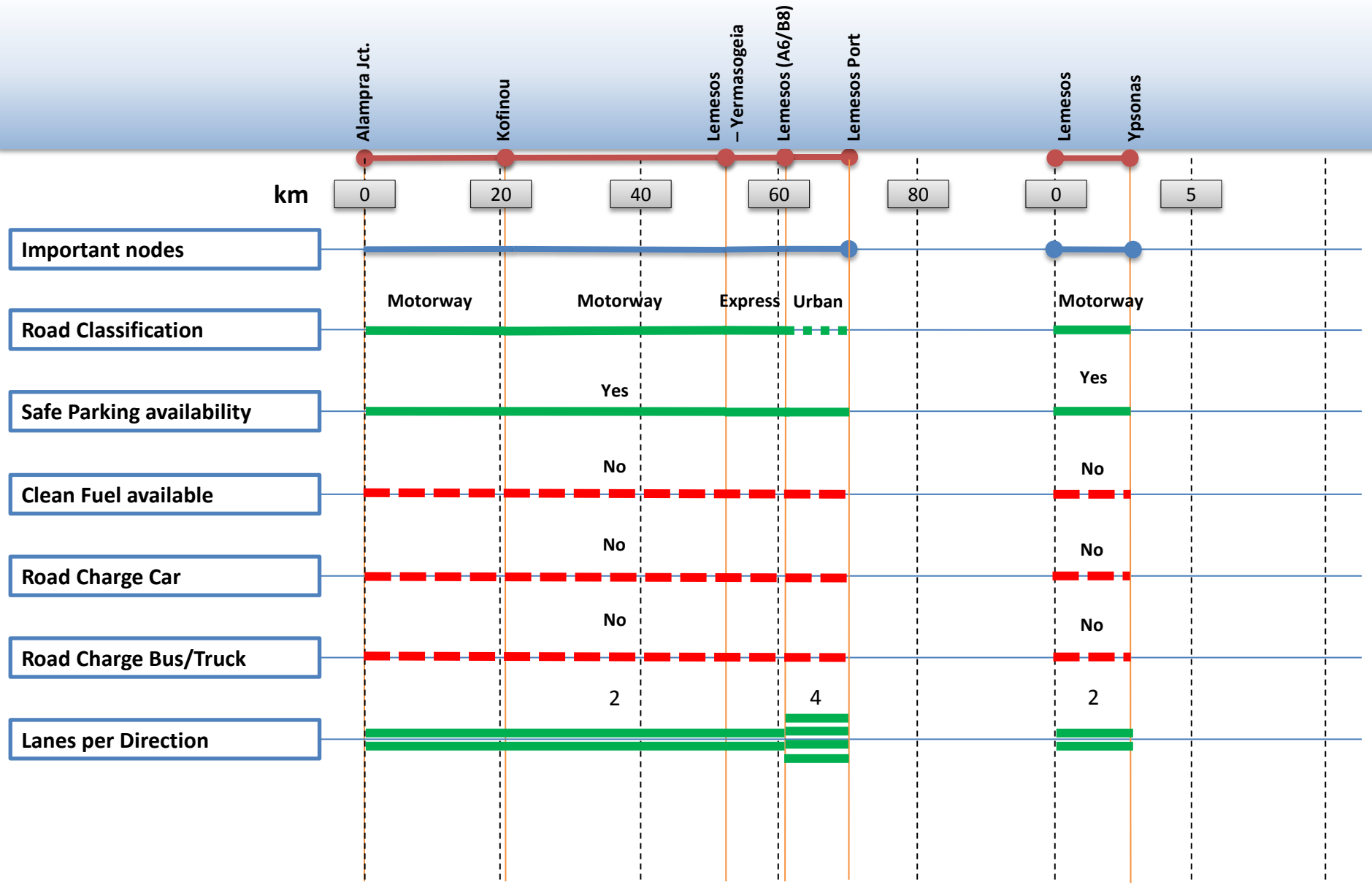
Country: Greece Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

Fulfilment of TEN-T Technical Parameters

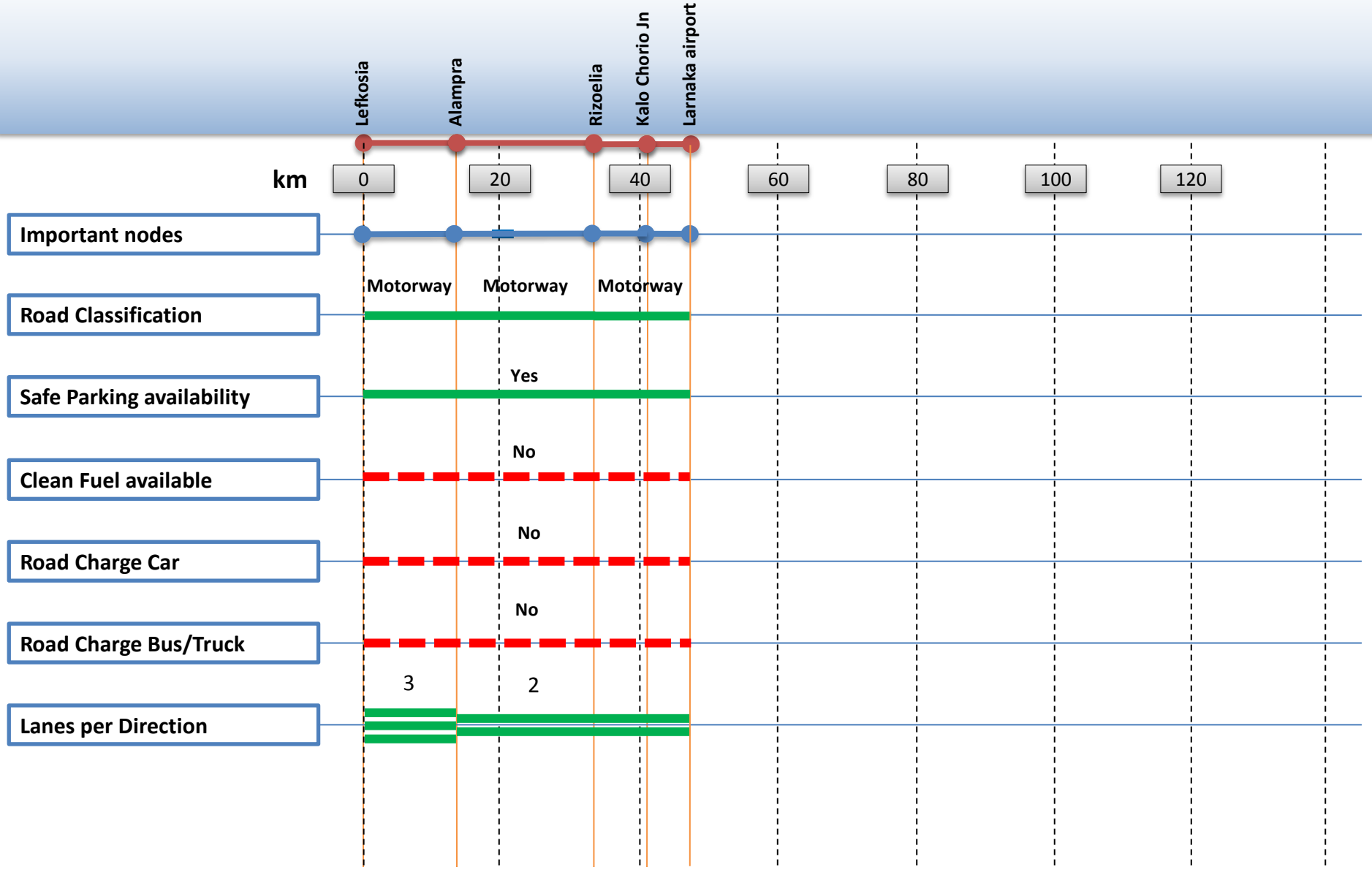
Country: Cyprus Mode: Road Status: 2013



Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission,
Contractor: iC / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

Fulfilment of TEN-T Technical Parameters

Country: Cyprus Mode: Road Status: 2013



Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 2 – Lists of Reviewed Documents

5 December 2014

Tables

Disclaimer

Note: Content of this Annex reflects the work status as of the 3rd Progress report.

Orient / East Med Corridor Study 2014
on behalf of European Commission / DG MOVE

MULTINATIONAL STUDIES Date: September 05th 2014

		(Or expected com-pletion)			Iso codes:	Sea/Air/Rail/Road/ IWW	Freight/Pax/ Both	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Add further remarks
A unique number	Title of study	Publication date	FS, CBA, Masterplan, infrastructure upgrade, strategy etc.	Time period covered by study e.g. forecast to 2030	List of countries e.g. DE; CZ; SK; AT; RO; BG ; GR; CY. Put main country first.	Drop down list with main modes		Does it contain technical data on current infrastructure?	Does it describe bottlenecks?	Does it contain plans, feasibility of new infrastructure projects?	Does it show technical specifications for planned infrastructure?	Does it include transport cost data or analysis?	Does it include project costs, and information about financing?	Does it contain data on current or historical traffic/ demand levels?	Does it contain demand forecasts?	Does it cover electronic traffic management systems?	Does it include environmental assessments, or other externalities?								
General Information					**Geogr. Coverage**	**Modal Coverage**		**Study Content**										**Relevance for Corridor Study Activities**							**Miscel-laneous**
Study ref.	**Title**	**Year of execution**	**Type of document**	**Time Period**	**Corridor countries**	**Transport Modes**	**Freight or Pax**	**Tech data on current infrastr.**	**Bottle-necks**	**Infra-structure Projects**	**Tech data on planned infrastr.**	**Cost Data/ Analysis**	**Financial data**	**Data on hist. and curr. tpt flows**	**Demand/ Market Fore-casts**	**Traffic Manag-ement systems**	**Environ-mental issues**	**Stake-holder identi-fication**	**Data Sources e.g. for TENtec**	**Com-pliance of Infrastruc-ture with TEN-T**	**Corrdior Ob-jectives**	**Corridor measures**	**Market Study**	**Imple-mentation of Plan**	**Invest-ment Strategy**	**Free Comments**
1	Annual reports of the EU Coordinator Gilles Savary	2013	EU Document	2012-2020	DE; CZ; AT; HU; RO; BG; GR	Rail	Freight and pax	N	Y	Y; PP22 (2015-2020)	N	N	N	Y; Freight and PAX	Y: Freight and PAX	Y	Y	Y	Y:Rail traffic on corridor	Y	Y	Y	N	Y	Y	
2	Priority Projects 2010 - A Detailed Analysis	2010	EU Document	2009-2010 (partly 2015-2020)	DE; AT; IT; ES; FR; CZ; SLO; HU; SK; NL; PL; UK; BE; LUX; GR; BG; RO; HR; IRL; DK; FIN; SE; NO; GB;	Multimodal	Freight and pax	Y	Y	Y; PP22 (2015-2020)	Y	Y	Y	Y; Freight and PAX	Y; Traffic Flows	Y	Y	Y	Y:Rail, Sea and Road Motorways Traffic on corridor	Y	Y	Y	N	Y	Y	
3	Study on the IMPLEMENTATION PLAN OF RAIL FREIGHT CORRIDOR 7 „ORIENT CORRIDOR"	2013		2006-2021	DE; SK; CZ; AT; HU; RO; BG; GR	Multimodal	Freight and pax	Y	Y	Y	Y; traffic corridors in RFC 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
4	Economic Development Perspectives of the Elbe/Oder Chamber Union (KEO)	2013		1997-2012	DE; CZ; PO	Multimodal	Freight	N	Y	N	N	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	N	Y	is more general economic analysis and corridors or nodes aren't included, just the countries

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
5	Rail Freight Corridor 7, Orient Corridor	2012			DE; SK; CZ; AT; HU; RO; BG; GR	Multimodal	Freight	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Conference presentation of 5 pages,not informative
6	Adriatic Motorways of the Sea (ADRIAMOS)	2013		2011-2013	IT; GR	Sea	Freight																			No study existing, just info broschure
7	MIELE - Multimodal Interoperability E-services for Logistics and Environment sustainability	2013		2010-2013	IT; ES; PT; DE; CY	Multimodal																				No study existing, just info broschure
8	Carrying out a study on the completion of the Priority Project Nr 22	2012		2004-2030	AT, BG, CZ, DE, GR, RO, SK	Rail	Freight and pax	Y, using the sources identified under this project	Y, by country along PP 22	Y, defined priorities and recommend ations for rail only	Y, for rail only	Y, results by scenario and country	Y, aggregated at national level	Y, on national level for 2005, 2009 and 2010	Y, on national level, rail traffic forecast per PP 22 sections	Y, as part of infrastructu re measures	Y, by scenario and country	Y	Y, using the PP22 data sources	Y, recommend ation for BG the implementa tion of the high standard (Ten-T) to be postponed	Y	Y, recommend ations on country and PP 22 level	Y, rail mode is covered in details, road more aggregated	Y, at national level by main sections	Y, investment scenarios by country	Analysed the implications coming from the completion of this corridor when the TEN-T Policy standards will be implemented
9	TEM and TER revised Master Plan- Trans-European Motorway (TEM) Trans-European Railway (TER) Projects	2012		2005-2020	AT; BG; TUR; BOS; HR; CZ; IT; RO; AZE; RUS; SLO; SK,	Multimodal	Freight and pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	
10	ELABORATION OF THE EAST MEDITERRANEAN MOTORWAYS OF THE SEA MASTER PLAN: Report on financial investment and time planning for the implementation of the East Mediterranean Motorways of the Sea	2009		2009-2015	GR; CY	Sea	Freight	Y (limited)	Y	N	Y	Y (MoS links)	Y	Y (freight demand)	Y (freight demand)	N	Y	Y	Y (freight demand)	N	Y (MoS operation)	N	N	Y	Y	Feasibility of potential MoS links/Investme nt plan, sources of financing

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
11	Railway Reform in South East Europe and Turkey	2011		2005-2009	BG, RO	Rail	Freight and pax	N	Y, estimation on regional and national level	Y, some recommend ations concerning the infrastructu re	N	N	Y, investments in infrastructu re on national level	Y, aggregated at national level	Y, general market estimation	N	N	Y, administrati ons and operators	N	N	N	N	Y, current state on national and regional level	N	N	Current state accessement mainly related to the EU legislation conformity and national railway companies performance; General
12	Facilitating and speeding up ERTMS deployment	2013		2011-2014	BE,ES; DE; FIN; IT; AT; FR; UK; DK; SWE; POL	Rail																			No study existing, just info broschure
13	Support to the ERTMS Consolidation	2013		2009-2013	BE; FR; DE; IT; NL; ES; SWE; UK;	Rail																			The Action is progressing according to schedule. No Study found
14	Retrofitting of 9 ES64U4 "Husarz" (EU44) locomotives with ETCS SRS 3.x.0 and line tests on the railway infrastructure equipped with ETCS Level 1 and 2 SRS 2.3.0 in Poland, Czech Republic and Austria	2013		2012-2014	PL, CZ, AT	Rail																			This project has been cancelled.
15	Prototyping, testing, renewed authorisation for placing in service and the retrofit of Siemens ES64U2 locomotives with ETCS L1/L2 2.3.0.d for Corridor A, B and E networks in DE, AT, HU and CH	2013		2011-2013	DE, AT, HU, CH	Rail																			The Action is ongoing
16	COSTA (framework conditions for the use of LNG for ships in the Mediterranean, Atlantic Ocean and Black Sea)	2014		2012-2014	EU member states	Sea																			No study existing, just info broschure

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
17	Monitoring and Operation Services for Motorways of the Sea (MOS4MOS)				EU member states	Sea																				No study existing
18	Studies on improving the Freight Corridor Concept by using Telematic Applications for Freight, and methods, tools and procedures developed by RNE for rail corridors	2013		2010-2012	EU member states	Rail																				No study existing, just info broschure
19	Freight and Logistics Advancement in Central Europe - Validation of processes, Improvements, Application of co-operation (FLAVIA)	2013		March 2010 - April 2013 (38 months)		Multimodal																				
20	ADB Multiplatform (Adriatic-Danube-Black Sea Multimodal Platform)	2013		2012-2014	AT/BG/HU/IT /SK/AB/HR/U K/RO	Multimodal					Establishme nt of an integrated network in the Adriatic-Danube region, which will serve as an instrument for the		EU: 4.799.924,50-EUR								Operational	Upgrading				
21	Transport Infrastructure Costs and Investments between 1996 and 2010 on the Trans-European Transport Network and its Connection to Neighbouring Regions, including an Inventory of the Technical Status of the Transport-European Transport Network for	2003		2001-2003	DE/FI/AT/BE/ CZ/ES/IT/NL/ FR/EL/HU/PT /DK/SE/RO	Multimodal					Provide a comprehens ive overview of past and planned future investments made in the Trans-European Transport										Study, Consultatio n	Upgrading				Transnational Cooperation Programme South East Europe - European Regional Development Fund (EFDR)
22	Transport dialogue and interoperability between the EU and its neighboring countries and Central Asian countries (TRACECA IDEA Project - Contract 2008/155-683)	2012		2009-2012	IT/DE	Multimodal			Weakness of regional transport cooperation .		Strengthen ing the political and transport dialogue mechanisms in the TRACECA region; supporting the										Study, Consultatio n	Upgrading			EuropeAid 2008	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
23	Activities to support the implementation of the IDP within DANUBE FAB, 2012-EU-40003-P	2013		2013-2015	RO/BG	Air	Freight and pax		airspace security and data exchanges		Improve air traffic managemen t performanc e and the deployment of SESAR		EU:1.394.000€								Operational procedure	Upgrading			TEN-T	
24	European ITS Platform (EIP), 2012-EU-50005-S	2013		2015	BE/FI/FR/DE/ GR/IT/IR/PT/ RO/ES/SW/N L/UK	Road					Enhancing the deployment of harmonised ITS services and the coordinated managemen t of road transport in		EU:1.350.000€								Study, Consultatio n	Upgrading			TEN-T	
25	Studies for the development of the Motorway-project of PP7 (Igoumenitsa/Patras-Athens-Sofia-Budapest Motorway Axis) - Strategic Action Plan			2012	EL, BG, RO, HU	Road	Freight and pax														Studies, works	Upgrading				Action part of Global Project PP 7 – aims at preparing a strategic study related to the development and upgrade of Priority Project 7. A global
26	EUSDR Report Priority Area 1b: to improve mobility and multimodality - rail, road and air links			2013	AT, SK, CZ, HU, RO, BG, RS	Multimodal	Freight and pax																			The Danube region strategy report include the following Annexes: Annex 1: roadmaps for the implementatio n, Annex 2: Projects
27	East Mediterranean Motorways of the Sea Master Plan			2004-2009	GR, CY	Sea	Freight and pax																			
28	ACROSSEE Accessibility improved at border CROSsings for the integration of South East Europe			2012-2014	AT, HU, RO, BG, GR; IT, BE, HR, SI	Multimodal																				

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
29	SIC! Sustrain Implement Corridor			2004-2007	DE, CZ, AT, SK, HU, PL	Multimodal	Freight and pax	Y	Y	Y	N	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	INTERREG Project on Corridor Berlin - Budapest
30	Commission Staff Working Document on the state of play of the implementation of the ERTMS Deployment Plan, SWD (2014) 48	2014	EU Document	2009-2014	EU member states	Rail	Freight and pax	Y	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	N	Y	N	
31	Evaluation of RIS Implementation for the period 2006-2011 MAIN REPORT and Country Reports DE, CZ	2014	Study	2006-2011	EU member states	IWW	Freight and pax	Y	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	
32	PLATINA II, SWP4.1 Information Package on the Corridor Objectives and prioritising projects in IWT and inland ports; Vol. 1 and 2	2014	EU Document	2013-2016	EU member states	IWW	Freight and pax	Y	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Part of NAIADES II

Orient / East Med Corridor

List of Pre-Identified CEF Projects and assigned documents reviewed

Annex 2b to 3rd Progress Report

05.Sep.14

				Name of documents reviewed (Name en, by Author, Date, for Client)				Implementation of investment projects				
Country	**Mode**	**Corridor Link / Corridor Node**	**Documents existing according to DG MOVE**	**Multinational, national, interregional analyses / strategies /perspectives/ master plans**	**Project related documentation (CBA, EIA, similar)**	**Description of ongoing projects**	**Others**	**Name of implementation project**	**Type**	**Investment Value**	**Funding Source**	
DE	IWW	Hamburg – Dresden - Border DE/CZ	Elbe studies, works for better navigability and upgrading	Principles for the professional concept of maintaining the Elbe between the Czech Republic and Geesthacht with explanations; German Federal Ministry of Transport; 2005		Outline of status quo regarding navigability of Elbe and formulation of objectives to maintain this status. Description of measures to be undertaken to achieve the objectives (i.e. maintenance projects).						
				Riverbed stabilization concept for the Elbe from Mühlberg to the river mouth of Saale; Waterways and Shipping Administration; 2009		Description of special maintenace works on the Elbe to reduce riverbed erosion.						
				Key elements of an overall concept for the Elbe of the federal government and state governments. German Federal Ministry of Transport; 2013		Short outline of further strategies regarding economic, transport and ecologic issues on Elbe. Some information were additionally provided by the Ministry of Transport by email. Final strategies will be developed until approx. 2016.						
				The shipping-affine potential of Elbstromgebietes and its development possibilities; LUB Consulting GmbH; 2011; Chamber of Industry and Commerce Dresden and Magdeburg			Description of framework conditions regarding navigability on Elbe. Presentation of cargo flows and potentials in regard to the status quo conditions on Elbe (state 2010).					
CZ	IWW	Border DE/CZ – Praha / - Pardubice	Elbe and Vltava studies, works for better navigability and	Not available								
CZ	IWW	Děčín locks	Navigation step Decin	National project of Navigation step Decin - connection of Germany and Czech republic by water, solving botleneck in Decin	EIA - evaluation of project´s impact on the environment	Ongoing evaluation of project´s impact on the environment especialy effective way to protect fish from entering the small hydropower plant		The Navigation step Decin	upgrading, new construction	n.a.		
DE	Rail	Dresden - Praha	Studies for high-speed rail	Analysis on speeding-up the railway connections Dresden - Prague and Munich - Prague; 2010	Calculation of cost-benefit for upgrading of railway lines							
				Study on traffic-related potentials and the relief effect for the existing rail line in the Elbe Valley; Saxon State Ministry for Economic Affairs, Labour and Transport; 2011	Calculation of traffic load of existing rail line. Forecast of relief potential if new line is constructed. Calculation of emission forecast.							
				Study on Investigation of lines variants and possible routes for a common cross-border planning; Saxon State Ministry for Economic Affairs, Labour and Transport; 2013	Description of alternative routes and comparision of the effects for operation, environmental impacts and noise pollution							
				• Analysis of the macroeconomic effects of the new route Dresden - Prague for the Free State of Saxony; Progtrans / LUB Consulting; 2014	Determination of macroeconomic effects and development potentials							
CZ	Rail	Dresden - Praha	Studies for high-speed rail	VRT Praha - Litomerice (draft version); SZDC / IKP Consulting Engineers; 2014	Planning of route variants including technical feasibility. Cost calculation.							
CZ	Rail	Praha	Upgrading, freight bypass; rail connection airport	Not available								
CZ	Rail	Praha	Rail connection Airport	Not available								
CZ	Rail	Praha – Breclav	Upgrading	Not available								
CZ	Rail	Prague - Brno - Breclav	Upgrading, including rail node Brno and multi-modal	Not available								

Country	Mode	Corridor Link / Corridor Node	Documents existing according to DG MOVE	Multinational, national, interregional analyses / strategies /perspectives/ master plans	Project related documentation (CBA, EIA, similar)	Description of ongoing projects	Others	Name of implementation project	Type	Investment Value	Funding Source	
CZ	Rail	Breclav – Bratislava	Cross-border, upgrading	Not available								
SK	Rail	Breclav – Bratislava	Cross-border, upgrading	Project for ugrading a speed for 160 km/h	EIA - evaluation of empact on envinroment	Upgrading a track speed for 160 km/h at the section Bratislava - Kuty/Lanzhot		Not available	Not availabe		Not available	
SK	Rail	Bratislava – Hegyeshalom	Cross-border, upgrading	Not available								
HU	Rail	Bratislava – Hegyeshalom	Cross-border, upgrading	Not available, confidential								
HU	Rail	Tata – Biatorbágy	Upgrading	Not available, confidential								
HU	Rail	Budapest – Arad	Upgrading (in HU nearly completed)	Not available, confidential								
RO	Rail	Arad – Timişoara – Calafat	Upgrading (ongoing in RO)	1. National development strategy/ Master Plan Transport - ongoing project (2012-2014)								
				Railway line upgrade	Revision Feasibility Study for the "Railway line rehabilitation Border - Curtici-Simeria Pan European Corridor IV component for movement of trains with a maximum speed of 160 km / h " section 1: Border - Curtici - Arad - km 614			Rehabilitation works Border – Curtici - Arad – km 614 (41,2 km)	Upgrading	n.a.	ongoing	
				Railway line upgrade	Revision Feasibility Study for the "Railway line rehabilitation Border - Curtici-Simeria Pan European Corridor IV component for movement of trains with a maximum speed of 160 km / h " Section 2and 3: km 614 - Gurasada - Simeria							
				Railway line upgrade	Revision Feasibility Study Report Rehabilitation of railway line Craiova - Calafat, for the trains circulation with maximum speed of 160 km/h, CBA included							
BG	Rail	Vidin – Sofia – Thessaloniki – Athens/Piraeus	Studies and works	1. National regional development strategy of the Republic of Bulgaria for the period 2012 - 2022; Ministry of Regional Development and Public Works; 2012; BG Government 2. National Strategy for development of the Bulgarian Transport System until 2020; Ministry of Transport, Information Technologies & Communications; 2010; BG Government 3. Strategy for development of the transport infrastructure of the Republic of Bulgaria until 2015; Ministry of Transport; 2006; BG overnment 4. National Strategy for integrated development of the infrastructure of Bulgaria for 2006 - 2015; Sectoral ministries; 2006; BG Government 5. Development of strategy for integration of the Bulgarian railway infrastructure into the European intermodal transport network; Consortium PLANET & TREDIT; 2006; Ministry of Transport & National Railway Infrastructure Company 6. Development of General Transport Master Plan; Consortium Faber Maunsell & AECOM Limited; 2010; Ministry of Transport, Information Technologies and Communications 7. Strategy for Introduction and Implementation of the Technical	Technical Assistance for the Modernisation of the Vidin-Sofia Railway Line in Bulgaria; Vidin-Sofia Railway Consultant (VSRC); 2009; Ministry of Transport, Information Technology and Communications & National Railway Infrastructure Company	Construction design for railway line Vidin - Sofia - update of the project and preparation of railway section Vidin - Medkovets (tendering procedure under way)						
					Technical Assistance for Modernisation of the Trans-European Railway Network in Bulgaria: Lot II Sofia-Pernik-Radomir Railway Line; POYRY INFRA Ltd; 2010; National Railway Infrastructure Company	Construction design for railway line Vidin - Sofia - update of the project and preparation of railway section Vidin - Medkovets (tendering procedure under way)						
						Technical Assistance for the Modernisation of the Trans-European Railway Network in Bulgaria: railway line Radomir - Kulata; Evrotransproject 2010; 2013-2015; National Railway Infrastructure Company						
								Electrification and reconstruction of railway line Plovdiv - Svilengrad, Phase 1 Krumovo - Parnomay and Phase 2 Parvomay - Dimitrovgrad	Upgrading	n.a.	ISPA, Cohesion Fund, State Budget, National Railway Infrastructure Company	Completed

Country	Mode	Corridor Link / Corridor Node	Documents existing according to DG MOVE	Multinational, national, interregional analyses / strategies /perspectives/ master plans	Project related documentation (CBA, EIA, similar)	Description of ongoing projects	Others	Name of implementation project	Type	Investment Value	Funding Source	
BG	Rail	Sofia – Burgas/TR border	Upgrading	Implementation of the Technical Specifications for Interoperability of the Conventional Rail System in the Republic of Bulgaria; consortium Schusler plan, Gama management AD, Vector bul OOD; 2010; Railway Administration Executive Agency within the Ministry of Transport, Information Technologies and Communications 8. Strategy and National Plan for implementation of European railway system for traffic management system (ERTMS) in Republic of Bulgaria; PM Group Bulgaria; 2010; Ministry of Transport, Information Tecnologies and Comunications 9. Assessment of the railway passenger transport services market demand in the Republic of Bulgaria and development of measures for the services optimisation; Consortium Infra Care & Trans Care; 2013; Ministry of Transport, Information Technologies and Communications	Technical Assistance for development of CBA and Preparation of an Application Form for financing the electrification and reconstruction of railway line Svilengrad – Turkish border; JASPERS; 2008; National Railway Infrastructure Company			Electrification and reconstruction of railway line Svilengrad – Turkish border	Upgrading	EUR 35.8 milion, VAT excluded	Cohesion Fund, State Budget and National Railway Infrastructure Company	Completed
					Feasibility study for construction of an intermodal (rail/road) terminal in the Bulgarian South Central Region of Planning - Plovdiv; Consortium Eurotrasnproject & NetEngineering; 2010; National Railway Infrastructure Company			Construction of Intermodal Terminal Plovdiv	New construction	EUR 5 million, VAT exclided	ERDF, State Budget, National Railway Infrastructure Company	Under way, to be completed in 2015
					Technical Assistance for Modernisation of TEN-T Railway Lines in Bulgaria: Lot I - Railway Line Sofia-Plovdiv; POYRY INFRA Ltd; 2010; Ministry of Transport, Information Technologies and Communications and National Railway Infrastructure Company	Technical assisstance for preparation of project for Modernisation of railway Line Sofia - Plovdiv: sections Sofia - Elin Pelin and Elin Pelin - Septemvri		Modernization of railway section Septemvri - Plovdiv as part of TEN-T	Upgrading	EUR 322.4 million	Cohesion Fund, State Budget and National Railway Infrastructure Company	Under way, to be completed in 2015
					Application Form for financing the modernisation of railway section Septemvri - Plovdiv; State Interprise National Railway Infrastructure Company; 2011; Ministry of Transport; Information Technologies and Communications							
					Technical Assistance for the Rehabilitation of the railway infrastructure along the railway line Plovdiv - Burgas; Consortium "SUDOP-TEE"; 2009; Ministry of Transport, Information Technology and Communications & National Railway Infrastructure Company	Preparation of project for Rehabilitiation of railway section Plovdiv - Burgas phase 2 (tendering procedure under way)		Rehabilitation of railway infrastructure along Plovdiv - Burgas line (pase I)	Rehabilitation	EUR 203.6 million	Cohesion Fund, State Budget and National Railway Infrastructure Company	Under way, to be completed in 2015
								Rehabilitation of: 1. Sofia Central Railway Station 2. Burgas Railway Station 3. Pazardzhik Railway Station-	Rehabilitation	EUR 49.6 million	ERDF, State Budget and National Railway Infrastructure Company	Under way, to be completed in 2015
GR	Rail	Vidin – Sofia – Thessaloniki – Athens/Piraeus	Studies and works	National Operational Programme 2007-2013, National Strategy Papers	Evaluation study for the upgrade of railway axis 22 and technical support of OSE S.A.			Construction of the New Double-Track High-Speed Railway Tithorea – Lianokladi –	New construction	EUR 1.5 billion	2nd CSF 1994-1999 OP RAPT 2000 - 2006 NSRF 2007-2013	Under way, to be completed in 2015
GR	Rail	Athina - Patras	Studies and works					Construction of new double-track railway line Kiato -	New construction	EUR 920 Milllon	Cohesion Fund and NSRF 2007-2013	Under way, to be completed in 2016
GR	Rail	Athina - Patras	Studies and works, port interconnections					Construction of new double-track railway line	New construction	EUR 502 Milllon	NSRF 2007-2013	Under way, to be completed in 2015
								Deployment of automatic train-protection system ETCS Level 1 on the PATHE/P axis	New installation	EUR 17 million	OP RAPT 2000-2006, OP Accessibility Improvement 2007-2013	Under way, to be completed in 2015
SK	Road	SK Border near Rusovce	Cross-border upgrading (if any)	Not available								
HU	Road	Rajka - Mosonmagyaróvár	Cross-border upgrading	Not available								
RO	Road	Vidin – Craiova	Cross-border upgrading	The section is completed				The section is completed				
BG	Road	Vidin – Craiova	Cross-border upgrading	The section is completed				The section is completed				

Country	Mode	Corridor Link / Corridor Node	Documents existing according to DG MOVE	Multinational, national, interregional analyses / strategies /perspectives/ master plans	Project related documentation (CBA, EIA, similar)	Description of ongoing projects	Others	Name of implementation project	Type	Investment Value	Funding Source	
CY	Road	Lefkosia	Lefkosia South Orbital, Studies and works, Traffic management systems	THE CONSTRUCTION OF THE LEFKOSIA (NICOSIA) SOUTH ORBITAL MOTORWAY; The Detailed Design Study of the Lefkosia South Orbital Motorway. Traffic Model report	Feasiility studies, Design study, CBA, Traffic Model	The Lefkosia South Orbital, a Core TEN-T road, will form a ring road around the southern part of the capital of Lefkosia and will interconnect three motorways of the TEN-T network in the urban area of the District of Lefkosia (the Lefkosia-Lemesos Motorway to the south, the Lefkosia-Deneia Motorway to the west and the planned Lefkosia-Palaichori Motorway to the south west). The resulting motorway network together with its interconnections to the urban and sub-urban areas of Lefkosia will facilitate the through traffic in the area and will cater for the traffic needs of nine municipalities and tens of communities.		Construction of Lefkosia South Orbital Motorway	New construction	EUR 390 milion	Co-financing by the European Union (€50 million - CEF)	Construction in Phases planned to commence in 2015
GR	Ports and MMP	Thessaloniki	Infrastructure upgrading and development	No studies available, only list of infrastructure projects in port Authorities Master Plans				Upgrade and electrification of Promahonas – Thessaloniki railway line	New construction	EUR 80 million	NRSF 2007-2013	Under way, to be completed in 2015
GR	Ports and MMP	Igoumenitsa	Multimodal interconnections	Not available				Completion of second phase ofrailway complex at Thriassio Pedio	New construction		Cohesion fund, national funds	Under way, to be completed in 2015
GR	Ports and MMP	Thessaloniki	Infrastructure upgrading and development	Not available				Installing of GSM-R modern radio coverage system, as part of the ERTMS (European Rail Traffic	New installation	EUR 63 million	OP RAPT 2000-2006 and OP Accessibility Improvement 2007-2013	Under way, to be completed in 2015
GR	Ports and MMP	Igoumenitsa	Multimodal interconnections	Not available								
GR	Ports and MMP	Patras	Port interconnections, (further) development of multimodal platforms	Not available								
GR	Port, MoS	Athens/Piraeus/Heraklion – Lemesos	Port capacity	Not available								
GR	Port, MoS	Athens/Piraeus/Heraklion – Lemesos	Multimodal interconnections	Not available								
CY	Port, MoS	Athens/Piraeus/Heraklion – Lemesos	Port capacity	Sustainable development strategy for inland transport and maritime transport (port infrastructure)	Not available	New passenger terminal - The new location of the terminal has been strategically chosen in order to serve the aim of separating the port (Terminal 1) into two sections (freight & passenger). The new Passenger Terminal (7.500 m2) a two stores building will consist out of one departure hall, two arrival halls and other supporting areas.		New passenger terminal	New construction	14,5mil.	State Budget (Cyprus Port Authority).	

Country	Mode	Corridor Link / Corridor Node	Documents existing according to DG MOVE	Multinational, national, interregional analyses / strategies /perspectives/ master plans	Project related documentation (CBA, EIA, similar)	Description of ongoing projects	Others	Name of implementation project	Type	Investment Value	Funding Source	
						Extension of the south container quay - The south container quay will be expanded by 500m reaching 800m. This project will improve in terms of capacity and efficiency the loading and unloading of containers from the mother container		Extension of the south container quay	Upgrading	25 mil.	Co-funded by EU (Cohesion Fund) [Expected/ proposed in period 2014-2020]. Maximum contribution 85% of eligible cost. State Budget (Cyprus Port Authority).	
						Expanding the cargo storage capacity - The Port will expand its storage capacity in order to facilitate the exploitation of hydrocarbons in eastern Mediterranean basin as well as its container capacity.		Expanding the cargo storage capacity	Upgrading	40 mil.	Co-funded by EU (Cohesion Fund-CEF) [proposed in period 2014-2020]. Maximum contribution 30-85% of eligible cost. State Budget (Cyprus Port Authority).	
						Expansion of Terminal 2 Vasiliko - The Lemesos Port (Terminal 2- Vasiliko) serves as the industrial port of Cyprus. The port will be expanded/ improved in order to cope with the increasing demand, including facilitating the exploitation of hydrocarbons in eastern Mediterranean basin.		Expansion of Terminal 2 Vasiliko	Upgrading	491,3 mil.	funded by EU (TEN-T Fund) Co-funded by EU (CEF) [proposed in period 2014-2020]. Maximum contribution 30% of eligible cost. State Budget (Cyprus Port Authority). Private Funds-Concession Contract.	
CY	Port, MoS	Athens/Piraeus/Heraklion – Lemesos	Multimodal interconnections	Sustainable development strategy for inland transport and maritime transport (port infrastructure)	Not available	Link road connecting Lemesos-Paphos Motorway with the Lemesos Port - The road network within the study area is currently most congested resulting from its use by port traffic and also other traffic in the west of the urban area of Lemesos. The Link Road will improve access to the Lemesos Port. In addition it will facilitate the through traffic in the area and redirect the Heavy Goods Vehicles serving the Port from congested urban roads.		Link road connecting Lemesos- Paphos Motorway with the Lemesos Port				

Country	Mode	Corridor Link / Corridor Node	Documents existing according to DG MOVE	Multinational, national, interregional analyses / strategies /perspectives/ master plans	Project related documentation (CBA, EIA, similar)	Description of ongoing projects	Others	Name of implementation project	Type	Investment Value	Funding Source	
CY	Ports and MMP	Lemesos – Lefkosia	Upgrading of modal interconnection	Sustainable development strategy for inland transport and maritime transport (port infrastructure)	Not available	Link road connecting Lemesos-Paphos Motorway with the Lemesos Port - The road network within the study area is currently most congested resulting from its use by port traffic and also other traffic in the west of the urban area of Lemesos. The Link Road will improve access to the Lemesos Port. In addition it will facilitate the through traffic in the area and redirect the Heavy Goods Vehicles serving the Port from congested urban roads.		Link road connecting Lemesos- Paphos Motorway with the Lemesos Port				
CY	Ports and MMP	Lefkosia – Larnaca	Multimodal interconnections and telematic applications systems	Sustainable development strategy for inland transport and maritime transport (port infrastructure)	Not available	Port Community System - Cyprus Port Authority aims to achieve optimal efficiency in their operation. Along this strategy an integrated Port Community System is considered as crucial component of this strategy. This will simplify and streamline the management of freight especially transshipment and allow exchange of data and interoperability between ICT Systems with other ports. Additionally such systems will enable exchanging data between ports and road network to better manage freight especially hazardous cargo.		Port Community System				

Orient / East Med Corridor Study 2014
on behalf of European Commission / DG MOVE

NATIONAL STUDIES Date: September 05th 2014

		(Or expected com-pletion)			Iso codes:	Sea/Air/Rail/Road/ IWW	Freight/Pax/ Both	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Y/N + remarks	Add further remarks
A unique number	Title of study	Publication date	FS, CBA, Master plan, infrastructure upgrade, strategy etc.	Time period covered by study e.g. forecast to 2030	List of countries e.g. DE; CZ; SK; AT; RO; BG ; GR; CY. Put main country first.	Drop down list with main modes		Does it contain technical data on current infrastructure?	Does it describe bottlenecks?	Does it contain plans, feasibility of new infrastructure projects?	Does it show technical specifications for planned infrastructure?	Does it include transport cost data or analysis?	Does it include project costs, and information about financing?	Does it contain data on current or historical traffic/demand levels?	Does it contain demand forecasts?	Does it cover electronic traffic management systems?	Does it include environmental assessments, or other externalities?									
General Information					**Geogr. Coverage**	**Modal Coverage**		**Study Content**										**Relevance for Corridor Study Activities**								**Miscel-laneous**
Study ref.	**Title**	**Year of execution**	**Type of document**	**Time Period**	**Corridor countries**	**Transport Modes**	**Freight or Pax**	**Tech data on current infrastr.**	**Bottle-necks**	**Infra-structure Projects**	**Tech data on planned infrastr.**	**Cost Data/ Analysis**	**Financial data**	**Data on hist. and curr. tpt flows**	**Demand/ Market Fore-casts**	**Traffic Manag-ement systems**	**Environ-mental issues**	**Stake-holder identi-fication**	**Data Sources e.g. for TENtec**	**Com-pliance of Infrastruc-ture with TEN-T**	**Corrdior Ob-jectives**	**Corridor measures**	**Market Study**	**Imple-mentation of Plan**	**Invest-ment Strategy**	**Free Comments**
1	Bundesverkehrswegeplan 2003 (Federal Transport Infrastructure Program 2003)	2003	Master Plan	2003-2015	DE	Multimodal	Freight and Pax	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	
2	Bundesverkehrswegeplan 2015 Projektlisten (Federal Transport Infrastructure Program 2015 Project lists)	2014	National Strategy Paper	2015-ongoing	DE	Multimodal	Freight and Pax	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	
3	Investitionsrahmenplan (IRP) 2011-2015 (Investment framework plan 2011-2015)	2012	National Strategy Paper	2011-2015	DE	Multimodal	Freight and Pax	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	
4	Verkehrsinvestitionsbericht (VIB) 2012 (Transport Investment Report 2012)	2014	National Strategy Paper	2012	DE	Multimodal	Freight and Pax	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
5	Prognose der deutschlandweiten Verkehrsverflechtung für 2025 (Forecast of the transport interrelations throughout Germany 2025)	2007	Market/Research Study	-2025	DE	Multimodal	Freight and Pax	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	
6	Prognose der deutschlandweiten Verkehrsverflechtung für 2030 (Forecast of the transport interrelations throughout Germany 2030)	2014	Market/Research Study	-2030	DE	Multimodal	Freight and Pax	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	
7	Principles for the professional concept of maintaining the Elbe between the Czech Republic and Geesthacht with explanations	2005	National Strategy Paper	2005-ongoing	DE	IWW	Freight	Y	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	
8	Riverbed stabilization concept for the Elbe from Mühlberg to the river mouth of Saale	2009	National Strategy Paper	2009-ongoing	DE	IWW	Freight	Y	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	
9	Key elements of an overall concept for the Elbe of the federal government and state governments	2013	National Strategy Paper	2013-ongoing	DE	IWW	Freight	Y	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
10	Untersuchung der Beschleunigung der Eisenbahnverbindungen (Analysis on speeding-up the railway connections Dresden - Prague and Munich - Prague)	2010	Feasibility Study	2010-ongoing	DE	Rail	Freight and pax	N	N	Y	N	Y	Y	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	
11	The shipping-affine potential of Elbstromgebietes and its development possibilities	2011	Market/Research Study	2025	DE	IWW	Freight	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
12	Study on traffic-related potentials and the relief effect for the existing rail line in the Elbe Valley	2011	Feasibility Study	2011-ongoing	DE	Rail	Freight and Pax	Y	N, but possible future bottleneck	Y	Y	N	Y	N	N	N	Y	N	N	N	Y	Y	N	N	N	
13	Study on Investigation of lines variants and possible routes for a common cross-border planning	2012	Feasibility Study	2012-ongoing	DE	Rail	Freight and Pax	Y	N, but possible future bottleneck	Y	Y	N	Y	N	N	N	Y	N	N	N	Y	Y	N	N	N	
14	Analysis der makroökonomischen Effekte der Neubaustrecke Dresden - Prag für den Freistaat Sachsen (Analysis of the macroeconomic effects of the new route Dresden - Prague for the Free State of Saxony)	2014	Market/Research Study	2014	DE	Rail	Freight and Pax	N	Y	Y	N	N	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
15	Study on Transport potential by upgrading the Elbe Seitenkanal	2013	Market/Research Study	2013	DE	IWW	Freight	Y	Y	Y	Y	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	N	N	N	
16	Equipment of the Railion Deutschland AG locomotives		Technical Report / Assistance		DE	Rail	Freight																				
17	DB Netz AG, "Leistungs- und Finanzierungsvereinbarung Infrastrukturzustands- und -entwicklungsbericht 2013",	2014	Technical Report / Assistance	2014	DE	Rail	Freight and Pax		Y							Y				Y						ERTMS Status
18	Dopravní politika pro období 2014-2020 (The Transport Policy of the Czech Republic for 2014 – 2020 with the prospect of 2050)	2013	Master Plan	2013	CZ	Multimodal	Freight and Pax																			
19	Transport Sector Strategies, 2nd Phase The Medium-Term Plan of Transport Infrastructure Development with a Long-Term Outlook	2014	Master Plan	2014	CZ	Multimodal	Freight and Pax																			

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
20	OPD / Operational Programme Transport 2007-2013		National Strategy Paper	2007-2013	CZ	Multimodal	Freight and Pax																			
21	OPD/ Operational Programme Transport 2014-2020		National Strategy Paper	2014-2020	CZ	Multimodal	Freight and Pax																			
22	Rail Corridor E ERTMS/ETCS in the section of German border-Decín-Prague-Kolín	2013	Technical Report / Assistance	2010-2013	CZ	Rail	Freight and Pax																			This project has been cancelled.
23	ERTMS deployment on Corridor E (Dresden-Budapest): On-board Equipment of Ceské dráhy, a.s.	2011	Technical Report / Assistance	2008-2009	CZ	Rail	Freight and Pax																			This project has been cancelled.
24	Corridor E: Trackside equipment in the Czech Republic	2013	Technical Report / Assistance	2008-2013	CZ	Rail	Freight and Pax																			

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
25	ERTMS National Implementation Plan	2007	National Strategy Paper	2001-2013	CZ	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	
26	Reconstruction of the Olomouc Railway Station	2011	Technical Report / Assistance	2009-2010	CZ	Rail	Freight and Pax																			No study existing, just info broschure
27	Rail junction upgrade will enhance national and cross-border journeys		Technical Report / Assistance		CZ	Rail	Freight and Pax																			Breclav Border Rail Station Rehabilitation
28	Revamp on the cards for Prague station		Technical Report / Assistance		CZ	Rail	Pax																			Praha Hlavni Nadrazi (Prague Main Station) Upgrade
29	VRT Praha - Litomerice (draft version)	2014	Feasibility Study	2014-	CZ	Rail	Freight and Pax	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	Y	Y	N	Y	Y	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
30	Major motorway a step closer to completion (D8 Motorway Usti nad Labem - Lovosice)	2010	Technical Report / Assistance	ongoing	CZ	Road	Freight and Pax											N	Y	Y	Y	Y	Y	Y	Y	Critical issue, D8 motorway faces since June 2013 delay in finalizing, missing link cross border road Praha - Dresden
31	EIA and Feasibility study documents on the construction of the Elbe IWW Navigation step at Decin (Czech Republic)		Feasibility Study	2010	CZ	IWW	Freight and Pax																			
32	Gesamtverkehrsplan 2012 (General Transport Infrastructure Strategy 2012)		Master Plan	2012-ongoing	AT	Multimodal	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	The Austrian Transport Masterplan analyses the current traffic situation, includes forecast for 2025 and defines a set of measures to accomplish
33	ASFINAG Rahmenplan 2013 - 2018 (Road Investment Framework)		National Strategy Paper	2013-2018	AT	Road	Freight and pax	N	N	Y	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	
34	ÖBB Rahmenplan 2013 - 2018 (Rail Investment Framework)		National Strategy Paper	2013-2018	AT	Rail	Freight and pax	N	N	Y	Y	N	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	

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35	Zielnetz 2025 (Long-term rail infrastructure programme)		National Strategy Paper	2012-2025	AT	Rail	Freight and pax	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	
36	Bundesstraßengesetz (Long-term road infrastructure programme)		National Strategy Paper	2012-ongoing	AT	Road	Freight and pax	N	N	Y	Y	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	
37	IVS Action Plan 2011 (Intelligent Traffic Management)		National Strategy Paper	2011-	AT	Multimodal	Freight and pax																			
38	Verkehrsprognose Österreich VPÖ 2025+ (Traffic Forecast Austria 2025)		National Strategy Paper	2009-2025	AT	Multimodal	Freight and Pax	N	Y	N	N	N	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	
39	Studies on improving the Freight Corridor Concept by using Telematic Applications for Freight, and methods, tools and procedures developed by RNE for rail corridors	2013	Technical Report / Assistance	2010-2012	AT	Rail	Freight and Pax																			No study existing, just info broschure

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40	ERTMS deployment on Corridor E (Dresden-Constanta) Austrian vehicles	2013	Technical Report / Assistance	2009-2012	AT	Rail	Freight and Pax																			Retrofitting of locomotives and authorisation for ETCS operation is still on going. No stidy found
41	ÖBB Infra "Streckenausrüstung mit ETCS"	2014	Technical Report / Assistance	2014	AT	Rail	Freight and Pax									Y								Y		ERTMS Status
42	Strategic Development Plan of Transport Infrastructure of the Slovak Republic by 2020 - Master Plan, phase I	2014	Master Plan	-2020	SK	Multimodal	Freight and Pax																			
43	EUSDR Report: Slovakia metropolitan transport system Bratislava, D4 motorway		Technical Report / Assistance	2012	SK	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
44	National Transport Strategy – National Transport Policy Concept (Nemzeti Közlekedési Stratégia – Nemzeti Közlekedési Koncepció)	2013	Master Plan		HU	Multimodal	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	under development

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45	Operative Programme of Integrated Transport Development (Integrált Közlekedésfejlesztési Operatív Program – IKOP 2014-2020)		National Strategy Paper	2014-2020	HU	Multimodal	Freight and Pax	Y	Y	Y	N	Y / N	N	Y	Y	Y / N	Y	Y	Y	Y	Y	Y	Y	Y	Y	
46	Traffic Model for all Transport Modes	2013	Market/Research Study		HU	Multimodal	Freight and Pax	N	N	Y	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
47	National Railway Development Concept	2013	National Strategy Paper		HU	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	
48	Report on the Timeline of implementation of ERTMS Corridors D and E on the Territory of Hungary	2013	National Strategy Paper	2013	HU	Rail	Freight and Pax									Y								Y		ERTMS Status
49	Supplementary report on the changes in 2013 to the timeline of implementation of ERTMS Corridors D and E on the territory of Hungary	2014	National Strategy Paper	2014	HU	Rail	Freight and Pax									Y								Y		ERTMS Status

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50	Reconstruction of Biatorbágy-Tata section	2015	Technical Report / Assistance		HU	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y					
51	Reconstruction of Szolnok Railway Station	2015	Technical Report / Assistance		HU	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	
52	Construction of 2nd track on Békéscsaba - Lőkösháza section	2014	Technical Report / Assistance		HU	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
53	Strategic Environmental Impact Assessment	2013	Market/Research Study		HU	Multimodal	Freight and Pax	Y	Y	Y	N	Y / N	N	Y	Y	Y / N	Y	Y	Y	Y	Y	Y	Y / N	Y	Y	
54	M0 motorway Southern Sector / Reconstruction of existing carriageway on M0/M1 - M0/Main road No.51 section		Technical Report / Assistance	2016	HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

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55	Upgrading M15 expressway to motorway (construction of 2nd carriageway) on M1-Rajka section	2013	Feasibility Study		HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
56	M0 motorway Southern Sector / Upgrading interchange M0/M1 and widening section 0+115 - 2+840 up to 2x3 traffic lanes	2014	Technical Report / Assistance		HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
57	Reconstruction of M1 motorway on Budapest - Bicske section	2014	Technical Report / Assistance		HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	
58	Upgrading M15 motorway Rajka Border Crossing to comply with accessibility requirements	2013	Technical Report / Assistance		HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	
59	Construction of M43 motorway on Makó-Nagylak section	2012	Technical Report / Assistance		HU	Road	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	

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60	Traffic Model for all Transport Modes	2013	Market/Research Study		HU	Multimodal	Freight and Pax	N	N	Y	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
61	Strategic Environmental Impact Assessment	2013	Market/Research Study		HU	Multimodal	Freight and Pax	N	Y	Y/N	N	N	N	N	N	Y/N	Y	Y	N	Y	Y	Y	N	Y	Y	
62	Analysis of Inland Waterway Transport Development Opportunities	2013	Market/Research Study		HU	IWW	Freight and Pax	N	Y	Y/N	N	N	N	N	N	Y/N	Y	Y	N	Y	Y	Y	N	Y	Y	
63	National Road Transport Platform of ERTRAC-Hungary	2010	Market/Research Study		HU	Road	Freight and Pax	N	N	N	N	N	N	N	N/Y	N	Y	N	N				N	N	N	
64	Preparation of design for approval for the railway line section Biatorbagy (incl.)-Tata (excl.)	2013	Technical Report / Assistance	2009-2012	HU	Rail	Freight and Pax																			No study existing, just info broschure

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65	Retrofitting of MÁV-TRAKCIÓ locomotives with ETCS equipment to be operated on "Corridor E"	2012	Technical Report / Assistance	2009-2012	HU	Rail	Freight and Pax																			No study existing, just info broschure
66	Construction of ETCS 2 on Budapest - Hegyeshalom section	2015	Technical Report / Assistance		HU	Rail	Freight and Pax																			
67	Reconstruction of Southern Danube Railway Bridge	2015	Technical Report / Assistance		HU	Rail	Freight and Pax																			
68	Track reconstruction of Gyoma - Békéscsaba section	2011	Technical Report / Assistance		HU	Rail	Freight and Pax																			
69	Reconstruction of signalling and safety system of Gyoma - Békéscsaba section and reconstruction of Békéscsaba Railway Station reconstruction	2011	Technical Report / Assistance		HU	Rail	Freight and Pax																			

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70	General Transport Masterplan for Romania / Problem identification	2014	Master Plan	ongoing	RO	Multimodal	Freight and Pax	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
71	Romanian Preliminary Report on the Master Plan Short, Long and Medium Term	2013	Master Plan	2020-2030	RO	Multimodal	Freight and Pax																			
72	Intermodal Transport strategy in Romania 2020	2011	National Strategy Paper	2020	RO	Intermodal	Freight	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	Y	N	N	
73	Revision Feasibility Study for the "Railway line rehabilitation Border - Curtici-Simeria Pan European Corridor IV component for movement of trains with a maximum speed of 160 km / h " section 1: Border - Curtici - Arad - km 614	2010	Feasibility Study	36 months	RO	Rail	Freight and Pax	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y	N	
74	Revision Feasibility Study for the "Railway line rehabilitation Border - Curtici-Simeria Pan European Corridor IV component for movement of trains with a maximum speed of 160 km / h " section 2 and 3: km 614 - Gurasada - Simeria	2010	Feasibility Study		RO	Rail	Freight and Pax																			

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75	Revision Feasibility Study for the "Railway line rehabilitation Craiova - Calafat Pan European Corridor IV component for movement of trains with a maximum speed of 160 km / h "	2012	Feasibility Study		RO	Rail	Freight and Pax	N	Y	Y	Y	Y	Y													
76	Calafat Port development. Improvement of navigation conditions on the Romanian-Bulgarian Danube common section and complementary studies. EUROPEAID/122137/D/SV /RO	2011	Technical Report / Assistance		RO	IWW	Freight and Pax	N	N	Y	Y	N	N	N	N	N	N	N	N	N		N	N		N	
77	Feasibility Study Motorway Arad - Timisoara, part of ARAD-TIMISOARA-LUGOJ Project, CBA	2007	Feasibility Study		RO	Road	Freight and Pax	N	N	N	N	N	N		N	N		N		N		N	N		N	
78	Revision of Feasibility Study for road rehabilitation DN 56 Craiova - Calafat	2014	Feasibility Study		RO	Road	Freight and Pax	N		N	N	Y	Y		N	N		N		N		N	N		N	
79	Feasibility Study Motorway Nadlac - Arad	2009	Feasibility Study		RO	Road	Freight and Pax	Y			Y	Y	Y	Y		N	Y	N		N		N	N		N	

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80	Feasibility Study Motorway Timisoara - Lugoj	2007	Feasibility Study		RO	Road	Freight and Pax	N			Y	Y	Y		N	N		N		N		N	N		N	
81	DIOMIS Romania Evolution of intermodal Rail/Road traffic by 2020	2010	Market/Research Study	2020	RO	Multimodal	Freight and Pax	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	Y	N	N	
82	The Lugoj bypass	2012	Technical Report / Assistance	2007-2010	RO	Road	Freight and Pax		Traffic congestion on the urban road		Construction of by-pass will be performed at the standard national road with a single lane drive, roundabout		16.358.126 €								Infrastructure works	New construction			ISPA	
83	DN6, rehabilitation section Drobeta Turnu Severin-Lugoj	2013	Technical Report / Assistance	2005-2013	RO	Road	Freight and Pax		Traffic congestion on the urban road		Rehabilitation of 132.625 km of existing road two lanes; building bypasses the city Drobeta Mehadia Domasnea		92.632.840 €								Infrastructure works	Upgrading			ISPA	
84	Feasibility study, detail design and tender documentation for the bypass Lugoj and preparing the details of execution and tender documentation for access road infrastructure at Calafat-Vidin bridge	2002	Feasibility Study	2002-2008	RO	Road	Freight and Pax		Traffic congestion on the urban road		Preparation of mature projects for completion of the road infrastructure on the southern branch of the Pan European Corridor IV		337.251 €								Study, Consultation	New construction			ISPA	

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85	Technical project for the railway infrastructure access to bridge over Danube at Calafat-Vidin	2007	Technical Report / Assistance	2007-2008	RO	Rail	Freight and Pax		Poor condition of rail infrastructure at border crossing		New bridge over Danube		296.000 €								Study, Consultation	New construction			ISPA	
86	Development of action plans the strategic noise maps for major railways with a traffic of more than 60,000 train passages per year	2009	National Strategy Paper	2009	RO	Rail	Freight and Pax		Lack of indicators related to the rail traffic noise		Action plans of the major railways with a traffic of more than 60,000 square passage of trains per year, for managemen		81.950 €								Study, Consultation	Rehabilitation			ERDF	
87	Development of General Transport Master Plan	2010	Master Plan	base year 2008, forecast for 2015 and 2030	BG	Multimodal	Freight and Pax	Y, for 2008 (out of date)	Y, Analysis of Existing Transport System and Weaknesses to be Overcome (as of 2008)	Y, Implementation and funding strategy	N	Y, general estimation of transport costs per mode for 2008, 2015 and 2030	N	Y, modelled (2008) and forecasted (2015, 2030) traffic flows per aggregated sections	Y, freight and passenger 2008 as base year; 2015 & 2030 forecast at aggregated level per transport mode	Y, as part of infrastructure projects	Y - SEA is included	Y, key national authorities involved	Y, forecast data although some are out of date	Y, national transport infrastructure to meet TEN-T characteristics	N	N	N, out of date	Y, 2007-2013 (out of date)	Y, indicative distribution	Key reports on transport model development, analysis of existing transport system and weaknesses, analysis of future transport
88	Update of the national transport model	2013	National Strategy Paper	2012, forecast for 2020 and 2030	BG	Multimodal	Freight and Pax	Y, incorporated in transport infrastructure network models	Y, by transport mode	N	Y, incorporated in transport infrastructure network models	N	N	Y, demand per rail and road for 2012 and forecast for 2020 and 2030	Y, freight and passenger	N	N	N	Y, technical, demand and forecast data	Y	Y	Y	N	N	N	Contains data and model update used for identification of infrastructure bottlenecks as of 2020 and 2030
89	National Reform Programme of the Republic of Bulgaria (2011–2015)	2011	National Strategy Paper	2011-2015	BG	Multimodal	Freight and Pax	N	N	N	N	N	N	N	N	N	Y, in general	Y, national authorities	N	N	N	N	N	N	Y, on national level	National Programme In implementation of “Europe 2020” Strategy

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90	National Development Programme: Bulgaria 2020 (NDP BG2020)	2012	National Strategy Paper	2013-2020	BG	Multimodal	Freight and Pax	N	N	N	N	N	N	N	N	N	Y, SEA	Y, national authorities	N	N	N	N	N	N	Y, on national level	The general long term objectives of the national policies
91	National Spatial Development concept for the period 2012 - 2025	2012	National Strategy Paper	2012-2025	BG	Multimodal	Freight and Pax	N	N	N	N	N	N	N	N	N	Y, SEA	Y, national authorities	N	N	N	N	N	N	Y, on national level	Strategic document
92	National regional development strategy of the Republic of Bulgaria for the period 2012 - 2022	2012	National Strategy Paper	2012-2022	BG	Multimodal	Freight and Pax	Y, on national level	N	N, general priorities	N	N	N	N	N	N	Y, as general priority	Y, national authorities	N	Y, in general	N	Y, national priorities	N	Y, indicative	Y, indicative distribution of resource	Strategic document for regional development and transport as part thereof
93	Strategy for development of the transport infrastructure of the Republic of Bulgaria until 2015	2006	National Strategy Paper	2006-2015	BG	Multimodal	Freight and Pax	Y, very aggregated	Y, on national level by transport mode	Y, priority projects to be implementation till 2015 by transport mode	N	N	Y, indicative estimations	Y, aggregated data on national level	N	N	N	Y, national authorities involved	N, out of date	Y, as a priority	N	N	N	Y, indicative plan for implementation of priority project, not detailed	Y, indicative values (most probably out of date)	Strategic document presenting the general transport infrastructure priorities for the period of 10 years 2006 - 2015; probably needs to be
94	National Strategy for development of the Bulgarian Transport System until 2020 - Priority 8: Improvement of the Transport Connectivity and the Market Access	2010	National Strategy Paper	2011-2020	BG	Multimodal	Freight and Pax	Y, very aggregated	Y, on national level by transport mode	N, priority infrastructure projects are listed on national level	N	N	N	Y, aggregated data on national level	Y, aggregated data on national level	N	Y - green transport as a priority	Y, national authorities involved	N	Y, stated as a priority	N	N	N	N, the period of all priorities implementation is considered	N	Strategic document presenting the general transport sector priorities for the period of 10 years 2010 - 2020

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95	Update of National ERTMS deployment strategy and TSI implementation strategy 2010	2013	National Strategy Paper	2013	BG	Rail	Freight and Pax									Y								Y		ERTMS Status
96	Strategy for Introduction and Implementation of the Technical Specifications for Interoperability of the Conventional Rail System in the Republic of Bulgaria	2010	National Strategy Paper	2010-2030	BG	Rail	Freight and Pax	Y, as of 2008/2009	Y, some general weakness	Y, priorities defined	Y, till 2030	N	N	N	Y, some assessment of competitiveness	Y; Strategy for implementation of TSI (Technical specification for interoperability) Traffic Operation and Manageme	Y, related to the TSI	Y	Y, railway sections parameters	Y	Y, related to TSI	Y, related to TSI	N	Y, plan for main objectives	Y, long term financial framework	The implementation of this strategy is for fulfilment all obligations in the field of rail interoperability all obligations in the field of rail
97	Long-term Plan for Introduction and Implementation of the Technical Specifications for Interoperability of the Conventional Rail System in the Republic of Bulgaria (2010 – 2030)	2010	National Strategy Paper	2010-2030	BG	Rail	Freight and Pax	Y, as of 2008/2009	Y, some general weakness	Y, related to the TSI Infrastructure Implementation	Y, till 2030	N	Y, financial long term framework	N	N	Y	N	Y	Y, related to the TSI implementation: tasks and periods	Y	Y, related to TSI	Y, related to TSI	N	Y, long term plan for ERTMS/ETCS by railway sections	Y, long term financial framework	The Plan shall be applied to national railway lines in compliance with the requirements of basic strategic documents developed at European and
98	Strategy for Development of the Transport Infrastructure of the Republic of Bulgaria through the Concession Schemes	2010	National Strategy Paper	2013-2015	BG	Multimodal	Freight and Pax	N	N	N	Y, general technical data, aggregated	N	N	Y, aggregated traffic data for seaports and airports	N	N	N	N	N	N	N	N	N	Y, for concession contracts to be concluded till 2015	N	Strategy on national level
99	Strategy for development of road infrastructure until 2020 - DRAFT	2012	National Strategy Paper	2014-2020	BG	Road	Freight and Pax	Y, aggregated on national level	Y, on national level	Y, priorities to be implemented	Y, aggregated	N	Y, indicative values	Y, aggregated	Y, aggregated data	Y, strategic objectives	Y, SEA	Y	Y, aggregated data and forecasts; plans for road sections' implementation	Y	Y	Y, for the sections along the corridor	N	Y, for the sections along the corridor	Y, related to the road infrastructure	This Strategy defines the vision, strategic objectives, priorities, measures, activities and projects

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
100	Strategy and National Plan for implementation of European railway system for traffic management system (ERTMS) in Republic of Bulgaria	2010	National Strategy Paper	2009-2040	BG	Rail	Freight and Pax	Y, Current status of the railway infrastructure (as of 2008/2009)	Y	Y, plans	Y, ERTMS Requirements and System Architecture	Y, CBA	Y, project costs and financing	Y	Y, for 2009 - 2040 per aggregated sections and in number of locomotives	Y	N	Y	Y, regarding ERTMS/ETCS	Y, full compliance	Y	Y	Y, CBA	Y, indicative plan	Y, indicative	The Strategy for introduction of ERTMS shall be applied to the national railway lines, included in the decisions, conclusions and plans for railway
101	Assessment of the railway passenger transport services market demand in the Republic of Bulgaria and development of measures for the services optimisation	2013	Market/Research Study	2011-2040	BG	Rail	Pax	Y, very general information about road and rail infrastructure	Y, at national level	N	N	Y	Y	Y, per railway lines	Y, for 2020, 2030 and 2040	N	N	Y	Y, aggregated	N	N	N	Y, rail pax only	Y	N	
102	Development of strategy for integration of the Bulgarian railway infrastructure into the European intermodal transport network	2006	National Strategy Paper	2005-2020	BG	Multimodal	Freight	Y, Current status of intermodal terminals (as of 2005)	Y	Y, Action Plan	Y, area	N	Y, Information about possible financing	Y, aggregated demand data	Y, aggregated freight traffic data	N	N	N, out of date	N, out of date	N	Y	Y	N, out of date demand	N, out of date plans	Y	Strategy on national level
103	Technical Assistance for the Modernisation of the Vidin-Sofia Railway Line in Bulgaria	2009	Feasibility Study	2009-2038	BG	Multimodal	Freight and Pax	Y, as of 2008 (some out of date)	Y	Y, Feasibility Study for modernisation of Sofia - Vidin railway line (160 km/h, partially new allignment and doubling)	Y, Preliminary design	Y, CBA	Y, some could be out of date	Y, for 2000-2008 period	Y, till 2038	Y, full interoperability compliance for infrastructure, ERTMS	Y, ToR for EIA	Y	Y, some data could be out of date	Y	Y	Y	Y, at level requiered for the feasibility study	N, out of date	N, out of date	
104	Technical Assistance for the Modernisation of the Trans-European Railway Network in Bulgaria: railway line Radomir - Kulata	2013-2015	Feasibility Study	2012-2042	BG	Multimodal	Freight and Pax	Y, as of 2012	Y, as of 2012	Y, Feasibility Study for Radomir - Kulata railway line modernisation	Y, available several options, no final decision is taken yet	Y, CBA for considered infrastructure options	Y, preliminary estimations per infrastructure options considered	Y, 2012	Y, preliminary forecast	Y, ERTMS	Y, ToR for EIA	Y	Y, technic and traffic data	Y	Y	Y, section of Corridor 4	N, refined forecast for the preferred option is under way	N, not ready	N, not ready	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
105	Technical Assistance for Modernisation of the Trans-European Railway Network in Bulgaria: Position II Sofia-Pernik-Radomir Railway Line	2010	Feasibility Study	2006-2040	BG	Rail	Freight and Pax	Y, as of 2006/2007 (some could be out of day)	Y, as of 2008	Y, Feasibility Study for line modernisation	Y, Preliminary design	Y, CBA	Y, some could be out of date	Y, for 2000-2006 period	Y, till 2038	Y, ERTMS	Y, at level required for development of tender documentation for EIA for each of the alternatives proposed	Y	Y, some data could be out of date	Y	Y	Y	Y, at level required for the feasibility study	N, out of date	N, out of date	
106	Technical Assistance for development of CBA and Preparation of an Application Form for financing the electrification and reconstruction of railway line Svilengrad – Turkish border	2008	Feasibility Study	2009-2030	BG	Rail	Freight and Pax	Y	Y	Y, electrification and reconstruction of railway line Svilengrad - border with TR	Y	Y, CBA	Y	Y	Y	Y	N	Y	Y, technical data	Y	Y	N, project completed and put in operation	N, out of date	N, project completed and put in operation	N, project completed and put in operation	The traffic flows on a Svilengrad – Turkish border railway line were elaborated in the Feasibility study for the project Electrification and
107	Feasibility study for construction of an intermodal (rail/road) terminal in the Bulgarian South Central Region of Planning - Plovdiv	2010	Feasibility Study	2013-2040	BG	Multimodal	Freight	Y, as of 2008/2009	Y	Y, construction of new intermodal terminal near by Plovdiv	Y	Y	Y	Y, as of 2008-2009	Y, forecast for 2014 - 2040	N	Y, EIA for the alternatives considered	Y	Y, intermodal terminal traffic forecast	Y	Y	Y	Y	Y	Y	
108	Technical Assistance for Modernisation of TEN-T Railway Lines in Bulgaria: Position I - Railway Line Sofia-Plovdiv	2010	Technical Report / Assistance	2011-2030	BG	Multimodal	Freight and Pax	Y, as of 2007/2008	Y	Y, Modernization of Sofia - Plovdiv railway line (160 km/h, partially new alignment)	Y	Y	Y	Y, 2000 - 2008	Y, 2011 - 2030	Y	Y, at level required for the application form; within the project only preparation of tender for EIA Contractor selection is	Y	Y, some of data could be out of date	Y	Y	Y	Y, at level required for the feasibility study; could be out of date	N, out of date	N, out of date	This railway line section is important for both national and European railway network
109	Bulgaria Struma Motorway Cost Benefit Analysis	2011	Feasibility Study	2008-2040	BG	Road	Freight and Pax	Y	Y	Y, construction of new motorway sections	Y, basic parameters	Y	Y	Y, traffic flow on Struma Corridor for 2008	Y, for different scenarios	N	N	N	Y, technical data and traffic forecast	Y, the new infrastructure is designed according to the TEN-T requirements	Y	Y	Y	Y, at level necessary for the CBA	Y, at level necessary for CBA	The base year of this CBA is 2008 and this analysis is used for Application form preparation

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
110	Preparation of Application Form for financing the construction of Struma Motorway, Lots 1, 2 and 4	2011	Technical Report / Assistance	2008-2040	BG	Road	Freight and Pax	Y	Y	Y, initial feasibility studies included in Annex	Y, basic parameters	Y	Y	Y, traffic flow on Struma Corridor for 2008	Y, for selected infrastructure option/ scenario	N	Y, EIA included in Environmental Annex	Y	Y, technical data and traffic forecast	Y, the new infrastructure is designed according to the TEN-T requirements	Y	Y	Y	Y, at level necessary for the Application form	Y	
111	Preparation of Application Form for financing the modernisation of railway section Septemvri - Plovdiv		Technical Report / Assistance		BG	Rail	Freight and Pax																			
112	Preparation of Application Form for financing the constructuion of MW Kalotina - Sofia Lot 1: Western arc of the Sofia Ring Road		Technical Report / Assistance		BG	Road	Freight and Pax																			
113	Preparation of Application Form for financing the constructuion of MW Kalotina - Sofia Lot 2: North Speed Tangent		Technical Report / Assistance		BG	Road	Freight and Pax																			
114	Preparation of Application Form for financing the Construction of bypass of Montana town		Technical Report / Assistance		BG	Road	Freight and Pax																			

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
115	Preparation of Application Form for financing the Construction of bypass of Vratsa town (section of the first class road I-1 /E-79/Vidin - Sofia - BC Kulata)		Technical Report / Assistance		BG	Road	Freight and Pax																			
116	Feasibility Study and CBA for Maritza MW from km 5 to km 72		Feasibility Study		BG	Road	Freight and Pax																			
117	Technical Assistance for the Rehabilitation of the railway infrastructure along the railway line Plovidv - Burgas		Feasibility Study		BG	Rail	Freight and Pax																			
118	Operational Programme "TRANSPORT INFRASTRUCTURES, ENVIRONMENT & SUSTAINABLE DEVELOPMENT 2014-2020"	2014	Master Plan	2014-2010	GR	Multimodal	Freight and Pax	N	Y	Y	N	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	
119	Strategic Framework of Transport Investments for 2014-2025	2014	National Strategy Paper	2014-2025	GR	Multimodal	Freight and Pax	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
120	Feasibility Study for the Western Extensions of the Railway Network of Greece	2003	Feasibility Study	2002-2015	GR	Rail	Freight and Pax	Y	Y	Y (CBA)	Y	Y	Y	Y (passenger and freight demand)	Y (passenger and freight demand)	Y	N (only socio-economic impact)	Y	Y	N	N	N	N	Y	N	Detailed feasibility study
121	MOS4MOS Master Plan	2011	Master Plan	2011-2012	GR	Sea	Freight	N	Y	N	N	N	Y	N	N	Y	N	Y	N	N	Y (seamless transport)	N	N	N	N	Pilots implementation of ICT solutions
122	Remaining studies to complete the upgrading of the main rail axis Athens-Thessaloniki in the section ATHENS R.S. (KM 9+700) - AHARNES ATTICA (KM 22+300)	2012	Market/Research Study	October 2012 - December 2014	GR	Rail	Freight and Pax																			No study existing, just info broschure
123	Evaluation study for the upgrade of railway axis 22 and technical support of OSE S.A. (Deliverable 4-Feasibility Study and Action Plan)	2012	Feasibility Study	2011-2012	GR	Rail	Freight and Pax	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	
124	Feasibility Study on the proposed Freight Village in the Thesprotia Region (ADRIAMOS Project)	2014	Feasibility Study	2014	GR	Intermodal	Freight	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
125	Strategic Action Plan for the Development of Igoumenitsa-Patras-Sofia-Budapest Priority Axis 7 (Final Report Deliverable 5)	2012	Feasibility Study	2012	GR	Road	Freight and Pax	N	Y	Y	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	Y	
126	Strategy on TEN-T ports and roads	2014	Master Plan	2014-	CY	Multimodal	Freight and Pax																			
127	Cyprus Airports		Technical Report / Assistance	2005-2009	CY	Air	Pax	Y	N	Y; Paphos and Larnaca Airports	Y; Design and constructio n of two new airport terminals	Y;	Y; Investment related to the desing and constructio n of the terminals	Y; Passengers	N	N	N	Y; Hermes Airports	Y; Identificatio n of contractor for upgrading of airport terminals	N	N	N	Y	N	N	
128	Cyprus Transport Statistics 2012	2012	Market/Resear ch Study	2012	CY	Multimodal	Freight and Pax	N	N	N	N	N	N	Y; Aircraft, passengers and freight movements by airport	N	N	N	N	Y; data on traffic flows	N	N	N	N	N	N	
129	A feasibility study for introducing a light rail in Cyprus between: Nicosia-Limassol (centre-airport); Nicosia-Larnaka (Centre-airport); Limassol-Larnaka	2012	Feasibility Study	2012	CY	Air	Pax	Y	Y; report decribe the absence of a rail link in Larnaka airport	Y; rail link in Larnaka airport	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	

Study ref.	Title	Year of execution	Type of document	Time Period	Corridor countries	Transport Modes	Freight or Pax	Tech data on current infrastr.	Bottle-necks	Infra-structure Projects	Tech data on planned infrastr.	Cost Data/ Analysis	Financial data	Data on hist. and curr. tpt flows	Demand/ Market Fore-casts	Traffic Manag-ement systems	Environ-mental issues	Stake-holder identi-fication	Data Sources e.g. for TENtec	Com-pliance of Infrastruc-ture with TEN-T	Corrdior Ob-jectives	Corridor measures	Market Study	Imple-mentation of Plan	Invest-ment Strategy	Free Comments
130	Strategy for sustainable development of inland transport and maritime transport	2014	National Strategy Paper	2014	CY	Multimodal	Freight and Pax	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	N	N	Y	Y	N	Y	N	
131	Model Report of "Perimetricos motorway of Nicosia"	2004	Feasibility Study	2003-2027	CY	Road	Freight and Pax	N	Y; report describe road traffic flows around Lefkosia urban node	N	N	N	N	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	
132	Final report on "The Nicosia integrated mobility master plan"	2010	Master Plan	2010-2020	CY	Road	Freight and Pax	N	N	Y	N	N	Y	N	Y	Y	Y	Y	N	N	N	N	Y	N	N	

Study on the Orient/East Med Core Network Corridor

Final Report – Annex 3

MAPS OF THE CORRIDOR

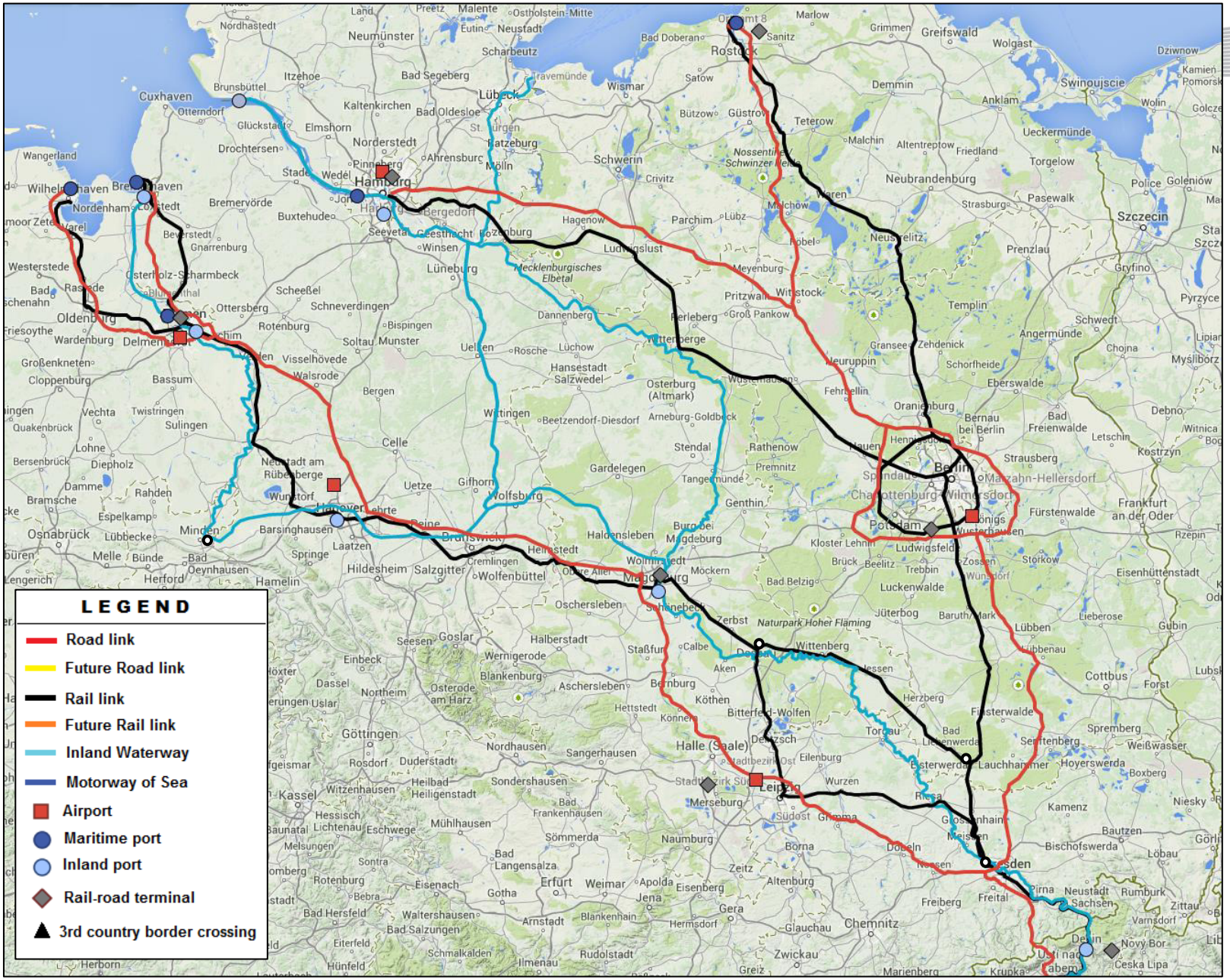
December 2014

Study on the Orient / East-Med Core Network Corridor, DG MOVE, European Commission;
Contractor: iC consulenten / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

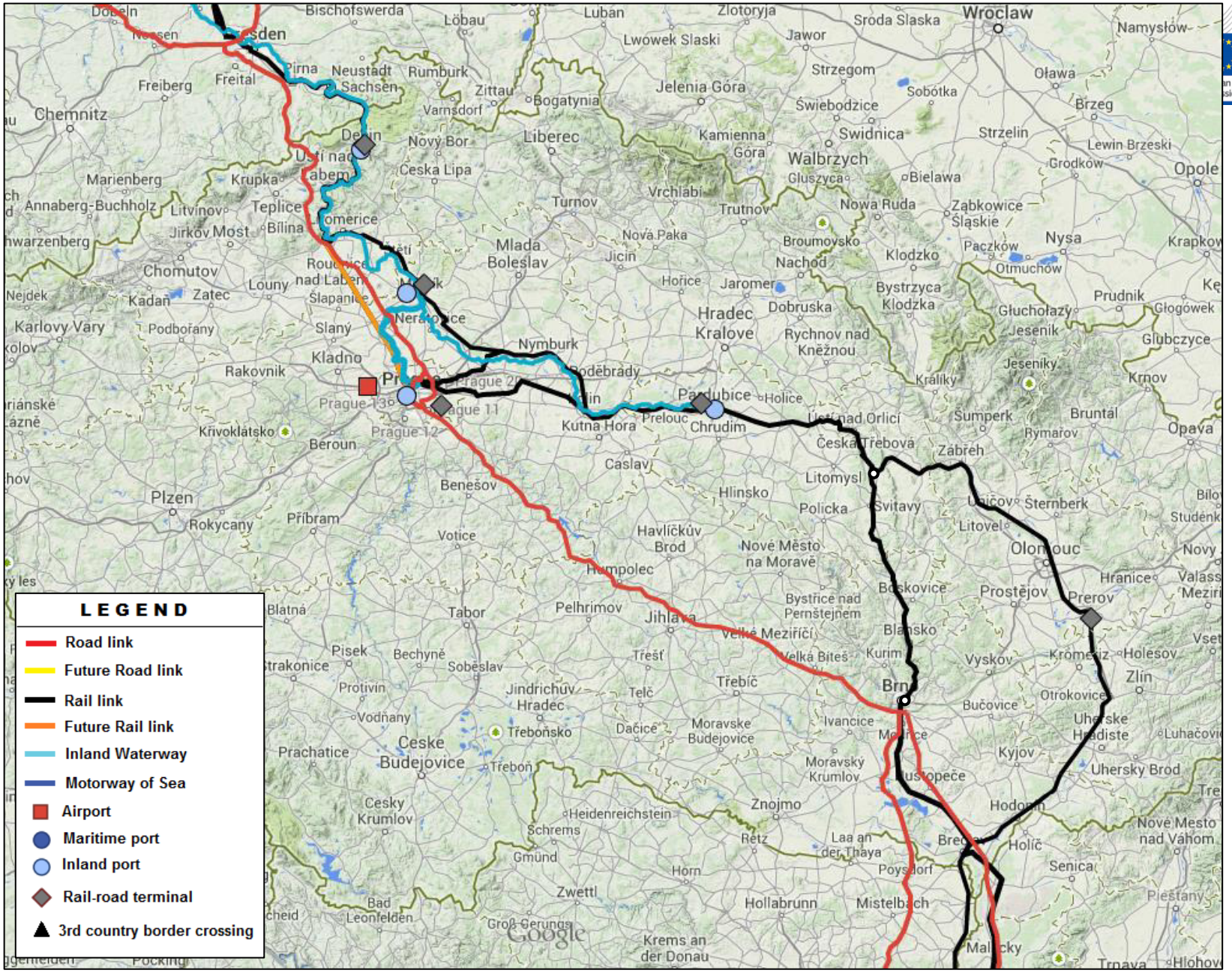
Orient/East-Med Corridor with all modes and nodes

Orient/East Med Corridor (North) – Core infrastructure with nodes

Orient/East Med Corridor (South) – Core infrastructure with nodes

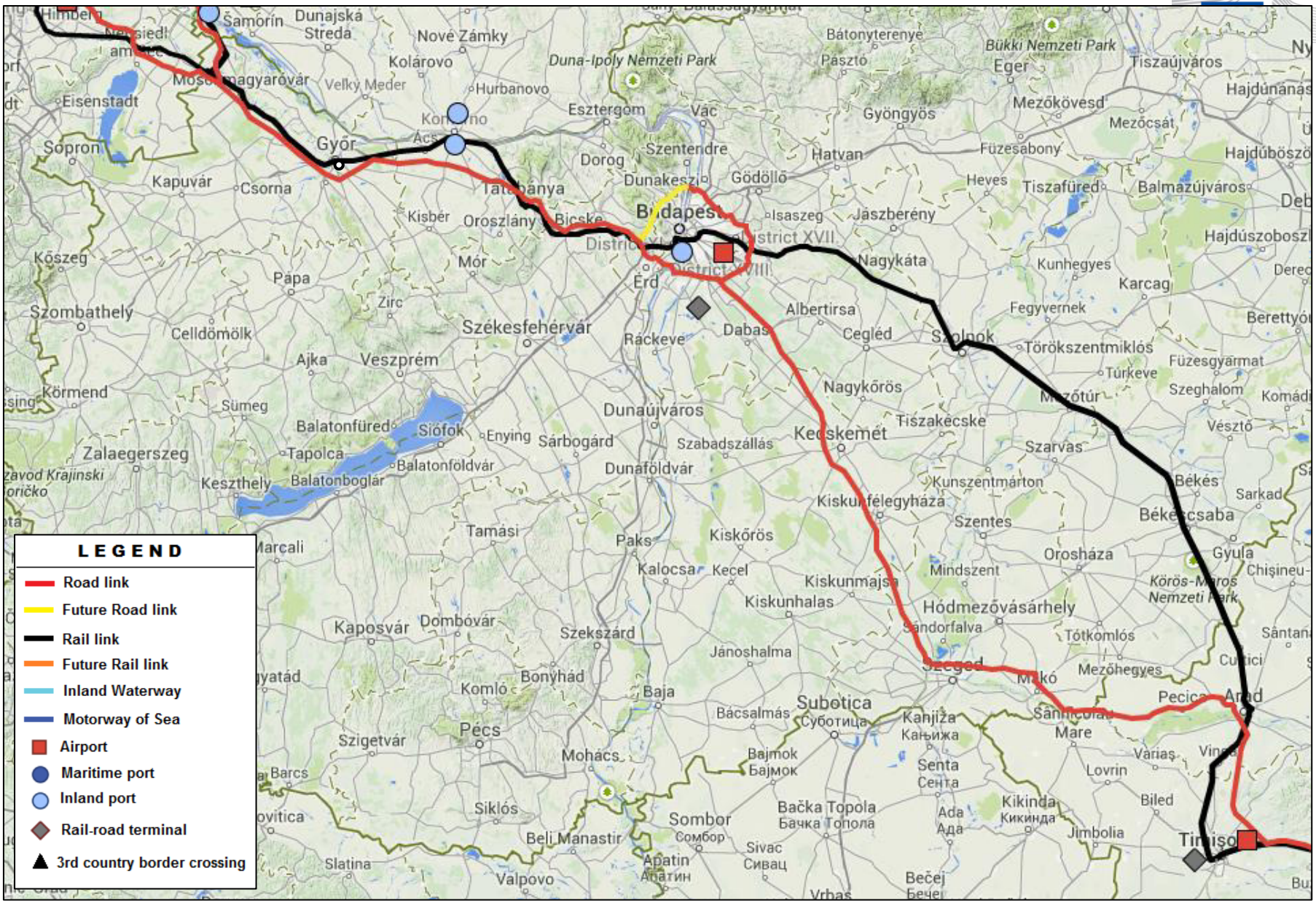

LEGEND
Road link
Future Road link
Rail link
Future Rail link
Inland Waterway
Motorway of Sea
Airport
Maritime port
Inland port
Rail-road terminal
3rd country border crossing

Germany



Czech Republic

Austria / Slovakia



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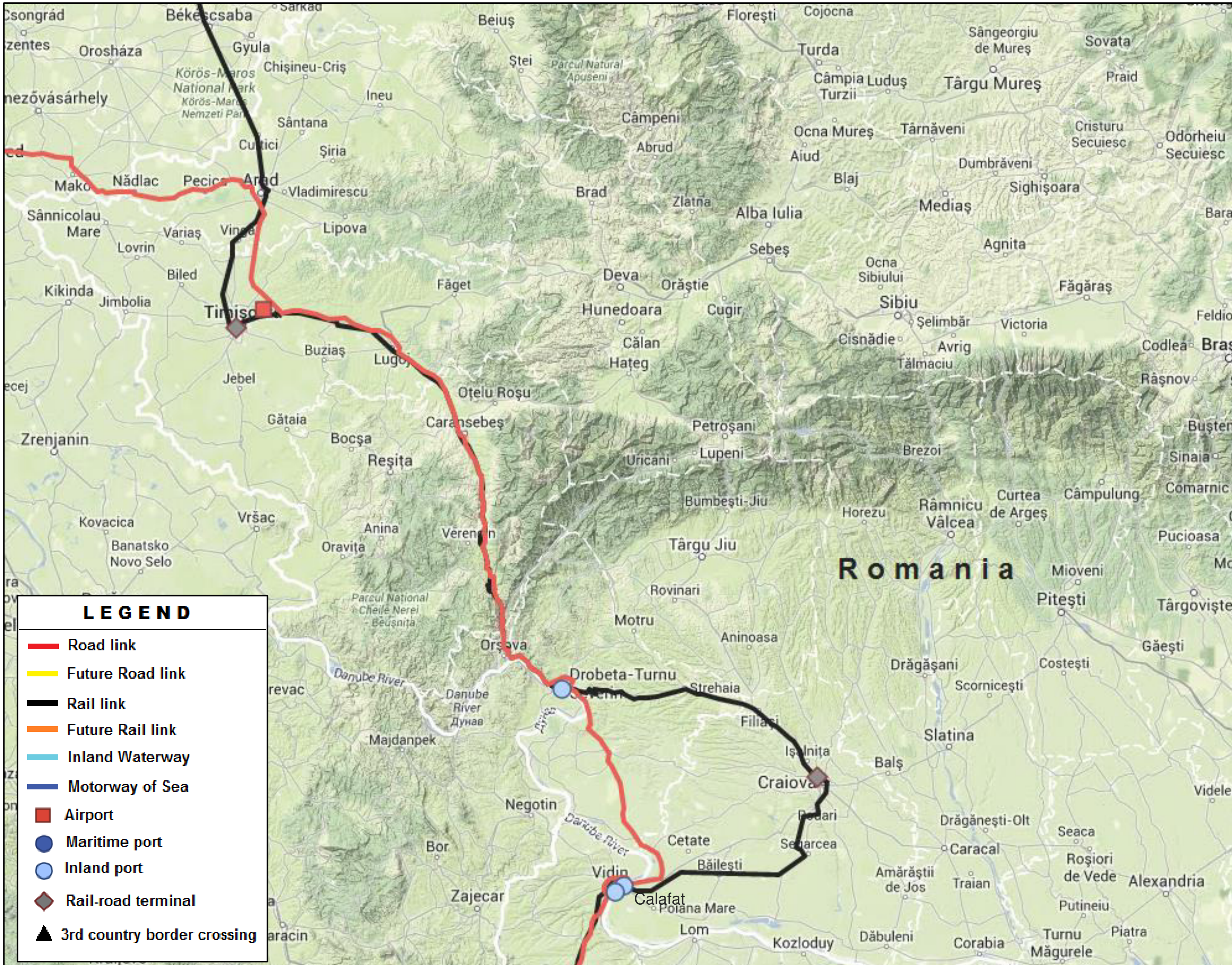
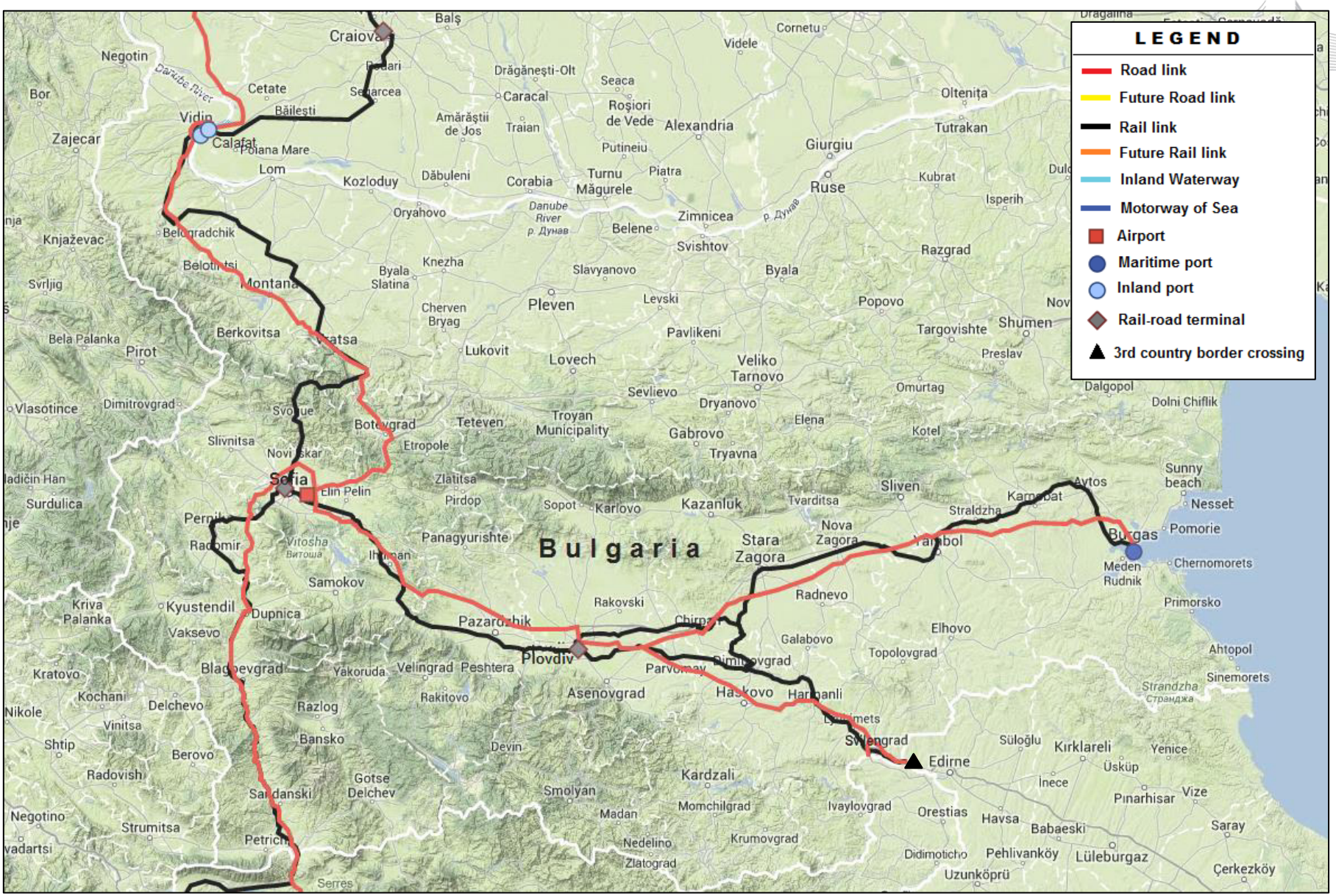
Contractor: iC consulenten / ITC / Panteia / Railistics / SYSTEMA / Prodex / UPB / PwC

Hungary


LEGEND
Road link
Future Road link
Rail link
Future Rail link
Inland Waterway
Motorway of Sea
Airport
Maritime port
Inland port
Rail-road terminal
3rd country border crossing
Romania
Arad
Timișoara
Lugoj
Caransebeș
Orșova
Drobeta-Turnu Severin
Craiova
Calafat
Vidin
Deva
Hunedoara
Sibiu
Alba Iulia
Târgu Jiu
Pitești
Slatina
Danube River

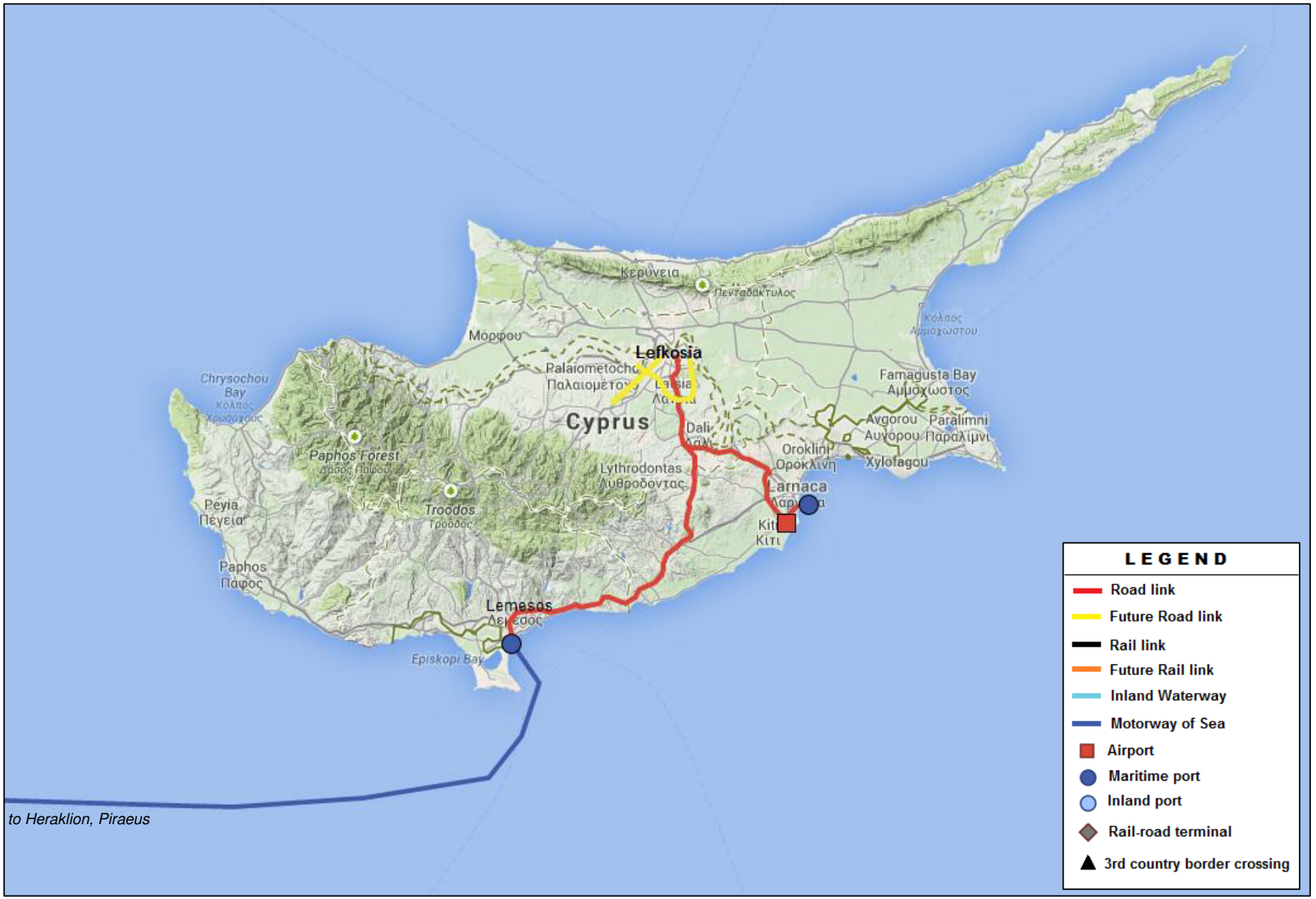
Romania


LEGEND
Road link
Future Road link
Rail link
Future Rail link
Inland Waterway
Motorway of Sea
Airport
Maritime port
Inland port
Rail-road terminal
3rd country border crossing
Bulgaria
Sofia
Plovdiv
Burgas
Varna
Ruse
Stara Zagora
Pleven
Veliko Tarnovo
Blagoevgrad
Kyustendil
Montana
Vidin
Calafat
Craiova
Edirne
Danube River

Bulgaria

European Commission

Greece


Κερύνεια
Πενταδάκτυλος
Μόρφου
Lefkosia
Palaiometochо
Παλαιομέτοχο
Cyprus
Famagusta Bay
Αμμόχωστος
Chrysochou Bay
Κόλπος Χρυσοχούς
Paphos Forest
Δάσος Πάφου
Dali
Δάλι
Avgorou
Αυγόρου
Paralimni
Παραλίμνι
Oroklini
Ορόκλινη
Xylofagou
Lythrodontas
Λυθροδόντας
Larnaca
Peyia
Πέγεια
Troodos
Τρόοδος
Kiti
Κίτι
Paphos
Πάφος
Lemesos
Λεμεσός
Episkopi Bay
to Heraklion, Piraeus
LEGEND
Road link
Future Road link
Rail link
Future Rail link
Inland Waterway
Motorway of Sea
Airport
Maritime port
Inland port
Rail-road terminal
3rd country border crossing

Cyprus

Study on Orient / East-Med TEN-T Core Network Corridor

Draft Final Report

Annex 4

Review of port demand studies

5 December 2014

Disclaimer

Content

Introduction

This section provides an account of regional information regarding ports along the OEM corridor, including seaports, as well as inland (river) ports. Like airports, seaports are a very important aspect of this study, as they serve as gateways for traffic entering and exiting the corridor. Inland ports can furthermore play an important role, especially when they are connected to other modalities such as the (national) rail and road network.

The selection of ports is based on those listed in the second TEN-T progress report (p. 16). Next to these ports on the OEM corridor, an additional number of ports belonging to the Rhine-Danube (RD), North-Sea Baltic (NSB) and Scandinavian-Mediterranean (SM) corridors are included in this document. Information on these additional ports has been taken from the Rhine Danube PR3 report.

This annex provides information regarding volumes (both current and projected), the type of cargo and the modal split of the ports. Significant differences exist between ports, which is reflected by the type and degree of data available and presented.

The last section of this annex the modal split for the hinterland traffic is included.

River Ports

The following table provides an overview of the inland river ports included in the analysis. The 'information' and 'source' in the table refer specifically to regional information, often involving local port websites. For the analysis that follows, other sources have been used to present as much relevant and up-to-date information as possible. It should be noted that ports with a shaded layer in the table below are connected to the inland waterway assigned to the Rhine-Danube Corridor or the North Sea-Baltic Corridor. Information on these ports has been taken from the Corridor 9 Rhine-Danube report.

Country	Port/ Node	Type	Corridor(s)[1]	Information	Source
DE	Hannover	Inland	OEM, NSB & SM	'Hafen in Zahlen' webpage	Hannover.de website
DE	Braunschweig	Inland	NSB	Homepage Hafen Braunschweig	Braunschweig Hafenbetriebsgesellschaft
DE	Magdeburg	Inland	OEM & NSB	Homepage Magdeburger Hafen	Magdeburger Hafen GmbH
DE	Berlin	Inland	OEM, NSB & SM	No regional information	Berliner Hafen- und Lagerhausgesellschaft mbH (BEHALA)
CZ	Děčín	Inland	OEM	Feasibility Study	Czech Technical University of Prague
CZ	Mělník	Inland	OEM	European Transport	CTU Prague, Czech Republic

[1] http://www.tentdays2013.eu/Doc/b1_2013_brochure_lowres.pdf

				Case Study
CZ	Praha-Holešovice	Inland	OEM	No regional information
CZ	Pardubice	Inland	OEM	No regional information
AT	Vienna	Inland	OEM, BA & RD	Rhine-Danube Transport Market Study
SK	Bratislava	Inland	OEM, BA & RD	Rhine-Danube Transport Market Study
SK	Komárno	Inland	RD	Rhine-Danube Transport Market Study
HU	Komárom	Inland	RD	Rhine-Danube Transport Market Study
HU	Budapest	Inland	RD	Rhine-Danube Transport Market Study
RO	Drobeta-Turnu-Severin	Inland	RD	Rhine-Danube Transport Market Study
RO	Calafat	Inland	OEM	Rhine-Danube Transport Market Study
RO	Constanta	Maritime	RD	Rhine-Danube Transport Market Study
BG	Vidin	Inland	OEM	Rhine-Danube Transport Market Study

Hannover

Instead of having one central port, the city of Hannover has 4 inland ports. The Nordhafen and the Brinker Hafen are located on the Mittellandkanal while the Misburger Hafen and the Lindener Hafen are located on the Stichkanal Misburg respectively Linden.

In terms of connectivity, Hannover benefits from a central location in Europe, as such it is a multimodal hub with rail and road access. Though the 4 ports are spread across Hannover, each port has its own railway station, which in turn is connected to the national German railway network. The development of the Mittellandkanal has further increased accessibility of Hannover in terms in IWT.

The table below depicts the 2010 and predicted 2025 volumes of Hannover, for conventional (bulk/ general cargo) as well as containerized cargo. The data is published by the 'Bundesministerium für Verkehr, Bau und Stadtentwicklung' (2013).

Zusammenfassung der integrierten Potenzialprognose

Standort	Konventioneller Verkehr (in 1.000 t)		Containerverkehr (in 1.000 TEU)	
	2010	2025	2010	2025
Hannover	2.427	2.476	69	117

Sources:
http://www.hannover.de/Wirtschaft-Wissenschaft/Wirtschaftsförderung/Standort/Logistikstandort-Hannover/Logistische-Knoten/Hafen-Hannover/Die-vier-Häfen/Hafen-in-Zahlen

Accurate accounts on the modal split for the different modes of transport are not available because the data varies from port to port. Information for the individual ports can be found at the link below.

Braunschweig

The port of Braunschweig is another inland port located on the Mittellandskanal, in the hinterland of Hamburg. As such, IWT between Hamburg and Braunschweig happens on a daily basis. The development of the Mittellandkanal has greatly increased Braunschweig's volume, especially in terms of containerized cargo. Between 2000 and 2005, the volumes recorded even doubled (15.912 TEU → 33.172 TEU). In addition to containerized cargo, Braunschweig processes seasonal goods such as grain, petroleum, fossil fuels and goods from the recycling industry.

As depicted below by the extract from the local port website, in 2012 Braunschweig handled 647.938 tonnes by ship, 164.236 tonnes by train and reported a container value of 58.954 TEU. The table below provides the prognosis for 2025.

Güterumschlag im Hafen Braunschweig

Jahr	Schiffsumschlag	Bahnumschlag	Containerumschlag
2012	647.938 t	164.236 t	58.954 TEU
2011	612.064 t	167.267 t	62.436 TEU

Zusammenfassung der integrierten Potenzialprognose

Standort	Konventioneller Verkehr (in 1.000 t)		Containerverkehr (in 1.000 TEU)	
	2010	2025	2010	2025
Braunschweig	764	902	46	96

Source: http://www.braunschweig-hafen.de/index.html

Braunschweig is accessible by road, rail and inland water, but the local port website provides no information regarding the modal split. Data from a 2004 study indicates a 48% rail, 41% road and 11% inland water split.

Magdeburg

The port of Magdeburg is a multimodal port, located closely to an intersection of the Mittellandkanal, Elbe-Havel-Kanal and the Elbe. Furthermore, Magdeburg is located near the larger German ports of Hamburg and Bremen, adding to its good regional position. While road and rail infrastructures are good, the port of Magdeburg continuously seeks to improve access by river. Both the deepening of the (Unter)elbe, as well as the construction of locks near Magdeburg has been identified as beneficial projects for Magdeburg.

In terms of volumes and cargo, 2010 figures for volume are available, but the types of cargo are not specified on the local port website. Furthermore, a prognosis was published for the "Wasser- und schienenseitiger Containerumschlag" of the port of Magdeburg, in the amount of 54.407 TEU

Zusammenfassung der integrierten Potenzialprognose

Standort	Konventioneller Verkehr (in 1.000 t)		Containerverkehr (in 1.000 TEU)	
	2010	2025	2010	2025
Magdeburg	2.555	3.660	13	54

Sources:http://www.magdeburg-hafen.de/magdeburg-hafen/mdhafen.htm
http://www.bmvi.de/SharedDocs/DE/Anlage/VerkehrUndMobilitaet/Wasser/gutachten_wettbewerbsfaehigkeit_binnenhaefen.pdf?__blob=publicationFile

Děčín

The port of Děčín is located on the Elbe, in the north of Czech Republic, close to the German border. Děčín is a trimodal hub and currently has the best navigation opportunities in the Czech Republic. The port is connected to the national road network (62, 13) and in terms of railway connections to both the Dresden-Prague-Vienna corridor and to the railway network Děčín-Ústí nad Labem-Cheb. Děčín is part of the 'Sächsische Binnenhäfen Oberelbe GmbH (SBO)', which is a multimodal orientated logistics company. As such, Děčín is often the keystone for the development and reliability of inland navigation in the Czech Republic. The "Děčín navigation degree" project for example involved the construction of a dam near the city, and is considered an essential step to ensure the navigation draft of 1,40 m 345 days per year.

The following table presents the volumes and types of cargo handled per modality by the port of of Děčín. Though not explicitly stated, the modal split of transport can be calculated. Based on the data from 2009, the modal split is 75.3% ships, 4.8% railway and 19.9% trucks. No forecast for 2025 was published.

Turnover of goods in the port Děčín

Category of goods	2007				2008				2009			
	Tons/type of transport				Tons/type of transport				Tons/type of transport			
	water	rail	road	sum	water	rail	road	sum	water	rail	road	sum
Agricultural and forest products	26 767	0	0	**26 767**	16 474	0	0	**16 474**	94 442	0	237	**94 442**
Other food and feed	138 135	0	0	**138 135**	90 207	0	310	**90 517**	65 933	0	106	**66 039**
Solid mineral fuels	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**
Petroleum and mineral oils	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**
Ore and metal waste	0	0	0	**0**	0	0	953	**953**	270	0	17	**287**
Iron, steel, and non-noble metals	24 463	27 700	6 677	**58 840**	36 844	40 787	11 753	**89 384**	1 635	7 964	3 178	**12 777**
Stones, soil	14 507	244	1 961	**16 712**	14 403	0	4 609	**19 012**	4 961	196	18 364	**23 521**
Fertilizers	3 552	0	0	**3 552**	3 046	0	0	**3 046**	1 613	0	1 000	**2 613**
Chemicals	134	0	0	**134**	0	0	0	**0**	450	0	0	**450**
Containers, other	3 519	0	25 354	**28 873**	1 260	484	29 997	**31 741**	2 103	2 857	22 415	**27 375**
TOTAL	**211 077**	**27 944**	**33 992**	**273 013**	**162 234**	**41 271**	**47 622**	**251 127**	**171 407**	**11 017**	**45 317**	**227 741**
	77%	**10%**	**13%**	**100%**	**64%**							

Sources: http://www.hafen-hamburg.de/en/address/s%C3%A4chsische-binnenh%C3%A4fen-oberelbe-gmbh, http://www.central2013.eu/fileadmin/user_upload/Downloads/outputlib/Chemlog_%C3%9Asteck%C3%BD_08_Region_Feasibility_study_uploaded.pdf

Melnik

Located on the right bank of the Elbe, the port of Melnik is a trimodal logistics terminal with connections to rail, road and water transport. It has its own tariff railway point, including wide area railway and siding railway network and is connected to Prague road circuit of the highway D8 Prague Dresden. Mělník serves daily container trains from/to the main European ports of Rotterdam, Bremerhaven and Hamburg; as well as the Central European ports Bratislava, Budapest and Koper (Slovenia). There are bottlenecks in the transfer capacity in Central Bohemia and Melnik is one of few Czech ports with the potential for expansion.

Turnover of goods in port of Mělník

Period	Powdery (tons)	Piece units + IC + NK (tons)	Chemicals (tons)	TOTAL (tons)
	27 695	27 520	4 600	**59 815**
	18 748	40 602	5 210	**64 560**
	31 666	21 412	5 400	**58 478**

Source: *Navigation Step Děčín: Update of transport analysis and feasibility study 2010*

Besides the above mentioned ports also the ports of Melnik and Ústí nad Labem are important in the Czech river system. These are shown below.

Turnover of goods in port of Lovosice

Category of goods	2007				2008				2009			
	Tons/type of transport				Tons/type of transport				Tons/type of transport			
	water	rail	road	**sum**	water	rail	road	**sum**	water	rail	road	**sum**
Agricultural and forest products	977	0	0	**977**	2 068	7 336	139 458	**148 862**	26 291	25 303	91 216	**142 810**
Other food and feed	3 525	0	0	**3 525**	0	4 915	0	**4 915**	2 568	9 681	270	**12 519**
Solid mineral fuels	0	0	0	0	0	0	0	**0**	0	0	0	**0**
Petroleum and mineral oils	0	0	0	0	0	0	0	**0**	0	0	0	**0**
Ore and metal waste	2 314	0	11 998	**14 312**	595	65	12 156	**12 816**	0	0	2	**2**
Iron, steel, and non-noble metals	0	1 520	1 270	**2 790**	1 118	696	304	**2 118**	91	0	7	**98**
Stones, soil	16 113	110	51	**16 274**	37 788	0	26 387	**64 175**	3 067	21 413	26 079	**50 559**
Fertilizers	0	9 727	2 975	**12 702**	0	11 355	0	**11 355**	0	0	0	**0**
Chemicals	0	0	0	**0**	0	0	0	**0**	0	0	27	**27**
Containers, other	2 473	0	25 924	**28 397**	2 065	617	651	**3 333**	28	195	642	**865**
TOTAL	**25 402**	**11 357**	**42 218**	**78 977**	**43 634**	**24 984**	**178 956**	**247 574**	**32 045**	**56 592**	**118 243**	**206 880**
	32%		**53%**		**17%**		**72%**		**15%**	**27%**	**57%**	

Source: Navigation Step Děčín: Update of transport analysis and feasibility study 2010

Turnover of goods in port Ústí nad Labem

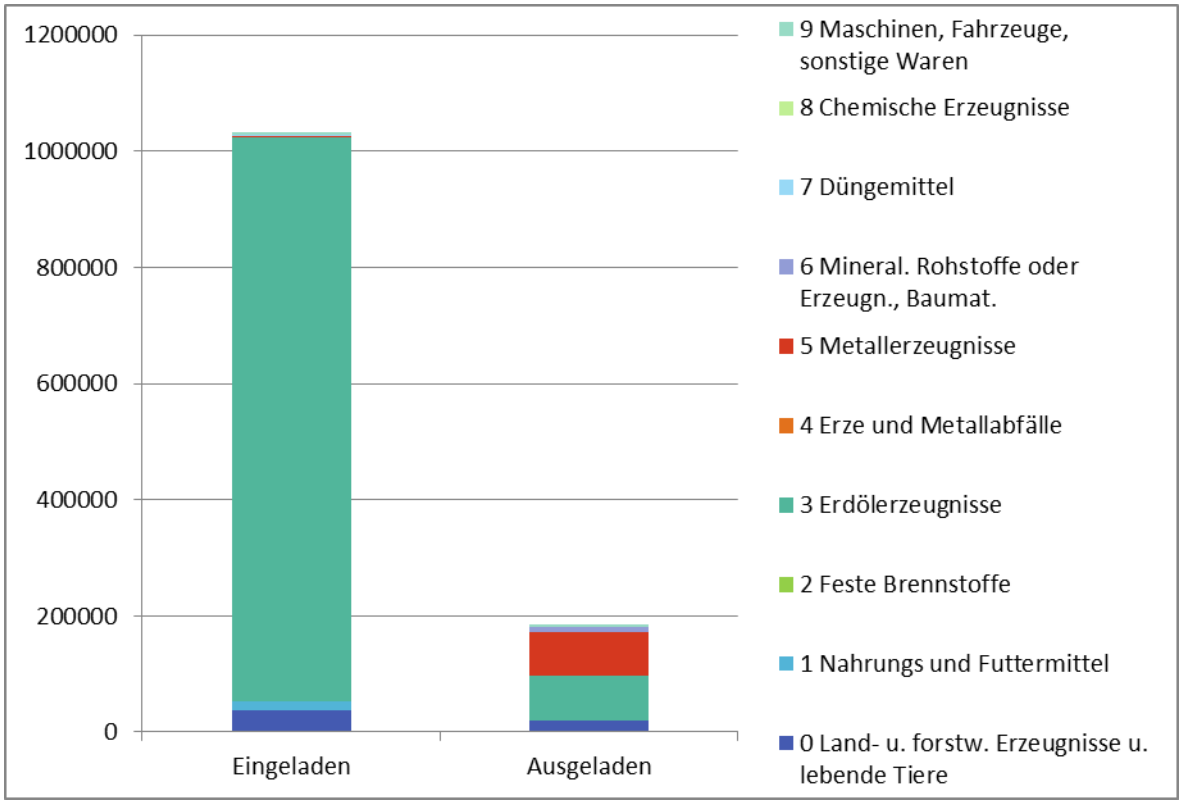
Period	Powdery (tons)	Piece units + IC + NK (tons)	Chemicals (tons)	TOTAL (tons)
2007	80 960	1 397	390	**82 747**
2008	65 268	6 042	38	**71 348**
2009	122 995	2 749	395	**126 139**

Source: Navigation Step Děčín: Update of transport analysis and feasibility study 2010

Vienna

For the port of Vienna, only volumes have been provided for container transport. In 2010, 120 TEU have been transported by IWT. On contrary, 191,322 TEU were transported by rail and 127,548 by road.

Detailed statistics on the port of Vienna can be found in the Austrian statistics. For 2012, a total cargo handling of 1,217,650 tons has been reported for Vienna. The majority of the cargo can be accounted as mineral oil products, accounting for 1,045,752 tonnes in 2012 and thus 86% of the total transport volume in the Port of Vienna. Most of the cargo is transported from Vienna.



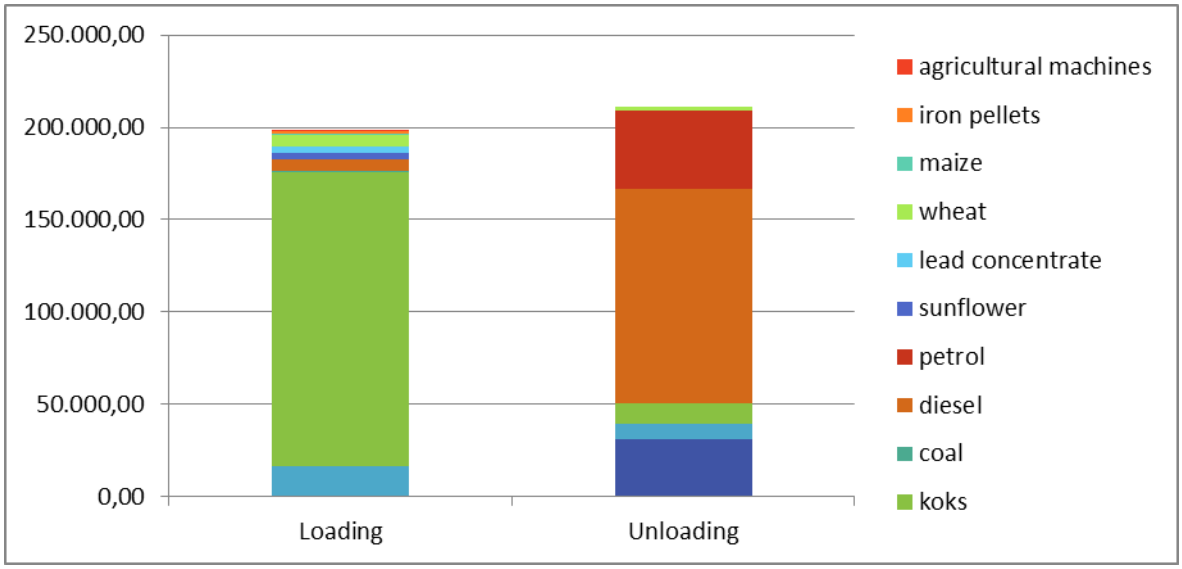
Vienna Port Volumes

Bratislava

The port of Bratislava provided data for IWT transport only. No details have been provided on the amount of cargo handled by rail or road transport. In total, 2,644,135 tonnes of cargo have been transhipped in 2010. One year later, traffic volumes have dropped to 2,349,962 tonnes. 55% of the transport volume concerns metal ores. Also coke and refined products have a large share in the transport volume of 31%.

Komarno

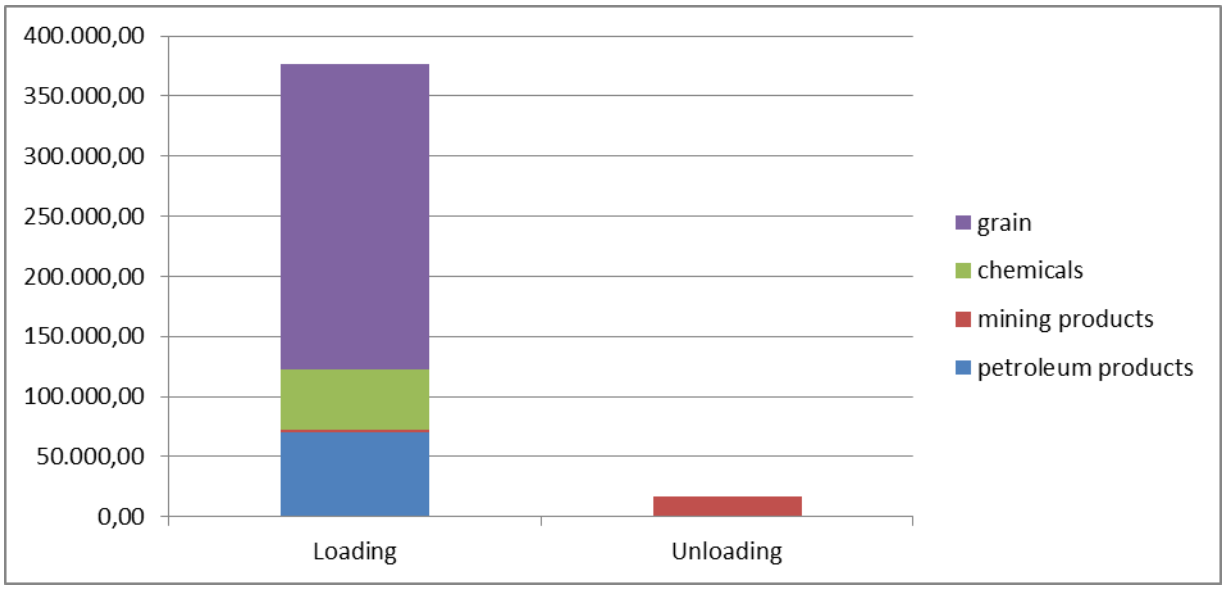
The port of Komarno (SK) has transhipped 408,970 tons of cargo in 2010. Traffic volumes were balanced; inbound and outbound flows have nearly the same volume. It should be noted that most outbound traffic flows concern petrol cokes: 159,262 tons of this products were exported in 2010. The inbound flows are more diverse, although diesel oil still is the most dominant with 115,715 tons imported.



Komarno Port Statistics

Komarom

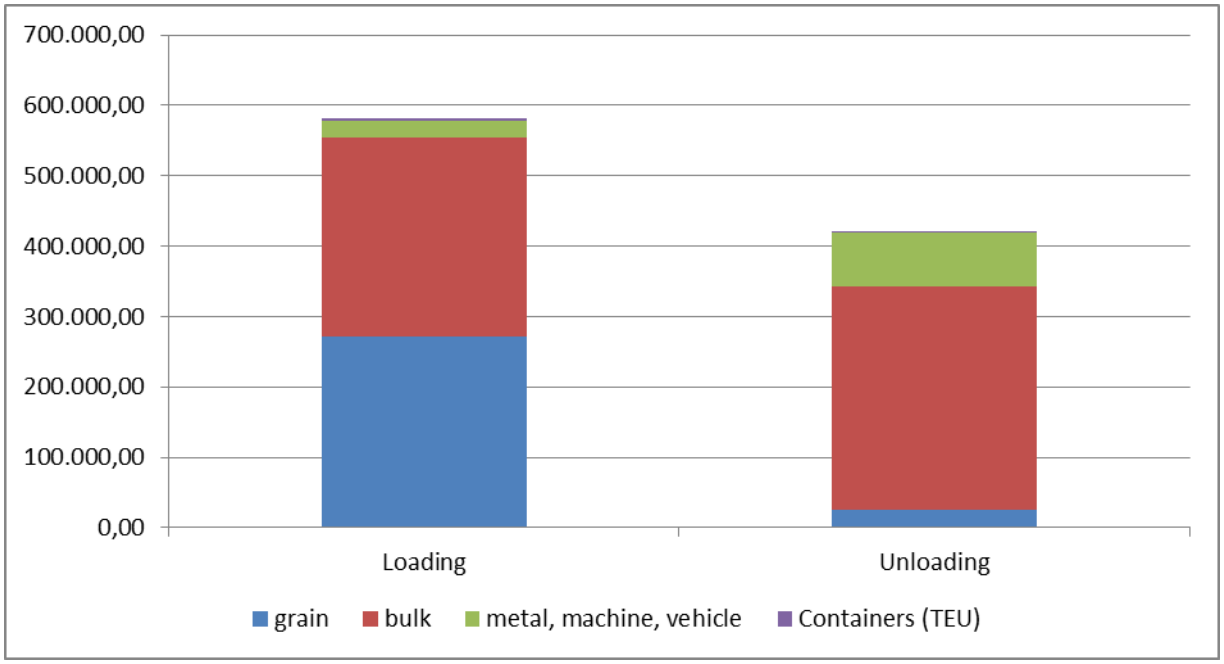
Komarom (HU) lies on the other bank of the Danube and also provides a decent number of traffic flows by IWT. In 2010, 394,021 tonnes of cargo have been transhipped. Unlike Komarno on the Slovakian border of the Danube, traffic flows are unbalanced here. 377,098 tons of cargo are exported. On contrary, the inbound flows only account for 16,923 tons. For commodities, it can be noted that for the outbound flows, grain is the most dominant commodity. Inbound, only mining products are transhipped.



Komarom Port Statistics

Budapest

The port of Budapest has transhipped nearly a million tonnes of cargo in 2010. Outbound, 581,678 tonnes of cargo were transhipped. Grain is the main commodity exported. Inbound, traffic flows are lower but still significant with 420,477 tonnes of cargo. No distinction can be made between the commodities.



Budapest Port Data

Drobeta-Turnu Severin

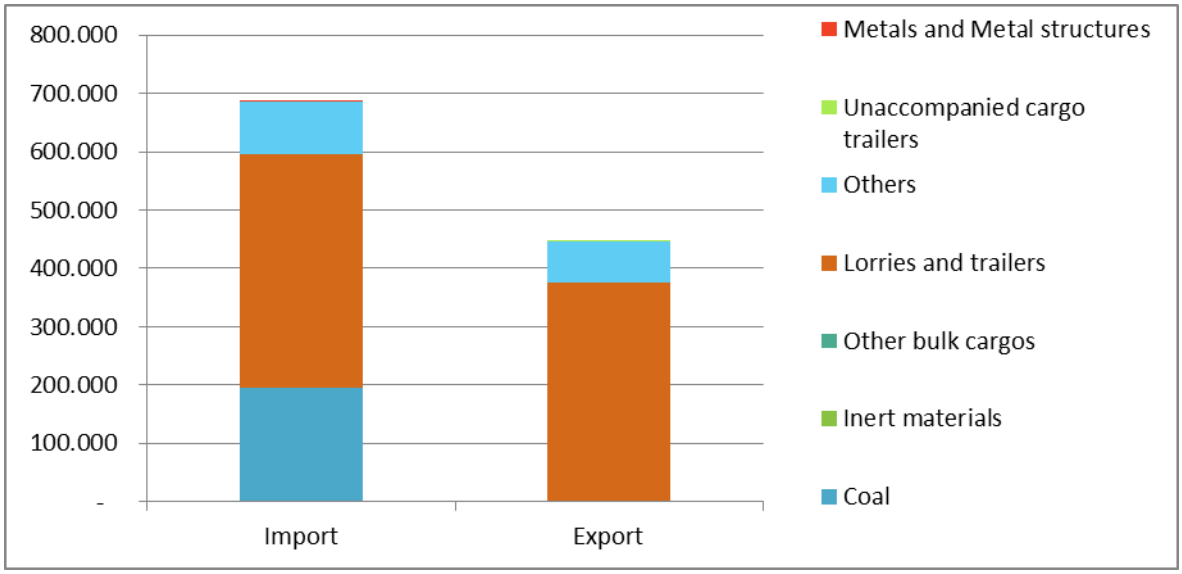
In Drobeta-Turnu Severin, 490,112 tons of cargo were handled in 2011. No further information is present about this port, apart from the fact that is has a container terminal that has handled 1849 tons of containers in 2011. For 2007, a total volume of 350,051 tonnes has been reported, indicating that the amount of cargo handled at this port has increased by 40% since then. In 2007, inbound flows accounted for 144,676 tons whilst outbound flows involved 262,621 tons of cargo.

Calafat

The port of Calafat is located on the left bank of the Danube at km 795. In 2011, the port of Calafat has handled 139,105 tonnes of cargo.

Vidin

The port of Vidin has handled 1,144,978 tons of cargo in 2010. Most traffic flows are inbound and involve coal or other cargo. Also the Ro/Ro traffic has got a large share in the total traffic volume.



Vidin Port Data

Constanta

Constanta is the largest seaport in the Rhine Danube Corridor. In the recent years, the port of Constanta has handled over sixty million tonnes per year. The financial crisis reduced handling statistics to slightly over 40 million tonnes in 2009, but since then volumes are increasing. The crisis had a large effect on the amount of TEU handled. This has dropped from 1.4 million in 2007 and 2008 to 595.000 in 2009. Whereas general and liquid cargo managed to retain its original pre-crisis values, the amount of TEU is still not back at the level pre-crisis. In 2013, the amount of cargo handled topped at 55.1 million tonnes of cargo, including 661.000 TEU.

In commodities, the number of containers shows a declining trend and so does the amount of liquid bulk. Up to 15.4 million tonnes of liquid bulk has been handled in 2005, dropping to 14.4 million tonnes in 2008. Since the crisis, this number has showed an ever-declining trend to a bare 10.1 million tonnes in 2013. Opposing, the amount of dry bulk cargo has increased from 31.4 million in 2005 via 21.1 million in 2009 to 34.9 million tons in 2013.

In 2013, 4,833 sea-going vessels were handled at the Port of Constanta, opposed to 9,233 river vessels. The sea –going vessels accounted for 42.7 million tonnes of cargo and the river-vessels hauled 12.5 million cargo.

The main commodities in the Port of Constanta are cereals, comprising 28% of the total transport volume in 2013. Also Iron ores and coal coke have a decent share.
According to ViaDonau (2007), the modal split of container handling in the Port of Constanta is 70% by truck, 27.5% by rail and the remaining 2.5% by inland barge.

Maritime ports

Country	Port/ Node	Type	Corridor(s)[2]	Information	Source
DE	Hamburg	Maritime	OEM, NSB, SM	The Port Development Plan to 2025	Hamburg Port Authority
				Gutachten zur Erhöhung der Wettbewerbsfähigkeit der Binnenhäfen	Bundesministerium für Verkehr, Bau und Stadtentwicklung
DE	Bremerhaven	Maritime	OEM & NSB	Hafen in Zahlen 2013;	Bremenports GmbH & Co. KG
DE	Wilhelmshaven	Maritime	OEM & NSB	Binnenschiffsanbindung des Havens Wilhelmshaven	Niedersächsisches Ministerium für Wirtschaft, Arbeit und Verkehr
DE	Bremen	Maritime	OEM, NSB & SM	Hafen in Zahlen 2013;	Bremenports GmbH & Co. KG
DE	Rostock	Maritime	OEM & SM	IKZM und Hafenentwicklung	Bundesministerium für Verkehr, Bau und Stadtentwicklung
BG	Burgas	Maritime	OEM	See main report	
GR	Athina/ Piraeus	Maritime	OEM	Container Ports: An Engine of Growth	National Bank of Greece
GR	Heraklion	Martime	OEM	No regional information	
GR	Thessaloniki	Maritime	OEM	Port of Thessaloniki homepage	Port of Thessaloniki homepage
GR	Igoumenitsa	Maritime	OEM	See main report	
GR	Patras	Martime	OEM	See main report	
CY	Lemessos	Maritime	OEM	See main report	

The German Ministry of transport has issued a study that has led to integrated transport of port throughput, these are listed in: Verkehrsverflechtungsprognose 2030 sowie Netzumlegung auf die Verkehrsträger Los 2 (Seeverkehrsprognose) Seeverkehrsprognose 2030. These are used for transport forecasts.

Hamburg

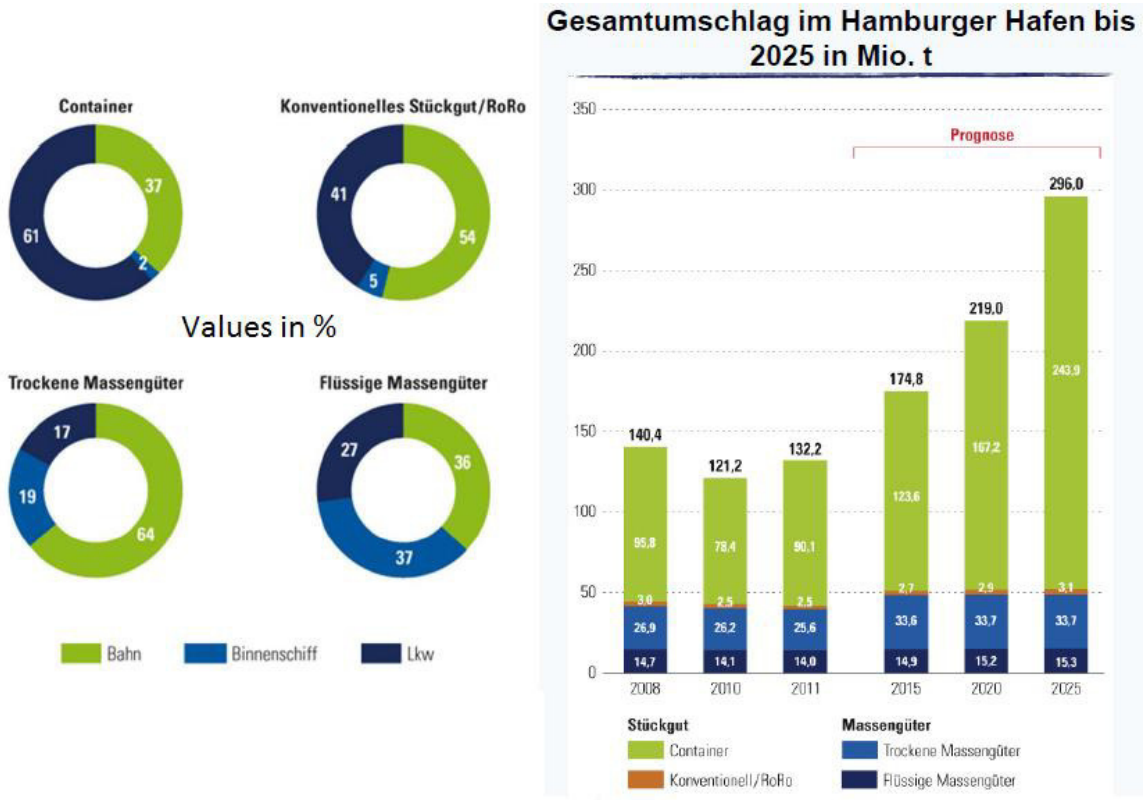
The port of Hamburg is the largest port of Germany, covering 12% of the Hamburg-Le Havre market. In 2011, Hamburg accommodated a total of 132.3 million tonnes, of which 98.9 million tonnes (≈ 75%) was transported to its hinterland. Of the different types of cargo, container cargo makes up the largest portion, and will remain the biggest according to the 2025 forecast (see bar chart).

The following table illustrates the overall modal split of Hamburg in 2010, 2025 (prognosis), as well as the relative change. In addition, the four circle diagrams illustrate that the modal split is further dependent on the type of cargo. The figures for the relative change reflect Hamburg's intention to significantly increase IWT, as stated in the 'port development plan to 2025.' The development plan further identifies a number of

[2] http://www.tentdays2013.eu/Doc/b1_2013_brochure_lowres.pdf

bottlenecks (for example the Elbe-Seitenkanal) that must be removed in order to reach the 2025 goal.

	Schiene	Straße	Wasserstraße
Hamburg			
2010	32%	66%	2%
2025	32%	63%	5%
Relative Veränderung	0,0%	-4,5%	150,0%



Sources:
The Port Development Plan to 2025 abridged version - english
http://www.flusskonferenzelbe.wsv.de/pdfs/Hinterlandverbindungen_des_Hamburger_Hafens_Stefanie_Kullmann_HPA.pdf

Bremen & Bremerhaven

These two ports are represented by the same organization, Bremenports GmbH & Co. KG. Their 2013 "Hafen in Zahlen" document serves as a great source of regional information. The tables below are extracts of this document. Bremerhaven seems to be the larger port of the two, with 66.1 million tonnes (mostly general cargo) as well as 60.9 million tonnes of containerized cargo (99.7%) handled in 2013. Both ports of Bremerhaven and Bremen are accessible by road, rail and inland water, with the modal split of containerized cargo traffic of Bremerhaven at 50% road, 46.6% rail and 3.4% IWT.

According to forecasts, 87.8 million tonnes in containers will be handled in Bremerhaven in 2030. These handling volumes will be reached through high annual growth of 3.3% on average. In Bremen, the handling volumes are to increase from 3.2 to 16.1 million tonnes.

SEEGÜTERUMSCHLAG ÜBER SEE IN BREMEN UND BREMERHAVEN

	2012	2013
Gesamt [Mio. t]	**84**	**78,7**
davon Bremen	13,6	12,6
davon Stückgut	4,2	3,9
davon Massengut	9,4	8,7
davon Bremerhaven	70,4	66,1
davon Stückgut	70,1	65,8
davon Massengut	0,3	0,3
Container		
[Mio. t]	65,1	60,9
[Mio. TEU]	6,1	5,8
Anteil Bremerhaven [%]	99,9	99,7

MODAL SPLIT BREMERHAVEN
Containerhinterlandverkehr

	2012	2013
Containerumschlag [1.000 TEU]	**6.134**	**5.822**
davon Transshipment	3.931	3.569
davon Hinterland	2.203	2.253
davon Straße	1.066	1.126
davon Schiene	1.042	1.049
davon Binnenwasserstraße	95	77

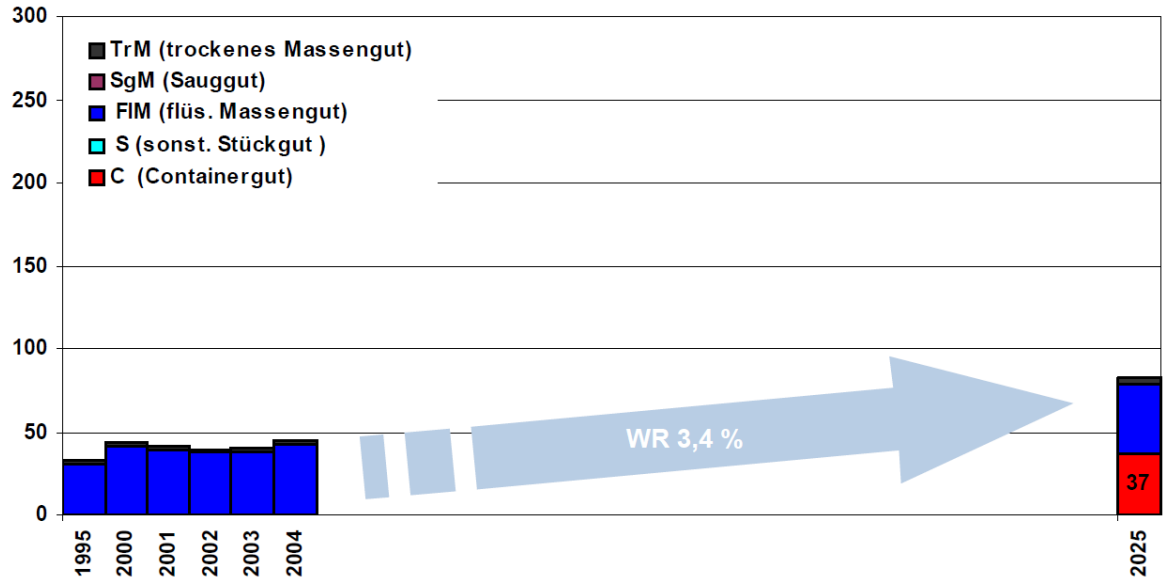
Sources: http://www.bremenports.de/misc/filePush.php?id=2289&name=Hafen+in+Zahlen_2013.pdf.
http://www.bremenports.de/standort/statistiken/hinterlandverkehr
http://www.bremenports.de/logisticspilot/2013_October_UK/page28.html

Wilhelmshaven

Wilhelmshaven is one of the larger German seaports located on the North Sea. In 2012, the JadeWeserPort was finished, a deep water port with a depth of 18 meters (59 feet) able to accommodate the increasing size of large, modern containerships of 12000 TEU and more. As Germany's foremost import terminal of crude oil, historically Wilhelmshaven has mainly dealt with liquid bulk (≈ 30 million tonnes). However, with the construction of the JadeWeserPort and the 'Niedersachsenbrücke' (bridge), dry bulk (≈ 9 million tonnes) and particularly containerized goods (≈ 30 million tonnes) are expected to significantly increase the total volumes accommodated by Wilhelmshaven.

Wilhelmshaven is connected to its hinterland by road and rail, with both the rail network as well as the A29 highway leading straight into the JadeWeserPort container terminal. The modal split of transport is stated as 60% of feeder traffic by sea, and 40% hinterland. The 40% inland traffic is divided into 50% rail, 25% road and another 25% IWT (Although these figures vary for the type of cargo considered. The Weser, Ems and Elbe are the inland waterways that connect Wilhelmshaven with its hinterland.

Abbildung 5.2-8: Umschlagsentwicklung in Wilhelmshaven (JadeWeserPort)

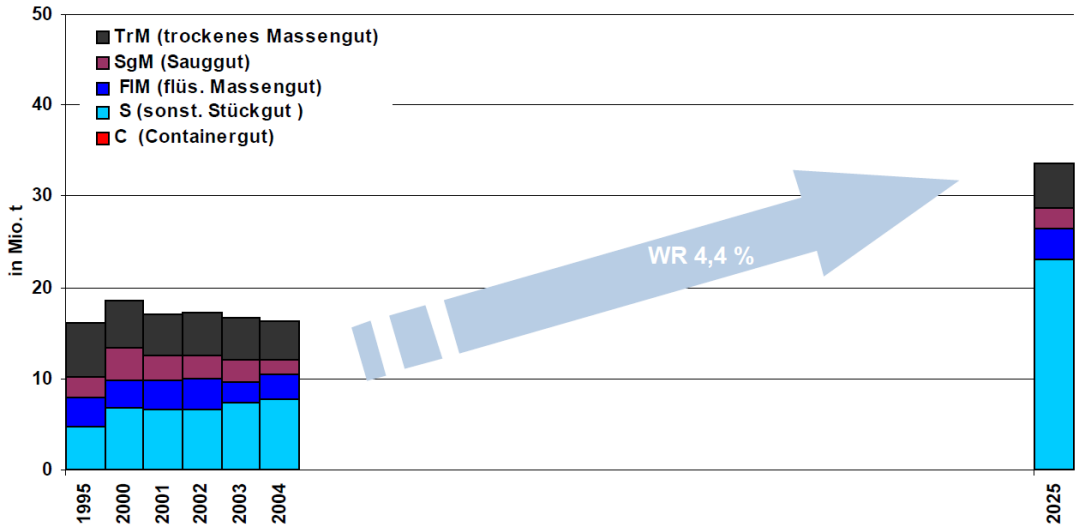


Sources : http://www.ptj.de/lw_resource/datapool/_items/item_3290/vortrag_weber.pdf
http://www.wilhelmshaven.de/wirtschaftskongress/Wirtschaftskongress_Wilhelmshaven_JWP-LZ.pdf
http://www.shortseashipping.de/de/service/pdf/seeverkehrsprognose-kurzbericht.pdf

Rostock

Rostock is an important node because it serves as a multimodal hub, connecting the Germany (and thereby the entire OEM corridor) to the Baltic and 'Ostsee-Adria' regions. The port of Rostock is the second biggest port (after Lübeck) located on the Ostsee with 21.278.000 tonnes accommodated (2008), the majority of which general cargo (44%). The 2025 prognosis for Rostock, made by the German 'Bundesministerium für Verkehr, Bau und Stadtentwicklung' states that a 145% increase is expected from 2004 to the target year of 2025, at a volume of 51.9 million tonnes. The same study found that the modal split of traffic (2004) from Rostock to its hinterland to be 69.4% by truck, 30.3% by rail and 0.2% by IWT. These values were estimated to change to 73.5%, 26.4% and 0.1% respectively.

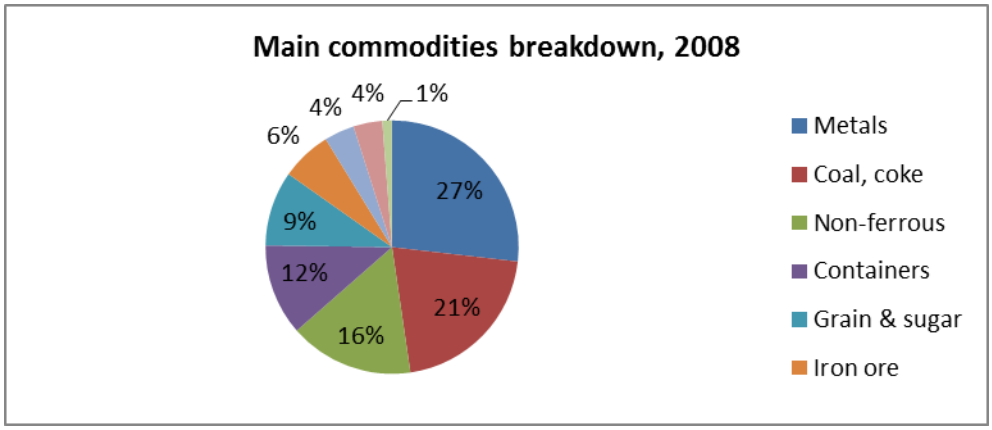
Abbildung 5.2-14: Umschlagsentwicklung in Rostock



Sources:
http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/BMVBS/Online/2010/DL_ON102010.pdf?__blob=publicationFile&v=2
http://www.shortseashipping.de/de/service/pdf/seeverkehrsprognose-kurzbericht.pdf

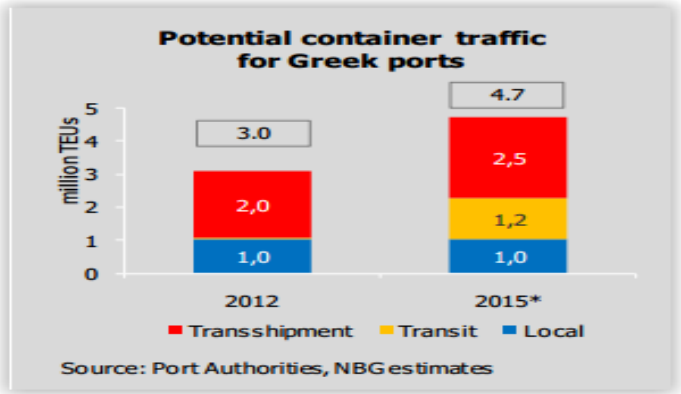
Burgas

The port of Burgas is Bulgaria's largest port, and after the port of Constanta (RO) the second largest Black Sea port. The port of Burgas is specialized in handling metals and foodstuffs. In 2008 traffic volumes of more than 45.000 TEUs was recorded.



Piraeus

Greek ports attracted about 4% of Mediterranean container traffic in 2011, a share which is on the rise from the 1.5-2% recorded during the period 2008-2010, and this share is estimated to have risen further in 2012, reaching its long-term average of 6%. This is mainly the result of the concession agreement for the operation of pier II of the Piraeus container terminal with private operator COSCO Pacific, which plans to turn Piraeus into a leading Mediterranean transshipment hub and a gateway for Chinese exports to Europe (National Bank of Greece, 2013).



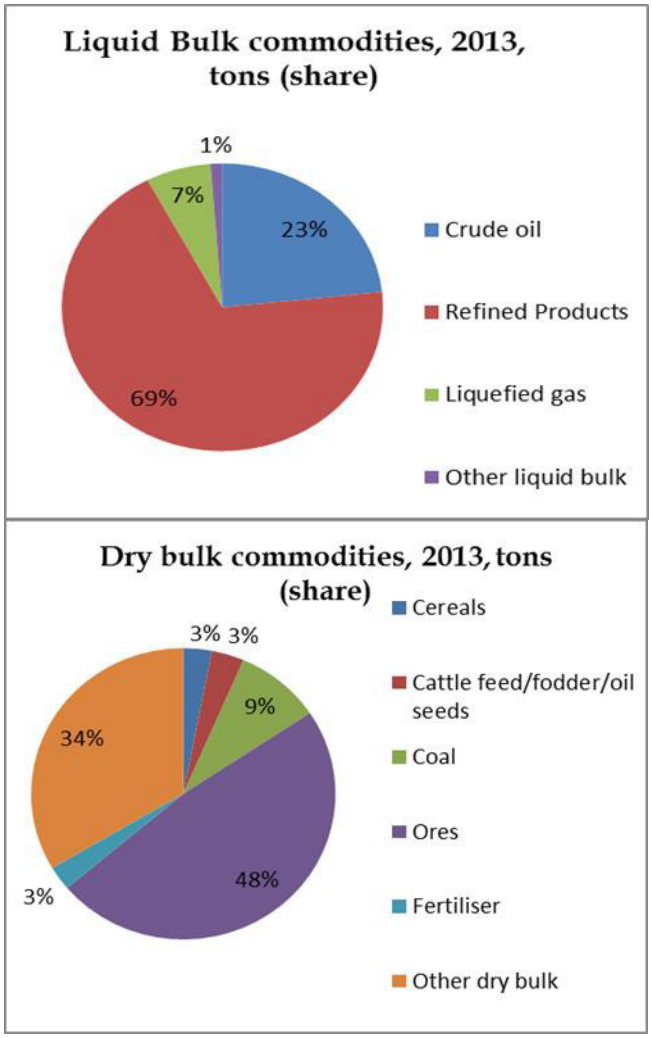
The port of Piraeus is the largest port in Greece with 644.055 TEUs container traffic, based on 2013 yearly statistics, in 2013 accommodated approximately 3.500 cargo ships responsible for more than 53 million tons (gross tonnage). Piraeus port is the biggest port in Eastern Mediterranean with a crucial role in transshipment activities, accounting for about 80%. Moreover, the car terminals at the port have significant position at the Mediterranean market, with the car terminal traffic accounting for more than 445.000 cars per year.

Piraeus port with its current infrastructure can absorb 6.8% of total Mediterranean transshipment traffic, which is not far from its realized transshipment traffic share in 2012. Including the planned capacity increase in Pier II and the construction of Pier III, based on our estimate of demand growth, Piraeus is estimated to handle 7.6 per cent of the total Mediterranean transshipment market by 2015 (National Bank of Greece, 2013).

Port of Piraeus connects to its hinterland mainly via road, which has become a highly saturated mode. However, the recent agreement between Hewlett-Packard, COSCO and Greek Railways TRAINOSE, which involves the use of Piraeus as a transport hub for all HP products in Central/Eastern Europe, the Middle East, North Africa and the Eastern Mediterranean, intends a shift from road to rail.

Thessaloniki

The port of Thessaloniki is the second largest Greek port handled about 300.000 TEUs in 2012. The total tonnage in 2013, accounted for about 13 million tons, demonstrated a decrease of 10.5% compared to 2012 total tonnage (14.5 million tons). The main types of goods are liquid bulk cargo accounting for 40% of the total seaborne traffic. Dry bulk cargo and general cargo (containers, Ro-Ro) follow accounting for 30% respectively. Decline on both liquid and dry bulk cargo it is demonstrated, especially for the liquid bulk with a decrease of 22%. On the other hand the general cargo experienced a small increase of 1.82%. The figures below illustrate the main commodities handled at the port.



Source: Port of Thessaloniki

Besides the port of Thessaloniki and Pireaus, also the ports of Igoumenitsa and Partras are listed below for Greece.

Table Freight traffic (1,000 tons) per cargo type for the port of Igoumenitsa

Igoumenitsa freight traffic		Total		Liquid bulk goods		Dry bulk goods		Large freight containers		Ro-Ro, mobile self-propelled units		Ro-Ro, mobile non-self-propelled units		Other cargo not elsewhere specified	
		2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006
Total	Inwards	**1952**	**1506**	**114**	**129**	**324**	**273**	**:**	**:**	**1482**	**1074**	**23**	**18**	**9**	**11**
	Outwards	**1926**	**1380**	**:**	**2**	**576**	**228**	**:**	**:**	**1230**	**1078**	**42**	**25**	**77**	**58**
Bulgaria	Inwards	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Outwards	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Greece	Inwards	744	631	114	129	324	273	:	:	307	220	0	0	:	15
	Outwards	788	420	:	2	576	227	:	:	149	147	0	0	62	52
Italy	Inwards	1198	872	:	:	:	:	:	:	1175	855	23	18	:	:
	Outwards	1123	955	:	:	:	:	:	:	1081	931	42	24	:	:
Cyprus	Inwards	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Outwards	:	:	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eastern Mediterranean Reion Masterplan study MOS

Table Freight traffic (1,000 tons) per cargo type for the port of Patras

Patras freight traffic		Total		Liquid bulk goods		Dry bulk goods		Large freight containers		Ro-Ro, mobile self-propelled units		Ro-Ro, mobile non-self-propelled units		Other cargo not elsewhere specified	
		2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006	2006	Average 2000-2006
Total	Inwards	**2468**	**2411**	**98**	**269**	**195**	**202**	**:**	**:**	**1680**	**1503**	**400**	**361**	**95**	**77**
	Outwards	**1770**	**1570**	**10**	**7**	**:**	**4**	**:**	**0**	**1514**	**1357**	**243**	**201**	**4**	**3**
Bulgaria	Inwards	:	3	:	:	:	3	:	:	:	:	:	:	:	:
	Outwards	:	0	:	:	:	0	:	:	:	:	:	:	:	:
Greece	Inwards	145	362	5	200	60	86	:	:	35	37	0	1	45	39
	Outwards	118	105	1	2	:	0	:	0	115	101	0	1	2	2
Italy	Inwards	2080	1859	21	22	1	6	:	:	1645	1466	400	360	13	6
	Outwards	1641	1456	:	2	:	:	:	:	1398	1256	243	200	:	:
Cyprus	Inwards	:	4	:	4	:	:	:	:	:	:	:	:	:	:
	Outwards	:	0	:	:	:	0	:	:	:	:	:	:	:	:

Source: Eastern Mediterranean Reion Masterplan study MOS

Lemesos

Lemesos port is handling over 80% of imports and exports of Cyprus. In 2013 with about 270.000 TEUs, the port experienced a decrease of 9.8% compared to 2012. Whereas, the first half of 2014, according to the Lemesos port statistics, the port demonstrated an increase of 8% in comparison to the first half of 2013, representing almost 1.7 million tons. The port's major exports include wine and other beverages, fruit and vegetables.

Modal split

MODAL SPLIT – GERMAN PORTS OEM CORIDOR

Port/ Node	Year of Data	MODAL SPLIT		
		Rail (%)	Road (%)	IWT (%)
Hamburg	2013	36	62	2
Bremen & Bremerhaven	2013	46.6	50	3.4
Hannover	2013	See below	See below	See below
Braunschweig	2004	48	41	11
Magdeburg	x	x	x	x
Wilhelmshaven[3]	2012	50	25	25
Rostock	2004	30.3	69.4	0.2

HANNOVER PORTS DATA

Port/ Terminal	Hafenumschlag (tonnes)	Schiffe (#)	Eisenbahnumschlag (tonnes)	Waggons (#)	Kombinierte Verkehre Binnenschiff
Nordhafen	848.688	1122	871.906	43.305	50.694 TEU
Misburger Hafen	390.378	543	184.078	1422	No data
Lindener Hafen	94.368	123	1.083.180	24.703	23.924 LE
Brinker Hafen	73.794	139	205.473	3234	No data
Total (Σ)	**1.407.228**	**1927**	**2.344.637**	**72.664**	

Jahrestonnage:
2012: 3,71 Mio t davon
Hafenbahnen: 2,30 Mio t
2013: 3,75 Mio t davon
Hafenbahnen: 2,35 Mio t
Kombinierte Verkehre (TEU + LE)
2012: 34.596 TEU, 15.977 LE
2013: CTH Nordhafen: 50.694 TEU; RTH Linden: 23.924

Source: http://www.hannover.de/Wirtschaft-Wissenschaft/Wirtschaftsförderung/Standort/Logistikstandort-Hannover/Logistische-Knoten/Hafen-Hannover/Die-vier-Häfen/Hafen-in-Zahlen

[3] Modal split for Wilhelmshaven hinterland traffic (40%). Feeder traffic by sea amounts to 60%

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 5

List of Projects

5 December 2014

Disclaimer

The information and views set out in this Report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Abbrevations

BAC	Baltic - Adriatic Corridor
CB	Cross-border section (after narrow definition, para 7.1.3)
CEF	Listed in CEF Annex I
CI	Critical Issue (as defined in study, para 5.4)
ERTMS	European Rail Traffic Management System
HoP2	Horizontal Priority No. 2 for innovative management services in cpre network ports and for safe and secure infrastructure (based on Reg. 1316/2013 Annex 1 Part 1), cf. para 3.2.2
ITS	Information and Technology Services
MEUR	Million Euro
n.a.	not available
N	No
NSB	North Sea – Baltic Corridor
RD	Rhine - Danube Corridor
Scand-Med	Scandinavian – Mediterranean corridor
TBD	to be defined
TMS	Traffic Mangement System
UA	Urban area
VTMIS	Vessel Traffic Monitoring & Information System
Y	Yes

Exchange Rates Used

Czech Republic	27.5 CZK = 1 EUR (not fixed)
Hungary	310.1 HUF = 1 EUR (not fixed)
Romania	4.45 RON = 1 EUR (not fixed)
Bulgaria	1.9557 BGN = 1 EUR (fixed)

Note

The list includes only upgrading projects or new constructions and not maintenance work. It includes ongoing and planned projects, which have been widely confirmed through feedback requests during and after the 3rd and 4th Corridor Forum meeting.
This list has been produced with due diligence, based on the available information and through regular input from representatives of Member States, Regional adminstrations as well as Infrastructure Managers. However, a guarantee on its completeness and correctness cannot be given.

Table 1: List of rail projects

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE001	DE Oldenburg - Wilhelmshaven Core Network	works partially completed	ABS Oldenburg - Wilhelmshaven Consistent track doubling, electrification and noise protection. Improve accessibility of Wilhelmshaven Port, in particular Jade Weser Port.	BMVI / DB Netz AG	2003 - 2022 (partl. undef.)	690	**Partially financed** State budget	Technical Compliance / Bottleneck	N	N	Y	Yes (NSB)
DE002	DE Bremen node Core Network	Works completed	Knoten Bremen Upgrading measures to improve traffic flows and capacity for passenger and freight transport	BMVI / DB Netz AG	2012 - 2014	63,4	**Financed** State budget	Capacity	N	Y	Y	Yes (NSB)
DE003	DE Hamburg node Core Network	works partially completed	Knoten Hamburg Upgrading measures to improve traffic flows and capacity for passenger and freight transport	BMVI / DB Netz AG	2008 - 2015 (Freight Station Maschen, partly undefined)	545	**Partially financed** State budget	Capacity	N	Y	Y	No
DE004	DE Hamburg/Bremen - Hannover Core Network	works planned	ABS/NBS Hamburg/Bremen - Hannover Construction of new line / line segments to relief existing line in order to improve traffic flows and capacity for passenger and freight transport	BMVI / DB Netz AG	2020+ - n.a.	1496	State budget	Capacity	N	partly	Y	Yes (ScandMed)
DE005	DE Berlin - Rostock Core Network	works partially completed	ABS Berlin - Rostock Upgrade for max. speed of 160 km/h and axle load of 250 kN, implementation of ETCS	BMVI / DB Netz AG	2005 - 2018 (ETCS undefined)	861	**Financed** State budget	Capacity	N	partly	Y	Yes (ScandMed)
DE006	DE Berlin Node Core Network	works planned	Nordkreuz - Birkenwerder Double tracked reconstruction of the so called "Nordbahn" between Berlin-Gesundbrunnen (Nordkreuz) and Berliner Außenring (Birkenwerder) with a design speed of 160 km/h.	BMVI / DB Netz AG	n.a. - n.a.	268	State budget	Technical Compliance / Bottleneck	N	Y	N	Yes (ScandMed)
DE007	DE Berlin Node Core Network	works planned	Südkreuz - Blankenfelde Double tracked electrified reconstruction as long-distance rail line with a design speed of 160-200 km/h. Partially relocation of existing suburban train tracks. (study in progress)	BMVI / DB Netz AG	n.a. - n.a.	558	State budget	Technical Compliance / Bottleneck	N	Y	N	Yes (ERTMS)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE008	DE Berlin Node Core Network	works partially completed	Nordkreuz-Karow Track doubling of the passengener line from km 4,2 to km 11,9 and speed design für 160 km/h, upgrading for the signaling systems	BMVI / DB Netz AG	n.a. - 2021	153,5	**Partially financed** State budget	Capacity	N	Y	N	Yes (ERTMS)
DE009	DE Berlin Node Core Network	works partially completed	Flughafenanbindung Schönefeld New double track line between Berliner Außenring via airport to Berlin-Görlitz New train station under the Terminal, measures for the improvement of traffic flows for passenger transport, cargo connection terminal	BMVI / DB Netz AG	2006 - 2011 / partially undefined	670	**Financed** State budget	Intermodality	N	Y	Y	Yes (ScandMed)
DE010	DE German Rail Network Core Network	works planned	Prolongation of Sidings for 740m trains Improvement and increase of interoperability	DB Netz AG	n.a. - n.a.	n.a.	State budget	Technical Compliance / Bottleneck	N	partly	N	No
DE011	DE German Rail Network Core Network	works planned	Rail Bridges Upgrade Upgrade and modernization of Rail bridges; Capacity Enhancement	DB Netz AG	n.a. - n.a.	n.a.	State budget	Capacity	N	partly	N	No
DE012	DE German Rail Network Core Network	works planned	Electronical Interlockings Upgrade and modernization; Stabilization and insuring of Capacity	DB Netz AG	n.a. - n.a.	n.a.	State budget	Interoperability	N	partly	Y	Yes (ERTMS)
DE013	DE Berlin - Dresden Core Network	works - under construction	ABS Berlin - Dresden Improvement of service quality by reducing the travel time. Gradual speed upgrade (160 / 200 km/h).	BMVI / DB Netz AG	2001 - 2018 / n.a.	802	**Partially financed** State budget	Technical Compliance / Bottleneck	N	partly	N	No
DE014	DE Leipzig - Dresden Core Network	works partially completed	ABS Leipzig - Dresden Reducing travel and transport times. Modernisation and upgrade.	BMVI / DB Netz AG	1993 - 2020 / n.a.	1451	**Partially financed** State budget	Technical Compliance / Bottleneck	N	N	N	No
DE015	DE Bitterfeld - Leipzig Core Network	works - under construction	Upgrade of the Berlin-Halle/Leipzig (VDE 8.3) track from ETCS Level 2, SRS 2.2.2+ to ETCS Level 2, SRS 2.3.0d Upgrade of the German Pilot line Berlin - Bitterfeld - Leipzig for ETCS Baseline 3	BMVI / DB Netz AG	2018 - 2019	39	**Financed** State budget	Interoperability	N	N	Y	Yes (ScandMed)
DE016	DE Leipzig Core Network	works partially completed	Leipzig node Upgrade of Leipzig node (1st and 2nd Construction phase)	BMVI / DB Netz AG	2002 - 2019	478,6	**Financed** State budget	Capacity	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE017	DE Magdeburg node Core Network	works - under construc-tion	Magdeburg Node, 2nd Construction Phase Upgrading measures to improve traffic flows and capacity for passenger and freight transport	BMVI / DB Netz AG	n.a - 2020	347	**Financed** State budget	Capacity	N	Y	N	No
DE018	DE Hamburg Node Core Net-work	works planned	Hamburg Billwerder Ubf. Freight Station - 3rd Module Upgrading of the Transhipment station	BMVI / DB Netz AG	2015 - n.a.	31	Financed State budget	Capacity	N	Y	N	No
CZ001	CZ Breclav Core Network	works - under construc-tion	Reconstruction of the railway junction Breclav	Railway In-frastructure Administra-tion, state organization (RIA)	2012 - 2015	45,5	**Financed** State Budget. Co-funding by EU (OPD I)	Capacity	Y	N	Y	Yes
CZ002	CZ Brno Core Network	study in progress	Railway junction Brno (Study) Main objective: Significant increase of capacity Measures included: - New railway junction Brno - New station	Railway In-frastructure Administra-tion, state organization (RIA)	n.a. (ongo-ing) - 2017	11	**Financed** State Budget. Co-funding by EU (OPD II)	Capacity	N	N	Y	Yes
CZ003	CZ Brno Core Network	works planned	Railway junction Brno (Works) Main objective: Significant increase of capacity Measures included: - New railway junction Brno - New station	Railway In-frastructure Administra-tion, state organization (RIA)	2018 - 2023	745	n.a.	Capacity	N	N	Y	Yes
CZ004	CZ Pardubice - Ceska Trebova Core Network	works planned	Modernization of the line Usti nad Orlici - Chocen Main objective: modernization of the line, priority project within the scope of the TEN-T network	Railway In-frastructure Administra-tion, state organization (RIA)	2021 - 2023	241	State Budget. Co-funding by EU (OPT II)	Capacity	N	N	Y	Yes
CZ005	CZ Ceska Trebova Core Network	works planned	Passage through the railway junction Ceska Trebova Main objective: modernization of the junction, priority within TEN-T network	Railway In-frastructure Administra-tion, state organization (RIA)	n.a. - 2021	219	State Budget. Co-funding by EU (OPD II)	Capacity	N	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ006	CZ Pardubice Core Network	study in progress	Passage through the railway junction Pardubice (study) Main objective: modernization of the junction, priority within TEN-T network	Railway Infrastructure Administration, state organization (RIA)	n.a. (ongoing) - 2017	18	**Financed** State Budget. Co-funding by EU (OPD II)	Capacity	N	N	Y	Yes
CZ007	CZ Pardubice Core Network	works planned	Passage through the railway junction Pardubice (works) Main objective: modernization of the junction, priority within TEN-T network	Railway Infrastructure Administration, state organization (RIA)	2018 - 2022	n.a.	n.a.	Capacity	N	N	Y	Yes
CZ008	CZ Pardubice - Kolin Core Network	works planned	Optimization of the line Pardubice - Kolin Main objective: remove bottlenecks - configuration of railway stations	Railway Infrastructure Administration, state organization (RIA)	n.a. - after 2020	n.a.	n.a.	Capacity	N	N	Y	Yes
CZ009	CZ Decin - Kolin Core Network	works planned	Optimization of the line Decin - Vsetaty - Lysa nad Labem - Kolin Main objective: optimization of the line	Railway Infrastructure Administration, state organization (RIA)	2017 - 2021	438	State Budget. Co-funding by EU (CEF, OPT II)	Capacity	N	N	Y	No
CZ010	CZ Prerov - Ceska Trebova - Breclav Core Network	works planned	ETCS on railway line Ceska Trebova - Prerov - Breclav Main objective: interoperability implementation	Railway Infrastructure Administration, state organization (RIA)	2016 - 2018	222	State Budget. Co-funding by EU (CEF)	Interoperability	N	N	Y	Yes (ERTMS)
CZ011	CZ Praha Node Core Network	works planned	Optimization of the line Praha Vysocany- Lysa nad Labem, 2nd construction phase (Praha Freight Bypass) Main objective: optimization of the line, part of the priority projects Measures included: - Optimization of the line	Railway Infrastructure Administration, state organization (RIA)	2016 - 2021	285	State Budget. Co-funding by EU (CEF)	Capacity	N	Y	N	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ012	CZ Praha Node Core Network	works planned	Optimization of the line Praha Hostivar - Praha hl.n. , 1st part (Praha Freight Bypass) Main objective:upgrade of rails, removing bottlenecks that create speed drops, increase of line capacity, part of Praha junction, connection of RRT core network Praha-Uhrineves Measures included: - Upgrade of rails	Railway Infrastructure Administration, state organization (RIA)	2014 - 2016	53,6	State Budget. Co-funding by EU (OPD I)	Capacity	N	Y	N	Yes
CZ013	CZ Praha Node Core Network	works planned	Optimization of the line Praha Hostivar - Praha hl.n., 2nd part (Praha Freight Bypass) Main objective: upgrade of rails, removing bottlenecks that create speed drops, increase of line capacity, part of Praha junction, connection of RRT core network Praha-Uhrineves Measures included: - Upgrade of rails	Railway Infrastructure Administration, state organization (RIA)	2015 - 2017	173	State Budget. Co-funding by EU (CEF)	Capacity	N	Y	N	Yes
CZ014	CZ Praha Node Core Network	works planned	Modernization of the line Praha - Vaclav Havel International Airport Main objective: connection of Vaclav Havel International Airport by rail, adressing also transport service for the area Measures included: - Construction of new line to the airport	Railway Infrastructure Administration, state organization (RIA)	2019 - 2022	n.a.	TBD	Intermodality	N	Y	Y	Yes
CZ015	CZ Lovosice / Litomerice - State Border DE/CZ Core Network	works planned	HSR Dresden - Praha (part border - Lovosice / Litomerice) Main objective: High speed rail between Dresden and Prague, optimization of line, connection of CR to the HSR network Measures included: - Construction of HSR line	Railway Infrastructure Administration, state organization (RIA)	n.a. - after 2023	n.a.	TBD	Technical Compliance / Bottleneck	Y	partly	Y	Yes
CZ016	CZ Lovosice / Litomerice - Praha Core Network	works planned	HSR Dresden - Praha (part Lovosice / Litomerice - Praha) Main objective: High speed rail between Dresden and Prague, optimization of line, connection of CR to the HSR network Measures included: - Construction of HSR line	Railway Infrastructure Administration, state organization (RIA)	n.a. - after 2023	n.a.	TBD	Technical Compliance / Bottleneck	N	partly	Y	Yes
CZ017	CZ Brno - Breclav Core Network	works planned	Upgrade of Brno - Breclav line as a High Speed Rail line Main objective: increase of capacity near Brno, upgrade to High Speed Rail	Railway Infrastructure Administration, state organization (RIA)	n.a. - after 2023	n.a.	TBD	Technical Compliance / Bottleneck	Y	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ018	CZ Decin - State border DE/CZ Core Network	works planned	Decin tunnels Main objective: passing clearance for combined transport between Decin Main station and State border CZ/DE	Railway Infrastructure Administration, state organization (RIA)	n.a. - 2022	n.a.	TBD	Capacity	N	N	Y	No
CZ019	CZ Czech Republic Core and Comprehensive Network	works planned	Equipment for traffic control on the railway infrastructure main objectives: Equipment for traffic control on the railway infrastructure measures: modernization of signaling and communication devices as a condition of securing interoperability of statewide routes (including ETCS/GSM-R); Modernization of signalling and communication devices on side statewide and regional routes (rationalization); removal or ensure crossings	Ministry of Transport	2015 - 2023	614,5	State Budget	Interoperability	N	N	Y	Yes (ERTMS)
CZ021	CZ Prerov Core Network	works planned	Modernisation of the railway junction Přerov	Railway Infrastructure Administration, state organization (RIA)	2017 - 2021	112,8	State Budget and possible EU Co-financing (CEF, CF)	Capacity	N	N	N	Yes (BAC)
CZ022	CZ Brno - Breclav Core Network	works - under construction	CTC Breclav - Brno	Railway Infrastructure Administration, state organization (RIA)	2014 - 2015	10,3	**Financed** TBD	Interoperability	Y	N	Y	Yes
CZ023	CZ Breclav - Hohenau (AT) Core Network	works planned	Reconstruction of the bridge at km 80.930 railway Hohenau (ÖBB) - Breclav	Railway Infrastructure Administration, state organization (RIA)	2015 - 2015	16,9	Procured (Financing to be confirmed) (Public funds and possible EU Co-financing (CF - OPT1))	Technical Compliance / Bottleneck	Y	N	Y	No
CZ024	CZ Praha Node Core Network	works planned	Increasing capacity of the Freight line Praha-Libeň – Praha-Malešice – Praha-Hostivař / Praha-Vršovice (Praha Freight Bypass) Modernization of the track section Praha-Libeň - Praha-Malešice, I. part	Railway Infrastructure Administration, state organization (RIA)	2016 - 2018	52	State Budget. Co funding by EU (CEF)	Capacity	N	Y	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ025	CZ Praha - Brno Core Network	works - under construc-tion	Modernization of the track section Praha Běchovice - Úvaly Measures includes: - Reconstruction of tracks, including drainage; - Remediation and increase of carrying capacity of the substruc-ture; - Reconstruction of bridges, underpasses, culverts, retaining walls; - Construction of a new underpass at Praha Klánovice; - New signal bridges, new platforms at railway station Úvaly; - Praha Klánovice: shelter and access to the platform; - Laying of energy, communication, security and fiber optic cables along the route; - Construction of track-side signaling equipment; - Reconstruction of the existing traction substations Bechovice	Railway In-frastructure Administra-tion, state organization (RIA)	2013 - 2016	65	**Financed** State Budget. Co founding by EU (Opt. I(40), II(6,5))	Capacity	N	Y	Y	Yes
CZ026	CZ State Border (DE) - Praha - Brno Core Network	works planned	Modernization of railway st. Nymburk hl. n.	Railway In-frastructure Administra-tion, state organization (RIA)	2019+ - n.a.	n.a.	OPT II	Capacity	N	N	Y	Yes
CZ027	CZ State Border (DE) - Praha - Brno Core Network	works planned	ETCS on 1st rail transit corridor: State Border (DE) - Dolní Zleb - Praha-Libeň – Kolín ECTS level 2 implementation	Railway In-frastructure Administra-tion, state organization (RIA)	2015 - 2017	25	State Budget. Co funding by EU (CEF)	Interoperabil-ity	par tly	par tly	Y	Yes (ER TMS)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ028	CZ Ústí nad Orlicí Core Network	works - under construc-tion	Passage through the railway junction Ústí nad Orlicí Main objectives: - Achieve load class D4 and spatial continuity for track loading gauge UIC GC; - Equipped with new modern electronic security equipment; - Remove obsolete buildings and technology files; - Increase traffic safety; - Save operating costs and infrastructure maintenance costs. Measures included: - Realignment of tracks (speed increase up to 160 km/h); - Reconstruction of bridges; - Removal of two level crossings in the station; - Noise barriers and noise reduction measures; - New safety equipment - central electronic interlocking; - Deployment of ERTMS.	Railway In-frastructure Administra-tion, state organization (RIA)	2012 - 2015	40	**Financed** State Budget. Co funding by EU (OPD I)	Capacity	N	N	Y	Yes
AT001	AT Wien Node Core Network	works partially completed	New Vienna Central Rail Station Construction of a new go-through Central Station substituting two dead-end stations and linking long-distance rail lines from PP17, PP22, PP23 (rail project size: 500.000 m2; 6 km line length; 8 km noise protection walls; 5x2 platform edges of 12m width; Urban public transport integration; underground parking for cars and bicycles, shopping centre	ÖBB Infra-struktur AG	2009 - 12/2015	1014,9	**Financed** City of Wien, State Rail In-frastructure Budget, Private (Real estate revenues); part of funded TEN-T 2007-AT-17040-P	Intermodality	Y	Y	Y	Yes (BAC)
AT002	AT Wien - Border AT/CZ Core Network	works partially completed	ETCS L2: Břeclav – Wien Integration of ECTS Level 2 including GSM-R along Břeclav – Wien segment	ÖBB Infra-struktur AG	n.a. - 07/2014	n.a.	**Financed** State Rail In-frastructure Budget	Interoperabil-ity	Y	par tly	Y	Yes (BAC)
AT003	AT Wien - Border AT/CZ Core Network	study planned	Study: Rail Line Upgrade Breclav - Wien Study on Upgrade on the conventional Břeclav – Wien (Bern-hardsthal-Süßenbrunn) segment to line speed 160 km/h incl. block densification to increase the capacity from 180 to 300 trains paths	ÖBB Infra-struktur AG	2015 - 12/2018	20,5	State guaran-teed loans, CEF	Capacity	Y	par tly	Y	Yes (BAC)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
AT004	AT Wien - Border AT/CZ Core Network	works planned	Upgrade Works Rail Line Breclav - Wien Upgrade on the conventional Břeclav – Wien (Bernhardsthal-Süßenbrunn) segment to line speed 160 km/h incl. block densification to increase the capacity from 180 to 300 trains paths	ÖBB Infrastruktur AG	after 2019 - 2025	600	State guaranteed loans taken by OEBB Infra; OEBB considers to apply for EU co-funding (CEF)	Capacity	Y	partly	Y	Yes (BAC)
AT005	AT Wien Node Core Network	works planned	Extension Wien Erdberger Lände Rail Bridge (section Wien Simmering - Wien Praterkai) Extension of existing two track line over Danube Canal between Wien Haidestraße /Erdberger Lände and Wien Praterkai up to three tracks for enabling a separate Suburban Rail Line to Donauuferbahn (Capacity increase on main line)	ÖBB Infrastruktur AG	after 2019 - n.a.	n.a.	State guaranteed loans, CEF	Capacity	N	Y	N	Yes (BAC)
AT006	AT Wien - Border AT/HU Core Network	study in progress	ETCS Upgrade: Wien - Gramatneusiedl - Border HU/AT near Nickelsdorf/Hegyeshalom (Study) Study Project on ETCS Upgrade Variant (L1 with new baseline or L2). On this line a pilot line for ETCS L1 with baseline 2.3.0 was implemented, but is out of operation in 2014.	ÖBB Infrastruktur AG	2014 - 12/2015	0,12	**Financed** State guaranteed loans, CEF	Interoperability	Y	partly	Y	Yes (ERTMS)
AT007	AT Wien - Border AT/HU Core Network	works planned	ETCS Upgrade: Wien - Gramatneusiedl - Border HU/AT near Nickelsdorf/Hegyeshalom (Works) Integration of ECTS Level 2 (including GSM-R) along Wien – Hegyeshalom segment. GSM-R is under operation. On this line a pilot line for ETCS L1 with baseline 2.3.0 was implemented, but is out of operation in 2014.	ÖBB Infrastruktur AG	after 2019 - n.a.	n.a.	State guaranteed loans, CEF	Interoperability	Y	partly	Y	Yes (ERTMS)
AT008	AT Wien Node Core Network	works planned	Wien Zvbf Rail Freight Station - Alignment optimization of exit lines Optimization of rail freight lines from/to Vienna Central Marshalling yard (Wien Zvbf) through construction of the Laaerberg tunnel (forming an additional inlet from the south and west) and the upgrade of line Vienna Kledering - Achau node (link to Pottendorfer line) as a new freight route from Wien Zvbf to Wiener Neustadt and Sopron. These measures relieve capacities at Vienna node (Meidling) and on the corridor line section Wien Zvbf - Gramatneusiedl (- Hegyeshalom).	ÖBB Infrastruktur AG	after 2019 - 2027	n.a.	State guaranteed loans	Capacity	N	Y	Y	Yes (BAC)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
AT009	AT CZ/AT border station Breclav Core Network	study planned	Stopless Freight Trains AT/CZ Developing operational and legal conditions to run cross-border freight trains between Austria and Czech Republic without stop at Breclav border station. Analysis of required administrative and legal steps	Rail Cargo Austria, CD Cargo, MoT CZ, MoT AT	n.a. - n.a.	n.a.	n.a.	Interoperability	Y	N	Y	No
AT010	AT HU/AT border station Hegyeshalom Core Network	study planned	Stopless Freight and Passenger Trains AT/HU Developing operational and legal conditions to run cross-border freight and passenger trains between Austria and Hungary without stop at Hegyeshalom border station. Analysis of required administrative and legal steps	ÖBB PV, MAV Start, Rail Cargo Austria, Rail Cargo Hungary, MoT HU, MoT AT	n.a. - n.a.	n.a.	n.a.	Interoperability	Y	N	Y	No
AT011	AT Entire network / ERTMS Core Network	works partially completed	ETCS retrofitting and testing AT, DE, HU, CZ, SI "CEE goes ETCS": ETCS retrofit of 7 locos SGP 2143 and 5 locos Siemens ES64U4 with ETCS Level 2, Baseline 2, Release 2.3.0d. Field / off-site tests to demonstrate compatibility of OB equipment with trackside equipment of baseline 2.3.0d in AT, DE, HU, CZ and SI (ERTMS corr's B,D,E)	CargoServ GmbH, RTS Rail Transport Service GmbH	5/2013 - 12/2015	3,11	**Financed** 2012-EU-60033-P; TEN-T 2007-2013 50% PP-ERTMS	Interoperability	partly	partly	Y	Yes (ERTMS)
AT012	AT ERTMS Core and Comprehensive Network	study in progress	UNIFE ERTMS deployment study Facilitating and speeding up ERTMS deployment (involved: BE, ES, DE, FI, IT, AT, FR, UK, DK, SE, PL)	EEIG ERTMS Users Group, UNIFE, various	11/2011 - 12/2014	30	**Financed** 2011-EU-60013-S; TEN-T 2007-2013 50%	Interoperability	N	partly	Y	Yes (ERTMS)
AT013	AT Wien - Bratislava - Györ Comprehensive Network	study in progress	Study New Rail Line Wien Airport - Bratislava / Budapest After stopping Götzendorf clip study (connecting Airport and Eastern line near Götzendorf), a line variant study is ongoing to integrate the Airport Station into long distance passenger rail Vienna – Bratislava / Budapest and to increase capacity of existing line Vienna – Parndorf – Border AT/SK/HU	ÖBB Infrastruktur AG / Flughafen Wien AG	2013 - 6/2015	5,8	**Financed** State Rail Infrastructure Budget; part of funded TEN-T 2007-AT-17040-P	Intermodality	Y	Y	Y	Yes (R-D)
AT014	AT Wien Node Core Network	works - under construction	Wien Zvbf/ Kledering Rail Clip "Kledering clip": linking the existing rail lines (Eastern Line, Airport Suburban Line) between Vienna Main Station and Vienna Airport by a new connection line incl. bridge across marshalling yard	ÖBB Infrastruktur AG	n.a. - 2016	63,1	**Financed** State Rail Infrastructure Budget; part of funded TEN-T 2007-AT-17040-P	Intermodality	N	Y	Y	Yes (BAC)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
AT015	AT Wien Node Core Network	works - under construc-tion	Upgrade Airport Rail Station Wien Schwechat Upgrade/Adaptation of existing Passenger Rail Station below the Airport (platform extension to 400 m length) safeguarding stop of long-distance passenger trains and separate stops of city-airport trains	ÖBB Infra-struktur AG / Flughafen Wien AG	2012 - 12/2014	118,9	**Financed** State Rail In-frastructure Budget; part of funded TEN-T 2007-AT-17040-P	Intermodality	N	Y	Y	Yes (BAC)
SK001	SK Border CZ/SK - Bratislava Core Network	works planned	ERTMS on corridor IV: Kúty-Bratislava (ETCS L2 + GSM-R) - Works Main objective: Deployment of ETCS L2 and GSM-R on 71 km of the corridor line; Modernization of interlocking system, Increase of safety on level crossings;	Slovak rail-ways (ZSR)	2017 - 2019	116,275	Cohesion Fund	Interoperabil-ity	Y	partly	Y	Yes
SK002	SK Border CZ/SK - Bratislava Core Network	study planned	ERTMS on corridor IV: Kúty-Bratislava (ETCS L2 + GSM-R) - Study Main objective: Deployment of ETCS L2 and GSM-R on 71 km of the corridor line; Modernization of interlocking system, Increase of safety on level crossings;	Slovak rail-ways (ZSR)	2015 - 2016	3,5	Cohesion Fund	Interoperabil-ity	Y	partly	Y	Yes
SK003	SK Bratislava Node Core Network	study in progress	Development of Rail Node Bratislava - Feasibility Study Complex solution for upgrading the Bratislava Rail Node incl. Air-port Rail Link- Feasibility Study	Slovak rail-ways (ZSR)	2014 - 2015	0,625	**Financed** Cohesion Fund	Technical Compliance / Bottleneck	Y	Y	Y	Yes
SK004	SK Border CZ/SK - Bratislava Core and Com-prehensive Net-work	study in progress	Study for Modernization of Kúty - Bratislava - Sturovo Railway Line Modernization of Railway Line Border CZ/SK - Kúty - Bratislava - Nove Zamky - Sturovo - Border CK/HU (251 km); ; Project Doc-umentaion and Construction Design	Slovak rail-ways (ZSR)	2014 - 2016	7	**Financed** ERDF	Technical Compliance / Bottleneck	partly	partly	Y	Yes
SK005	SK Bratislava Node Core Network	study planned	Development of Rail Node Bratislava - Project Documentation Complex solution for upgrading the Bratislava Rail Node incl. Air-port Rail Link - Project Documentation	Slovak rail-ways (ZSR)	2016 - 2018	25	Cohesion Fund	Technical Compliance / Bottleneck	N	Y	Y	Yes
SK006	SK Bratislava Node Core Network	works planned	Development of Rail Node Bratislava - Works Complex solution for upgrading the Bratislava Rail Node incl. Air-port Rail Link - Implementation Works	Slovak rail-ways (ZSR)	2019 - 2021	900	TBD based on absorption capacity	Technical Compliance / Bottleneck	Y	Y	Y	Yes
HU001	HU Budapest - State Border HU/RO Core Network	works - under construc-tion	Budapest Ferencváros Junction "C" - Gyoma railway line imple-mentation of ERTMS ERTMS on Budapest Ferencváros - Gyoma railway line (ETCS L2 + GSM-R) (153 km)	National Infrastructure Development Company - (NIF ZRt)	2013 - 2015	45,3	**Financed** Co-financed by Cohesion Fund	Interoperabil-ity	N	partly	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
HU002	HU Budapest - State Border HU/RO Core Network	works - under construc-tion	Gyoma - Lökösháza railway line implementation of ERTMS ERTMS on Gyoma - Lökösháza HU/RO Border railway line (ETCS L2 + GSM-R) (68 km); (III / 1.b phase of Ferencvaros - Lökosha-za)	National Infrastructure Development Company - (NIF ZRt); National Government	2013 - 2016	51,27	**Financed** State budget, to be co-funded by CEF	Interoperabil-ity	par tly	N	Y	Yes
HU003	HU Budapest - State Border HU/RO Core Network	works - under construc-tion	Szolnok - Szajol: Line upgrade Rehabilitation of River Tisza Rail Bridge: Increase of Axle Load in order to meet TEN-T requirements	National Infrastructure Development Company - (NIF ZRt); National Government	2013 - 2015	9,35	**Financed** Co-financed by Cohesion Fund	Technical Compliance / Bottleneck	N	N	N	Yes
HU004	HU Budapest - State Border HU/RO Core Network	works planned	Szolnok Railway Node Szolnok Complex station upgrade	National Infrastructure Development Company - (NIF ZRt); National Government	2018 - 2020	131,25	Co-financed by Cohesion Fund	Capacity	N	N	N	Yes
HU005	HU Budapest - State Border HU/RO Core Network	works - under construc-tion	Gyoma - Békéscsaba railway line rehabilitation Rehabilitation of railway line (37 km) for train speed increase to 120 km/h	National Infrastructure Development Company - (NIF ZRt)	2012 - 2016	n.a.	**Financed** Co-financed by Cohesion Fund	Technical Compliance / Bottleneck	N	N	N	Yes
HU006	HU Budapest - State Border HU/RO Core Network	works planned	Békéscsaba - Lökösháza railway line rehabilitation Construction of 2nd track and rehabilitation of railway line (29 km) for train speed increase to min. 100 km/h	National Infrastructure Development Company - (NIF ZRt)	2017 - 2019	160,92	State budget, to be co-funded by CEF	Technical Compliance / Bottleneck	Y	N	Y	Yes
HU007	HU Border SK/HU - Budapest Core Network	works - under construc-tion	Rajka Border SK/HU - Hegyeshalom railway line implementation of ERTMS ERTMS on Rajka Border SK/HU - Hegyeshalom railway line (ETCS L1 + GSM-R) (13 km)	GySEV - Raaberbahn	2014 - 2015	2,1	**Financed** Co-financed by Cohesion Fund	Interoperabil-ity	Y	N	Y	Yes
HU008	HU Budapest - Bor-der AT/HU Core Network	works - under construc-tion	Budapest - Győr - Hegyeshalom Border AT/HU railway line imple-mentation of ERTMS ERTMS on Budapest - Győr - Hegyeshalom Border AT/HU railway line (ETCS L2 + GSM-R) (191 km)	National Infrastructure Development Company - (NIF ZRt)	2015 - 2018	25	**Financed** To be co-funded by EU (Cohesion Fund-CEF)	Interoperabil-ity	par tly	par tly	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
HU009	HU Budapest Node Core Network	works planned	Budapest Southern Railway Danube bridge Rehabilitation of Budapest Southern Railway Bridge + construction of 3rd track with connection to Ferencváros railway station	National Infrastructure Development Company - (NIF ZRt); National Government	2016 - 2018	112,87	State budget, to be co-funded by CEF	Capacity	N	Y	Y	No
HU010	HU Budapest Node Core Network	works planned	Budapest Southern Railway Bypass ("V0") Construction of a new Budapest Southern Railway Bypass	National Infrastructure Development Company - (NIF ZRt); National Government	n.a.	1160,92	Loan	Capacity	N	Y	Y	No
HU011	HU Budapest Node Core Network	works planned	Budapest Airport Rail Connection Building the railway connections of Budapest Liszt Ferenc Airport.	National Infrastructure Development Company - (NIF ZRt); National Government	2019 - 2020	145,11	State budget, to be co-funded by CEF	Intermodality	N	Y	Y	No
HU012	HU Budapest - Border AT/HU Core Network	works planned	Biatorbágy - Tata railway line rehabilitation Rehabilitation of railway line (52 km) for train speed increase to 140-160 km/h	National Infrastructure Development Company - (NIF ZRt); National Government	2017 - 2020	378,1	State budget, to be co-funded by CEF	Capacity	N	N	N	Yes
RO001	RO Border HU/RO – Arad Core Network	works - under construction	Rehabilitation of Railway line Border HU/RO – Curtici – Arad – Deva – Simeria Railway line rehabilitation for train speed increase to 160 km/h	CFR Infrastructura	2011 - 2017	364	**Financed** Co-funded by EU (Cohesion Fund-CEF)	Capacity	partly	N	partly	Yes
RO002	RO Craiova - Border RO/BG Core Network	works planned	Rehabilitation of Railway line Craiova - Calafat Railway line rehabilitation for train speed increase to 160 km/h	CFR Infrastructura	2018 - 2025	n.a.	Co-funded by EU (Cohesion Fund-CEF)	Technical Compliance / Bottleneck	Y	N	Y	Yes
RO003	RO State Border HU/RO - Timisoara - State Border RO/BG Core Network	study planned	Arad - Timisoara - Caransebeş rail line Modernisation of the Arad- Timisoara - Caransebeş line for higher speeds	CFR Infrastructura	n.a. - n.a.	n.a.	TBD	Technical Compliance / Bottleneck	N	N	Y	Yes

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RO004	RO Timisoara - State Border RO/BG Core Network	study planned	Caransebes-Drobeta Turnu Severin-Craiova rail line Modernisation of the Caransebes-Drobeta Turnu Severin-Craiova line	CFR Infra-structura	n.a. - n.a.	n.a.	TBD	Technical Compliance / Bottleneck	N	N	Y	Yes
BG001	BG Border RO/BG - Sofia Core Network	study in progress	Modernisation of the Vidin - Sofia - railway line - Preliminary design update for Vidin-Sofia railway line and prepa-ration for construction; - Preparation of technical design for Vidin-Medkovets section (61.9 km); - Update of EIA; - Conformity assessment at the stage of Technical design for Section 1: Vidin-Medkovets; - Interoperability assessment/Preparation of DDP/PP; - Preparation of technical specifications for construction; - CBA updating.	National Railway In-frastructure Company (NRIC)	2013 - 2015	7,126	**Financed** Co-funded by EU (Cohesion Fund); State budget	Technical Compliance / Bottleneck	N	N	Y	Yes
BG002	BG Border RO/BG - Sofia Core Network	works planned	Modernisation of Vidin - Medkovets section Infrastructure works for partial doubling of the 61.9 km line sec-tion, increasing design speed (160/120 km/h), achievement of GC loading gauge, reducing inclination, catenary upgrading, im-provement of safety and installation of SCADA, ETCS (level 1) and GSM-R	National Railway In-frastructure Company (NRIC)	2016 - 2020	451,333	Co-funded by EU (CEF) State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	Y	N	Y	Yes
BG003	BG Border RO/BG - Sofia Core Network	works planned	Modernisation of Medkovets - Ruska Byala section Infrastructure works for increasing design speed (160/120 km/h), achievement of GC loading gauge, catenary upgrading, improve-ment of safety and installation of SCADA, ETCS (level 1) and GSM-R along 84.3 km line	National Railway In-frastructure Company (NRIC)	2019 - 2025	514,148	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	Y	N	Y	Yes
BG004	BG Border RO/BG - Sofia Core Network	works planned	Modernisation of Ruska Byala - Sofia section Infrastructure works for increasing design speed (160/120 km/h), achievement of GC loading gauge, improvement of safety and installation of SCADA, ETCS (level 1) and GSM-R, along 76.3 km line section	National Railway In-frastructure Company (NRIC)	2019 - 2025	987,402	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes
BG005	BG Sofia - Border BG/EL Core Network	study in progress	Modernisation of Sofia - Pernik Razpredelitelna - Radomir section - Study for preparation of technical designs - Interoperability assessment - preparation of DDP/PP - preparation of technical specifications for construction - CBA updating	National Railway In-frastructure Company (NRIC)	2013 - 2015	9,332	**Financed** Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG006	BG Sofia - Border BG/EL Core Network	works planned	Modernisation of Sofia - Pernik Razpredelitelna - Radomir section Infrastructure works for increasing design speed were possible, achievement of GC loading gauge, improvement of safety and installation of SCADA, ETCS (level 1) and GSM-R along 47.7 km section	National Railway Infrastructure Company (NRIC)	n.a. - n.a.	431,492	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes
BG007	BG Sofia - Border BG/EL Core Network	study in progress	Modernisation of Radomir - Kulata line - Study for preparation of Feasibility study; - Preliminary design; - Cost-Benefit Analysis; - EIA Report.	National Railway Infrastructure Company (NRIC)	2012 - 2015	3	**Financed** Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	Y	N	Y	Yes
BG008	BG Sofia - Border BG/EL Core Network	works planned	Modernisation of Radomir - Kulata line Infrastructure works for increasing design speed were possible, achievement of GC loading gauge, improvement of safety and installation of SCADA, ETCS (level 1) and GSM-R along 161 km section	National Railway Infrastructure Company (NRIC)	n.a. - n.a.	1140	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	Y	N	Y	Yes
BG009	BG Sofia - Plovdiv Core Network	study in progress	Modernisation of Sofia - Plovdiv railway line, Sofia - Elin Pelin and Elin Pelin - Septemvri sections Study for: - Preparation of technical design; - Interoperability assessment; - Preparation of DDP/PP; - Preparation of technical specifications for construction; - CBA updating.	National Railway Infrastructure Company (NRIC)	2012 - 2015	30,157	**Financed** Co-funded by EU (Cohesion Fund), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	N	Yes
BG010	BG Sofia - Plovdiv Core Network	works planned	Modernisation of Sofia - Plovdiv railway line, Sofia - Elin Pelin and Elin Pelin - Septemvri sections Infrastructure works for increasing design speed (160/120 km/h), upgrade of catenary, achievement of GC loading gauge, reduction of inclinations, improvement of safety and installation of SCADA, ETCS (level 1) and GSM-R	National Railway Infrastructure Company (NRIC)	2016 - 2020	974,92	Co-funded by EU (Cohesion Fund), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes
BG011	BG Sofia - Plovdiv Core Network	works - under construc-tion	Modernisation of Septemvri - Plovdiv section Infrastructure works for increasing design speed (160/120 km/h), achievement of GC loading gauge, improvement of safety and installation of SCADA, ETCS (level 1) and GSM-R	National Railway Infrastructure Company (NRIC)	2012 - 2015	322,434 0864	**Financed** Co-funded by EU (Cohesion Fund), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	Y	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG012	BG Plovdiv - Border BG/TR Core Network	works - under construction	Reconstruction and electrification of Dimitrovgrad-Harmanli-Svilengrad section Infrastructure works for electrification, increasing the design speed (160/120 km/h), construction of power substations, improvement of safety and installation of ETCS (level 1)and GSM-R systems along 65.6 km long section	National Railway Infrastructure Company (NRIC)	2012 - 2015	200,324	**Financed** Co-funded by EU (Cohesion Fund), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes
BG013	BG Plovdiv - Burgas Core Network	works partially completed	Rehabilitation of Stara Zagora-Zimnitsa and Tserkovski-Burgas sections Infrastructure works for rehabilitation and renewal of railway track, catenary, and signalling; total length 164.5 km	National Railway Infrastructure Company (NRIC)	2011 - 09/2015	244,353	**Financed** Co-funded by EU (Cohesion Fund), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	N	Yes
BG014	BG Plovdiv - Burgas Core Network	study in progress	Rehabilitation of Plovdiv - Burgas railway line; Phase II: Plovdiv - Orizovo, Orizovo - Mihaylovo, Yambol - Zimnitsa (Zavoy station), Straldzha - Tserkovski Study for Conformity assessment to the essential requirements for construction/ Preparation of Safety Report/Preparation and updating of technical designs/Feasibility study/Preliminary design/Approved EIA Report/Preparation of DDP/PP/Preparation and updating of technical specifications for construction; total length 117.2 km	National Railway Infrastructure Company (NRIC)	2012 - 2015	2,445	**Financed** Co-funded by EU (Cohesion Fund 2007-2013), State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	N	Yes
BG015	BG Plovdiv - Burgas Core Network	works planned	Rehabilitation of Plovdiv - Burgas railway line; Phase II: Plovdiv - Orizovo, Orizovo - Mihaylovo, Yambol - Zimnitsa (Zavoy station), Straldzha - Tserkovski Infrastructure works for rehabilitation and modernisation of sections, installation of ETCS (level 1, version 2.3.0d) and signalling in stations, development of Plovdiv railway node, etc.; total length 117.2 km	National Railway Infrastructure Company (NRIC)	2016 - 2020	299,817	Co-funded by EU (Cohesion Fund 2007-2013) State Budget Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	Y	Yes
BG016	BG Sofia Core Network	works - under construction	Reconstruction of Sofia station Infrastructure works for rehabilitation and reconstruction of station buildings	National Railway Infrastructure Company (NRIC)	2013 - 2015	n.a.	**Financed** Co-funded by EU (EFRD 2007-2013), State Budget, Other (NRIC loan)	Intermodality	N	partly	N	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG017	BG Sofia - Plovdiv Core Network	works - under construc-tion	Reconstruction of Pazardzhik station, phase II Infrastructure works for rehabilitation and reconstruction of sta-tion buildings	National Railway In-frastructure Company (NRIC)	2013 - 2014	n.a.	**Financed** Co-funded by EU (EFRD 2007-2013), State Budget, Other (NRIC loan)	Intermodality	N	par tly	N	Yes
BG018	BG Burgas Core Network	works - under construc-tion	Reconstruction of Burgas station Infrastructure works for rehabilitation and reconstruction of sta-tion buildings	National Railway In-frastructure Company (NRIC)	2014 - 2016	n.a.	**Financed** Co-funded by EU (EFRD 2007-2013), State Budget, Other (NRIC loan)	Intermodality	N	par tly	N	Yes
BG019	BG Burgas Core Network	works planned	Burgas railway node Preparation and infrastructure works for modernisation of Burgas railway node, incl. track rehabilitation, modernisation of signalling and telecommunication systems and improvement of safety	National Railway In-frastructure Company (NRIC)	n.a. - n.a.	18,8893 6411	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	N	N	Yes
BG020	BG Sofia Core Network	study in progress	Sofia railway node Study for preparation of infrastructure works for modernisation of Sofia railway node	National Railway In-frastructure Company (NRIC)	2014 - 2015	2,07483 7793	**Financed** Co-funded by EU, State Budget	Technical Compliance / Bottleneck	N	par tly	N	Yes
BG021	BG Sofia Core Network	works planned	Sofia railway node Infrastructure works for modernisation of Sofia railway node	National Railway In-frastructure Company (NRIC)	n.a. - n.a.	220,704 8338	Co-funded by EU, State Budget, Other (NRIC loan)	Technical Compliance / Bottleneck	N	par tly	N	Yes
BG022	BG Plovdiv Core Network	study in progress	Plovdiv railway node Feasibility study for infrastructure works for modernisation of Plovdiv railway node	National Railway In-frastructure Company (NRIC)	2014 - 2015	n.a.	**Financed** n.a.	Technical Compliance / Bottleneck	N	par tly	N	No
BG023	BG Mihaylovo - Di-mitrovgrad Core Network	study planned	Modernisation of Ruse - Dimitrovgrad railway line (pre)Feasibility study for modernisation of the line; section length 33.6 km	National Railway In-frastructure Company (NRIC)	n.a. - n.a.	3,57904 3168	Co-funded by EU, State Budget	Technical Compliance / Bottleneck	N	N	N	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EL003	EL Thessaloniki - Athens Core network	works - under construction	Construction of the New Double-Track High-Speed Railway Tithorea – Lianokladi – Domokos New double-track line, 106 km long, to replace the mountainous section of the existing 122 km long single-track line. New alignment designed for speeds of 160-200 km/h. Objectives: - reduce travel time between Athens and Thessaloniki to 3.5 hours, after completion of works. - restore discontinuities of the trans-European transport networks, part of which is PATHE/P rail corridor that also includes this project.	Ergose S.A.	1997 - 2017	1500	**Financed** Co-funded by NSRF 2007-2013	Technical Compliance / Bottleneck	N	N	Y	Yes
EL004	EL Athens - Patra Core network	works - under construction	Construction of new double-track railway line Kiato - Aigio (Rododafni) New double-track line, 71 km long, in the section new Railway Station of Kiato to Rododafni, after Aigio , and equipped with signalling, telecommanding, telecommunications and electrification. This project is part of the wider construction project of the new double-track railway line Athens (SKA)-Patras. Objectives: - reduce travel time between Athens and Patras to 2 hours, from 3 hours 25 minutes - modernizelong stretch of existing rail network, beyond Kiato, and ensure interoperability (uniform track gauge) with the rail network north of Athens.	Ergose S.A.	2006 - 2017	920	**Financed** Co-funded by Cohesion Fund, co-funded by NSRF 2007-2013; NSRF 2014-2020	Technical Compliance / Bottleneck	N	N	Y	Yes
EL005	EL Athens - Patra Core network	works - under construction	Construction of new double-track railway line Rododafni – Rio Construction of a new double-track railway line, 27.6 km long, in the Rododafni - Rio section of the Athens - Patras corridor, equipped with signalling -telecommanding, telecommunications and electrification. Objectives: - reduce travel time between Athens and Patras to 2 hours, from 3 hours 25 minutes -modernize a long stretch of existing rail network, beyond Kiato, and ensure interoperability (uniform track gauge) with the rail network north of Athens.	Ergose S.A.	2012 - 2017	502	**Financed** NSRF 2007-2013	Technical Compliance / Bottleneck	N	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EL006	EL Athens - Patra Core network	works planned	Construction of new double-track railway line Rio - Patra Construction of the remaining section Rio to Patra of the axis Athens (SKA)-Patras, and potential connection with the Port of Patras.	Ergose S.A.	2017 - 2022	168	Cohesion Fund	Technical Compliance / Bottleneck	N	N	Y	Yes
EL007	EL Thessaloniki - Athens Core network	study in progress	Upgrade and electrification of Inoi - SKA (Aharnes) railway line - Study	Ergose S.A.	2013 - 2014	n.a.	**Financed** Cohesion Fund	Technical Compliance / Bottleneck	N	Y	Y	Yes
EL008	EL Thessaloniki - Athens Core network	works planned	Upgrade and electrification of Inoi - SKA (Aharnes) railway line - Works	Ergose S.A.	n.a. - n.a.	88	Cohesion Fund	Technical Compliance / Bottleneck	N	Y	Y	Yes
EL009	EL State Border BG/EL - Thessaloniki - Athens Core network	works - under construction	Deployment of automatic train-protection system ETCS Level 1 on the PATHE/P axis New high-speed railway line (PATHE/P corridor), developed within the framework of the national rail network modernization program. Installation of ETCS Level 1 trackside in the main railway lines of Athens - Thessaloniki-Promachonas corridor. The trackside subsystem will be designed as an overlay to the existing signalling system, the basic principles of which remain unchanged.	Ergose S.A.	2007 - 2017	17	**Financed** OP RAPT 2000-2006, OP Accessibility Improvement 2007-2013	Interoperability	partly	N	Y	Yes
EL010	EL State Border BG/EL - Thessaloniki - Athens Core network	works - under construction	Kiato-Athens-Thessaloniki-Promachonas-Eidomeni rail corridor (except for Tithorea - Domokos), including SKA - Spata Airport - 3 Gefyres - Piraeus, Inoi-Chalkida and Thriassio – Ikonio Installing GSM-R modern radio coverage system, as part of the ERTMS (European Rail Traffic Management System) Installation of GSM-R modern radio coverage system along PATHE/P rail corridor. The project contributesto the development of a modern, fully operational and integrated data transmission system along PATHE/P rail corridor. GSM-R meets the following basic requirements: -High quality voice and data transmission even at high speeds -High quality and safety ofsignalling - telecommanding systems -Open platform for the development of future applications, both for rail use and added value services provided to passengers	Ergose S.A.	2006 - 2015	63	**Financed** OP RAPT 2000-2006 and OP Accessibility Improvement 2007-2013	Interoperability	partly	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EL011	EL State Border BG/EL - Thessaloniki Core network	works - under construction	Upgrade and electrification of Promahonas – Thessaloniki railway line Electrification of 143 km long Thessaloniki - Strymonas - Promachonas rail corridor, local interventions to improve the line and stations of the section and installation of automatic level-crossing protection systems	Ergose S.A.	2017 - n.a	80	**Financed** NSRF 2007-2013	Technical Compliance / Bottleneck	Y	Y	Y	Yes
EL013	EL Athens - Igoumenitsa Core network	works planned	Construction of Kalambaka- Ioannina- Igoumenitsa - Port of Igoumenitsa missing link Construction of new line, approximately 175 km long as part of the Greek western railway axis. The line will be equipped with signalling -telecommanding, telecommunications and electrification.	Ergose S.A.	n.a. - n.a.	1743	TBD	Technical Compliance / Bottleneck	N	Y	Y	Yes
EL014	EL Athens Node Core network	study in progress	Remaining studies to complete the upgrading of the main rail axis Athens-Thessaloniki in the section Athens R.S. (Km 9+700) - Aharnes Attica (Km 22+300)	Ergose S.A.	n.a. - end of 2014	2	**Financed** State budget, co-funded by EU	Capacity	N	Y	Y	Yes
EL015	EL Athens Node Core network	study in progress	Remaining studies for the underground construction and rail level realignment of the railway corridor from the Piraeus RS exit (Km 1+488) to the Athens RS The inhabitants in the Rouf and Piraeus districts will greatly benefit from the improved communication between the areas on either side of the railway line. The Action will also contribute to the reduction of noise pollution, to an improved traffic management and to ensure interoperability for the overall corridor from Piraeus to Athens	Ergose S.A.	n.a. - end of 2015	1,5	**Financed** Promoter budget, co-funded by EU	Intermodality	Y	N	N	Yes
EU001	DE, CZ Dresden - Ústí nad Labem Core Network	study in progress	HSR Dresden - Praha Planning of construction of a new High-Speed line (section Heidenau - Chabarovice)	Saxon State Ministry for Economic affairs, Labour and Transport, Czech Ministry of Transport	2014 - 2015	n.a.	**Financed** State budget, TEN-T	Technical Compliance / Bottleneck	Y	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EU002	HU, RO, BG, EL Athens - Sofia - Budapest - Hegyeshalom Core and Comprehensive Network	study in progress	Part of Priority Project 22 Athens-Thessaloniki-Promachonas-Kulata-Sofia-Vidin-Calafat-Craiova-Timisoara-Curtici-Lokoshaza-Budapest-Gyor-Hegyeshalom Assessment study to establish common standards	MoT	n.a. - 2015	13	**Financed** TEN-T Multi-Annual Programme	Interoperability	partly	partly	Y	Yes

Table 2: List of projects concerning multimodal logistics platforms/rail road terminals

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE051	DE Lehrte Core Network	works - under construc-tion	Mega Hub Lehrte Construction of Mega Hub	BMVI / DB Netz AG	2014 - 2017	139	**Financed** State budget	Intermodal-ity	N	Y	N	No
DE052	DE Berlin node Core Network	works planned	Improvement of rail connections to Terminal / Freight Villages and intermodal freight capacities around Berlin Improvement of the rail connections to the Terminals / Freight Villages (e.g. Wustermark, Berlin-Westhafen, Königs Wusterhau-sen) and intermodal freight capacities (e.g. heavy good cranes)	Regional and Local Public and Private Promotors	2014 - 2020	n.a.	Regional, Pri-vate, Local	Intermodal-ity	N	Y	Y	YES
DE053	DE Berlin node Core Network	study planned	Berlin Interoperability Study Improvement of interoperability by creating new management structures and introduction of innovative technologies (e.g. new freight train concepts, new transport technologies and communi-cation structures for freight centers)	Regional and Local Public and Private Promotors	2014 - 2020	n.a.	Regional, Pri-vate, Local	Interopera-bility	N	Y	Y	Yes (In-nov)
DE054	DE Berlin node Core Network	study planned	Berlin Last mile improvment Study Improvement of the last mile, development of new concepts re-garding greening transport in the Capital Region	Regional and Local Public and Private Promotors	2014 - 2020	n.a.	Regional, Pri-vate, Local	Intermodal-ity	N	Y	N	No
CZ051	CZ Czech Road Net-work Core and Com-prehensive Net-work	works planned	Development of transport terminals Measure consists in development of new VLC and public terminals of combined transport, construction of new changing terminals PuT	Ministry of Transport	2015 - 2020	43,6	State Budget, co-financed by Cohesion Fund/CEF	Intermodal-ity	N	par tly	Y	No
CZ052	CZ Czech Road Net-work Core and Com-prehensive Net-work	works planned	Equipment of transport terminals Measure foresees equipment for terminals concerning freight transport and passenger transport (airports, ports)	Ministry of Transport	2017 - 2022	50,9	State Budget, co-financed by Cohesion Fund/CEF	Intermodal-ity	N	par tly	N	No
AT051	AT Wien Node Core Network	works - under construc-tion	Cargo Center Wien (Inzersdorf) Construction of a new Rail-Road Terminal (Cargo-Center Wien) (Phase 1) in Wien-Inzersdorf, Relocation of RRT Wien NW Station	ÖBB Infra-struktur AG	n.a. - 2017	300,3	**Financed** EU TEN-T, State Rail In-frastructure Budget	Intermodal-ity	N	Y	Y	Yes (BAC)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
SK051	SK Bratislava Node Core Network	works planned	ZSR Intermodal Terminal Bratislava - 1st construction phase Construction of ZSR Intermodal Terminal - 1st phase	Slovak railways (ZSR)	2018 - 2020	46,382	State Budget, co-financed by Cohesion Fund/CEF	Intermodality	N	Y	Y	Yes
BG051	BG Plovdiv Core Network	works - under construction	Plovdiv intermodal terminal Infrastructure works for construction of a new intermodal terminal in Plovdiv area	National Railway Infrastructure Company (NRIC)	2014 - 2015	7,13	**Financed** Co-funded by EU (ERDF; 2007-2013), State Budget, Other (NRIC)	Intermodality	N	N	N	No
BG052	BG Sofia Core Network	study planned	Construction of new intermodal terminal in the area of Sofia Feasibility study	National Railway Infrastructure Company (NRIC)	n.a. - n.a.	n.a.	n.a.	Intermodality	N	partly	partly	No
EL051	EL Athens Node Core network	works - under construction	Completion of second phase of railway marshalling yard complex at Thriassio Pedio 2nd Operational Phase: laying of remaining tracks within the Complex, signalling - telecommanding, electrification of lines, supply - installation of special equipment, construction of buildings.	Ergose S.A.	1999 - 2015	252	**Financed** State Budget. Co funded by EU (Regional Operational Programme 2007-2013)	Intermodality	N	Y	Y	No
EL052	EL Igoumenitsa Core network	works planned	Freight village in the Thesprotia region	Port Authority of Igoumenitsa S.A.	n.a. - n.a.	200	TBD	Intermodality	N	N	Y	Yes

Table 3: List of projects concerning IWW & Inland Ports

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE101	DE Elbe IWW: Geesthacht - State Border DE/CZ Core Network	*works partially completed*	Mittel- and Oberelbe Reestablishment of the navigation conditions as before the flood of 2002	BMVI	n.a. - n.a.	69	**Financed** State budget	Technical Compliance / Bottleneck	partly	N	Y	Yes
DE102	DE Elbe IWW: Hamburg - State Border DE/CZ Core Network	study in progress	Mittel- and Oberelbe Overall concept for future actions ("Gesamtkonzept Elbe")	BMVI	2013 - 2015+	n.a.	**Financed** State budget	Capacity	partly	N	Y	Yes
DE103	DE Weser IWW: Bremen - Minden Core Network	works - under construction	Mittelweser Dredging to deepen the fairway, construction of lock Dörverden, construction of new lock Weserschleuse Minden	BMVI	n.a. - n.a.	205	**Financed** State budget	Capacity	N	partly	N	Yes (NSB)
DE104	DE Weser IWW: Bremen - Minden Core Network	works - under construction	Mittelweser Improvement of the Middle Weser fairway and thereby improving the connection between the hinterland and the seaports. Upgrade of the waterway from class IV to Va and allowing the passage of vessels with a length of 110 m and a width of 11.45 m on the Middle Weser. First phase of the adaption of the fairway consist of the following works: relocation of the banks in 3 river bends, groyne shortening, conversion of the ship impact protection equipment and improvement of the holding basins of Dörverden lock.	BMVI	n.a. - 2015	31,3	**Financed** State budget 10% of cost is covered by TEN-T funding	Capacity	N	partly	N	No
DE105	DE Elbe-Seitenkanal Core Network	works planned	Extension of Ship lift Lüneburg Scharnebeck Construction of an additional new lock with a length of 190 m and a width of 12.5 m	BMVI	n.a. - n.a.	250	State budget	Capacity	N	N	Y	No
DE106	DE Magdeburg - Braunschweig Core Network	works partially completed	Mittellandkanal Upgrade (VDE No. 17); Magdeburg - Wolfsburg Upgrade of inland waterway to allow transport with vessels with a capacity up to 2000 tons and convoys up to 3500 tons	BMVI	n.a. - 2016 (for section on Mittelland-kanal)	n.a.	**Financed** State budget	Capacity	N	N	N	Yes (NSB)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ101	CZ Ústí nad Labem – State border CZ/DE Core Network	works planned	Improvement of navigation conditions on the Dolni Labe in the section Strekov - state border Main objective: capacity increase of the line, secure navigability for class IV vessels, includes DECIN WEIR-LOCK COMPLEX (study in progress)	Directorate of water transport network	n.a. - 2023	160	OPD II / CEF	Capacity	Y	N	Y	Yes
CZ102	CZ Melnik - Pardubice Core Network	works - under construction	Extension of navigability from Melnik to Pardubice Construction of new weir-lock Prelouc II in order to extend navigability on Elbe	Directorate of water transport network	n.a. - 2017	111,686 4175	**Financed** State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ103	CZ Melnik - Pardubice Core Network	works planned	Extension of navigability from Melnik to Pardubice Modernization of the lock chamber Srnojedy in order to extend navigability on Elbe	Directorate of water transport network	n.a. - 2019	15,2	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ104	CZ Melnik - Pardubice Core Network	works - under construction	Extension of navigability from Melnik to Pardubice Modernization of the lock chamber Velky Osek in order to extend navigability on Elbe	Directorate of water transport network	n.a. - 2016	5,6	**Financed** State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ105	CZ Melnik - Pardubice Core Network	works - under construction	Extension of navigability from Melnik to Pardubice Modernization of the lock chamber Brandys nad Labem in order to extend navigability on Elbe	Directorate of water transport network	n.a. - 2016	7,1	**Financed** State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ106	CZ Melnik - Pardubice Core Network	works planned	Extension of navigability from Melnik to Pardubice Construction of a new road bridge over Elbe between Valy and Melice in order to increase transport capacity	Directorate of water transport network	n.a. - 2019	8	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ107	CZ Melnik - Pardubice Core Network	works planned	Extension of navigability from Melnik to Pardubice Stabilization of shipway in the port of Chvaletice in order to extend navigability on Elbe	Directorate of water transport network	n.a. - 2019	3,2	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ108	CZ Melnik - Pardubice Core Network	works planned	Extension of navigability from Melnik to Pardubice Construction of a new public port of Pardubice in order to extend navigability on Elbe - Phase 1 Basic Infrastructure Works	Directorate of water transport network	n.a. - 2019	8,2	State Budget. Co-funding by EU (CEF)	Intermodality	N	N	Y	Yes
CZ109	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Securing underpass heights on the Vltava waterway in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	36,6	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	partly	Y	Yes
CZ110	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Increasing draught levels on the Vltava waterway in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	2,4	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	partly	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ111	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Adaptation of chambre gates in Horin in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	8,4	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ112	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Modernization of the lock chamber Stvanice in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	4,2	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	Y	Y	Yes
CZ113	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Modernization of the lock chamber Praha-Stare Mesto in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	23,7	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	Y	Y	Yes
CZ114	CZ Melnik - Praha Core Network	works planned	Securing navigability of Dolni Vltava from Melnik beyond Praha Adaptation of waterway Zbraslav & Stechovice in order to extend and improve navigability on Vltava (study in progress)	Directorate of water transport network	n.a. - 2018	7,3	State Budget. Co-funding by EU (CEF)	Technical Compliance / Bottleneck	N	N	Y	Yes
CZ115	CZ Melnik Core Network	works - under construction	Upgrade of Melnik port Upgrade of current infrastructure in Melnik port consisting of new railway track, new crane, expansion of storage capacity, building of new area for positioning of trucks in order to eliminate bottlenecks, provide interoperability with rail network and increase transport capacity of the port.	Ceske pristavy, a.s.	2012 - 2015	4,1	**Financed** Private sources, Co-funded by EU	Intermodality	N	N	N	No
CZ116	CZ Czech IWW network Core and Comprehensive Network	works planned	Traffic control of waterways Measure is aimed at traffic control of waterways including water transport management projects and equipment for increasing reliability of waterways	Ministry of Transport	2014 - 2023	n.a.	n.a.	Interoperability	N	partly	Y	Yes
CZ117	CZ Ústí nad Labem – State border CZ/DE Core Network	study planned	Study of projects for stabilisation of navigation depths	Directorate of water transport network	n.a. - 2022	n.a.	State budget	Technical Compliance / Bottleneck	Y	partly	Y	Yes
CZ118	CZ Mělník – Pardubice Core Network	study planned	Study of projects for extension of waterway to Pardubice, works on enhancements of parameters and performance conditions (locks)	Directorate of water transport network	n.a. - 2019	n.a.	State budget	Technical Compliance / Bottleneck	N	partly	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EU101	AT, CZ, SK, HU, RO Danube IWW, Elbe IWW Core and Comprehensive Network	study in progress	IRIS Europe 3 IRIS Europe 3 on further RIS implementation	MoTs of AT, BG, CZ, HU, PL, RO, SK	01/2012 - 12/2014	10,46	**Financed** 2011-EU-70001-S; TEN-T 50%	Interoperability	N	partly	partly	No

Table 4: List of projects concerning seaports and maritime transport

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE201	DE Bremerhaven Core Network	works - under construc-tion	Quality and capacity upgrade of the railway system in the seaport of Bremerhaven (Kaiserhafen) Substantial technical upgrade and expansion of the existing rail-way capacity and efficiency in the port. Expansion of capacity in the 'Kaiserhafen' shunting yard by new construction of 16 tracks and increasing the track length to 700-750 meters as well as electrification of 3 entrance tracks	Bremenports GmbH & Co. KG	2013 - 2015	8	**Financed** Bremenports GmbH & Co. KG	Capacity	N	Y	Y	Yes
DE202	DE Bremerhaven Core Network	works - under construc-tion	Port of Bremerhaven - Quality and capacity upgrade of the railway system in the seaport of Bremerhaven (Imsumer Deich) Substantial technical upgrade and expansion of the existing rail-way capacity and efficiency in the port. Expansion of capacity in the 'Insumer Deich' shunting yard by adding 8 tracks	Bremenports GmbH & Co. KG	2014 - 2016	24	**Financed** Bremenports GmbH & Co. KG	Capacity	N	Y	Y	Yes
DE203	DE Bremerhaven Core Network	works planned	Port of Bremerhaven -Quality and capacity upgrade of the railway system (Speckenbüttel) Electricification of track group and new construction of additional track group to increase capacity	Bremenports GmbH & Co. KG	n.a. - n.a.	n.a.	Bremenports GmbH & Co. KG	Capacity	N	Y	N	No
DE204	DE Hamburg - Brunsbüttel Core Network	works - under construc-tion	Unter- and Außenelbe Fairway adjustments to allow the passage of container ships with a max. draught of 14.5 m	BMVI / Ham-burg Port Authority	n.a. - n.a.	250	**Financed** State budget	Capacity	N	par tly	par tly	No
DE205	DE Nordenham - Bremen Core Network	works planned	Unterweser Draught increase	BMVI	n.a. - n.a.	n.a.	State budget	Capacity	N	par tly	N	No
DE206	DE Bremerhaven - North Sea Core Network	works planned	Port of Bremerhaven - Außenweser Draught increase	BMVI	n.a. - n.a.	n.a.	State budget	Capacity	N	par tly	N	No
DE207	DE Rostock Core Network	works planned	Port of Rostock - Warnow-Seekanal Expansion and deepening of the Warnow-Seekanal (seaward en-trance to the port of Rostock) on a water depth of 16.50 m, that allows the access of vessels with a permissible draft up to 15.00 m	BMVI / Port of Rostock	n.a. - n.a.	n.a.	State budget	Capacity	N	N	N	Yes (Scan dMed)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE208	DE Rostock Core Network	works planned	Onshore power supply for vessels Planning and implementation of onshore power supply	Port of Rostock	n.a. - 2030	n.a.	Port of Rostock	Sustainability	N	N	N	Yes
DE209	DE Hamburg node Core Network	works - under construction	New construction of Kattwyk rail bridge Construction of an additional rail bridge to separate rail from road traffic and to optimise traffic flows.	Hamburg Port Authority	2014 - 2018	205	**Financed** Hamburg Port Authority	Intermodality	N	Y	N	No
DE210	DE Hamburg node Core Network	works planned	Port of Hamburg - Adjustment of gateway offshore terminal (turning radius) Widening of gateway form the Norderelbe into the offshore terminal to meet the requirements of ship size development and to ensure safety and ease of ship traffic.	Hamburg Port Authority	2014 - 2017	97,5	State budget	Capacity	N	Y	N	No
DE211	DE Hamburg node Core Network	works planned	Reconstruction of freight station Waltershof (2. phase) Modernisation of interlocking	Hamburg Port Authority	2014 - 2018	9	Hamburg Port Authority	Intermodality	N	Y	N	No
DE212	DE Hamburg node Core Network	works planned	New construction of Reihersteig lock Replacement of existing Reihersteig lock (built 1904 - 1907) to improve capacity on an important transport axis within the port.	Hamburg Port Authority	2014 - 2016	22,3	Hamburg Port Authority	Capacity	N	Y	N	No
DE213	DE Hamburg node Core Network	works planned	Transport connection of Burchardkai Renewal and new conception of road and rail transport connection of Burchardkai Container Terminal.	Hamburg Port Authority	2014 - 2016	103,7	Hamburg Port Authority	Intermodality	N	Y	N	No
DE214	DE Hamburg node Core Network	works planned	Southern rail connection Altenwerder New construction of a double track rail connection between group of splitting-up lines Altenwerder Ost and new Kattwyk rail bridge to improve access to Altenwerder Container Terminal.	Hamburg Port Authority	2016 (at the earliest) - 2020 (at the earliest)	45	Hamburg Port Authority	Intermodality	N	Y	N	No
DE215	DE Hamburg node Core Network	works planned	New tracks in Hohe Schaar station including connection to new Kattwyk rail bridge New construction of four side tracks and two through tracks at Hohe Schaar station to connect the eastern part of the port with the new Kattwyk rail bridge and the Southern rail connection Altenwerder according to the 2-axes concept. Objective is to establish an efficient connection to the TEN-T rail freight corridors.	Hamburg Port Authority	n.a - n.a.	n.a.	Hamburg Port Authority	Capacity	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE216	DE Hamburg node Core Network	works planned	Lokservicestelle Hafen West New construction of storage sidings and social buildings to avoid unnecessary, capacity-consummuning loco empty runnings in the hinterland of Hamburg.	Hamburg Port Authority	2015 - n.a.	12	Hamburg Port Authority	Intermodal-ity	N	Y	N	No
DE217	DE Hamburg node Core Network	works planned	Double track upgrade Nordkurve Kornweide according to 2-axes concept New costruction of one track and adjustment of rail infrastructure (overbridges) to connect the upgraded Nordkurve Kornweide to the rail network of the Port railway and to establish an efficient connection to the TEN-T rail freight corridors.	Hamburg Port Authority	2015 (at the earliest) - 2017 (ap-prox.)	3	Hamburg Port Authority	Capacity	N	Y	N	No
DE218	DE Hamburg node Core Network	works planned	smartPort Energy Use of renewable energies and alternative fuels, reduction of energy consumption and emissions in the port	Hamburg Port Authority	2015 - n.a.	75	Hamburg Port Authority	Sustainabil-ity	N	Y	N	Yes (HoP 2)
DE219	DE Hamburg node Core Network	works planned	smartPort Logistics Efficient use of existing infrastructure, optimisation of traffic flows	Hamburg Port Authority	2015 - n.a.	25	Hamburg Port Authority	Sustainabil-ity	N	Y	N	Yes (HoP 2)
DE220	DE Bremerhaven Core Network	works planned	Construction of offshore-terminal Construction of a terminal equipped for the transhipment of heavy goods (in particular components of offshore wind turbines).	Bremenports GmbH & Co. KG	2014/15 - n.a.	n.a.	Bremenports GmbH & Co. KG	Capacity	N	N	N	No
DE221	DE Bremerhaven Core Network	works planned	LNG Klappschute Equipment of hopper barges (at least one) with Liquefied Natural Gas power unit. In parallel also planning of the construction of two LNG tank farms in Bremen and Bremerhaven for the supply of LNG as fuel for ships.	Bremenports GmbH & Co. KG	2014 - n.a.	4,5	Bremenports GmbH & Co. KG	Sustainabil-ity	N	Y	N	No
DE222	DE Hamburg node Core Network	study in progress	Construction of Motorway A26 between A1 (Hamburg Stillhorn Jct) and A7 (Hamburg Süderelbe Jct) in the south of Hamburg Port (Hafenquerspange / Port Link Road) incl. new Süderelbe bridge	BMVI	2014 - 2017	15	**Financed** TBD	Capacity	N	Y	N	No
BG201	BG Burgas Core Network	works - under construc-tion	Black Sea - Burgas Port Safety, VTMIS Phase III Works for extension of coverage and functions of VTS, establish-ment of a national centre for electronic maritime transport data exchange (single window), upgrade of GMDSS	State Com-pany Port Infrastructure	n.a. - 12/2014	20,014581	**Financed** Co-funded by EU (ERDF; 2007-2013), State Budget	Interopera-bility	N	N	Y	Yes (TMS)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG202	BG Burgas Core Network	works planned	Black Sea - Bourgas Port Safety, VTMIS Phase IV Works for implementation of vessel traffic management system /VTMIS/ to improve the safety and efficiency of navigation in ports, in accordance with the latest requirements of IMO, IALA and EC - (VTMIS phase 4)	State Company Port Infrastructure	2015 - 2018	9,204	Co-funded by EU (ERDF; 2007-2013), State Budget	Interoperability	N	N	Y	Yes (TMS)
BG203	BG Burgas Core Network	works planned	Black Sea - Bourgas Port Safety Works for rehabilitation of the design parameters of the approaches, channels, water areas of the ports along the corridor "Orient/East-Mediterranean", including delivery of specialized dredging equipment, sucking device, type "hopper". Indicative budget 25 mil. BGN	State Company Port Infrastructure	2015 - 2019	12,784	Co-funded by EU (ERDF; 2007-2013), State Budget	Sustainability	N	N	N	No
BG204	BG Burgas Core Network	works planned	Black Sea - Bourgas Port Safety Works for development of system for monitoring of sea level /electronic gauge/ and navigational aids /coastal lighthouses, maritime and canal buoys/, related to navigation safety of approaches, channels and water areas in sea ports. Delivery of polypropylene buoys	State Company Port Infrastructure	2015 - 2019	6,136	Co-funded by EU (ERDF; 2007-2013), State Budget	Sustainability	N	N	N	No
BG205	BG Burgas, Vidin Core Network	study planned	Port Community Systems (Burgas Seaport, Vidin Riverport) Feasibility study for Port Community systems	State Company Port Infrastructure	n.a. - n.a.	n.a.	Co-funded by EU (ERDF; 2007-2013), State Budget	Interoperability	N	N	Y	Yes (TMS)
BG206	BG Burgas, Vidin Core Network	works planned	Port Community System Works for development of system for management, optimization and automation of logistic processes and multimodal transport /Port Community Systems/	State Company Port Infrastructure	2015 - 2019	5,113	Co-funded by EU (ERDF; 2007-2013), State Budget	Interoperability	N	N	Y	Yes (TMS)
BG207	BG Burgas, Vidin Core Network	study planned	Multimodality Feasibility Study Feasibility study to facilitate the multimodal transport along the Corridors in the scope: 1. sea - road and rail transport; 2. river - road and rail transport; 3. sea - road and rail transport - river	State Company Port Infrastructure	n.a. - n.a.	n.a.	Co-funded by EU (ERDF; 2007-2013), State Budget	Intermodality	N	N	Y	Yes
BG208	BG Burgas, Vidin Core Network	works planned	Multimodality works Works to facilitate the multimodal transport along the Corridors in the scope: 1. sea - road and rail transport; 2. river - road and rail transport; 3. sea - road and rail transport - river	State Company Port Infrastructure	2015 - 2019	2,55	Co-funded by EU (ERDF; 2007-2013), State Budget	Intermodality	N	N	Y	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG209	BG Burgas, Vidin Core Network	works planned	Burgas and Vidin Ports Master plans Updating the Master Plans for ports, including performance of environmental impact assessment and construction of waste reception facilities for solid and liquid waste	State Company Port Infrastructure	2015 - 2018	4,091	Co-funded by EU (ERDF; 2007-2013), State Budget	Sustainability	N	N	N	No
EL201	EL Thessaloniki Core network	works planned	Rail connections to the Port of Thessaloniki	Ergose S.A.	2014 - 2015	33	TBD	Intermodality	N	N	Y	Yes
EL202	EL Igoumenitsa Core network	works - under construction	Port of Igoumenitsa; Infrastructure project, Phase B and Phase C New Terminal Buildings, road connection, electromechanical facilities, new quay walls, etc.	General Secretariat of Public Works- through the Special Management Service (SMS)/ Big Projects in Western Greece	n.a. - 2018 (Phase B)	139,55	**Financed** EU Cohesion Fund	Capacity	N	N	Y	Yes
EL203	EL Patras Core network	works planned	Rail connections to the Port of Patras	n.a.	n.a. - n.a.	n.a.	TBD	Intermodality	N	N	Y	Yes
EL204	EL Heraklion Core network	works planned	Port of Heraklion - Deployment of VTMIS system Deployment of Management and Information System plus electronic services for shipping, including "single-window" and other communications systems relevant customs information.	Port Authority of Heraklion	n.a. - n.a.	1,5	TBD	Interoperability	N	N	Y	Yes
EL205	EL Heraklion Core network	works planned	Port of Heraklion - Expansion / Construction of new port facilities Construction of new port facilities: new quaywall with longer operational depth, new Ro-Ro ramp, basin dredging to -13,5m, new buildings, etc.	Port Authority of Heraklion	n.a. - n.a.	35,395	TBD	Capacity	N	N	Y	Yes
EL206	EL Heraklion Core network	works planned	Port of Heraklion - Maintenance works 1 Dredging to remove 60.000m3 of sanding causing extremely low depth	Port Authority of Heraklion	n.a. - n.a.	0,3	TBD	Sustainability	N	N	N	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EL207	EL Heraklion Core network	works planned	Port of Heraklion - Maintenance works 2 Supply and installation of various types of fenders (minimum 300 pieces) in length of 5,9 km, at the coastal, cruise and commercial port segments to replace existing buffers.	Port Authority of Heraklion	n.a. - n.a.	2,5	TBD	Sustainabil-ity	N	N	N	No
CY201	CY Lemesos Core Network	works - under construc-tion	Port of Lemesos - New passenger terminal The new location of the terminal has been strategically chosen in order to serve the aim of separating the port (Terminal 1) into two sections (freight & passenger). The new Passenger Terminal (7.500 m2) a two stores building will consist out of one departure hall, two arrival halls and other supporting areas.	Cyprus Port Authority	n.a. - 2016	14,5	**Financed** State Budget (Cyprus Port Authority).	Capacity	N	N	Y	Yes
CY202	CY Lemesos Core Network	works - under construc-tion	Port of Lemesos - Extension of the south container quay The south container quay will be expanded by 500m reaching 800m. This project will improve in terms of capacity and efficiency the loading and unloading of containers from the mother container vessels.	Cyprus Port Authority	n.a. - 2016	25	**Financed** Co-funded by EU (Cohesion Fund-CEF), State Budget (Cyprus Port Authority).	Capacity	N	N	Y	Yes
CY203	CY Lemesos Core Network	works planned	Port of Lemesos - Expanding the cargo storage capacity The Port will expand its storage capacity in order to facilitate the exploitation of hydrocarbons in eastern Mediterranean basin as well as its container capacity.	Cyprus Port Authority	2017 - 2020	40	to be co-funded by EU (Cohe-sion Fund-CEF) , State Budget (Cyprus Port Authority).	Capacity	N	N	Y	Yes
CY204	CY Lemesos Core Network	works planned	Port of Lemesos - 3 Super Post-Panamax Gantry Cranes The new extension of the south container quay, will need to be equipped with three new Super Post Panamax gantry cranes. This project will improve in terms of efficiency the loading and unload-ing of containers from the mother container vessels.	Cyprus Port Authority	2016 - n.a.	30	to be co-funded by EU (CEF), State Budget (Cyprus Port Authority), Private Funds / Concession Contract.	Capacity	N	N	N	Yes
CY205	CY Lemesos Core Network	works planned	New Tug Boat The new tug boat will improve in terms of efficiency the berthing and unberthing at the port's south container quay.	Cyprus Port Authority	2016 - n.a.	7,5	to be co-funded by EU (CEF), State Budget (Cyprus Port Authority), Private Funds / Concession Contract.	Capacity	N	N	N	Yes

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CY206	CY Lemesos Core Network	works planned	Expansion of Terminal 2 Vasiliko The Lemesos Port (Terminal 2- Vasiliko) serves as the industrial port of Cyprus. The port will be expanded/ improved in order to cope with the increasing demand, including facilitating the exploitation of hydrocarbons in eastern Mediterranean basin.	Cyprus Port Authority	2018 - n.a.	491,3	Relevant Study Co-funded by EU (TEN-T Fund), to be co-funded by EU (CEF), State Budget (Cyprus Port Authority), Private Funds / Concession Contract.	Capacity	N	N	Y	Yes
CY207	CY Lemesos Core Network	works - under construction	Port of Lemesos - Port Community System Cyprus Port Authority aims to achieve optimal efficiency in their operation. Along this strategy an integrated Port Community System is considered as crucial component of this strategy. This will simplify and streamline the management of freight especially transshipment and allow exchange of data and interoperability between ICT Systems with other ports. Additionally such systems will enable exchanging data between ports and road network to better manage freight especially hazardous cargo.	Cyprus Port Authority	n.a. - 2017	n.a.	**Financed** Relevant Study Co- funded by EU (TEN-T Fund), Co-funded by EU (CEF), State Budget (Cyprus Port Authority).	Interoperability	N	N	Y	Yes

Table 5: List of road projects

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE301	DE Leipzig Node Core Network	works planned	A 14 Leipzig/Ost - interchange Parthenaue (A 14 / A 38) Closing the gap between already-developed 6-lanes A14-sections and the interchange Parthenaue	BMVI	2017 - 2021	42	State budget	Capacity	N	Y	N	No
DE302	DE Rostock - Berlin Core Network	works - under construc-tion	A 19 near Malchow Replacement construction of the bridge over the Petersdorfer See and upgrade of a section of the A 19 (Reconstruction of exit Waren)	BMVI	2014 - 2018	32	**Financed** State budget	Capacity	N	N	N	No
DE303	DE Berlin Node Core Network	works partially completed	A 10 Weißensee - Interchange Pankow Extension to 6 lanes between the Berlin/Brandenburg border to the threee-leg interchange Pankow Construction of a new stretch of motorway including the motor-way structures to raise capacity, the rain water drainage systems for safety reasons and the active noise protection systems for environmental improvements. Enlargement of several bridges to accommodate the additional lanes.	BMVI	n.a. - 2015	64	**Financed** State budget, Co-funded by TEN-T	Capacity	N	Y	N	No
DE304	DE Berlin Node Core Network	works planned	A 10 Interchange Potsdam - Interchange Nuthetal Extension to 8 lanes	BMVI	2016 - 2020	130	State budget	Capacity	N	Y	N	No
DE305	DE Berlin Node Core Network	works - under construc-tion	A 10 Interchange Havelland Extension to 6 lanes	BMVI	n.a. - 2014	60	**Financed** State budget Co-funded by ERDF	Capacity	N	Y	N	No
DE306	DE Berlin Node Core Network	works planned	A 10 Interchange Pankow - Interchange Havelland Extension to 6 lanes	BMVI	n.a. - n.a.	242	State budget / Public Private Partnership	Capacity	N	Y	N	No
DE307	DE Berlin Node Core Network	works planned	A 10 Interchange Barnim - Weißensee Extension to 6 lanes	BMVI	2015 - n.a.	14	State budget	Capacity	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
DE308	DE Bremen Node Core Network	works - under construc-tion	A 281 Bremen Strom - Bremen Gröpelingen incl. Weser Tunnel New construction of motorway	BMVI	n.a. - n.a.	230	**Financed** State budget	Capacity	N	Y	N	No
DE309	DE Bremen Node Core Network	works planned	A 281 Bremen Kattenturm – Bremen Airport-Stadt New construction of motorway	BMVI	n.a. - n.a.	77	State budget	Capacity	N	Y	N	No
DE310	DE Berlin - Hamburg Core Network	works planned	Motorway A24 Extension of Section Wittstock Jct. - Neuruppin Extension of motorway up to 6 lanes	BMVI	n.a. - n.a.	n.a.	TBD	Capacity	N	N	N	No
DE311	DE Hannover Core Network	works planned	Improving accessibiliy to cargo facilities Improvement of road access to air cargo terminals. New road to the western part of Hannover Airport, where new cargo facilities are located	Flughafen Hannover-Langenhagen GmbH	2015 - 2018	11	Flughafen Han-nover-Langenhagen GmbH	Intermodal-ity	N	Y	N	No
DE312	DE German Motor-way Network Core and com-prehensive net-work	works planned	Corridor Programme Road 1 (CRP1): Actions to improve safety and security by providing appropriate parking space for trucks	BMVI	2014 - 2020	58	State Budget	Technical Compliance / Bottleneck	N	par tly	N	Yes (HoP2)
CZ301	CZ D8 Praha - State Border DE/CZ Core Network	works - under construc-tion	D8 motorway construction D0805 A-F Lovosice - Rehlovice Construction of a new road section (16,4km) between Bilinka - Rehlovice after landslide	Ministry of Transport, Road and Motorway Directorate	2007 - 2016	156,827 7119	**Financed** State budget	Technical Compliance / Bottleneck	N	N	N	No
CZ302	CZ R1 Ruzyne – Suchdol Core network	works planned	Ring road around Praha: A5 R1 518 Ruzyne – Suchdol 9,4 km main objectives: reduce traffic from parts of Praha that suffer serious adverse impacts of traffic by upgrading of existing infra-structure (construction after 2014; included in approved SFD1 Budget 2014)	Ministry of Transport, Road and Motorway Directorate	2017 - n.a.	n.a.	TBD	Technical Compliance / Bottleneck	N	Y	N	No
CZ303	CZ R1 Praha Ring Motorway Core network	works planned	Ring road around Praha: A6 R1 519 Suchdol – Brezineves 6,7 km main objectives: reduce traffic from parts of Praha that suffer serious adverse impacts of traffic by upgrading of existing infra-structure (construction after 2014; included in approved SFD1 Budget 2014	Ministry of Transport, Road and Motorway Directorate	2017) - n.a.	n.a.	TBD	Technical Compliance / Bottleneck	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ304	CZ R1 Praha Ring Motorway Core network	works planned	Ring road around Praha: A7 R1 520 Brezineves – Satalice 13,7 km main objectives: reduce traffic from parts of Praha that suffer serious adverse impacts of traffic by upgrading of existing infra-structure (construction after 2014; included in approved SFD1 Budget 2014)	Ministry of Transport, Road and Motorway Directorate	2017 - n.a.	420,127 6208	State budget	Technical Compliance / Bottleneck	N	Y	N	No
CZ305	CZ R1 Praha Ring Motorway Core network	works planned	Ring road around Praha: A1 R1 511 Bechovice – D1 12,6 km main objectives: reduce traffic from parts of Praha that suffer serious adverse impacts of traffic by upgrading of existing infra-structure (construction after 2014; included in approved SFD1 Budget 2014)	Ministry of Transport, Road and Motorway Directorate	2017 - n.a.	n.a.	TBD	Technical Compliance / Bottleneck	N	Y	N	No
CZ306	CZ D1 Praha - Brno Core network	works partially completed	D1 Mirosovice - Kyvalka Main objectives: to improve technical parameters of the obsolete motorway. Sections under upgrading: Section 05: Šternov – Psáøe; Section 09: Loket – Hoøice; Section 14: Vìtrný Jeníkov – Jihlava; Sections under construction: Section 03: Hvìzdonice – Ostøedek; Section 18: Mìøín – V. Meziøíèí západ; Section 21: Lhotka – Velká Bíteš; Section 25: Ostrovaèice – Kývalka; Sections scheduled for construction after 2014: Section 01: to Šmejkalka; Section 02: Mirošovice – Hvìzdonice; Section 04: Ostøedek – Šternov; Section 06: Psáøe – Soutice; Section 07: Soutice – Loket; Section 10: Hoøice – Koberovice; Section 11: Koberovice – Humpolec; Section 12: Humpolec – Vìtrný Jeníkov; Section 13: Vìtrný Jeníkov – Jihlava; Section 15: Jihlava – Velký Beranov; Section 16: 119 Velký Beranov – Mìøín; Section 19: Meziøíèí záp. – V. Meziøíèí vých; Section 20: V. Meziøíèí východ – Lhotka; Section 22: Velká Bíteš – Devìt køížù; Section 23: Devìt køížù – Ostrovaèice	Ministry of Transport, Road and Motorway Directorate	con-struction after 2014; included in ap-proved SFD1 Budget 2014 - 2022	542,862 3519	**Financed** State Budget. Co-funding by EU (OPD I&II)	Capacity	N	N	N	No
CZ307	CZ D1 Praha - Brno Core network	works planned	D1 Kývalka – Bosonohy 4,8 km main objective: resolving capacity deficiencies in motorway net-work. construction after 2014; included in approved SFD1 Budget 2014	Ministry of Transport, Road and Motorway Directorate	after 2014 - 2020	n.a.	TBD	Capacity	N	N	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CZ308	CZ D1 Praha - Brno Core network	works planned	B21 D1 01172 Bosonohy – Starý Lískovec 4,9 km B main objective: resolving capacity deficiencies in motorway network. construction after 2014; included in approved SFD1 Budget 2014	Ministry of Transport, Road and Motorway Directorate	after 2014 - 2020	n.a.	TBD	Capacity	N	N	N	No
CZ309	CZ D1 Praha - Brno Core network	works planned	B22 D1 01191 Starý Lískovec – Brno-jih 6,7 km main objective: resolving capacity deficiencies in motorway network by upgrading existing infrastructure. construction after 2014; included in approved SFD1 Budget 2014	Ministry of Transport, Road and Motorway Directorate	after 2014; - 2020	n.a.	TBD	Capacity	N	N	N	No
CZ310	CZ R52 Brno - border CZ/AT Core network	works planned	R52 Pohorelice - border CZ/AT main objective/measure: upgrading route to Austrian border; connection A5 in future: B1 R52 5204 Pohoøelice – Ivaò 6,9 km B2 R52 5205 Ivaò – Perná 8,0 km B3 R52 5206 Perná – st.hr. CZ/A 8,2 km construction after 2014; included in approved SFD1 Budget 2014	Ministry of Transport, Road and Motorway Directorate	after 2014 - n.a.	380	State Budget. Possible Co funding by EU (CEF+CF)	Technical Compliance / Bottleneck	Y	N	N	No
CZ311	CZ Czech Road Network Core and Comprehensive Network	works - under construction	Introduction and development of ITS for road transport on highways, limited access highways and 1st class roads (incl. Operation or toll system) The measure includes data collection, traffic information services, and traffic management, electronic toll system, eCall service	Ministry of Transport	2014 - 2023	1272	**Financed** TBD	Interoperability	N	partly	N	Yes (ITS)
CZ312	CZ Czech Road Network Core and Comprehensive Network	works planned	Road control systems for safety and environment Measure foresees use of road traffic control systems for traffic safety, equipment for monitoring observance of emission limits, adjustments of accident localities	Ministry of Transport	2015 - 2023	69,1	TBD	Interoperability	N	N	N	No
AT301	AT Wien Node Core Network	works planned	S1 Construction Süßenbrunn - Großenzersdorf S1 Vienna Motorway Ring, construction of section Großenzersdorf– Süßenbrunn, 10 km	ASFINAG (Austrian Road Infrastructure Manager)	2016 - 2018	300	Public, State-guaranteed loans, Private	Technical Compliance / Bottleneck	N	Y	N	No
AT302	AT Wien Node Core Network	works planned	S1 Construction Grossenzersdorf - Schwechat Completion of S1 Vienna Motorway Ring, construction of sections Schwechat – Großenzersdorf, 9 km (thereof 8.2 km Danube road tunnel)	ASFINAG (Austrian Road Infrastructure Manager)	2018 - 2025	1500	Public, State-guaranteed loans, Private	Technical Compliance / Bottleneck	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
AT303	AT A5 Wien - Border AT/CZ Core Network	works planned	A5 Construction Schrick - Poysbrunn Construction of A5 Wien – CZ border (- Brno) motorway, Schrick-Poysbrunn section, 25km, 2x2 lanes	ASFINAG (Austrian Road Infra-structure Manager)	2014/15 - 2017	324	Public, State-guaranteed loans, Private	Technical Compliance / Bottleneck	par tly	N	N	No
AT304	AT A4 Wien - Border AT/HU Core Network	works - under construc-tion	A4 Upgrade Schwechat - Fischamend Upgrade of A4 motorway: Construction of 3rd lanes in both direc-tions (7,5 km); Motorway Width extenstion from 27m to 35 m; Increase of capacity on 75.000 ADTV (status 64.000)	ASFINAG (Austrian Road Infra-structure Manager)	03/2014 - 12/2015	43	**Financed** Public, State-guaranteed loans, Private	Capacity	N	N	N	No
AT305	AT A4 Wien - Border AT/HU Core Network	works planned	A4 Upgrade Fischamend - Neusiedl Upgrade of A4 motorway 3rd lanes construction Part 2: Fischamend – Neusiedl, 24 km	ASFINAG (Austrian Road Infra-structure Manager)	2018 - 2023	245	Public, State-guaranteed loans, Private	Capacity	N	N	N	No
AT306	AT Motorway Net-works AT, DK, FR, DE, IT, PL, ES Core and Com-prehensive Net-work	study in progress	REETS TEN Regional European Electronic Toll Service (REETS TEN) for Trucks; (one single OBU compliant with multiple systems): Regarding the interoperability of electronic road tolls the proposed action (REETS TEN) aims to deploy EETS compliant services in a cross-border regional project.	ASFINAG, AETIS	05/2013 - 12/2015	4,57	**Financed** 2012-EU-50009-S; TEN-T 2007-2013 50%	Interopera-bility	N	par tly	N	No
AT307	AT A5 Wien - Border AT/CZ Core Network	works planned	A5 Construction Poysbrunn - Border AT/CZ 1st Part Construction of A5 Wien – CZ border (- Brno) motorway, Drasen-hofen bypass, 5km, 2x1 lanes	ASFINAG (Austrian Road Infra-structure Manager)	Q3/2016 - 2018	54,5	Public, State-guaranteed loans, Private	Technical Compliance / Bottleneck	Y	N	N	No
AT308	AT A5 Wien - Border AT/CZ Core Network	works planned	A5 Construction Poysbrunn - Border AT/CZ 2nd Part Construction of A5 Wien – CZ border (- Brno) motorway 2nd Phase, Poysbrunn-Drasenhofen section, 9km, 2x2 lanes	ASFINAG (Austrian Road Infra-structure Manager)	n.a. - 2030	91	Public, State-guaranteed loans, Private	Technical Compliance / Bottleneck	Y	N	N	No
SK301	SK Border CZ/SK-Bratislava - Bor-der SK/HU Core Network	works planned	Motorway ITS Bratislava Node Modernization and completion of ICSM - Information and control system of motorway (IRSD -Informačný a riadiaci systém diaľnic), Bratislava - Border HU (18.1 km), Bratislava - Border CZ (55 km), Bratislava Node (25 km D2/D1).	National motorway company (NDS)	2015 - 2018	24,5	TBD	Interopera-bility	N	Y	N	Yes (ITS)

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
SK302	SK D2 Bratislava - Border SK/CZ Core Network	works planned	Parking facilities on Motorway D2 Upgrade of Parking Facility for Passenger and Heavy Goods Vehicles - Modernization and Safety Measures on Motorways and Expressways: Sekule, Brodské, Cunovo, Svrcinovec	National motorway company (NDS)	2014 - 2016	10,3	TBD	Technical Compliance / Bottleneck	N	Y	N	No
SK303	SK D4 (Bratislava Ring) Core Network	works planned	Construction of Motorway D4 section Rača Junction – Záhorská Bystrica Construction of Motorway D4 section Junction Rača – Záhorská Bystrica, 12,1 km	National motorway company (NDS)	2018 - 2023	740,818	TBD	Capacity	N	Y	N	No
SK304	SK D4 (Bratislava Ring) Core Network	works planned	Construction of Motorway D4 section Bratislava Jarovce – Ivanka pri Dunaji sever - Rača Construction of Motorway D4 section Bratislava Jarovce – Ivanka pri Dunaji sever - Rača; PPP; 27,3 km	National motorway company (NDS)	2015 - 2020	1300	TBD	Capacity	N	Y	N	No
SK305	SK D4 (Bratislava Ring) Core Network	study planned	Study on Motorway D4 Bratislava Ring Preparation of Project Documentation / Design for Motorway D4 in the sections Bratislava Jarovce – Ivanka pri Dunaji sever - Rača; Junction Rača - Záhorská Bystrica	National motorway company (NDS)	2014 - 2020	22,5	TBD	Capacity	N	Y	N	No
SK306	SK D2 Bratislava - Border SK/HU Core Network	study planned	Study on Motorway Junction D2 Cunovo Construction of additional motorway exit	National motorway company (NDS)	n.a - n.a	1,5	TBD	Capacity	Y	Y	N	No
SK307	SK D2 Bratislava - Border SK/CZ Core Network	study planned	Study on Increasing Capacity of Motorway D2 section Bratislava-Lamač Main objective: Increase of capacity at the D2 motorway due to high traffic intensity	National motorway company (NDS)	n.a - n.a	0,3	TBD	Capacity	N	Y	N	No
HU301	HU M15 Border SK/HU - Györ Core Network	works planned	Motorway M15 upgrading: Border SK/HU near Rajka - Jct. M15/M1 near Hegyeshalom Construction of second carriageway of a 2x2 lanes motorway, aiming to increase capacity and improve traffic safety (14 km)	National Infrastructure Development Company - (NIF ZRt)	2016 - 2018	29,45	State budget, to be co-funded by CEF	Technical Compliance / Bottleneck	Y	N	N	Yes
HU302	HU M0 Budapest Node Core Network	Works planned	Motorway M0 Southern Section upgrading: Jct. M0/M1 - Jct. M0/M5 Phase 1 Jct. M0/M1 - Jct. M0/M7: Construction of second carriageway of a 2x3 lanes motorway, aiming to increase capacity and improve traffic safety (2,7 km)	National Infrastructure Development Company - (NIF ZRt); National Government	2015 - 2017	70,34	Co-financed by Cohesion Fund, State Budget	Capacity	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
HU303	HU M0 Budapest Node Core Network	study planned	Motorway M0 Northern Section Jct. M0/RN10 - Jct. M0/RN11 (study) Design and EIA preparing construction of a 2x2 lanes new motorway section, aiming to increase capacity and improve traffic safety (8 km)	National Infrastructure Development Company - (NIF ZRt); National Government	2017 - 2018	5,08	Co-financed by Cohesion Fund, State Budget	Technical Compliance / Bottleneck	N	Y	N	No
HU304	HU M0 Budapest Node Core Network	works planned	Motorway M0 Northern Section Jct. M0/RN10 - Jct. M0/RN11 (works) Construction Works of a 2x2 lanes new motorway section, aiming to increase capacity and improve traffic safety (8 km)	National Infrastructure Development Company - (NIF ZRt); National Government	2018 - 2020	TBD	Co-financed by Cohesion Fund, State Budget	Technical Compliance / Bottleneck	N	Y	N	No
HU305	HU M0 Budapest Node Core Network	study planned	Motorway M0 Northern Section Jct. M0/RN10 - Jct. M0/RN1: Study Preliminary design and preliminary EIA preparing planned construction of a 2x2 lanes new motorway, aiming to increase capacity and improve traffic safety (18 km)	National Infrastructure Development Company - (NIF ZRt); National Government	2014 - 2018	17,74	Co-financed by Cohesion Fund, State Budget	Technical Compliance / Bottleneck	N	Y	N	No
HU306	HU M0 Budapest Node Core Network	works planned	Motorway M0 Northern Section Jct. M0/RN10 - Jct. M0/RN1: Works Construction works of a 2x2 lanes new motorway, aiming to increase capacity and improve traffic safety (18 km)	National Infrastructure Development Company - (NIF ZRt); National Government	2020 - 2023	TBD	Co-financed by Cohesion Fund, State Budget	Technical Compliance / Bottleneck	N	Y	N	No
HU307	HU M43 Border HU/RO - Szeged Core Network	works - under construction	Motorway M43 Makó-Nagylak Border HU/RO: New construction Construction of a 2x2 lanes motorway, aiming to increase capacity and improve traffic safety (23 km)	National Infrastructure Development Company - (NIF ZRt)	2013 - 2014	150	**Financed** Co-financed by Cohesion Fund	Technical Compliance / Bottleneck	Y	N	N	No
HU308	HU M0 Budapest Node Core Network	works planned	Motorway M0 Eastern Section Jct. M0/M3 - Jct. M0/M5: Works Construction of noise protection walls	National Infrastructure Development Company - (NIF ZRt); National Government	2014 - 2015	1,78	Co-financed by Cohesion Fund, State Budget	Sustainability	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
RO301	RO Timisoara - Border RO/BG Core Network	works planned	Timisoara - Lugoj motorway Construction of new motorway (A1), section Timisoara – Lugoj, 2x2 lanes, 25.625 km, and 9.5 km for Timisoara bypass (Lot 1)	CNADNR	n.a. - 2019	293,94	To be co-funded by EU (Cohesion Fund-CEF)	Technical Compliance / Bottleneck	N	N	N	No
RO302	RO Border HU/RO - Timisoara Core Network	works - under construction	Nadlac - Arad motorway Construction of new motorway (A1), section Border HU/RO near Nadlac – Arad, 2x2 lanes, 38.882 km and a connection road between Nadlac and DN7 on 5.91 km	CNADNR	n.a. - 2015	296,77	**Financed** To be co-funded by EU (Cohesion Fund-CEF)	Technical Compliance / Bottleneck	Y	N	N	No
RO303	RO Timisoara - State Border RO/BG Core Network	study planned	Drobeta-Turnu-Severin – Maglavit/Calafat Road upgrade (Study) Design Motorway Standard for Drobeta-Turnu-Severin – Maglavit/Calafat	CNADNR	n.a. - n.a.	n.a.	To be co-funded by EU (Cohesion Fund-CEF)	Technical Compliance / Bottleneck	N	N	N	No
RO306	RO Timisoara - Border RO/BG Core Network	study planned	Lugoj - Craiova Expressway Study on new construction of expressway (E70), section Lugoj – Craiova	CNADNR	2020 - 2030	1,81	To be co-funded by EU (Cohesion Fund-CEF)	Technical Compliance / Bottleneck	N	N	N	No
RO307	RO Timisoara - Border RO/BG Core Network	works planned	Drobeta-Turnu-Severin – Maglavit/Calafat Road upgrade (Works) Upgrade of Drobeta Turnu Severin - Calafat road	CNADNR	2020 - 2030	50,8	ERDF	Technical Compliance / Bottleneck	N	N	N	No
BG301	BG Border RO/BG - Sofia Core Network	works planned	Vidin - Montana express road Infrastructure works for reconstruction of Vidin - Montana section (90 km, road I-1/E 79) as express road (four-lane road, 20 m width)	Road Infrastructure Agency (RIA)	n.a. - n.a.	500	TBD	Technical Compliance / Bottleneck	N	N	N	No
BG302	BG Border RO/BG - Sofia Core Network	works partially completed	Montana by-pass road of urban section Infrastructure works for construction of a dual-carriageway road to by-pass the town of Montana (12.5 km)	Road Infrastructure Agency (RIA)	2013 - 2015	26	**Financed** Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Technical Compliance / Bottleneck	N	N	N	No
BG303	BG Border RO/BG - Sofia Core Network	works planned	Mezdra - Botevgrad express road Infrastructure work for reconstruction of Mezdra - Botevgrad section (road I-1/E 79) as express road (four-lane road, 20 m width); 30 km length	Road Infrastructure Agency (RIA)	n.a. - n.a.	146	TBD	Technical Compliance / Bottleneck	N	N	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG304	BG Sofia Node Core Network	works partially completed	Western Arc of A6 Sofia Ring Road: Section Lyulin Motorway - Kakach River Infrastructure works for construction of 3 km section of Sofia Ring Road dual carriageway	Road Infra-structure Agency (RIA)	2012 - 2015	23	**Financed** Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Capacity	N	Y	N	No
BG305	BG Sofia Node Core Network	works planned	Western Arc of Sofia Ring Road: Kakach River - North High Speed Tangent Road Infrastructure works for construction of a 5 km section of Sofia Ring Road dual carriageway	Road Infra-structure Agency (RIA)	n.a. - n.a.	84	Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Capacity	N	Y	N	No
BG306	BG Sofia - Border BG/EL Core Network	works partially completed	A3 Struma Motorway Lot 2 (Dupnitsa - Blagoevgrad) Infrastructure works for construction of 37 km A3 motorway section	Road Infra-structure Agency (RIA)	2013 - 2015	184,919 877	**Financed** Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Technical Compliance / Bottleneck	N	N	N	No
BG307	BG Sofia - Border BG/EL Core Network	works partially completed	A3 Struma Motorway Lot 4 (Sandanski - Kulata) Infrastructure works for construction of 14.7 km A3 motorway section	Road Infra-structure Agency (RIA)	2012 - 2015	34,5287 7755	**Financed** Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Technical Compliance / Bottleneck	Y	N	N	No
BG308	BG Sofia - Border BG/EL Core Network	study in progress	A3 Struma Motorway Lot 3 (Blagoevgrad - Sandanski) Study for preparation of construction of 65 km A3 motorway section, incl. 17.35 km tunnels	National Company Strategic Infrastructure Pro-jects(NCSIP)	2011 - 2015	4,176	**Financed** Co-funded by EU (Cohesion Fund; 2014-2020, State Budget	Technical Compliance / Bottleneck	Y	N	N	No
BG309	BG Sofia - Border BG/EL Core Network	works planned	A3 Struma Motorway Lot 3 (Blagoevgrad - Sandanski) Infrastructure works for construction of 65 km A3 motorway section, incl. 17.35 km tunnels	National Company Strategic Infrastructure Pro-jects(NCSIP)	2014 - 2021	850	Co-funded by EU (Cohesion Fund; 2014-2020, State Budget	Technical Compliance / Bottleneck	Y	N	N	No
BG310	BG Plovdiv - Burgas Core Network	works partially completed	A4 Maritsa Motorway Lot 1 & Lot 2 (Orizovo - Harmanli) Infrastructure works for construction of 65.6 km A4 motorway section	Road Infra-structure Agency (RIA)	2011 - 2015	160	**Financed** Co-funded by EU (Cohesion Fund; 2007-2013), State Budget	Technical Compliance / Bottleneck	N	N	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
BG311	BG Bulgarian Road Network Core and Comprehensive Network	works planned	Integrated system for traffic analysis and assessment along TEN-T motorways and first class roads Works for development and establishment of traffic analysis and assessment	Road Infrastructure Agency (RIA)	n.a. - 2015	3,64988 7771	Co-funded by EU funds (CF), State Budget	Interoperability	N	partly	N	No
BG312	BG Bulgarian Road Network Core and Comprehensive Network	works planned	High-speed communication Works for development of high-speed communication system for safety and security data transmission along national road network (incl. CCTV)	Ministry of Transport, Information Technologies and Communications	n.a. - 2016	6	State budget	Interoperability	N	partly	N	No
EL301	EL Thessaloniki Node Core network	study in progress	Designs for the connection of Egnatia/Pathe highways (PP 07) with Macedonia Airport of Thessaloniki (Phase B) Studies that involve the necessary design for the connection of the Egnatia and Pathe motorways (part of Priority Project 7 - motorway axis Igoumenitsa/Patra-Athina-Sofia-Budapest) with Thessaloniki's Macedonia Airport. This will eventually contribute to the completion of the external ring road of Thessaloniki, which bypasses the area's extremely burdened road network and facilitate airport connections.	Egnatia Odos S.A.	n.a. - end of 2014	11,84	**Financed** State budget, co-funded by EU	Intermodality	N	Y	Y	No
EL302	EL State Border BG/EL - Thessaloniki Core network	works - under construction	Completion of the link Thessaloniki-Serres- Promahonas in the section Strymoniko- Petritsi Construction of motorway, section Strymoniko – Petritsi (41 km), part of the axis Thessaloniki – Serres – Promachonas. The new motorway will have two lines per direction.	Egnatia S.A.	n.a. - 2015	157,13	**Financed** Regional Operational Programme	Technical Compliance / Bottleneck	N	N	N	No
EL303	EL Athens - Patra Core network	works - under construction	Construction of Olympia Odos Motorway concession: Korinthos-Patra section Construction of motorway in the section Korinthos – Patra (120 km), part of the PATHE axis (Patra – Athens – Thessaloniki – Eyzonoi). The new motorway will have two lines per direction.	Olympia Odos S.A.	n.a. - 2015	2138	**Financed** TBD	Technical Compliance / Bottleneck	N	N	N	No
EL304	EL Thessaloniki - Athens Core network	works partially completed	Construction of the Lamia - Raches section of the A1 PATHE Motorway Construction of motorway in the sections of Lamia – Raches (34 km), part of the PATHE axis (Patra – Athens – Thessaloniki – Eyzonoi). The new motorways will have two lines per direction.	Pathe S.A.	2007 - 2014	304,97	**Financed** NSRF budget	Technical Compliance / Bottleneck	N	Y	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
EL305	EL Thessaloniki - Athens Core network	works partially completed	Construction of the Skotina - Evagelismos section of the A1 PATHE Motorway Construction of motorway in the sections of Skotina – Evagelismos (32,5 km), part of the PATHE axis (Patra – Athens – Thessaloniki – Eyzonoi). The new motorway will have two lines per direction.	Pathe S.A.	2007 - 2015	870	**Financed** NSRF budget	Technical Compliance / Bottleneck	N	Y	N	No
EL306	EL Thessaloniki Core network	works - under construc-tion	Road connection between Port of Thessaloniki and Egnatia Odos Motorway	Egnatia Odos S.A.	2010 - 2014	30	**Financed** TBD	Intermodal-ity	N	N	Y	Yes
CY301	CY Lemesos-Paphos Motorway - Lemesos Port Core Network	works - under construc-tion	Link road connecting Lemesos-Paphos Motorway with the Lemesos Port The road network within the study area is currently most congest-ed resulting from its use by port traffic and also other traffic in the west of the urban area of Lemesos. The Link Road will improve access to the Lemesos Port. In addition it will facilitate the through traffic in the area and redirect the Heavy Goods Vehicles serving the Port from congested urban roads.	Republic of Cyprus Ministry of Communica-tions and Works	n.a. - 2017	100	**Financed** Co-funded by EU (Cohesion Fund), EIB Loan (part of the Action), State Budget	Intermodal-ity	N	N	Y	Yes
CY302	CY Lefkosia Core Network	works planned	Lefkosia South Orbital Motorway The Lefkosia South Orbital, a missing link in the Corridor, will form a ring road around the southern part of the capital of Lefkosia and will interconnect three motorways of the TEN-T net-work. The resulting motorway network together with its intercon-nections to the urban and sub-urban areas of Lefkosia will facili-tate the through traffic in the area and will cater for the traffic needs of nine municipalities and tens of communities.	Republic of Cyprus Ministry of Communica-tions and Works	Phase A Starting year 2016 Phases B, C, D and E will be con-structed after 2020 - after 2020	220	Relevant Study Co- funded by EU (TEN-T Fund), To be Co-funded by EU (CEF), State Budget	Technical Compliance / Bottleneck	N	Y	Y	Yes
CY303	CY A1 motorway Lefkosia-Lemesos Core Network	works planned	Upgrading Sia Grade Separated Junction on Lefkosia-Lemesos Motorway The Lefkosia-Lemesos Motorway is facing congestion and road safety problems. The Sia Grade Separated Junction was identified as a bottleneck and a black spot side. The upgrading of the junc-tion will eliminate congestion and delays and improve road safety levels.	Republic of Cyprus Ministry of Communica-tions and Works	2015 - 2018	1,5	To be Co-funded by EU (CEF), State Budget	Capacity	N	N	Y	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CY304	CY A1 motorway Lefkosia-Lemesos Core Network	works planned	Construction of Stavrou Grade Separated Junction on Lefkosia-Lemesos Motorway The entrance of Lefkosia is facing congestion problems. A new terminal Grade Separated Junction in the Lefkosia- Lemesos Motorway will be constructed in order to eliminate congestion & delays and facilitate the east-west interconnections on the Motorway.	Republic of Cyprus Ministry of Communications and Works	2018 - 2020	25	To be co-funded by EU (CEF), State Budget	Capacity	N	N	Y	No
CY305	CY A1 motorway Lefkosia-Lemesos; A2 motorway Lefkosia-Larnaka Core Network	study planned	Interurban Multimodal Terminals Three Interurban Multimodal Terminals will be constructed adjacent to the Corridor (Alambra Area, Skarinou, Larnaka Airport) serving the interconnections of the Lefkosia-Lemesos and Lefkosia-Larnaka Motorways. These centres shall be combined with secure parking for Heavy Goods Vehicles, Park & ride facilities and Public Transport. A ITS web portal will be able to provide information regarding availability of parking, fees, and booking arrangements.	Republic of Cyprus Ministry of Communications and Works	2017 - 2020	15	Relevant Study Co- funded by EU (TEN-T Fund), To be Co-funded by EU (CEF), State Budget, Private Funds / Concession Contract	Intermodality	N	N	Y	Yes
CY306	CY A1 motorway Lefkosia-Lemesos; A2 motorway Lefkosia-Larnaka Core Network	works planned	ITS Development on Lefkosia-Lemesos (Port) and Lefkosia-Larnaca Airport Motorways Further development of ITS in Lefkosia- Lemesos Port/ Lefkosia-Larnaca Airport Motorways. Expanding Intelligent Transport Systems in order to facilitate traffic management, road safety and freight transport.	Republic of Cyprus Ministry of Communications and Works	2017 - n.a.	5	Relevant Study Co- funded by EU, To be Co-funded by EU (CEF), State Budget	Interoperability	N	N	N	Yes (ITS)
CY307	CY A1 Motorway Lefkosia – lemesos A2 Motorway Lefkosia – Larnaka Lemesos Port Larnaka Airport Core Network	works planned	Alternative fuels infrastructure development on the core network The overall objective of the action is to implement an alternative fuels infrastructure network that will facilitate the usage of low carbon technologies on the road transport. The action will be linked with modal shift at bus terminals, port and airport and integrate with ITS and renewable energy sources. Finally, the Action will undertake a study providing the policy makers with recommendations on future actions and furthermore demonstrate on a Pan-European level an integrated and completed alternative fuels infrastructure network.	Republic of Cyprus- Ministry of Communications and Works	2017 - 2020	4	Relevant Study Co- funded by EU (TEN-T Fund), Co-funded by EU (CEF) , State Budget (Cyprus Port Authority).	Sustainability	N	N	N	No

ID	Location	Studies or Work	Description of project	Project promoter	Timing	Costs MEUR	Financing sources	Category	CB	UA	CI	CEF
CY308	CY A1 Motorway Lefkosia – lemesos A2 Motorway Lefkosia – Larnaka Lemesos Port Larnaka Airport Core Network	works planned	Core Network Energy Efficiency Lighting integrated with Renewable Energy Sources/ Energy Autonomous Motorway The overall objective of the action is to implement a pilot project of energy efficient lighting on the core network having integrated renewable energy sources (photovoltaic), thus enhancing energy efficiency and safety. The system will have the ability for dimming and monitor the traffic. The action will demonstrate what a Pan European motorway with efficient lighting could look like by identifying the conditions for a viable integration of renewable energy sources. Furthermore, a study will be conducted to assess the viability of such an energy autonomous motorway lighting system and assist policy makers by providing them valuable information for future actions. It will at the end provide with all the information needed to create an energy autonomous motorway that will include and provide all services (lighting, e-charging, ITS, speed cameras etc) through low carbon technologies.	Republic of Cyprus- Ministry of Communications and Works	2017 - 2020	3	Relevant Study Co- funded by EU (TEN-T Fund), Co-funded by EU (CEF) , State Budget (Cyprus Port Authority).	Sustainability	N	N	N	No
EU301	AT, CZ, DE, HU, RO Road networks Core and Comprehensive Network	study in progress	CROCODILE CROCODILE: sets up and operates a data exchange infrastructure that will be used to exchange data and information between all involved public authorities and private partners: Implement infrastructure and processes, foster cross-border coordination of ITS, provide information services to truck drivers on parking space, implement services for user information on safety critical traffic information, improve the efficiency of traffic flows and reduce congestion, stimulate investment in ITS infrastructure	AustriaTech	01/2013 - 12/2015	31,42	**Financed** National budget: 20.33; Action promoter: 4.8; EU support: 20%	Interoperability	Y	N	Y	Yes (ITS)

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 6

ERTMS Deployment Plan

5 December 2014

Disclaimer

The information and views set out in this Report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Table 1 Status and Expected Deployment of ERTMS on the Orient/East-Med corridor (as of 2014)

MS	ERTMS Corridor	From	To	Section Length [km]	Number of Tracks	ETCS installed	GSM-R in operation	Level installed	EDP/NDP Deployment Target (2009)	Expected Deployment (as per 2014)	Design Level of ERTMS
DE	--	Wilhelmshaven	Bremen	104	2	N	Y		-	**not intended**	-
DE	--	Bremerhaven	Hannover	121	2	N	Y		-	**not intended**	-
DE	F	Hannover	Magdeburg	186	2	N	Y		2015	**2027**	L2
DE	F	Magdeburg	Elsterwerda	168	2	N	Y		2015	**2027**	L2
DE	VN	Rosslau	Bitterfeld	31	2	N	Y		time shifted after ERTMS corridors	**unknown;**	L2
DE	VN* (3G)	Bitterfeld	Leipzig	34	2	N	Y		2015	**12/2019**	L2 BL3
DE	VN	Leipzig	Dresden	122	2	N	Y		time shifted after ERTMS corridors	**unknown;**	L2
DE	VN* (5P)	Hamburg	Berlin Hbf	295	2	N	Y		2020 / after 2020	**unknown; includes deployment in the Port of Hamburg**	L2
DE	EDP	Rostock	Berlin Hbf	200	2	N	Y		2015	**Works contracted in 2011, Start of Operation, unknown**	L2 BL3
DE	F	Potsdam Saarmund	Berlin Wuhlheide	140	2	N	Y		2020	**2027**	L2
DE	VN* (5P)	Berlin Hbf	Elsterwerda	140	2	N	Y		after 2020	**unknown**	L2
DE	E	Elsterwerda	Dresden	55	2	N	Y		2020	**unknown**	L2
DE	E	Dresden	Schöna / Dolní Žleb CBC	53	2	N	Y		2020 / latest by 2020	**2025**	L2
CZ	E	Schöna / Dolní Žleb CBC	Praha hl.n.	145	2	N	Y		2015		L2

MS	ERTMS Corridor	From	To	Section Length [km]	Number of Tracks	ETCS installed	GSM-R in operation	Level installed	EDP/NDP Deployment Target (2009)	Expected Deployment (as per 2014)	Design Level of ERTMS
CZ	E	Praha Uhříněves	Lysá nad Labem		2	N	Y		2015	**Q4 2017 (Praha node); Q4 2018 (Praha Vysocany - Lysá n/L); not part of OEM corridor**	L2
CZ	--	Praha hl.n.	Praha Airport			N	N		-	**Q4 2022**	L2
CZ	E	Praha hl.n.	Poříčany	38	3	N	Y		2015		L2
CZ	E	Poříčany	Kolin	24	3	**Y**	Y	L2	operative	**Testing Pilot L2**	
CZ	E	Děčín	Kolin	160	2	N	Y		2020	**Q4 2021**	L2
CZ	E	Kolin	Česká Třebova	101	2	**N**	Y		2015	**main line after 2014; Česká Třebova Q3/2021; Pardubice: Q3/2022; Usti n/O - Choceň: Q4/2023**	L2
CZ	VN	Česká Třebova	Prerov	104	2	N	Y		2015-2018		L2
CZ	VN	Prerov	Břeclav	100	2	N	Y		2015/2016		L2
CZ	E	Česká Třebova	Břeclav	151	2	N	Y		2015	**after 2014**	L2
CZ	E	Břeclav	Lanzhot / Kúty CBC	11	2	N	Y		2015		
CZ	E	Břeclav	Břeclav / Bernhardsthal CBC	5	2	N	Y		2015		
SK	E	Lanzhot / Kúty CBC	Devínska Nova Ves	69	2	N	N		2013	**ERTMS project 2010-2019**	L2
SK	E	Devínska Nova Ves	Rusovce / Rajka CBC	45	2	N	Y		2013/2015	**Overall line Upgrade after 2020**	L2
AT	E	Břeclav / Bernhardsthal CBC	Wien Hbf	90	2	**Y**	Y	L2	2020	**Start of Operation: Q3 2014**	L2
AT	E	Wien Hbf	Nickelsdorf / Hegyeshalom CBC	70	2	**Y**	Y	L1	2015	**L1 Out of Service; Update study ongoing until 2015, implementation until 2019**	L2
HU	E	Rusovce / Rajka CBC	Hegyeshalom	13	1	**N**	Y		2015	**ETCS L1 until Q4 2015**	L1

MS	ERTMS Corridor	From	To	Section Length [km]	Number of Tracks	ETCS installed	GSM-R in operation	Level installed	EDP/NDP Deployment Target (2009)	Expected Deployment (as per 2014)	Design Level of ERTMS
HU	E	Nickelsdorf / Hegyeshalom	Budapest Ferencváros	183	2	**Y**	N	L1	operative	**ETCS L1 v2.3.0 under operation; GSM-R completed by 11/2015; Gradual conversion to L2 depending on GSM-R and Track works until 2020**	L1/L2
HU	E	Budapest Ferencváros	Gyoma	153	2	N	N		2015	**GSM-R and ETCS implemented until 12/2015 with L2 (except Szolnok L1)**	L1/L2
HU	E	Gyoma	Lőkösháza / Curtici CBC	68	2	N	N		2015	**ETCS L2 (Gyoma-Békéscsaba) and L1 (Békéscsaba - Lőkösháza) will be implemented until 03/2016, GSM-R completed by 10/2015**	L1
RO	E	Lőkösháza / Curtici CBC	Arad	17	2	N	N		2015	**Until 2017 Line Upgrade on 160 km/h**	
RO	EDP	Arad	Timisoara	57	1	N	N		2015	**Completed by 2030**	L2
RO	EDP	Timisoara	Craiova	324	1	N	N		2020	**Completed by 2030**	L2
RO	EDP	Craiova	Golenţi	90	1	N	N		2020	**Until 2025 Line Upgrade on 160 km/h**	
RO	EDP	Golenţi	Calafat / Vidin CBC	18	1	**Y**	N	L1	operative	**ETCS installed, not in operation**	L1
BG	EDP	Calafat / Vidin CBC	Vidbol	23	1	N	N	L1	operative	**ETCS installed, not in operation**	L1
BG	EDP	Vidbol	Medkovets	85	1	N	N		2017/2020	**Overall modernization until 2020**	L1
BG	EDP	Medkovets	Sofia	161	1/2	N	N		2017/2020	**Overall modernization after 2020**	L1
BG	EDP	Sofia	Septemvri	103	2	N	N		2020	**ETCS until 2020; GSM-R under installation**	L1
BG	EDP	Septemvri	Plovdiv	53	2	N	N		2020	**ETCS+GSM-R under construction; operation start 2015**	L1

MS	ERTMS Corridor	From	To	Section Length [km]	Number of Tracks	ETCS installed	GSM-R in operation	Level installed	EDP/NDP Deployment Target (2009)	Expected Deployment (as per 2014)	Design Level of ERTMS
BG	EDP	Plovdiv	Dimitrovgrad	77	1	**Y**	Y	L1	2020	**installed; start of operation with Dimitrovgrad-Svilengrad**	L1
BG	EDP	Dimitrovgrad	Mihaylovo	33	1	N	N		2017/2020	**ETCS and GSM-R until 2025**	L2
BG	EDP	Mihaylovo	Stara Zagora	37	1	N	N		2015/2020	**ETCS and GSM-R until 2020**	L1
BG	EDP	Stara Zagora	Burgas	187	2	**Y**	N	L1	operative	**ETCS in operation,**	L1
BG	VN	Plovdiv	Mihaylovo	88	1	N	N		2020	**ETCS and GSM-R until 2020**	
BG	VN	Dimitrovgrad	Svilengrad / Border TR	83	1	N	N		2020	**ETCS+GSM-R under construction; operation start 2015**	L1
BG	EDP	Sofia	Kulata / Promahonas CBC	209	1	N	N		2020		L1
EL	EDP	Kulata / Promahonas CBC	Thessaloniki	108	1	**N**	N	L1	2016	**Under construction; GSM-R 2006-2015; ETCS L1 2007-2016**	L1
EL	EDP	Thessaloniki	Domokos	217	2	**N**	N	L1	2016	**Under construction; GSM-R 2006-2015; ETCS L1 2007-2017**	L1
EL	EDP	Domokos	Tithorea	121	2	**N**	N	L2	2017	**Under construction; New Line 1997-2017**	L1
EL	EDP	Tithorea	SKA	145	2	**N**	N	L1	2016	**Under construction; GSM-R 2006-2015; ETCS L1 2007-2017**	L1
EL	EDP	SKA	3 Gefyres / Piraeus	18	4	**N**	N	L1	2016	**Under construction; GSM-R 2006-2015; ETCS L1 2007-2017**	L1
EL	VN	SKA	Kiato	105	2	Y	Y	L1	operative	**in operation**	L1
EL	VN	Kiato	Rododafni/Aigio	71	0	N	N		2016	**New Line planned, to be implemented 2006-2016**	L1
EL	VN	Rododafni / Aigio	Patra	28	0	N	N		2017	**New Line planned, to be implemented 2012-2017**	L1

MS	ERTMS Corridor	From	To	Section Length [km]	Number of Tracks	ETCS installed	GSM-R in operation	Level installed	EDP/NDP Deployment Target (2009)	Expected Deployment (as per 2014)	Design Level of ERTMS
EL	--	Palaiofarsalos	Kalambaka	80	1	N	N		-		-
EL	--	Kalambaka	Igoumenitsa	175	0	N	N		-		-

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 7

Review of most important corridor related studies

5 December 2014

Disclaimer

The information and views set out in this Report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Content

1. Completion of the Priority Project Nr. 22 (PP22)

This review covers the PP22 study, issued by Panteia, PWC, ISIS and TML on behalf of the European Commission in November 2012. The study focusses on the Central and South-Eastern part of the Orient/East Med Corridor, i.e. from Dresden in Germany towards Athina in Greece.

The study focussed on six major categories:

- Description of the rail infrastructure;
- Country perspective
- the traffic forecast for several scenarios;
- the social impact analysis
- the environmental effects analysis
- the cost-benefit analysis for upgrading the PP22;

This study analysed the implications coming from the completion of this corridor when the TEN-T Policy standards will be implemented on the total PP22 corridor. First of all should be ascertained what are the benefits of the railway axis. But also the cost of the completion of this corridor had to be estimated, not only due to the limited TEN-T and Cohesion budget but also because of the financial crisis. Therefore, a cost-benefit analysis has been carried out with respect to the special characteristic of the Priority Project Nr. 22, its bottlenecks and cross-border sections. This study contains a comparative analysis, combining the impacts of TEN-T Policy and the changes in traffic volumes and characteristics.

Description of the rail infrastructure

At present, the axis does not fulfil all the technical requirements of TEN-T regulation for such type of corridor. The fact that it has eight cross-border sections makes the completion of this axis more difficult. Following rail infrastructure characteristics have been summarised: number of tracks, maximum permissible speed, electrification, maximum axle load, loading gauge, admissible train length and ERTMS/ETCS.

Country perspectives

For some of the OEM countries, the Czech Republic, Hungary, Greece and Romania, PP22 is the most important national and international connection, whereas for other corridor countries it is just one of their national railway axes and border crossings, notably Austria, Bulgaria and Germany. Some sections of PP22 have been already completed, notably in Germany, Austria, the Czech Republic, Hungary and Greece, whereas Romania and Bulgaria face huge investments.

This combination of national importance to the railway network and the investments needed for an update of the infrastructure clearly shows the differences in interests and priority of the corridor countries to PP22. The Czech Republic, Greece and Romania give high priority to the PP22 update while Austria and Germany less; Bulgaria and Hungary are in the middle.

Total traffic effects in the different scenarios

The following scenarios have been developed:

A. Doing nothing, only taking into account already planned upgrades;

B. What is/are the most suitable solution(s) for the connection Germany and the Czech Republic?
C. What is the relative effect of further upgrading the Southern part of the corridor (Arad – Athina) compared to the one generated by the development of the Northern part (Germany – Constanta);

The traffic effects of foreseen interventions were the key elements for the calculation of internal and external costs and benefit, except for investment and fixed maintenance. In total, the rail freight demand was expected to double by 2030 in the Do-Nothing scenario, while it can increase up to 180% when upgrading the Southern part of the corridor, with an overall demand of 95 million tonnes for corridor PP22.

CBA results for PP22

The CBA for PP22 focused on the investments on a **high speed line between Germany and Praha** and the upgrading's on the Southern part of the corridor; either up to TEN-T standards and a scenario which does not reach the speed standards which means less investments. On the basis of the performed CBA it is concluded that the Do-Minimum scenario is the most promising scenario. This indicates that the investments made and planned so far are well spent.

The proposed passenger High Speed Rail line Dresden – Praha appears not to have a positive CBA, but potential shift from passenger air traffic needs to be taken into account. The most extensive investment programme, focussing on upgrading the Southern branch in Romania and Bulgaria does not have a positive economic outcome. However, the proposed reduction of the investments and simplifying of the plans have a much better outcome and achieves nearly a B/C ratio bigger than 1.

To complete the corridor PP22 and to justify the investments made so far (particularly on the Danube bridge between Romania and Bulgaria), the proposed investments are justified, especially taking into account that the effects of the investments in Bulgaria and Romania have the highest social and economic impact on the net present value of the GDP and welfare, which indicates that these investments have a positive impact to the GDP in both countries.

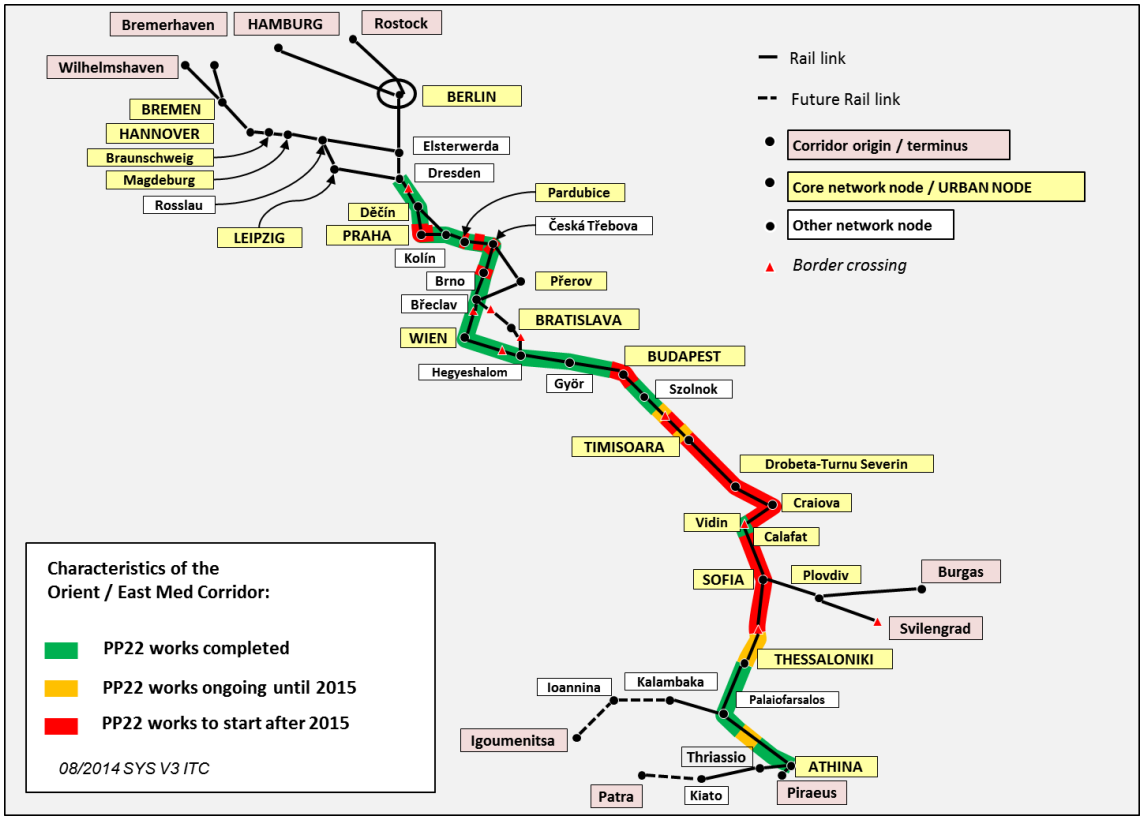
The freight-oriented nature of the PP22 and of some section in particular should be taken into account in order to define the appropriate investments needed. Investments focusing on rail freight interoperability allowing for fluid freight traffic may prove more adapted than investments focusing on reaching high levels of speed.

Relevance for Corridor Study Activities

The effect of the PP22 to the OEM corridor rail network and the PP 22 line connection are not to underestimate; especially for the Romanian and Bulgarian part. The PP22 study showed that an upgrade of this part of the railway line to high standards cannot be justified and the freight orientation of the line does not hinder the development of the traffic. This viewpoint is more or less accepted by the stakeholders.

This study serves as main information source for wide parts of the OEM corridor work plan. The following graph gives an update of the status of the OEM rail network.

Figure 1: Corridor Railway Network: Implementation of PP22 projects (2014)



Source: Consortium, based on PP22 study

2. Evaluation Study for the Upgrade of Railway Axis 22 and Technical Support to OSE SA: Feasibility Analysis- Action Plan

The report constitutes the fourth and final deliverable of the above study and presents the results of the feasibility analysis carried out for the PRIORITY RAILWAY AXIS No. 22: Athina - Thessaloniki - Promahonas - Kulata - Sofia - Vidin - Calafat - Craiova - Timisoara - Curtici – Lökösháza – Budapest - Györ – Hegyeshalom. It was elaborated 2011-2012 on behalf of the Hellenic Railways Organisation.

Scope

The report covers the following:

- Identification of technical characteristics specifications, including the evaluation of alternative alignments, investment costs and planned start of works, performance specifications and technological alternatives;
- Identification of operational characteristics, including speed, personnel and rolling stock;
- Financial appraisal of three key investment scenarios ("reference", "middle" and "full"), including financing plans, financial viability and economic indicators;
- Socio-economic evaluation through cost-benefit analysis and evaluation of cash flows;
- Sensitivity and risk analysis;
- Recommended action plan.

Main content of the study

In summary, the study's key conclusions and recommendations are the following:

- The forecasted modal split between road and rail is expected to shift in favour of rail especially for freight traffic.
- The "middle" scenario provides better results and adequate service to both passengers and freight.
- Maintenance of existing infrastructure and operations improvements must continue, as renewal of infrastructure may require a long time.
- The total cost of the projects proposed to be implemented along Axis 22 across all four countries amounts to approximately EUR 12.2 billion for the "full" scenario and up to EUR 9.1 billion for the "middle" scenario.
- The projects are not feasible or viable from the financial point of view of the private sector. The projects' feasibility and viability should be assessed on the basis of the Economic Indicators.
- The socio-economic analysis yielded acceptable results at the consolidated level for both "full" and "middle" alternative scenarios.
- A substantial portion of the Axis 22 projects are expected to be co-financed by the EU and the EIB. The involvement of the private sector in terms of PPP projects in any form is considered more likely for rail related infrastructure such as ports, terminals and cross-border facilities than traditional rail investment.

Relevance for Corridor Study Activities

Given that Axis 22 forms a substantial part of the OEM Corridor railway network, the report provides key information on the technical and operational characteristics of the corridor that can be used in the TENtec data exercise, as well as demand data that can be employed in the Transport Market Study. Most importantly, being a feasibility study, it contains detailed information on the planned investment infrastructure projects along the axis, including project costs, schedules, and sources of financing that address the Axis objectives. To this end, the OEM study will take into consideration these particular infrastructure projects in the subsequent analysis of WP4 and, given that these comply with the criteria set, they will be included in the Corridor Implementation Plan.

3. Implementation plan of Rail Freight Corridor 7 "Orient Corridor"

Rail Freight Corridor 7 is defined by the Regulation 913/2010/EU to run through the Praha - Wien/Bratislava - Budapest – Bucharest - Constanta and – Vidin – Sofia – Thessaloniki - Athina axis. The plan was prepared in November 2013 and summarizes the conclusions and agreements reached by eight infrastructure managers and one capacity allocation body of the corridor. The Implementation Plan presents:

- the main characteristics of the corridor,
- the measures taken so far and
- the planned procedures of corridor operation.

A Transport market study done by the Marketing Working Group of the RFC7, with the support of ZSR research institute is annexed to the Implementation plan.

Scope

The document covers the following:

- Identification of technical characteristics, infrastructural and capacity bottlenecks
- Single network statement for all corridor traffic (called Corridor Information Document, CID)Corridor traffic management
- ERTMS deployment.

It also contains detailed technical, technological and traffic data for 135 sections in total (18 in CZ, 12 in AT, 13 in SK, 37 in HU, 24 in RO, 9 in BG, and 22 in GR), visualised in 12 Corridor maps.

Main content of the study

The TMS identifies infrastructural and capacity bottlenecks along the corridor as follows:

- low capacity (capacity utilisation over 90% along the sections Poříčany – Pardubice and Choceň - Česká Třebová (CZ) and Bratislava hl. st. - Bratislava Nové Mesto (SK); congestion problems along HU/RO border near Curtici – Arad (-Simeria – Coslariu – Sighişoara) are attributed to modernisation works under way)
- speed limit,
- limited length of trains,
- limited axle load,
- non electrified sections,
- lack of adequate safety equipment (signalling track circuits with 25 Hz frequency, ETCS, GSM-R, etc.).

Specific bottlenecks are identified per IM and their effect on the overall Corridor performance is estimated.

The document points out the waiting times at the borders of RFC7 are often quite long, the main reasons thereof being:

- internal procedures of railway undertakings (mostly waiting for locomotive and/or staff of the cooperating RU, technical control, etc.),
- lack of interoperability of infrastructure (the differences on the corridor are mostly in the electric systems, signalling devices, technical equipment of border stations and lines),
- low capacity (single track line, restricted capacity of stations / line section),
- restricted speed (max. speed of 60 km/h)

The Investment Plan suggests the following necessary developments:

- increasing capacity
- increasing axle load
- electrification
- increasing speed

- ensuring interoperability.

The plan is based on a list of bottlenecks per country and there effects on the Corridor competitiveness. Considering the developments being under implementation the Implementation plan consists of 77 projects, out of which 21 under construction. The total value of the Implementation plan is estimated at some EUR 22 billion.

Relevance for Corridor Study Activities

RFC7 covers large part of OEM corridor and thus, is document is highly relevant to this study. Technical and technological information is up-to-date and was provided directly by the railway undertakings, which guarantees its reliability. The proposed list of identified projects (at different stage of preparation) could be taken as basis for the EOM Corridor Work plan to be further elaborated.

4. Studies for high-speed rail Dresden - Praha

The planned construction of a new railway line Dresden – Ústí nad Labem – Lovosice/Litoměřice - Praha for both passenger and freight (between Dresden and Ústí n.L.), designed for a maximum operational speed of 200 km/h, aims to improve capacity on the cross-border section, to reduce travel times and to improve offer quality between nodes as well as to relieve residents from noise exposure, especially in the Elbe valley. Several studies have been carried out in this regard, notably:

- Analysis on speeding-up the railway connections Dresden - Praha and München – Praha; BVU / Intraplan (2010)
- Study on traffic-related potentials and the relief effect for the existing rail line in the Elbe Valley; Saxon State Ministry for Economic Affairs, Labour and Transport (2011)
- Study on Investigation of lines variants and possible routes for a common cross-border planning; Saxon State Ministry for Economic Affairs, Labour and Transport (2012)
- Analysis of the macroeconomic effects of the new route Dresden - Praha for the Free State of Saxony; Progtrans / LUB Consulting (2014)
- VRT Praha - Litoměřice (draft version); SZDC / IKP Consulting Engineers (2014)

Background

The existing line in the Elbe valley is already today the most important connection in European rail freight transport between Scandinavia and South East Europe, covering in large part international rail freight traffic between Scandinavia, Benelux and Germany on the one hand and Czech Republic, Slovakia, Hungary and Slovenia on the other hand. Due to expected growth in seaport hinterland traffic, especially in through traffic, the traffic volume will increase in future years. According to the bottleneck analysis in the target network 2025 of the German Federal Ministry of Transport the capacity limit of the existing line will be reached between 2015 and 2025.

Due to the topographical conditions of the Elbe valley as well as sociological and ecological constraints an upgrading of this line is not possible. In this regard studies have been carried out by the Saxon State Ministry for Economic Affairs, Labour and Transport, focusing on the traffic-related potential and the relief effect for the existing railway line in the Elbe Valley as well as on line/route variants for a joint cross-border planning together with the Czech Republic. In addition the planning of a new railway

line from Usti nad Labem via Litoměřice to Praha will complete the high-speed link Dresden-Praha.

Scope

The studies cover the following:

- Identification, description and evaluation of options for route optimization of the existing route, including definition of routing parameters (design speed, gradient, etc.) and special cost-intensive parameters (geology, hydrology, etc.), taking into account the Czech planning.
- Identification of operating efficiency of the studied alternatives, including operational simulation.
- Identification of relief potential for the existing railway line in the Elbe valley.
- Detailed planning for several route variants between Litoměřice and Praha.
- Calculation of emission forecasting.
- Identification of estimated investment costs.
- Comparison of alternatives, taking into account investment costs, line length, gradient, environmental sustainability, noise and emission-protection.
- Recommendations for further planning phases.

Main content of the studies:

In summary, the key conclusions and recommendations of the studies are the following:

- The new railway line offers the potential to shift both freight and long-distance passenger traffic from the existing line in the Elbe valley. This would result in a significant relief of the existing line and in reductions of noise emissions.
- The chosen design speed of 200 km/h ensures optimal traffic performance of the new railway line for passenger and freight traffic. Any further increase would reduce the ability of the freight trains to integrate optimally with the passenger service and at the same time lead to significantly higher investment and operating costs. The achieved benefit in travel time, however, would be comparatively low.
- The chosen axis Heidenau Süd - Pirna Zehista - Dohma - Bahretal is the optimal planning corridor for the new railway line.
- Link via Usti nad Labem and Litoměřice is important due to the economic potential of the region
- A preferable variant could not yet be identified, due to the need to define further boundary conditions, planning parameters and decision criteria. In this regard further planning is required.
- Coordination of planning in Germany and Czech Republic is crucial and a combined effort required.

Summary / Relevance for Corridor Study Activities

With regard to the OEM corridor, the studies provide useful information on possible options for upgrading the railway section Dresden - Praha. The above include technical specifications for infrastructure (according to the defined alternative routings), description of operational and ecological effects, and estimations of investment costs.

5. Elbe studies, works for better navigability and upgrading

Regarding the Elbe in Germany the "Principles for the professional concept of maintaining the Elbe between the Czech Republic and Geesthacht with explanations" (2005) and the discussion paper "Key elements of an overall concept for the Elbe of the federal government and state governments" (2013) of the German Federal Ministry of Transport (with additional information provided via email by the Ministry, 2014) as well as the "Riverbed stabilization concept for the Elbe from Mühlberg to the river mouth of Saale" (2009) of the Federal Waterways and Shipping Administration were reviewed.

Scope

Nowadays measures for better navigability and upgrading along the Elbe must always be considered in terms of the sometimes conflicting criteria of economy and ecology. Given the occurrence of severe floods, especially in 2002 and 2013, policy has changed. Before the flood of August 2002 the deepening of the fairway over the entire German section had been in discussion to ensure a draught of 1.6 m over the whole year and of 2.5 m for half of the year. After this flood all developments were stopped. At present, the objectives of the Federal Water and Shipping Administration on the Elbe between Geesthacht and the border with the Czech Republic focus on restoring the status quo of the navigation conditions before the flood of 2002 by maintaining and repairing flood protection measures on the existing structures. This ensures that a minimum standard for economical shipping traffic, in particular container transport to/from the Port of Hamburg, is guaranteed.

The traffic-related maintenance objectives corresponding to the status quo are part of the principles for a specialized concept for maintaining the Elbe, agreed between the Ministry of Transport and the Ministry of Environment in May 2005, bundling traffic-related, environmental and water management goals. The objective is to ensure a consistent fairway depth for shipping of 1.6 m between Geesthacht and Dresden as well as of 1.5 m between Dresden and Schöna (i.e. border DE/CZ) for an average of 345 days a year. This corresponds to the shipping conditions before the flood in August 2002. In this context, it is to be understood that the above-mentioned number of days can fall in dry years and be exceeded in wet years. Average is not to be understood as guaranteed.

The maintenance objective refers to the statistical equivalent water level (gleichwertiger Wasserstand) GlW 89. This is based on water level measurements from selected, closely spaced dry and average years. For long-lasting discharge volumes lower than in GlW 89, it is thus possible that shortfall of fairway depth occurs on further days. Therefore the maintenance objective guarantees not discharge volumes, but a maintenance state that is orientated on GlW 89.

Maintenance measures along the Elbe focus on maintaining the functionality of the river structures (i.e. spur dykes, longitudinal structures and bank protections) in order to avoid local cross-sectional widening and irregular current cross sections changing the current velocity leading to sedimentation and to degradation of fairway conditions. In addition special attention has to be paid to the section between Mühlberg (km 120) and the confluence of Elbe and Saale (km 290), in particular to the section Mühlberg - Coswig/Anhalt (km 230). This section is characterized by the erosion of the river bed. For this reason a concept to stabilize the river bed, including concrete river engineering measures, has been developed and is currently implemented.

In addition to the above mentioned measures to guarantee shipping on the Elbe, at present the Federal Government and the Governments of the Elbe neighbouring Federal States are working on the "Gesamtkonzept Elbe", aimed at the development of an adapted maintenance strategy bringing into line shipping, nature conservation and water management, so that each of them will benefit from the concept. Works started in the middle of 2013 with the work packages water management, nature conservation, river regulation, and transport on Elbe and on Elbe-Seitenkanal. In the first step the status quo will be analysed for each work package, focussing on the identification of common weak points to be solved later by combined actions. It is expected that these works will be finalized by the end of 2014. On a regular basis stakeholders (navigation, industry, environment) and the Czech Ministry of Transport are invited and involved in the "Round Table" of the "Gesamtkonzept Elbe". Based on the findings a future concept will be developed in the following two years. This concept is expected to be available in 2016. The Ministry of Transport assumes that the Elbe between the border with the Czech Republic and Hamburg can contribute to managing the increase in traffic according to its potential.

Summary/ Relevance for Corridor Study Activities

Regarding the OEM Corridor the information given in the concepts and by the Ministry of Transport are helpful to understand better the current situation along the German part of the Elbe (in particular regarding policy and objectives) as well as the specific characteristics of the river and the related difficulties.

6. EIA and Feasibility study documents on the construction of the Elbe IWW Navigation step at Děčín (Czech Republic)

About

This project is the construction of a new navigation step additionally to the existing weirs at Elbe-Vltava waterways in the area between Děčín Loubí and Prostřední Žleb. The aim of the design is to improve navigation conditions on the Elbe in the section between the state border Czech Republic/Germany (river km 726.6, nav. km 109.27) and Boletice (river km 746.2, nav. km 90) to the parameters corresponding to the parameters of downstream German section of the Elbe. This will ensure connectivity of Core Network port of Děčín with average water level at 345 days per year.

Rational for the intent

The Czech Republic is a landlocked country with no direct access to the Sea. The Elbe waterway is in terms of water transport the only connection with European and global markets, but this connection is problematic and unreliable. The Elbe River leaves Czech territory about 10 kilometres north of Děčín in Hřensko. Even though every year a large amount of water flows in this river here, it is achieved the draft of 140 cm (the draught from which the freight shipping in CZ is profitable) only for 155 days in the average water year. Especially long periods of drought in May are the cause of cessation of navigation in this section and is also limiting for the use of the whole Elbe-Vltava waterway. In the long term, the unreliability of this waterway section, is almost liquidating for the Czech inland water transport. On the Elbe river there are transported mainly mass substances (agricultural commodities, chemical raw materials and products, sand gravel, building materials) oversize loads, prefabricated, piece goods (boxes, construction), wood etc.

After the implementation of this project, in addition to increasing the volume of freight water transport, it is also expected the growth of recreational boating and passenger transport. Additionally the Navigation step will comprise a hydropower plant. The amount of renewable electricity produced is equivalent to about the consumption of half of all households in Děčín.

Assessments of solutions

The option 1 represents basic option of navigation step Děčín. This is the original option provided for in the notice of intent. Required Navigational parameters are achieved by building navigation step Děčín at river km 737.02 (nav. km 98.98) with a lock and movable weir, allowing nominal backwater, directly above the weir on the dimension 124.50 m above the sea, which is about 0.5 m above the level of annual high water. Therefore, in the entire length of the backwater will be no spillway outside of riverbed. The part of a navigation step is small water plant and two fish passages.

Navigation conditions in the stretch of river from PS Děčín to Dolní Žleb (about 5 km) will be improved by dredging, thus deepening the bottom of the fairway. Further downstream from Dolní Žleb to the state border and further the German territory are required navigational parameters for current situation met.

Implementation

The current status of project preparation is at the stage of processing of documentation to assess the impact of the project on a NATURA2000 area and documentation of assessment of the impact of the project on the environment.

Relevance for Corridor Study Activities

The study provides information on the planned measures in the Czech Republic to upgrade the Elbe to ensure better navigability. It provides information on the current situation as well as on the expected future conditions to be achieved after the construction of the weir. The information given is helpful for a better understanding of the Czech policy and objectives on the role of the Elbe as transport route.

7. Study on Seaport Hinterland transport (Forecast of the transport interrelations throughout Germany 2025 - maritime forecast)

Scope

The study "Forecast of the transport interrelations throughout Germany 2025" aims to analyse and forecast the modal-cross transport interrelations throughout Germany for passenger and freight transport for the base year 2004 and the forecast horizon 2025 in the form of modal cross-origin-destination matrices. For this purpose an integrated transport network for road, rail and waterway transport was created involving ports and airports as points of common coupling, which also allows the mapping of combined transport. In addition air and maritime transport forecasts were developed in specific work packages and have also been taken into account in the traffic interrelations.

The matrices serve as a framework and main base data for the further development of transport planning in federal and state governments and to review the need for plans or not yet realized and new projects of the Federal Transport Infrastructure Planning for road, rail and waterway. With these, essential information bases are updated and maintained for a long term demand-oriented control of investment in transport infrastructure as well as for targeted development of transport policies and programs.

At present a new forecast of the transport interrelations throughout Germany is prepared (forecast target 2030) in line with the preparation of the Federal Transport Infrastructure Plan (Bundesverkehrswegeplan) 2015.

Regarding Seaport Hinterland transport in general and with regard to the OEM Corridor in particular the forecast provides the following information:
In general a growth for both transport volumes and transport performance is expected until 2025. Compared to the base year 2004 (value in brackets) the total volume will increase by 131% to 451 million tons (195 million tons) and total performance by 168% to 153 billion ton kilometres (57 billion ton kilometres).
The differentiation by type of transport (container and conventional) shows the high dynamic of container traffic, which is expected to increase in both volume and performance by 6.5% per year. Increase in conventional traffic is clearly lower.
Road transport will further increase its dominance (growth in volume and performance of more than four times), followed by rail transport (growth more than double) and inland waterway transport (significant lower growth rate). However, overall all modes benefit from the dynamic growth of the seaport hinterland traffic.

Transit traffic will grow significantly faster than traffic to and from Germany. Thus existing relations to South East Europe (Czech Republic, Slovakia, Austria and Hungary) will grow further.

Summary / Relevance for Corridor Study Activities

With regard to the OEM corridor, the forecast study provides useful information on the expected developments in German Seaport Hinterland transport. The above include growth rates and information on the modal split, allowing conclusions to be drawn on requirements for infrastructure and services along the OEM Corridor.

8. Adriatic Motorways of the Sea (ADRIAMOS)

Scope

The Action ADRIAMOS, approved as a TEN-T project (Part of Priority Project 21), aims at enhancing a viable, regular and reliable sea-based transport service integrated in the logistic chain along the Adriatic-Ionian transport corridor between the port of Venice and the Ionian Sea/West Greece port cluster (Igoumenitsa and Patras) with the scope to contribute to reducing economic, social and environmental costs related to port and logistics activities. With regard to Greece, belonging to the OEM corridor, the Action foresees the completion of preliminary studies for the establishment of a Freight Village in the Thesprotia area in the vicinity of the Port of Igoumenitsa, serving the freight flows to/from the Adriatic. The proposed Freight Village will be directly connected to the port of Igoumenitsa, and will attract and enable more freight from the hinterland, promoting the sea link to Italy, while at the same time increasing the modal shift from road to sea in line with the key goals of current EU's transport policies.

Currently, only the preliminary study "Feasibility Study for Freight Village in Thesprotia" has been completed on behalf of the Port of Igoumenitsa (2014). The objective of the study was the analysis of the feasibility and financial viability of the proposed Freight Village, through a methodology that included the following key stages:

a.) site selection and traffic forecasts

b.) definition of FV services offered and corresponding dimensions

c.) estimation of investment and operation costs and related revenues

d.) evaluation of investments through three types of appraisal, namely financial appraisal, socio-economic evaluation and Multi-Criteria Analysis.

The three different types of appraisal have confirmed the feasibility and financial viability of the proposed Freight Village of the Thesprotia region under specific circumstances, attracting both private and public capital.

Summary / Relevance for Corridor Study Activities

With regard to the OEM corridor, the report provides useful information on an RRT terminal that could be included as a future node in the corridor, as well as its connection to another node, the port of Igoumenitsa and the future rail link Kalambaka – Ioannina - Igoumenitsa. The above include technical specifications for planned infrastructure; demand forecasting, cost data analysis and sources of financing. This particular infrastructure project will be reviewed under WP4, and included in the OEM Corridor Implementation Plan.

9. Master Plan Monitoring And Operation Services For Motorways Of The Sea (MOS4MOS)

Scope

The main objective of MOS4MOS Action, a TEN-T project is to design and demonstrate a set of initiatives that will improve the operational coordination of transport flows and

facilitate collaboration between the various administrative services and operators at port level to ensure that they can cope efficiently with their gateway function in line with the requirements of Directive 2010/65 EU on reporting formalities for ships arriving in and/or departing from ports of the Member States. The test prototypes will be applied to existing door-to-door MoS supply chains in the Mediterranean region, namely in: Spain-Italy, Spain-Slovenia, Spain-Greece, Slovenia-Greece and Italy-Greece.

The Master Plan of MOS4MOS was completed in 2011 and included several initiatives out of which 15 would be developed into pilots. The key tasks carried out were the following:

- Identification of current status and analysis of MoS in several corridors in terms of inter-organisations (public and private) relationships;
- Identification of problems and bottlenecks in the information and communication technologies (ICT) domain in the above mentioned MoS corridors;
- Analysis of possible alternative ICT solutions for the problems and areas of improvement identified in the previous task;
- Elaboration of feasibility study (financial and technical) of different solutions for each ICT alternative considered in each location;
- Strategic assessment of alternative solutions;
- Demonstration and implementation programme for the initiatives and solutions selected;

The MOS4MOS initiatives were grouped under port level, port-to-port, port-to-hinterland, as well as door-to-door initiatives, including indicatively electronic ship formalities, intra-community customs paperless controls, electronic intra-community freight formalities, port traceability, railway transport management systems, rail-port interfaces, rail e-ways, short sea consolidation e-services initiative, multimodal paperless workflows, and many others.

Summary / Relevance for Corridor Study Activities

The study contains information on the port of Piraeus in Greece, which is one of the key nodes of the OEM corridor, in terms of current technological infrastructure and facilities, as well as the feasibility and cost-benefit analysis of the implementation of a number of the proposed initiatives. The above could contribute to identifying interoperability critical issues in this port and potential measures to address these.

10. East Mediterranean Motorways of the Sea Master Plan

Scope

The "Elaboration of East Mediterranean Motorways of the Sea Master Plan", was carried out between 2004 and 2009 by the Hellenic Ministry of Merchant Shipping and the General Secretary of Ports, financed by the TEN-T programme and is considered as the most significant Motorways of the Sea project in the country.

The main objective was the establishment and development of MoS links, nodes and interconnections necessary for eliminating current bottlenecks, filling in missing links, improving interoperability on the main routes and reducing road congestion through modal shift. Based on the findings, the East Mediterranean Motorways of the Sea Master Plan was elaborated, which included all proposed projects for the region (evaluated and prioritized), together with an investment and time plan for their implementation.

Summary / Relevance for Corridor Study Activities

Viable Motorways of the Sea, connecting Greece and Cyprus (belonging to the OEM Corridor) with the Mediterranean area, were identified by the project, providing also an investment and time plan for the necessary infrastructure projects for the upgrade and modernization of ports and for the development of significant actions within the promotion of MoS and intermodal transport. Information that can be useful in the OEM study includes planned infrastructure projects, demand forecasts, project costs, and information about financing, which will be reviewed for potential inclusion in the implementation plan.

11. Strategic Action Plan for the Development of Igoumenitsa-Patras-Sofia-Budapest – Priority Axis 7

Scope

The study was carried out in 2012 on behalf of the Hellenic Ministry of Infrastructure, Transport and Networks, and constitutes the Final Report of Deliverable 5 within the framework of the Studies for the development of the motorway project of PP7 (Igoumenitsa/Patras-Athina-Sofia-Budapest Motorway Axis).

The aim of the study was to prepare a strategic action plan related to the development and upgrade of Priority Project 7 with the scope to identify the prioritisation of investments, the optimum allocation of resources and specify required actions.

In summary, the study carried out the following tasks:

- Prioritisation of network sections within the general area of influence of the Axis.
- Prioritisation of required actions for the implementation of the Axis.
- Detailed description and analysis of scenarios for the different stages of implementation.
- Cost-Benefit analysis and Multi-criteria evaluation of scenarios.
- Sensitivity and risk analysis
- Formulation of Strategic Action Plan and required Actions.

The study concluded in a number of actions related to the construction and/or completion of the required infrastructure projects on a country basis, with a focus on Romania and Bulgaria that lag behind the most. Also, a number of horizontal actions were identified that would require the cooperation of all countries involved, namely Greece, Hungary, Bulgaria and Romania.

Summary / Relevance for Corridor Study Activities

With regard to the relevance to the OEM corridor, which widely coincides with the PP 7 motorways (except of Thessaloniki – Alexandroupolis – GR/TR border), the study provides information on technical data of current road infrastructure along the axis, as wells as technical characteristic of infrastructure projects and related financial data. Consequently, these particular projects will be reviewed for inclusion in the implementation plan.

12. ACROSSEE

The Project "Accessibility improved at border Crossings for the integration of South East Europe" is a project co-financed by the EU Transnational Cooperation Programme "South-East Europe" carried out between 2012 and 2014 by the ACROSEE consortia, constitute by 24 partners, and Partner Leader CEI – Central European Initiative, Trieste –Italy, involving the Member states Italy, Belgium, Austria, Hungary, Romania, Bulgaria, Greece, Croatia, Slovenia and the Neighbouring countries Serbia, Montenegro, Albania. Studies focus on the area of South East Europe area (including Western Balkans countries).

Description of the main objectives and findings

The specific objectives are:

- Establishment of an institutional multilevel platform and promotion of Administrative cooperation in order to complete and extend the implementation of the TEN-T network and to enhance cooperation among relevant stakeholders with the aim of improving national and regional strategic plans
- Elaboration of an integrated transport model completed with the inclusion of local and international flows
- Elaboration of an action plan for cross-border points (BCP) and bottlenecks in South East Europe Area and of a joint proposal for administrative standardisation and concrete plan for cutting transit time on EU corridors and Western Balkans comprehensive network.
- Field surveys on 23 selected rail border crossing points in the whole South East Europe Area and field survey on 23 road selected crossing sections
- Promotion of actions for the agreements of infrastructure interconnection in order to expedite border-crossings procedures
- Elaboration of Action plan for the synergy of European Macro regional Strategies (Strategy for the Danube Region, Adriatic-Ionian Strategy and Black Sea Synergy)

Up to now findings:

- the field surveys were performed inside to selected BCPs and procedures were investigated, besides the infrastructure' diagnosis (in Romania, there were performed field surveys in Calafat, Giurgiu, for procedures in BCPs, but also for other BCPs with neighbouring countries: Serbia, Moldova, Ukraine),
- the field surveys for traffic flows were performed on selected roads, railways, and data for transport model calibration were gathered,
- the field surveys on the origin-destination of the tracks and cars entering/exiting the selected BCPs were performed,
- the analysis on data in order to have the overall picture of the BCP around the South East Europe and Western Balkans was performed,
- for Romania, there were collected data for Constanta port and for three intermodal terminals (București, Arad, Ploiesti) for infrastructure, operational equipment and traffic flows.
- the bottlenecks of traffic flows at the CBPs were revealed and concluding measurements for cutting transit time for passengers and freight will be prepared.

Relevance for Corridor Study Activities

1. Identification of critical issues

   All collected data show the performance of transport infrastructure at the BCPs, the critical issues, and the need for investments will be provided after the transport model simulation of the proposed scenarios, on short-middle term and also for long term, too,

2. Assessment of corridor measures

   The transport model simulation for entire South East Europe and Western Balkans area, considering the proposed measures for transport improvement at boarding crossing points, but also for the core network investments, is the most appropriate way for the broadly assessment of the corridor measures,

3. Gathering information for market study

   The data obtained from the all kind of performed surveys are useful data for market study and especially, they represent the valuable base for a calibration process

4. Identification of on-going/planned projects

   Simulation process is based on several scenarios, including on one side the ongoing projects as a base scenario, but also planned project for 2020 and 2030 horizon of planning. This creates the opportunity to find the data for on-going and planned projects

5. Assessment of investment strategy

   The results of the simulation process with ACROSSEE transport model will be in line with investment strategy of the every country in the SEE area, including Western Balkans countries.

13. FLAVIA project

The project "Freight and Logistics Advancement in Central/ South-East Europe - Validation of trade and transport processes, Implementation and Application" is a project co-financed by the EU Transnational Cooperation Programme Central Europe – Cooperation for success that was carried out 2010-2013 by the FLAVIA consortia, constitutes by the 14 partners, and Lead Partner TFH Wildau University for Applied Sciences, Germany. Geographically it covers the Member States Germany, Austria, Hungary, Poland, Slovakia, Czech Republic, and Romania. Studies focus on the area of Central Europe to South East Europe area.

Objectives

The specific objectives were:

- identification of organizational, administrative and technical barriers in the intermodal logistic channels and the integrated logistic chains
- measures for further development of logistic and trade relations between Central and South-East Europe and beyond to the Black Sea bordering countries
- establishing different national and trans-national alliances of regions, transport and terminal operators which could function as multiplications of their interests
- Enhancing the competitiveness by:
- improved accessibility by reducing bottleneck measures
- transferring of best practice rail and inland waterway transportation chains

- elaborating concepts for the intermodal security enhancement

Findings:

- Identification of trade/transport barriers between Central Europe and South-East Europe and measures to overcome
- Analysis of the transnational intermodal logistic chains
- Evaluation of transport security aspects
- Identification of the technical and organizational bottlenecks in the corridor and measures to overcome
- Visualization of bottlenecks in an IT tool, and for accessibility analysing of regions/terminals and intermodal flows,
- Missing liner services on FLAVIA corridor identification,
- Identification of transport infrastructure measures with high impact, and TEN-T recommendations - evaluated list for a Ministry Group, including prefeasibility studies for transport infrastructure.

Relevance for Corridor Study Activities

1. Identification of critical issues

   The bottlenecks and barriers were identified mostly from the operators, shippers and other stakeholders point of view, related to the administrative, infrastructure, employed personnel, technical equipment etc., including the rail interoperability;

2. Assessment of corridor measures

   The proposed measures were proposed for TEN-T corridors, and recommendations were proposed for a selected relevant Ministry Group, composed for representatives in all seven countries,

3. Gathering information for market study

   The data obtained from the project are useful data for market study and especially, they represent the valuable base for the estimation of market evolution

4. Identification of on-going/planned projects

   Identification of transport infrastructure measures with high impact, and TEN-T recommendations created the opportunity to the core and comprehensive TEN-T networks intermediate review

5. Assessment of investment strategy

14. UNECE TEM and TER Master Plan (2006-2010)

The United Nations Economic Commission for Europe (UNECE) Trans-European Motorways (TEM) and Trans-European Railways (TER) Project was a sub-regional cooperation among Central, Eastern and South Eastern European countries, whose scope was to develop a system of motorways and railways, linking the European Union's TEN-T Road and Railway Network with the road and rail systems of Eastern and South Eastern Europe.

Context

One of the main activities of this project was the elaboration of the "TEM and TER Master Plan", whose goals were the following:

- Evaluation and prioritization of infrastructure projects, together with their securing of funding.
- A consistent and realistic short, medium and long term investment strategy on the road and rail Backbone Networks in the wider TEM and TER region.
- The identification of important issues such as alternative scenarios of growth, infrastructure bottlenecks, missing links and border crossing issues.

Summary / Relevance for Corridor Study Activities

The original TEM and TER Master Plan was published in 2006, and included an extensive inventory of specific road and rail infrastructure projects for 21 countries. A revision of the Master Plan was carried out in 2009 and 2010, extending its coverage to 25 countries, and updating the project list and related figures. The exercise also revisited the bottlenecks, grouped under "capacity" and "condition" bottlenecks, missing links and border crossing issues.

Six countries belonging to the OEM corridor were included in the TEM and TER Master Plan study, namely, Bulgaria, Czech Republic, Greece, Hungary, Slovakia and Romania. To this end, the study can provide certain information, albeit outdated, with regard to key bottlenecks and border crossing issues, technical data on current infrastructure and as well as information on planned infrastructure projects, including project costs and financing in the above countries.

15. Sustrain Implement Corridor Study (Hamburg – Budapest)

Context

The transport research study "Sustrain Implement Corridor" (SIC) has been a result of an INTERREG IIIB CADSES co-financed project under the partnership of several Central European regions from Austria, Germany, and Czech Republic under the leadership of the Burgenland Provincial Government during the years 2004 and 2007.

Before the background of

- the goal of "creation and enlargement of several dynamic zones of global economic integration as an important instrument for accelerating economic growth in the EU", as set out as an objective of the European Spatial Development Perspective;
- the "promotion of integrated transport and communication concepts" to support the "polycentric development of the EU territory" as one of the three goals of European Spatial Planning;

The study aimed to assess and predict the socio-economic potential of linking the regions along the northern part of the Orient/East Med corridor (the former Pan-European Transport corridor IV) between Hamburg, Berlin, Praha, Wien, Bratislava and Budapest, in order to form a second economic core zone of European relevance.

Analysing various scenarios of transport infrastructure upgrades and network extensions based on selected new high-speed passenger rail lines, improved freight rail lines, and the completion of the motorway network until 2020, the study reports describe

- Description of the high-ranking interregional rail and road network 2004 and 2020

- Analysis of regional accessibility deficits
- Definition, substantiation and evaluation of investment measures (with high implementation probability) based on input of regional stakeholders
- Inter-regional traffic flows and scenario forecasts 2020 for passenger and freight through modelling based on overall demographic and economic development and based on travel time improvements, on NUTS 2/3 level.
- Cost Benefit Analysis of Investments (clustered in scenarios)
- Simulation of regional economic impacts of inter-regional travel/transport time improvements and from impacts of infrastructure construction and operation.

In SIC an econometric forecast model was used to estimate the impact of accessibility on the socioeconomic distribution of growth rates (employment, population, regional GDP and value-added, migration, education) up to 2020.

By condensing the results of the financial evaluation to be used in a bankable paper at financing institutions, the SIC project moreover illustrated ways in which investments can be implemented in a speedy manner despite public budget bottlenecks.

SIC Study Extension: High Speed Train link for Saxony and Europe

The report was issued in October 2006 on behalf of the Saxon Ministry of the Interior (Germany) as add-on study to the INTERREG IIIB project SIC.

It sets out the results of a comparative study of high speed rail systems in the corridor Berlin, Saxony, Praha, Wien, Bratislava and Budapest. It focuses on the comparative assessment of rail-bound high-speed systems along the pan-European Corridor IV on the basis of the technology variants "conventional high-speed railway line" and "Transrapid maglev system". The endpoints of the surveyed lines are Berlin in the north-west and Budapest in the south-east. In the German area (Free State of Saxony, Berlin, Brandenburg and Saxony-Anhalt) the survey focussed on direct connections from Berlin to Dresden via Berlin airport as well as two alternative routes from Berlin BBI Airport to Dresden via Leipzig on the one hand and Cottbus on the other hand, which served as a basis for a detailed analysis in view of travelling through the conurbations of Leipzig and Dresden.

Travel times were calculated and traffic forecasts made, the report then sets out a passenger forecast, operation concept and a C/B ratio evaluation. The report makes recommendations on an operational and economic point of view. The report recommends that the Transrapid maglev system is constructed.

Relevance for Corridor Study Activities

This study mainly addresses among others the topic of High Speed Rail Line Dresden – Praha and indicates potential socio-economic benefits of a strong rail backbone in the northern part of the Orient/East Med Corridor. With regard to the OEM Transport Market Study and the definition of the Corridor objectives, the results of SIC forecasts are delivering certain benchmarks of economic and transport development, especially the impact of improved inter-regional accessibility.

16. Detailed Design Study of the Lefkosia South Orbital Motorway

Background information

The Lefkosia South Orbital Motorway is an integral part of the Orient/East Med Corridor and constitutes the endpoint at the south eastern part of this Corridor.
In order to support the functionality of the Core Network Corridor including the elimination of bottlenecks and bridging missing links, pre-identified sections and projects were included in the CEF Regulation. These pre-identified sections and projects are expected to be prioritized in respect to financial aid in the field of TEN-T through the CEF Regulation.
It should be noted that the Lefkosia South Orbital Motorway was an integral part of the planned Motorway Network of Cyprus, even before the establishment of the Core Network Corridors concept.

Description of the action

The Lefkosia South Orbital, a core TEN-T network road, will form a ring road around the southern part of the capital city and will interconnect three motorways of the TEN-T network in the urban area of the District of Lefkosia (the Lefkosia-Lemesos Motorway to the south, the Lefkosia- Deneia Motorway to the west and the planned Lefkosia-Palaiochori Motorway to the south west). The resulting motorway network together with its interconnections to the urban and sub-urban areas of Lefkosia will facilitate the through traffic in the area and will cater for the traffic needs of nine municipalities and tens of communities.

The road scheme includes the design of a road network consisting of approximately 32 km of 4-lane motorway, a large number of 4-lane and 2-lane urban and rural roads totalling approximately 25 km, 16 grade-separated junctions together with service and link roads. The design includes cut and cover section, a number of underpasses and overpasses, tunnel and two viaducts.

The Study was managed / supervised by a dedicated multidisciplinary team of Engineers of the Public Works Department of the Ministry of Communications and Works. A Steering Committee coordinated by the Road Design Section of the Public Works Department and composed of representatives from the Town Planning and Housing Department, Control Department and Electromechanical Services Department monitors the progress of the Study. The Coordinator of the Committee is supported by various Sections of the Public Works Department (Traffic, Bridge, Tenders, Surveying and TEN-T Coordinators).
The Action is implemented through one contract according to the public procurement procedures. It is expected to be completed by 26 December 2015.

Relevance for Corridor Study Activities

In light of the above, the OEM study will take into consideration the above project in the Corridor's implementation plan.

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 8 – List of Stakeholders

5 December 2014

Content

Disclaimer

Note: Content of this Annex reflects the work status as of the 3rd Progress report.

1. Rail sector

1.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	IM	Austrian Federal Railways Infrastructure Company (ÖBB Infrastruktur AG)
	IRB	Schienen-Control GmbH
	IU	Austrian Federal Railways Cargo Company (Rail Cargo Austria AG)
	IU	Austrian Chamber of Commerce – Branch Association of Rail Operators (Schienenbahnen)
	IU	Austrian Federal Railways Passenger Transport (ÖBB Personenverkehr AG)
	O	Austrian Association of Rail Industry (Bahnindustrie.at)
BG	IM	State Enterprise National Company Railway Infrastructure
	IRB	Executive Agency "Railway Administration"
	IU	Bulgarian State Railways BDZ Holding EAD
	IU	Association of Bulgaria Railway Operators
CZ	IM	Railway Infrastructure Administration (SZDC)
	IRB	Rail Authority (DUCR)
	IU	Czech Railways (CD)
	IU	Association of Railway Companies
	O	Association of the Czech Railway Industry
DE	IM	DB Netz AG
	IRB	Federal Railway Authority (Eisenbahnbundesamt)
	IRB	Federal Network Agency (Bundesnetzagentur)
	IU	DB Schenker AG
	O	Railway Industry Association in Germany
EL	IM	ERGOSE S.A.
	IM	Hellenic Railways Organisation (OSE)
	IU	TrainOSE S.A.
	IRB	Regulatory Authority for Railways (RAS)
	IU	Association of International Freight Forwarders & Logistics Enterprises of Greece
HU	IM	MÁV Co.
	IM	GYSEV - Győr-Sopron-Ebenfurth Railways
	IM	Rail Capacity Allocation Office (VPE)
	IU	MÁV Hungarian State Railways Private Company by Shares
RO	IM	National Railway Company "CFR" SA
	IRB	Romanian Railway Authority
	IU	National Railway Freight Company CFR Marfa SA
	IU	Romanian Rail Operators Association
	IU	Romanian Association of Rail Industry
SK	IM	Railways of Slovak Republic
	IM	Railway Company Slovakia
	IU	Railway Company Cargo Slovakia
Transnational		RFC7 Management and Executive Boards
		Community of European Railway and Infrastructure Companies (CER)

MS	Stakeholder group	Stakeholder name
		RailNetEurope - Association of European Rail Infrastructure Managers and Allocation Bodies
		UNIFE - Association of the European Rail Industry
Transnational projects		Priority Project 22
		ACROSSEE Project

1.2. Railway sector stakeholders invited to attend the CF2, CF3 and CF4

MS	Stakeholder type	Stakeholder name
AT	IM	Austrian Federal Railways Infrastructure Company
BG	IM	State Enterprise National Company Railway Infrastructure
CZ	IM	Railway Infrastructure Administration
DE	IM	DB Netz AG
EL	IM	ERGOSE S.A.
	IM	Hellenic Railways Organisation
HU	IM	MÁV Co.
	IM	GYSEV - Győr-Sopron-Ebenfurth Railways
	IM	Rail Capacity Allocation Office (VPE)
RO	IM	National Railway Company "CFR" SA
SK	IM	Railways of Slovak Republic
Transnational		RFC7 Management & Executive Boards

2. Inland Waterway Sector and River ports

2.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	IM	via donau Austrian Inland Waterway Company
	IM	Port of Wien / Container Terminal
	O	Austrian Public Ports Association
BG	IM	Executive Agency for Exploration and Maintenance of the Danube River
	IM	Bulgarian Ports Infrastructure Company
	IU	Bulgarian River Shipping Company AD
	IU	Port of Vidin EOOD (port operator)
CZ	IM	Directorate of Waterways Czech Republic (RVC CR)
	IM	České přístavy a.s. (Ports Praha Holešovice and Mělník)
	IM	Port of Pardubice
	IM	Česko-Saské přístavy (Port of Děčín)
	IU	Czech Barge Union
	NA	State Shipping Administration (SPS CR)
	O	Association Shipbuilding Industry
DE	IM	Directorate General Waterways and Shipping (Headquarter & Branch Office East)
	IM	Hanover Ports
	IM	Magdeburg Port
	IM/IU	Braunschweig Port/ Port operations company Braunschweig
	O	Federal Association of German Inland Water Transport

MS	Stakeholder group	Stakeholder name
	O	Federal Association of Inland Ports
HU	IM	Budapest Freeport and Logistics Company Limited by Shares
	IM	Komárom Port Authority
	IU	Hungarian National Shipping Association
	IU	Association of Hungarian Inland Shipping Companies
	IU	MAHART Hungarian Shipping Company Limited by Shares
RO	IM	River Administration of Lower Danube Galati - state autonomous administrator
	IM	National Company for Danube Ports Administration (regional offices at Ports of Orşova and Calafat)
	IU	Romanian Association of Inland Ship Owners and Port Operators
	IU	"Drobeta" Port Operations Company
SK	IM	Waterborne Transport Development Agency
	IM	Slovak Shipping and Ports
	IM	Public Ports
TRs	O	Inland Navigation Europe (INE)
	O	European Barge Union (EBU)
	O	Pro Danube International
	O	European Federation of Inland Ports (EFIP)
	O	International Commission for the Protection of the Elbe

2.2. IWW stakeholders invited to attend the CF2, CF3 and CF4

MS	Stakeholder group	Stakeholder name
CZ	IM	Directorate of Waterways Czech Republic
	IM	Ceske přístavy a.s. (Ports Praha Holešovice and Mělník)
	IM	Port of Pardubice
	IM	Česko-Saské přístavy (Port of Děčín)
DE	IM	Federal association of inland ports
	IM	Magdeburg Port
	IM/ IU	Braunschweig Port / Port Operation
	IM	Hannover Ports

3. Maritime Sector and Seaports ports

3.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
BG	IM	Bulgarian Ports Infrastructure Company
	NA	Executive Agency Maritime Administration
	IU	Port of Burgas EAD (operator)
CY	NA	Cyprus Port Authority
	NA	Department of Merchant Shipping
	O	Cyprus Shipping Association
	O	Cyprus Shipping Chamber
DE	IM	Hamburg Port Authority
	IM	Rostock Port Authority
	IM	Rostock Port Development Company
	IM	Bremen Port Authority

MS	Stakeholder group	Stakeholder name
	IM	Lower Saxony Ports
	IM	Lower Saxony Ports - location Wilhelmshaven
	IM	JadeWeserPort Implementation Company
	NA	Ministry for Economics, Labour and Transport Lower Saxony
	IU	Hamburg Port and Logistics
	IU	Bremen ports
	O	German Association of Maritime Ports
	O	Hamburg Port Marketing
	O	Hanse Office Gemeinsame Vertretung der Freien und Hansestadt Hamburg und des Landes Schleswig-Holstein bei der Europaeischen Union
EL	IM	Piraeus Port Authority S.A.
	IM	Heraklion Port Authority S.A.
	IM	Igoumenitsa Port Authority S.A.
	IM	Thessaloniki Port Authority S.A.
	IM	Patras Port Authority S.A.
	NA	Ministry of Mercantile Marine
	NA	General Secretariat of Ports, Port Policy and Investments
	IU	Hellenic Ship-owners Association
	IU	Hellenic Short sea Ship-owners Association
	IU	Anek Lines
	IU	Minoan Lines
	IU	Superfast Ferries
	O	Hellenic Chamber of Shipping
	O	Hellenic Port Association
	O	Hellenic Chamber of Shipping
TRs	O	European Sea Ports Organisation

3.2. Maritime stakeholders invited to attend the CF2, CF3 and CF4

MS	Stakeholder group	Stakeholder name
BG	IM	Bulgarian Ports Infrastructure Company
CY	NA	Cyprus Port Authority
DE	IU	German Association of Maritime Ports
	IM	Rostock Port Authority
	IM	Bremen Port Authority
	IM	Lower Saxony Ports (Wilhelmshaven)
	IM	Hamburg Port Authority
	O	Hanse Office
EL	IM	Piraeus Port Authority S.A.
	IM	Heraklion Port Authority S.A.
	IM	Igoumenitsa Port Authority S.A.
	IM	Thessaloniki Port Authority S.A.
	IM	Patras Port Authority S.A.

4. Road Sector

4.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	IM	ASFINAG State Owned Motorway Enterprise
BG	IM	Road Infrastructure Agency
	IM	National Company Strategic Infrastructure Projects
	IU	Association of the Bulgarian Enterprises for International Road Transport and the Roads
CY	NA	Department of Road Transport
CZ	NA	Road and Motorway Directorate of the Czech Republic
	IU	Association of Road Carriers CESMAD BOHEMIA
DE	O	TOLL COLLECT GmbH
EL	IM	Attikes Diadromes S.A.
	IM	Olympia Odos S.A.
	IU	Hellenic Road Hauliers Association
	IU	Hellenic Association of Inland Freight Transport
	O	Road Safety Institute Panos Mylonas
HU	IM	Hungarian Public Road Non-profit Private Company Limited
	IM	AKA Alföld Motorway Concession Private Company Limited by Shares
RO	NA	Romanian Road Transport Authority
	IM	National Company for Highways and National Roads in Romania
	IU	National Union of Road Hauliers from Romania
	IU	Romanian Logistic Association - ARILOG Networking Supply Chain Professionals
SK	IM	National Motorway Company
	IM	Slovak Road Administration
	IU	Association of Road Carriers Slovak Republic
TRs	IM	Danube Bridge Vidin - Calafat AD
	O	European Association of the tolled motorways concessionaires
	O	LABEL project

4.2. Road stakeholders invited to attend the CF3

MS	Stakeholder group	Stakeholder name
AT	IM	ASFINAG State Owned Motorway Enterprise
BG	IM	Road Infrastructure Agency
	IM	National Company Strategic Infrastructure Projects
CY	-	-
CZ	NA	Road and Motorway Directorate of the Czech Republic
DE	-	-
EL	IM	Attikes Diadromes S.A.
HU	-	
RO	NA	Romanian Road Transport Authority
	IM	National Company for Highways and National Roads in Romania
SK	IM	National Motorway Company
	IM	Slovak Road Administration

5. Road-Rail Terminals

5.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	IM	Container Terminal Wien Nord-West
BG	IM	State Enterprise National Company Railway Infrastructure
	IM	Yana Intermodal Terminal
CZ	IM	Metrans, a.s. (Rail Hub Terminal Praha Uhříněves)
DE	IM	Container Terminal Wustermark
	IM	HavelPort Berlin
	IM	Terminal Großbeeren
	IM	Terminal Freienbrink
EL	IM	Thriassio Pedio Complex
	IM	Piraeus in-port rail terminal (for Ikonio -Thriassio link)
	IM	Piraeus Container Terminal (PCT)
HU	IU	Budapest Intermodal Logistics Centre (BILK)
	IU	Association of Hungarian Logistics Service Centres
RO	IM	Container Terminal Railport Arad
SK	IU	Container Terminal Dunajská Streda
	IU	Container Terminal Bratislava UNS

6. Airports and air transport sector

6.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	IM	Wien International Airport
BG	IM	Sofia Airport EAD
	NA	Directorate General Civil Aviation Administration
CY	IM	Hermes Airports Ltd (Larnaka and Paphos international airports)
	NA	Department of Civil Aviation
CZ	IM	Airport Praha-Růzyně
	IM	Brno Airport
	IM	Air Navigation Services of the Czech Republic
DE	IM	Airport Hamburg
	IM	Airport Berlin Brandenburg
	O	ADV Association of German Airports (Hamburg, Berlin, Bremen, Hannover, Leipzig-Halle)
EL	IM	Athina International Airport (AIA) Eleftherios Venizelos
	IM	Thessaloniki International Airport Makedonia
	IM	Heraklion International Airport
	IM	Hellenic Civil Aviation Authority (HCAA)
HU	IM	Budapest Airport Company by Shares
	IM	HungaroControl Pte. Ltd. Co.
RO	IM	Arad International Airport
	IM	"Traian Vuia" Timisoara International Airport
SK	IM	Bratislava Airport
TRs	O	Airports Council International Europe

MS	Stakeholder group	Stakeholder name
	O	European Civil Aviation Conference

6.2. Air stakeholders invited to attend the CF3

MS	Stakeholder group	Stakeholder name
AT	IM	Wien International Airport
BG	IM	Sofia Airport EAD
	NA	Civil Aviation Administration
CY	IM	Hermes Airports Ltd (Larnaka and Paphos international airports)
CZ	IM	Airport Praha-Růzyně
DE	O	ADV Association of German Airports (Hamburg, Berlin, Bremen, Hannover, Leipzig-Halle)
EL	IM	Athina International Airport (AIA) Eleftherios Venizelos
	IM	Thessaloniki International Airport Makedonia
	IM	Heraklion International Airport
	NA	Hellenic Civil Aviation Authority
HU	IM	Budapest Airport Company by Shares
RO	IM	"Traian Vuia" Timişoara International Airport
	IM	Arad International Airport
SK	IM	Bratislava Airport

7. Administrative sector

7.1. Identified stakeholders

MS	Stakeholder group	Stakeholder name
AT	NA	Austrian Federal Ministry for Transport, Innovation and Technology
	RA	Provincial Government of Lower Austria
	RA	Provincial Government of Burgenland
	MC/RA	Government of the City of Wien
BG	NA	Ministry of Transport, Information Technologies and Communications
	NA	Ministry of Regional Development
	NA	Ministry of Investment Planning
	RA	Regional Administration Vidin
	RA	Regional Administration Montana
	RA	Regional Administration Vratsa
	RA	Regional Administration Sofia
	RA	Regional Administration Sofia City
	RA	Regional Administration Blagoevgrad
	RA	Regional Administration Pazardzhik
	RA	Regional Administration Plovdiv
	RA	Regional Administration Stara Zagora
	RA	Regional Administration Haskovo
	RA	Regional Administration Sliven
	RA	Regional Administration Yambol
	RA	Regional Administration Burgas

MS	Stakeholder group	Stakeholder name
	RA	North-Western Planning Region
	RA	South-Western Planning Region
	RA	South-Central Planning Region
	RA	South-Eastern Planning Region
	RA	National Association of the Municipalities in the Republic of Bulgaria
	MC	Sofia Municipality
CY	NA	Ministry of Communications and Works
	NA	Department of Public Works
	NA	Ministry of Finance
CZ	NA	Ministry of Transport
	NA	State Fund for Transport Infrastructure
	RA	South Moravian Region
	RA	Olomouc Region
	RA	Usti nad Labem Region
	RA	Central Bohemian Region
	RA	Vysočina Region
	RA	Pardubice Region
	RA	Association of regions
	RA	Praha Municipal Region
	MC	Praha Municipality
	MC	Municipality of Statutory city of Brno
DE	NA	Federal Ministry of Transport and Digital Infrastructure
	RA	Saxon State Ministry for Economic Affairs, Labour and Transport
	RA	Ministry of Regional Development and Transport of the State of Saxony-Anhalt
	RA / MC	Senate Department for Urban Development and Environment of the State of Berlin
	RA	Ministry for Infrastructure and Agriculture of the State of Brandenburg
	RA	Ministry for Economic Affairs, Labour and Transport of the State of Lower Saxony
	RA	Ministry of Energy, Infrastructure and Regional Development of the State of Mecklenburg-Vorpommern
	RA	Senate for Environment, Construction and Transportation of the Free Hanseatic City of Bremen
	MC	Free Hanseatic City of Bremen, Senate for Economics, Labour and Ports
	RA	Ministry of Economy, Labour, Transport and Technology of the State of Schleswig-Holstein
	RA / MC	Department of Economics, Transport and Innovation of the Free and Hanseatic City of Hamburg
	RA	Joint Spatial Planning Administration for Berlin and Brandenburg
	RA	Transport Ministerial Conference of the German States
EL	NA	Ministry of Development, Infrastructure, Transport and Networks
	NA	Ministry of Development and Competitiveness
	NA	General Secretariat for Investment (NSRF)
	RA	Periferia Attiki

MS	Stakeholder group	Stakeholder name
	RA	Periferia Ipirou
	RA	Periferia Stereas Elladas
	RA	Periferia Peloponnisou
	RA	Periferia Thessalias
	RA	Periferia Dytikis Elladas
	RA	Periferia Kendrikis Makedonias
	RA	Periferia Kritis
	RA	Periferia Dytikis Makedonias
	RA	Union of Regions of Greece (EN.P.E)
	MC	Municipality of Athina
	MC	Municipality of Thessaloniki
HU	NA	Ministry of National Development
	NA	Transport Development Coordination Centre
	NA	National Transport Authority
	NA	Ministry for National Economy
	NA	State Audit Office
	NA	Hungarian National Asset Management Inc.
	NA	National Infrastructure Development Company Limited by Shares
	NA	Central Statistical Office
	NA	Ministry of Foreign Affairs of Hungary
	RA	Győr-Moson-Sopron County Government Office
	RA	Komarom-Esztergom County Government Office
	RA	Budapest County Government Office
	RA	Pest County Government Office
	RA	Bács-Kiskun County Government Office
	RA	Jász-Nagykun-Szolnok County Government Office
	RA	Csongrád County Government Office
	RA	Békés County Government Office
	RA	Association of Hungarian County Administrations
	RA	Association of County-right Towns
RO	NA	Romanian Government
	NA	Ministry of Transports
	NA	Ministry of Environment and Climate Changes
	NA	Ministry of Regional Development and Public Administration
	RA	West Region Development Agency
	RA	Regional Office for Cross-Border Cooperation Romania-Hungary
	RA	South - West Region Development Agency
	MC	Municipality of Arad City
	MC	Municipality of Timisoara City
	MC	Municipality of Craiova City
SK	NA	The Ministry of Transport, Construction and Regional Development
	RA	Bratislava Self-Governing Region
	RA	Trnava Self-Governing Region
	RA	Nitra Self-Governing Region
	RA	Association of self-governing regions (SK8)
	MC	Municipality of Bratislava City

7.2. Administrative sector stakeholders invited to attend the CF3

MS	Stakeholder group	Stakeholder name
AT	NA	Austrian Federal Ministry for Transport, Innovation and Technology
	RA	Provincial Government of Lower Austria
	RA	Provincial Government of Burgenland
	MC	City of Wien
BG	NA	Ministry of Transport, Information Technologies and Communications
	RA	North-Western Planning Region
	RA	South-Western Planning Region
	RA	South-Central Planning Region
	RA	South-Eastern Planning Region
	RA	National Association of the Municipalities in the Republic of Bulgaria
CY	NA	Ministry of Communications and Works/ Permanent Representation of Cyprus to the EU
CZ	NA	Ministry of Transport/ Permanent Representative of CZ to the EU
	RA	Association of regions
DE	NA	Federal Ministry of Transport and Digital Infrastructure
	RA	State Ministry for Economics, Labour and Transport, Saxony
	RA	Ministry of Regional Development and Transport, Saxony-Anhalt
	RA	Ministry for Economic Affairs, Labour and Transport Lower Saxony
	RA	Ministry of Energy, Infrastructure and Regional Development, Mecklenburg-Vorpommern
	RA	Senate for Economics, Labour and Ports, Bremen/ Senate for Environment, Construction and Transport, Bremen
	RA	Schleswig Holstein Ministry for Economy, Labour, Transport and Technology
	RA	Hamburg Authority for Economy, Transport and Innovation
	RA	Senate Department for Urban Development and Environment of the State of Berlin
	RA	Ministry for Infrastructure and Agriculture of the State of Brandenburg
	RA	Joint Spatial Planning Administration for Berlin and Brandenburg
EL	NA	Ministry of Infrastructure, Transport and Networks/Permanent Representation of Greece to the EU
	NA	Ministry of Development and Competitiveness
	RA	Union of Regions of Greece (EN.P.E)
HU	NA	Ministry of National Development
	RA	Association of Hungarian County Administrations
RO	NA	Ministry of Transports
	RA	West Region Development Agency
	RA	South - West Region Development Agency
	RA	Regional Office for Cross-Border Cooperation Romania-Hungary
SK	NA	Ministry of Transport, Construction and Regional Development

MS	Stakeholder group	Stakeholder name
	RA	Bratislava Self-Governing Region
	RA	Trnava Self-Governing Region
	RA	Association of self-governing regions (SK8)

8. Civil Society

8.1. Identified civil society stakeholders

MS	Stakeholder group	Stakeholder name
AT	CS	VCÖ - Transport Policy Club Austria
	CS	Worldwide Fund for Nature Austria
	CS	National Park Administration of Danube Wetlands in Lower Austria
	CS	National Chamber of Commerce
	CS	National Chamber of Workers and Employees (Consumer Protection, Commuters)
	CS	Federation of Austrian Industries
	CS	Euro Region CENTROPE
BG	CS	Bulgarian Society for the Protection of Birds part of BirdLife International
	CS	WWF Bulgaria
	CS	Ecological Association "Za Zemiata"
	CS	Bulgarian Chamber of Commerce and Industry
	CS	Bulgarian Industrial Association
	CS	Euro-region Middle Danube - Iron Gates + Euro-region Danube 21 (BG/RO/SRB)
	CS	Euro-region Nishava (BG/SRB)
	CS	Euro-region Belasica (BG/EL/MK)
	CS	Euro-region Polis - TrakiaKent - RAM Trakia
	CS	Euro-region Morava-Pcinija-Struma (BG/MK/SRB)
CY	CS	Cyprus Chamber of Commerce and Industry
CZ	CS	Transportation Federation
	CS	Chamber of Commerce
	CS	Confederation for Industry and Transport
	CS	Association for Infrastructure Development
	CS	Euro-region Pomoravie
	CS	Euro-region Elbe/ Labe
	CS	Euro-region Silesia
	CS	Euro-region Centrope
	CS	Euro-region Glacensis
DE	CS	Association of German Transport Companies
	CS	Friends of the Earth Germany
	CS	Association of German Chambers of Commerce and Industry
	CS	Federal Association of German Industry e.V.
	CS	Euro-region Elbe/ Labe
EL	CS	GREENPEACE Greek Office
	CS	WWF HELLAS
	CS	Society for the Environment and National Heritage
	CS	Ecocity

MS	Stakeholder group	Stakeholder name
	CS	Athina Chamber of Commerce and Industry
	CS	Thessaloniki Chamber of Commerce and Industry
	CS	Piraeus Chamber of Commerce and Industry
	CS	Economic Chamber of Greece
	CS	Technical Chamber of Greece
	CS	Directorate of European Union Issues and International Affairs
	CS	Hellenic Chambers Transport Association
	CS	Hellenic Association of Consulting Firms (HELLASCO)
	CS	Central Union of Municipalities and Communities of Greece
HU	CS	Institute for Transport Sciences
	CS	The Clean Air Action Group (CAAG)
	CS	Hungarian Chamber of Commerce and Industry
	CS	Institute for Transport Sciences Non-Profit ltd (non-admin)
RO	CS	Save Danube and Delta Association
	CS	ALMA-RO Association
	CS	Romanian Environmental Association
	CS	ECO-CIVICA
	CS	Romanian Chamber of Commerce, Industry and Agriculture (National Chamber and Arad, Timiş and Dolj county chambers)
SK	CS	Friends of the Earth
	CS	Slovak Chamber of Commerce and Industry
	CS	Euro-region Pomoravie (Zahorie)
	CS	Euro-region Centrope
	CS	Danube Euro-region Triple Alliance
TRs	CS	EUROCITIES is the political platform for major 130 European cities
	CS	Network of Protected Landscapes along Danube River
	CS	European Liaison Committee of Common Market Forwarders
	CS	Chamber Union Elbe Odra

Study on Orient / East-Med TEN-T Core Network Corridor

Final Report

Annex 9 – Bottleneck Mitigation Analysis

5 December 2014

Table of content

Tables

Disclaimer

Abbreviations

bln	Billion
CBA	Cost/Benefit Analysis
CNC	Core Network Corridor
CNG	Compressed Natural Gas
DG MOVE	European Commission – Directorate General for Mobility and Transport
EC	European Commission
EIA	Environmental Impact Assessment
ERTMS	European Rail Traffic Management System
ETCS	European Train Control System
EU	European Union
GDP	Gross Domestic Product
GSM-R	Global System for Mobile Communications - Rail
IM	Infrastructure Manager
IU	Infrastructure User
IRU	International Road Union
IWW	Inland waterway
Jct	Junction
km	kilometre
LPG	Liquefied petroleum gas
m	metre
mln	Million
MC	Major Cities & agglomerations
MS	Member States of the European Union
NA	National Authority
NUTS	Nomenclature of statistical territorial units (in EU)
O	Other (stakeholders)
OEM	Orient / East-Med (Corridor)
PAX	Passengers
p.a.	per year / annual
PP	Priority Project
RA	Regional Authority
RFC	Rail Freight Corridor
TEN-T	Trans-European Transport Network
TMS	Multimodal Transport Market Study
Ton-km	tonne-kilometre

Country Codes after ISO 3166:

AT	Austria
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
EL	Greece
HU	Hungary
RO	Romania
SK	S

1. Bottleneck Mitigation Analysis

1.1. Introduction

Following the identification of the main physical, technical, operational, and administrative barriers to the efficient and seamless operation of the OEM corridor, a review of the existing and planned infrastructure projects was carried out on a modal basis, with the scope to develop a practical and realistic deployment plan for removing the above barriers. Reference is made to the chapter 7.1 – Plan for the removal of barriers and to enhance efficient multimodality.

The analysis presented focuses on summarizing in table format the main bottlenecks identified per transport mode in each Corridor country against the infrastructure projects (works or studies) to alleviate these (should these exist; if not, these are recommended). The list of existing and/or planned infrastructure projects was based on national sources presented in Annex 5. In each table, the column "Study/Works" indicates whether the identified bottleneck is addressed by a study or by works, while the "End Date of Works" column indicates the expected year the bottleneck would be fully mitigated by the completion of the relative works.

1.2. Germany

Table 1: Bottlenecks and foreseen mitigation projects - Germany

#	Mode	Section/ Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	Hamburg node	Technical	Works	2015 / partly undefined	Works partly completed (Upgrading measures to improve traffic flows and capacity for passenger and freight transport)
2	Rail	Hamburg/ Bremen - Hannover	Physical	Study/ Works	n.a.	Study in progress (Studies and analysis for routing of new line / line segments to relief existing line in order to improve traffic flows and capacity for passenger and freight transport)
3	Rail	Dresden - Praha	Physical	Study	2015	Study in progress (Planning of construction of a new High-Speed line (section Heidenau - Chabarovice))
5	Rail	Wilhelmshaven – Oldenburg	Physical	Works	2022	Works in progress (railway double -tracked, electrified, upgrade to 160 km/h)
65	Rail	ETCS	Operational	Works	after 2030	Works in progress (Implementation of ETCS)
7	Road	Weißensee – Interchange Pankow	Technical	Works	2015	Works in progress (Extension of motorway)
8	Road	Interchange Potsdam – Interchange Nuthetal	Technical	Works	2020	Works scheduled
9	Road	Interchange Pankow - Interchange Havelland	Technical	Works	n.a.	Works not scheduled yet (Extension of motorway)
10	Road	Bremen Strom	Physical	Works	n.a.	Works in progress

#	Mode	Section/ Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
		- Bremen Gröpelingen incl. Weser Tunnel				(New construction of motorway)
11	Road	Bremen Kattenturm – Bremen Airport-Stadt	Physical	Works	n.a.	Works planned (New construction of motorway)
12	Road	Corridor Programme Road 1 (CRP1)	Technical	Works	2020	Actions to improve safety and security by providing appropriate parking space for trucks
13	Inland Waterways	Hamburg - Border DE/CZ	Technical	Study	n.a.	Study in progress (Overall concept for future actions "Gesamtkonzept Elbe")
14	Inland Waterways	Ship lift Scharnebeck	Technical	Works	n.a.	Works not scheduled yet (Construction of additional lock planned, but financing is not secured)
15	Inland Waterways	Bremen – Minden (Mittelweser)	Technical	Works	2015	Dredging works ongoing, Fairway improvement under construction, Locks construction
16	Maritime	Hamburg	Technical	Works	2018	Works in progress (New construction of Kattwyk rail bridge)
17	Maritime	Hamburg	Technical	Works	2018	Works scheduled (Reconstruction of freight station Waltershof 2nd phase)
18	Maritime	Hamburg	Technical	Works	2016	Works scheduled (New construction of Reihersteig lock)
19	Maritime	Bremerhaven	Technical	Works	2015	Works in progress (Expansion of capacity in the 'Kaiserhafen' and 'Insumer Deich' shunting yards)

Critical issue
n.a.: unknown

Railway

The bottlenecks in the rail network along the OEM Corridor in Germany are mainly related to the seaport-hinterland transport from/to the Port of Hamburg, Bremen, Bremerhaven and Wilhelmshaven. Additional projects addressing rail bottlenecks within the Ports of Hamburg and Bremerhaven, e.g. upgrade of the rail capacity in shunting yards, are listed as seaport projects. The railway line between Dresden and Praha is likely to become a future bottleneck, particularly due to growing traffic volumes in hinterland transport. Also, there is a need to improve the quality of international passenger services from/to the Czech Republic. Due to the cross-border aspect of this project, this is considered as critical issue. Another issue is the implementation of ETCS in Germany, which is described in detail in section 7.2.

Road

The analysed bottlenecks in the German road network, mainly located in urban agglomerations and related to capacity issues through the overlay of international and regional traffic flows, are widely tackled by the projects listed in the above table. The main objective of all projects is to increase capacity on existing road sections in order to meet future requirements of traffic demand. Additionally the Corridor Programme Road project aims to improve safety and security along the road network by providing appropriate parking space for trucks.

Inland waterways

The main bottleneck along the German inland waterway network of the OEM corridor is the River Elbe. Due to the international importance of linking the Czech Republic to the Port of Hamburg, while also being the country's waterway gateway to world markets, this bottleneck is considered as a critical issue (cross-border). Furthermore, the ship lift Scharnebeck, located on the Elbe-Seitenkanal near Lüneburg, needs to be extended by a new lock meeting the dimensions of 110 m long barges in order to improve quality of inland waterway transport. Although planning for this project exists, there is at present a lack of financing hindering its realisation.

Maritime

The projects listed in the above address rail and waterway bottlenecks in the Ports of Hamburg and Bremerhaven. The main objective is to increase capacity and improve operations. There are interrelations to projects listed for other modes, especially with rail infrastructure upgrading measures in the Hamburg node.

1.3. Czech Republic

Table 2: Bottlenecks and foreseen mitigation projects – Czech Republic

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	Praha Vysocany – Lysá nad Labem 2nd part	Technical	Study/ Works	2021	Study in progress (optimization of the line)
2	Rail	Břeclav	Physical	Works	2015	Works in progress (Reconstruction of railway junction)
3	Rail	Choceň-Ústí nad Orlicí	Operational	Study	2023	Study in progress (Modernization of railway line to remove bottlenecks)
4	Rail	Česká Třebová	Technical	Study/ Works	2021	Study in progress (Modernization of junction to remove bottlenecks)
5	Rail	Pardubice	Technical	Study/ Works	2022	Study in progress (modernization of junction to remove bottlenecks)
6	Rail	Praha Airport connection	Physical	Study/ Works	2022	Study in progress (Construction of new line to airport)
7	Rail	Praha – Lovosice/-Litoměřice	Technical	Study/ Works	2023	Study in progress (Construction of high speed rail between Dresden and Praha)
8	Rail	Pardubice – Kolín	Physical	Works	2020+	Works not scheduled yet (Remove bottleneck by configuration of railway station)
9	Rail	Praha Freight Bypass	Technical	Study/ Works	2016/2017	Study finalised (Remove bottlenecks creating speed drops)
11	Rail	ERTMS on entire network	Operational	Works	2023	Works scheduled
12	Rail	Train length	Technical/ Operational	n.a.	n.a.	*Recommended (Improvement of infrastructure and operational concept to allow trains of 740m length)*
13	IWW	RIS on entire network	Operational	Works	2023	Works scheduled (Water transport management

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
						projects, equipment for increasing reliability of waterways)
14	IWW	Mělník-Praha (Vltava)	Technical	Study/ Works	2018	Study in progress (elimination of bottlenecks)
15	IWW	Ústí nad Labem – border CZ/DE (Elbe)	Technical	Study/ Works	2022	Study of projects for stabilisation of navigation depths (incl. decision on Děčín Lock Weir Complex)
16	IWW	Mělník – Pardubice (Elbe)	Technical	Study/ Works	2019	Study of projects for extension of waterway to Pardubice, works on enhancements of parameters and performance conditions (incl. Přelouč lock)
17	Road	D8 Lovosice – Ústí n.L.	Technical	Works	2016	Works in progress (Construction of remaining missing motorway section -6.4 km)
18	Road	R1 Praha Motorway Ring	Technical	Works	n.a.	Works scheduled (Construction resp. upgrade of Ring road around Praha)
19	Road	R52 Pohorelice – Border AT/CZ	Technical	Works	n.a.	Works not scheduled yet (Construction of missing cross-border section on Brno – Wien motorway)
20	Road	D1 Mirošovice - Brno	Capacity deficiency	Works	2022	Works scheduled (Alleviating bottlenecks by resolving capacity deficiencies)
21	Road	ITS	Operational	Works	2023	Works in progress (Introduction and development of ITS for road transport on corridor roads, incl. Operation or toll system)

Critical issue; n.a.: unknown

Railway

Railway infrastructure projects that are either on-going or planned in the Czech Republic will eventually address the main bottlenecks identified in the country's rail network:

- Gaps and deficiency
- Non-compliant parameters
- Insufficient capacity within the railway network

Inland waterway

Bottlenecks in waterway infrastructure are identified with regard to the following:

- Deficiency due to incomplete network, network capacity deficiencies
- Deficiencies due to con-compliant waterway parameters
- Port infrastructure capacity deficiencies
- Deficiency due to navigation fluency and safety

Deficiencies are identified from the point of view of TEN-T completeness. The waterway network capacity deficiency is based on the actual technical and operating conditions. The Czech Sector Transport Strategies 2nd phase foresee for mitigation measures for alleviating the above bottlenecks.

Road

All known technical bottlenecks will be mitigated during the next years. In the case of R1 Praha Ring Motorway (Start 2017) and R52 Pohorelice - Border AT/CZ, no envisaged finalization date is disclosed. A number of projects address capacity bottlenecks along the Czech motorway D1, which is the main road artery of the Czech Republic.

Traffic Management Systems

The deployment of ITS, ETCS and RIS are addressed through the Czech Sector Transport Strategies 2nd phase and will be implemented until 2022/2023.

1.4. Slovakia

Table 3: Bottlenecks and foreseen mitigation projects - Slovakia

#	Mode	Section/Node	Bottleneck Type	Study /Works	End Date (of Works)	Status/Project Information
1	Rail	Kúty-Bratislava	Operational	Study	n.a.	Study in progress (optimization of the line)
2	Rail	Bratislava node	Physical / Technical	Study/ Works	2021	*Feasibility Study in progress (Increase of capacity at Bratislava node on N-S direction, Airport link, Upgrades of stations)*
3	Road	Border CZ/SK-Bratislava	Technical	Works	2016/2018	Works ongoing (Parking facilities, ITS)
4	Road	Motorway D2 Bratislava-Stupava	Technical	Study	n.a.	Study planned (Capacity upgrade)

Critical issue
n.a.: unknown

Railway

The development and operability of the rail transport route is ensured by the Railway Manager. The essential vision of the operational use of the railway network is to increase the volume of rail transport. The modernization of selected rail-lines including the Bratislava Node will increase the efficiency of rail transport.

Road

Road transport represents the highest share of freight and passenger transport volume in Slovakia. The projects will pursue the achievement of the following specific objectives:

- Increase of road traffic safety
- Reduction of noise
- Reduction of time losses
- Creation of the conditions for enhance competitiveness of regions

1.5. Austria

Table 4: Bottlenecks and foreseen mitigation projects - Austria

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	all in AT	Operational (Non-compliant train length of 650 m instead of	-	n.a.	*Recommended (Issue is solvable with operational concepts)*

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
			740m)			
2	Rail	Wien - Hegyeshalom	Operational (Installed ETCS L1 out of operation)	Study	n.a.	Study in progress (ETCS L2 deployment implemented after 2019)
3	Rail	Wien Node	Capacity	Works	2027	Works scheduled (Optimization of Rail Freight Lines from/to Wien Central Marshalling Yard (Wien Zvbf); Extension Wien Erdberger Lände).
4	Road	A5 Nord Autobahn, Schrick – Drasenhofen (AT/CZ border), 34 km	Technical (2014: no level-free expressway)	Works	2018/ 2030	Works scheduled (Construction of full 2x2 lanes depending on the progress of the adjacent Czech motorway project R 52. Implementation delays through court appeals are possible.)
5	Road	A5 Poysbrunn - Border AT/CZ Drasenhofen / Mikulov Core Network	Technical	Works	2018	Works scheduled (Construction of motorway)
6	Road	S1 Wien Motorway Ring, Schwechat – Groß Enzersdorf, Danube Tunnel	Technical (2014: existing level-free expressway bypass S2 and A23 experiences capacity limit)	Works	2025	Works scheduled (Project is very expensive, 1500 MEUR, and disputed. Implementation delays through court appeals are possible.)
7	Road	all in AT	Operational (missing interoperability of electronic road tolls with CZ, SK, HU, SI)	Study	n.a.	Study in progress (REETS TEN study is ongoing for Motorway Networks AT, DK, FR, DE, IT, PL, ES 2013-2015).
9	Airport	Wien Airport	Operational (2014: no clean fuels for aircrafts available)	-	n.a.	*Recommended Issue can be solved on demand-driven development until 2030 with certain investment at fuel tanks.*

n.a.: unknown

Railway

Physical or technical bottlenecks do not exist in the rail network along the OEM Corridor in Austria. To improve rail operations, a project idea is developed at the Austrian Rail Infrastructure Manager to introduce stopless trains at the border crossing points of Hegyeshalom (AT/HU; for freight and passenger trains) and Breclav (AT/CZ, for freight trains). The railway line between Wien and the Hungarian border and the Wien node might become a future capacity bottleneck due to growing cross-border freight traffic volumes, which might become due to its cross-border relation a Critical issue of the Corridor. Projects such as the optimization of rail freight lines around Wien are planned to be implemented until 2027. The ETCS L2 deployment on the Wien – Hegyeshalom line until 2019 is a project solving the operational bottleneck, which was caused by the decommissioning of the previously operated ETCS L1.

Road and ITS

One bottleneck in the Austrian road network and associated projects is related to the cross-border sections (A5 / R52) Wien – Brno (CZ). A further bottleneck is covered by the disputed new construction of the Wien Eastern Motorway bypass, mainly serving the international traffic on the North-South direction. The main objective of all projects

is to increase capacity on existing road sections in order to serve expected future road traffic demand. Another operational bottleneck is the missing interoperability of on-board units for freight car road tolling that are compliant to systems in Central European countries (Slovakia, Czech Republic, and Hungary).

Clean Alternative Fuels

The projects listed above address the availability of alternative clean fuels at airports (for aircraft) and ports (for IWT ships). Its objective is to improve operation of vehicles with cleaner fuels, such as LPG, CNG and similar. The full availability of such fuels for all relevant modes is deemed a result of market-driven development until 2030, whereas a governmental strategy deemed recently not necessary.

1.6. Hungary

Table 5: Bottlenecks and foreseen mitigation projects - Hungary

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Road	M15 Border SK/HU - Győr	Capacity	Works	2018	Works planned
2	Road	M0 Budapest Ring Motorway	Capacity	Study/ Works	2023	Works planned
3	Rail	Borders AT/SK/HU - Border HU/RO	Technical (ERTMS)	Works	2018	Works under construction (ETCS + GSM-R deployment)
4	Rail	Szolnok – Szajol - Gyoma – Bekescsaba - Lökösházа	Technical	Works	2016/19	Works under construction (line upgrade), works planned
5	Rail	Budapest (Southern Railway danube bridge)	Capacity	Works	2018	Works planned (rehabilitation and capacity upgrade of bridge)
6	Rail	Tata – Biatorbagy	Technical	Works	2020	Works planned (rehabilitation of railway line)

Critical issue
n.a.: unknown

1.7. Romania

Table 6: Bottlenecks and foreseen mitigation projects – Romania

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	Border HU/RO – Curtici – Arad	Technical, operational and interoperability	Works	2017	Works in progress
2	Rail	Arad - Caransebes	Technical and operational	Study	n.a.	Financing for CBA and FS existing, feasibility study will be tendered by 2015
3	Rail	Caransebes - Craiova	Technical and operational	Study	n.a.	Need of feasibility study identified and tentatively planned
4	Rail	Craiova - Calafat	Technical and operational	Study	2025	Study finalised (Planned and preparations are under way; Concept design study is subject of tendering end date is tentative and subject of availability of financial funds)
5	Road	Border HU/RO – Arad Motorway	Technical and operational	Works	2014	Works in progress

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
		construction				
6	Road	Timisoara - Lugoj Motorway construction	Technical and operational	Works	2019	Works in progress
7	Road	Lugoj - Craiova	Technical and operational	Study	2030	*Recommended (Urgent need for feasibility study identified and tentatively planned)*
8	Road	Drobeta T. Severin - Calafat	Technical and operational	Study	n.a.	Works scheduled (Planned and preparations are under way; end date is tentative and subject of financial application)
9	RRT	Craiova	Operational & interoperability issues	n.a.	n.a.	*Recommended (Existing terminal with very limited capacity; FS for selecting new location is needed)*
10	RRT	Timisoara	Operational & interoperability issues	n.a.	n.a.	*Recommended (Existing terminal with very limited capacity; FS for selecting new location is needed)*

Critical issue

n.a.: unknown

The Romania 2020 Strategy, as depicted in the Preliminary Report on the General Transport Masterplan, lists a number of committed highway schemes that further extend the motorway network, as well as a considerable investment in railways through improvements in core network rail corridors to 160kph operation, rolling stock improvements, and station enhancements. There are also improvements to waterways and ports, which affect freight traffic, and relatively small scale improvements to airports.

Railway

The situation of on-going or planned railway infrastructure projects along the OEM Corridor section in Romania is not going to solve the main bottlenecks identified in the country's rail network in the short term. Critical technical, operational and interoperability bottlenecks are still not addressed by projects for more than 75% of the OEM Corridor rail section in Romania. Lack of funding, the expected high financial investment costs and the large number of on-going projects around Romania, delay the start of the necessary planning and related feasibility studies.

Road

The completion of the on-going road projects along the Romanian road network belonging to the OEM corridor is expected to relieve most of the current bottlenecks by year 2020. The only exception is the completion of the missing motorway/express road section from Lugoj to Drobeta Turnu Severin, for which there is no recent study or project planned.

RRTs

The intermodal transport in Romania is underdeveloped. As part of the Intermodal Transport Strategy, studies will be carried out on the identification and analysis of new locations for the construction of a new terminal in Timisoara. The proposed facility includes the development of a storage platform with a maximum floor area of 10

acres, a rail terminal connection, connecting utilities and necessary road infrastructure. The location and financing are still subject of discussion.
Existing terminals in Craiova and Timisoara are owned by the national freight rail operator, CFR Marfa, which is in the process of being privatised and it is anticipated that the private sector will take over the responsibility of updating rolling stock, maintenance and provision of associated infrastructure.

1.8. Bulgaria

Table 7: Bottlenecks and foreseen mitigation projects – Bulgaria

#	Mode	Section/Node	Bottle-neck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	Vidin-Brusartsi/ Medkovets	Technical and operational	Works	2020	Works scheduled (Planned and preparations are under way; end date is tentative and subject of financial application)
2	Rail	Brusartsi/ Medkovets– Ruska Byala	Technical and operational	Works	2025	Works scheduled (Planned and preparations are under way; end date is tentative and subject of cost optimisation)
3	Rail	Ruska Byala-Sofia/ Stolnik	Technical and operational	Works	2025	Works scheduled (Planned and preparations are under way; end date is tentative, subject of cost optimisation and availability of financial funds)
4	Rail	Sofia Railway node	Operational	Works	n.a.	Works not scheduled yet (Planned and preparatory studies are under way; works schedule is subject of availability of financial funds)
5	Rail	Sofia-Radomir	Technical and operational	Works	n.a.	Works not scheduled yet (Planned with unknown staring date; works schedule is subject of availability of financial funds)
6	Rail	Radomir-Kulata	Technical and operational	Works	n.a.	Works not scheduled yet (Concept design study is under preparation)
7	Rail	Sofia-Elin Pelin	Technical and operational	Works	2020	Works scheduled (Planned and preparations are under way; end date is tentative and subject of financial application)
8	Rail	Elin Pelin-Septemvri	Technical and operational	Works	2020	Works scheduled (Planned and preparations are under way; end date is tentative and subject of financial application)
9	Rail	Septemvri-Plovdiv	Technical and operational	Works	2015	Works in progress (technical and operational bottlenecks will be relieved)
10	Rail	Dimitrovgrad-Svilengrad	Technical and operational	Works	2015	Works in progress (technical and operational bottlenecks will be relieved)
11	Rail	Plovdiv railway node	Operational	Study	2015	Study in progress (Feasibility study is under preparation; works schedule is subject of FS results and availability of financial funds)

#	Mode	Section/Node	Bottle-neck Type	Study/ Works	End Date (of Works)	Status/Project Information
12	Rail	Plovdiv-Burgas	Technical and operational	Study/ Works	2020	Works in progress (technical bottlenecks will be partially relieved (some sections only)
14	Rail	Burgas railway node	Operational	Works	n.a.	Works not scheduled yet (Planned with unknown date; works schedule is subject of availability of financial funds)
15	Rail	Mihaylovo-Dimitrovgrad	Technical and operational	Study	n.a.	Study not scheduled yet (Need of feasibility study identified and tentatively planned)
16	Road	Vidin-Montana	Operational	Works	n.a.	Works not scheduled yet (Planned with unknown date)
17	Road	Montana	Physical (lack of by-pass road)	Works	2015	Works in progress (construction of a dual-carriageway road)
18	Road	Mezdra-Botevgrad	Operational	Works	n.a.	Study planned (end date is tentative and subject of availability of financial funds)
19	Road	Sofia Ring Road Northern Arch	Operational	Works	2014	Works in progress (Operational bottlenecks will be partially relieved (some sections only)
20	Road	Dupnitsa-Blagoevgrad	Operational	Works	2015	Works in progress (operational bottlenecks will be relieved)
21	Road	Blagoevgrad-Simitli	Operational	Works	2020	Works scheduled (tender procedure for selection of contractor)
22	Road	Simitli-Kresna	Technical and operational	Works	2021	Works scheduled (Planned and preparations are under way; the end date is tentative and subject of availability of financial funds; very difficult terrain conditions along Kresna gorge and very high investment costs)
23	Road	Kresna-Sandanski	Operational	Works	2021	Works scheduled (tender procedure for selection of contractor)
24	Road	Sandanski-Kulata	Operational	Works	2015	Works in progress (operational bottlenecks will be relieved)
25	Road	Orizovo-Dimitrovgrad	Operational	Works	2015	Works in progress (operational bottlenecks will be relieved)
26	Road	Dimitrovgrad-Harmanli	Operational	Works	2014	Works in progress (operational bottlenecks will be relieved)
27	Maritime	Port of Burgas	Operational	Works	2015	Works in progress (Implementation of VTIMS)
28	RRT	Plovdiv	Operational &interoperability issues	Works	2015	Works in progress (Construction works for new RRT)
29	RRT	Sofia	Operational & interoperability issues	n.a.	n.a.	*Recommended (Existing terminal with very limited capacity; FS for selecting new location is needed)*
30	Air	Sofia	Intermodality	Works	2015	Works in progress (Construction of metro sec-

#	Mode	Section/Node	Bottle-neck Type	Study/ Works	End Date (of Works)	Status/Project Information
						tion to link the Airport of Sofia with the Central Rail Station)

Critical issue

n.a.: unknown

Railway

The railway infrastructure projects along the OEM Corridor section in Bulgaria that are either on-going or planned will eventually address the main bottlenecks identified in the country's rail network, which are mainly related to compliance with infrastructure requirements set in Regulation 1315/2013. However, the actual implementation depends on different conditions, the most important of which being the availability of financing. This is particularly valid for the Vidin – Sofia – Kulata line that runs for most of its length along difficult terrain conditions, which – depending on the requirements for the line – results in significant investment costs that could hardly be justified by the relatively low (long-distance/international) traffic levels.

The same applies to the Elin Pelin-Septemvri section along the Sofia – Plovdiv line. The investment costs for this section are very high due to similar reasons (mountainous area with very steep gradients, need of helper locomotive for heavy freight trains, low speed and short sidings). Although the passenger traffic between the two biggest Bulgarian cities of Sofia and Plovdiv would bring significant economic benefits, the financial investment costs involved are very high and may postpone the implementation of the project. This would not only hamper the long-distance international traffic, but would also prevent the benefits from Septemvri-Plovdiv-Svilengrad-TR border.

Road

The completion of the on-going road projects along the Bulgarian road network belonging to the OEM corridor is expected to relieve most of the current bottlenecks by year 2015. The most important exception is the completion of the missing motorway section from Blagoevgrad to Sandanski along the Struma motorway that links Sofia with the EL border. In August 2014, the Bulgarian Government launched a tender procedure for the detailed design and implementation of construction works for the Blagoevgrad – Krupnik (17 km) and Kresna – Sandanski (23 km) sections (Lots 3.1 and 3.3 of Struma Motorway), indicating that the Bulgarian government does not consider these sections critical.

However, the middle section Krupnik – Kresna (with total length of 21 km) is very difficult from a technical, operation, construction and environmental point of view. It runs along Kresna gorge and crosses a NATURA 2000 preserved area with a 15.5 km long tunnel. Very high investment costs as well as environmental, construction, operation, and other risks make this particular section critical. Similarly to Sofia – Plovdiv – Svilengrad railway line, non-completion of this relatively short but very important section would hinder the benefits acquired along the other Lyulin and Struma motorway sections, funded in the 2007-2013 period.

Construction works for upgrading the existing Vidin – Montana and Botevgrad – Mezddra 2-lane road sections into express road are planned, but no fixed implementation timeschedule is set.

RRTs

Intermodal transport is underdeveloped in Bulgaria. This is related in part to the general lack of RRTs. A new RRT is being constructed in the area of Plovdiv and will be

completed (and put in operation) in 2015. In the OP Transport 2007-2013, a new terminal in Sofia is planned to address the (very limited) capacity of the existing one, which is exhausted, while its location in the city borders does not provide for extension. The plans were not implemented due to land acquisition problems, imposing the need to study and estimate the need of a new RRT at a new location.

1.9. Greece

Table 8: Bottlenecks and foreseen mitigation projects - Greece

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Rail	Promahonas – Thessaloniki	Technical/ (Cross-border)	Study	2020	Study in progress (Upgrade and electrification/ remove operational bottleneck related to interoperability with rail network of Bulgaria).
2	Rail	Domokos – Tithorea	Technical	Works	2017	Works in progress (Construction of new line)
3	Rail	Rododafni-Rio	Physical	Works	2017	Works in progress (Construction of new line)
4	Rail	SKA-Inoi	Technical	Works	n.a	Study in progress (Upgrade and electrification)
5	Rail	Rio-Patras	Physical	Works	2022	Study in progress (Construction of new line expected to start in 2017).
6	Rail	Entire PATHE/P axis	Operational	Works	2017	Works in progress (Deployment of ETCS Level 1 and GSM-R modern radio coverage system)
7	Rail	Igoumenitsa-Ioannina-Kalambaka	Physical	n.a.	n.a.	*Recommended (Missing connection: a number of studies finalised, project not considered priority until 2020)*
8	Rail	Kiato - Aigio (Rododafni)	Technical	Works	2017	Works in progress (Construction of new line)
9	Road	A1 Skotina–Evangelismos	Physical	Works	2015	Works in progress (Construction of motorway)
10	Road	A1 Raches-Lamia	Physical	Works	2014	Works in progress (Construction of motorway)
11a	Road	A8 Korinthos-Patras	Technical	Works	2015	Works in progress (Construction of motorway)
11b	Road	A25 Strymoniko – Border BG/EL	Physical	Works	2015/n.a	Works in progress Strymoniko – Petritsi, (Construction of motorway) Petritsi – Border missing
12	Road	Entire corridor	Technical	-	-	*Recommended Sufficient truck parking areas along the corridor roads.*
13	Road	Entire corridor	Technical/Operational	-	-	*Recommended Availability of clean fuels by 2030.*
14	Road	Entire corridor	Technical/Operational	-	-	*Recommended Interoperability of road tolling systems for trucks.*
15	Maritime	Port of Thessaloniki	Operational	Works	2015	Works scheduled (Rail connection to the port)
16	Maritime	Port of Igoumenitsa	Physical/ Operational	-	-	*Recommended (Rail connection not considered priority until 2025)*

#	Mode	Section/Node	Bottleneck Type	Study/ Works	End Date (of Works)	Status/Project Information
17	Maritime	Port of Patras	Physical/ Operational	Study	n.a.	Study in progress (Taken into consideration in the Operational Programme within the context of the completion of the Kiato-Patras section).
18	Maritime	Port of Patras	Operational	-	-	*Recommended (Plans for TMS deployment)*
19	Maritime	Port of Heraklion	Operational	Works	n.a.	VTIMS deployment planned
20	Maritime	All ports (apart from Piraeus)	Technical	-	-	*Recommended (Clean Fuels Availability)*
21	Airport	Thessaloniki	Technical/ Operational	-	-	*Recommended (Requirement for rail connection)*
22	RRT	Thriassio Pedio	Operational	Works	2015	Works in progress
23	RRT	Port of Igoumenitsa / thesprothia Region	Physical/ Operational	Study		Study planned (Context of ADRIAMOS Project)

Critical issue

n.a.: unknown

Railway

The majority of the railway infrastructure projects that are either on-going or planned in Greece will eventually address the main bottlenecks identified in the country's rail network.

With regard to the missing link Igoumenitsa-Ioannina-Kalambaka-Kozani and its connection to PATHE/P axis:

- Of major importance for providing connectivity of the Western part of the country and the Port of Igoumenitsa belonging to the OEM Corridor.
- Several studies carried out in the last decade to examine the feasibility of the above connections.
- Project has not been considered a priority one in the Strategic Framework of Transport Investments for 2014-2025 (based on the outcome of the related Multi-criteria Analysis for prioritizing projects).
- Not mentioned in the Operational Programme "TRANSPORT INFRASTRUCTURES, ENVIRONMENT & SUSTAINABLE DEVELOPMENT 2014-2020".

Road

The completion of the on-going road projects along the Greek road network belonging to the OEM corridor are expected to relieve current bottlenecks by year 2015.

With regard to the availability of clean fuels:

- 3 stations in the wider Attica region (Athina) and one in Thessaloniki.
- 2 additional are planned within the immediate future in Thessaloniki and Larissa.
- No plans for clean fuel stations along the Athina-Patra motorway.

Maritime

Missing rail connection at the Port of Patras:

- Taken into consideration in the Operational Programme within the context of the completion of the Kiato-Patras section, with a related study being under elaboration.
- Could be assumed that it would be realised after 2020.

Missing rail connection at the Port of Igoumenitsa:

- Considered within the missing link of the western extension of the railway network of Greece, Igoumenitsa-Ioannina-Kalambaka, described previously.

- ***RRTs***

An RRT is deemed necessary at the Port of Igoumenitsa in the Thesprotia region:

- Related to the missing rail link Igoumenitsa-Ioannina-Kalambaka-Kozani.
- Addressed by ADRIAMOS Action, which foresees the completion of preliminary studies for the establishment of a freight village within the end of 2014.
- Connection to the proposed rail link Igoumenitsa-Ioannina-Kalambaka-Kozani also foreseen for 2030.
- At study phase for the purpose of examining their feasibility, and no infrastructure projects are officially planned until 2025.

1.10. Cyprus

Table 9: Bottlenecks and foreseen mitigation projects - Cyprus

#	Mode	Section/Node	Bottle-neck Type	Study/ Works	End Date (of Works)	Status/Project Information
1	Road	Lemesos-Paphos Motorway - Lemesos Port	Technical / Physical	Works	2017	Works in progress (Construction of Link Road to improve access to Lemesos Port and facilitate traffic flow).
2	Road	Lefkosia	Technical / Physical	Works	>2020	Works scheduled (Construction of ring road, interconnecting three motorways of the TEN-T network in order to facilitate through traffic.)
3	Road	A1 motorway Lefkosia-Lemesos	Technical / Physical	Works	2018	Works scheduled (Upgrade of Sia Grade Separated Junction causing congestion and road safety problems on the Lefkosia-Lemesos Motorway)
4	Road	A1 motorway Lefkosia-Lemesos	Technical / Physical	Works	2020	Works scheduled (Construction of new terminal Stavrou Grade Separated Junction in the Lefkosia-Lemesos Motorway to eliminate congestion and delays and facilitate east-west interconnections on the Motorway)
5	Maritime	Lemesos	Physical	Works	2016	Works in progress (Expansion of quay by 500m reaching 800m to improve capacity and efficiency of infrastructure)
6	Maritime	Lemesos	Physical	Works	2020	Works scheduled (Expansion of port's storage capacity)
7	Maritime	Lemesos	Physical	Works	n.a	Works scheduled (Expansion of Lemesos Port Terminal 2- Vasiliko to accommodate increased demand)

n.a.: unknown

1.11. Summary of Findings

A considerable number of current and future bottlenecks were identified along the OEM corridor during the analysis and presented in the tables above, part of which will be addressed by infrastructure projects.

According to the results of the analysis, approx. 25 % of the bottlenecks will be mitigated in the near future, by year 2016, while approx. 15 % will be alleviated on a mid-term horizon, between 2016 and 2020.

Nevertheless, for the majority of the bottlenecks (~61%), it is unknown when they would be mitigated, since these are addressed by studies and/or further steps are required before definition, scheduling and possible financing of the related infrastructure projects.