

EUROPEAN
COURT OF AUDITORS

ISSN 1831-0834

Special Report No 8

2010

IMPROVING TRANSPORT PERFORMANCE
ON TRANS-EUROPEAN RAIL AXES:
HAVE EU RAIL INFRASTRUCTURE
INVESTMENTS BEEN EFFECTIVE?



EN



Special Report No 8 // 2010

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(pursuant to Article 287(4), second subparagraph, TFEU)

EUROPEAN COURT OF AUDITORS
12, rue Alcide De Gasperi
1615 Luxembourg
LUXEMBOURG

Tel. +352 4398-1
Fax +352 4398-46410
E-mail: auraud@eca.europa.eu
Internet: <http://www.eca.europa.eu>

Special Report No 8 // 2010

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Cataloguing data can be found at the end of this publication
Luxembourg: Publications Office of the European Union, 2010

ISBN 978-92-9207-818-8
doi:10.2865/97788

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Printed in Luxembourg

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REPLY OF THE COMMISSION

Photo 1 – Unhooked locomotive before shunting at Brennersee station



© European Court of Auditors, February 2009.

GLOSSARY

DG: Directorate General of the Commission.

Essen Projects: 14 projects of common interest in respect of trans-European network defined at the Essen European Council in 1993.

European Co-ordinators: Persons appointed by the Commission to facilitate the coordinated implementation of certain projects, in particular cross-border projects or sections of cross-border projects included among the projects declared to be of European interest.

European Rail Traffic Management System (ERTMS): A specific initiative at European level that seeks to contribute to the creation of a seamless European railway system by replacing the different national train control systems in Europe. It is made up of two technical components, the European Train Control System (ETCS) and Global System for Mobile Communications – Rail (GSM-R).

European Regional Development Fund (ERDF): Financial instrument designed to promote economic and social cohesion between the regions of the EU. ERDF interventions are mainly implemented through operational programmes encompassing a large number of projects.

Infrastructure Manager (IM): Any body or undertaking responsible in particular for establishing and maintaining railway infrastructure. This may also include the management of infrastructure control and safety systems.

Instrument for Structural Policies for Pre-Accession (ISPA): One of the instruments to assist the candidate countries of central and eastern Europe in the preparation for accession in the period 2000–2006. Its objectives were to help candidate countries to apply EU environmental standards and to upgrade and expand transport networks, including links with the trans-European network. These projects were converted into Cohesion Fund projects at accession.

Interoperability: Technical compatibility of infrastructure, rolling stock, signalling and other rail systems, as well as procedures for approving rolling stock for use across the European rail network.

Priority Projects: 30 projects of common interest made up of sections of the TEN-T network included in the TEN-T guideline.

Railway Undertaking (RU): Any public or private undertaking licensed according to applicable Community legislation, the principal business of which is to provide services for the transport of goods and/or passengers by rail.

Regulatory Body: A body independent from any infrastructure manager, charging body, allocation body or applicant. A railway undertaking has a right to appeal to the regulatory body.

TGV / HSL / AVE: Trains à Grande Vitesse / High Speed Line / Alta Velocidad Española.

EXECUTIVE SUMMARY

I.

European Union policy in respect of railways entails, on the one hand, legislative measures addressing the opening of the European rail market and also interoperability and safety issues, and, on the other, co-financing rail infrastructure development under TEN-T and Cohesion Policy. The Court's audit focused on EU co-financing of rail infrastructure and examined its effectiveness in improving the performance of trans-European axes.

II.

The Court concluded that, through co-financing the development of rail infrastructure, the EU contributed to providing new possibilities for trans-European rail transport. Some actions could however be taken in order to achieve greater value for EU money:

- the definition of the Priority Projects, the main mechanism for co-ordinating and concentrating EU financial resources, has not, to date, been based on an analysis of actual and anticipated traffic flows and the axes to which they correspond do not represent definitive descriptions of the main trans-European rail axes;
- the concentration of TEN-T co-financing at cross-border locations has improved, and the Co-ordinators appointed by the Commission to facilitate cross-border and other sections have made a positive contribution. However, much remains to be achieved at these locations and there is a need to improve analysis about bottlenecks. There were weaknesses in approval procedures for Cohesion Fund projects, and there remains room for improvement in TEN-T project selection procedures;
- co-financed infrastructure projects delivered the planned infrastructure to specification, and, once completed, have created new and improved rail transport possibilities on key sections of the Priority Projects. Amendments to technical specifications were made due to circumstances that came to light during construction and cost escalations were common; and
- measurable improvements have been achieved on lines dedicated to high-speed passenger services, but rail services are not yet operating fully at anticipated levels on conventional mixed and freight lines whose use is influenced by a range of factors, including system constraints in the rail network especially at border locations.

EXECUTIVE SUMMARY

III.

The Court recommends that the Commission should:

- in future considerations of the definition of the Priority Projects, work with Member States and railway institutions to identify those trans-European corridors for which there is significant actual or anticipated demand, strengthening the European-level knowledge and analytical bases where necessary;
- build on the roles played to date by the co-ordinators and ensure that decisions regarding the targeting of TEN-T funds are supported by robust analysis of important bottlenecks;
- make sure that procedures for approving projects under the Cohesion Policy are robust, and also improve the quality of cost-benefit analyses for TEN-T selection procedures;
- building on past experience, take the lead in facilitating the exchange of knowledge and experience about rail infrastructure development amongst project promoters; and
- consider placing increased emphasis on alleviating practical constraints for cross-border rail transport that are not *per se* related to infrastructure, and encourage and facilitating collaboration amongst Member State rail institutions to this end.

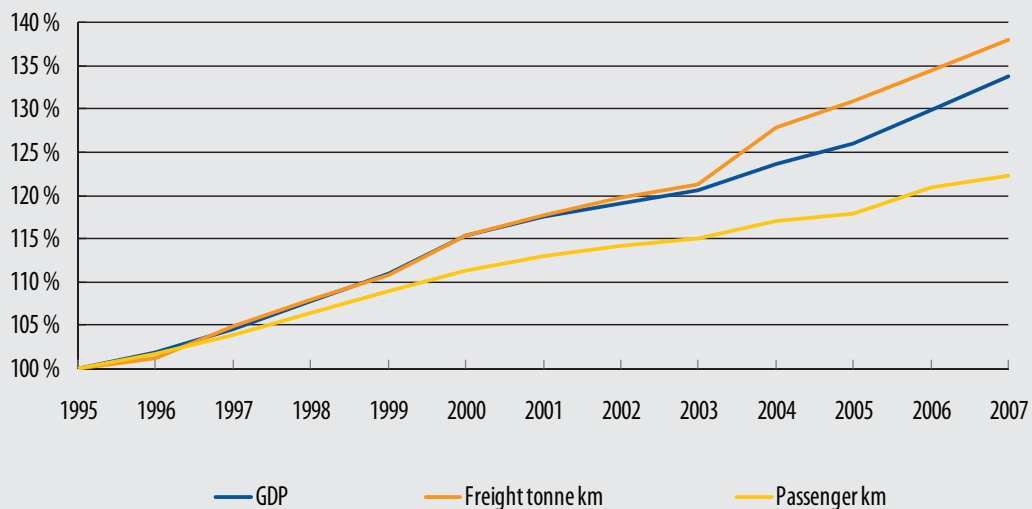
INTRODUCTION

BACKGROUND

1. In recent years, transport volumes in the European Union have increased significantly, with growth in freight transport volumes outstripping GDP growth between 1995 and 2007 (see **Figure 1**).
2. This situation is expected to continue in the period up to 2020 with recent predictions suggesting that growth in freight transport will be borne mostly by road and sea transportation (see **Figure 2**) whilst the passenger car will account for the vast majority of growth in passenger transport (see **Figure 3**). Europe's railways stand to account for only a small part of the expected growth; indeed, its relative share of the transport market as a whole is predicted to fall.

FIGURE 1

GROWTH IN TRANSPORT EU-27 (1995-2007)

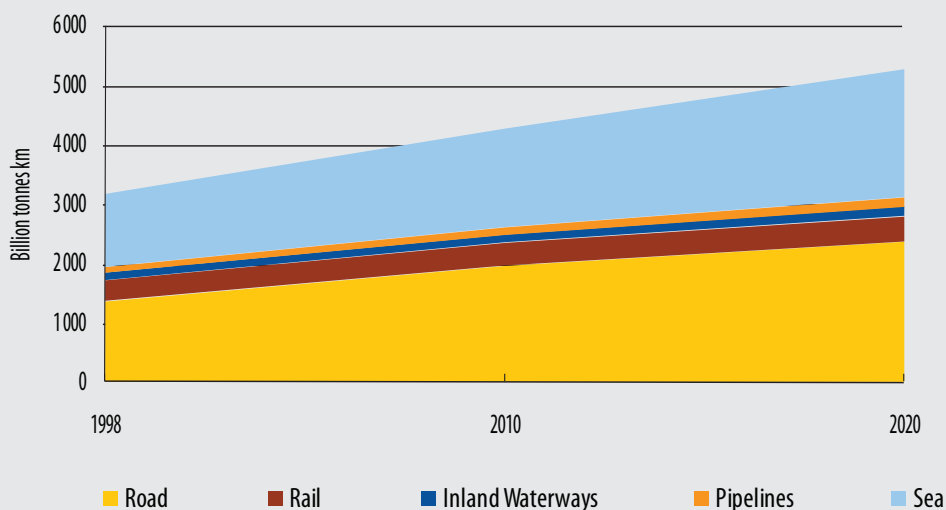


Source: EU Energy and Transport in Figures: Statistical Pocketbook 2009, European Commission (DG Energy and Transport).

3. The Commission has identified three important obstacles to developing a strong and competitive European rail transport industry:
- rail infrastructure is not well adapted to cater for trans-European services, in particular, there are missing links between national rail networks (especially at cross-border locations), there are bottlenecks on important axes and much of the rail infrastructure in use today in Europe is several decades old (some as old as a century) and in need of replacement or upgrade;
 - the European rail network is made up of a patchwork of national rail networks that have historically developed to meet national needs, each developing similar, but not identical, national technical and operational characteristics and administrative procedures; interoperability problems need to be addressed; and
 - rail services in Europe have historically been provided within national markets only; a competitive market for trans-European services needs to emerge.

FIGURE 2

FORECAST FREIGHT TRANSPORT GROWTH EU-25 (1998-2020)



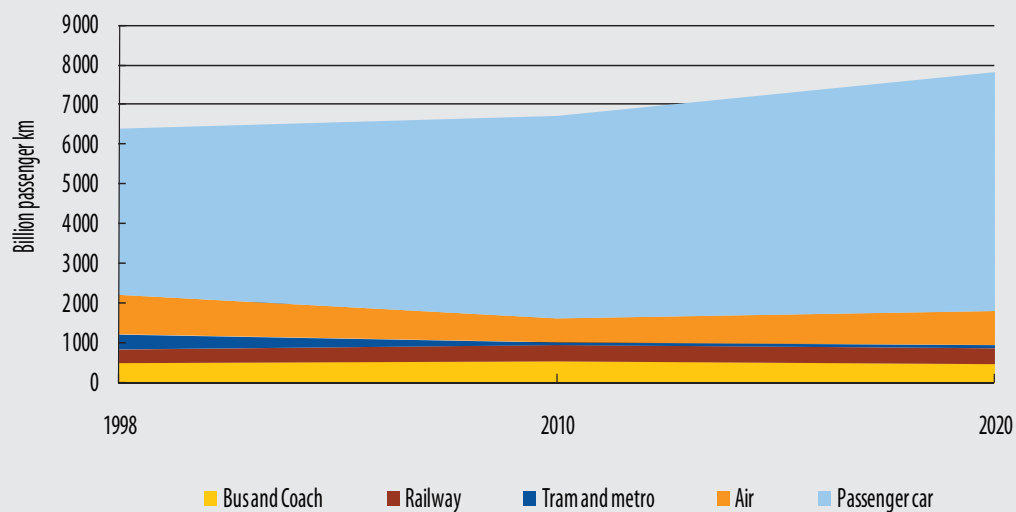
Source: Keep Europe Moving, ASSESS, DG Transport and Energy, Annex II, pp. 35-36.

EU INTERVENTIONS REGARDING RAILWAYS

4. EU interventions in respect of Europe's railways entail two policy instruments, on the one hand, legislative measures aimed at opening the European rail market and promoting interoperability (as well as rail safety and passenger rights), and on the other, co-financing of new and upgraded rail infrastructure (see **Figure 4**). Overall progress depends on making the most of the synergies between these instruments; for example, newly constructed cross-border rail infrastructure may not be fully used if the market for trans-European services thereon is not properly developed.

FIGURE 3

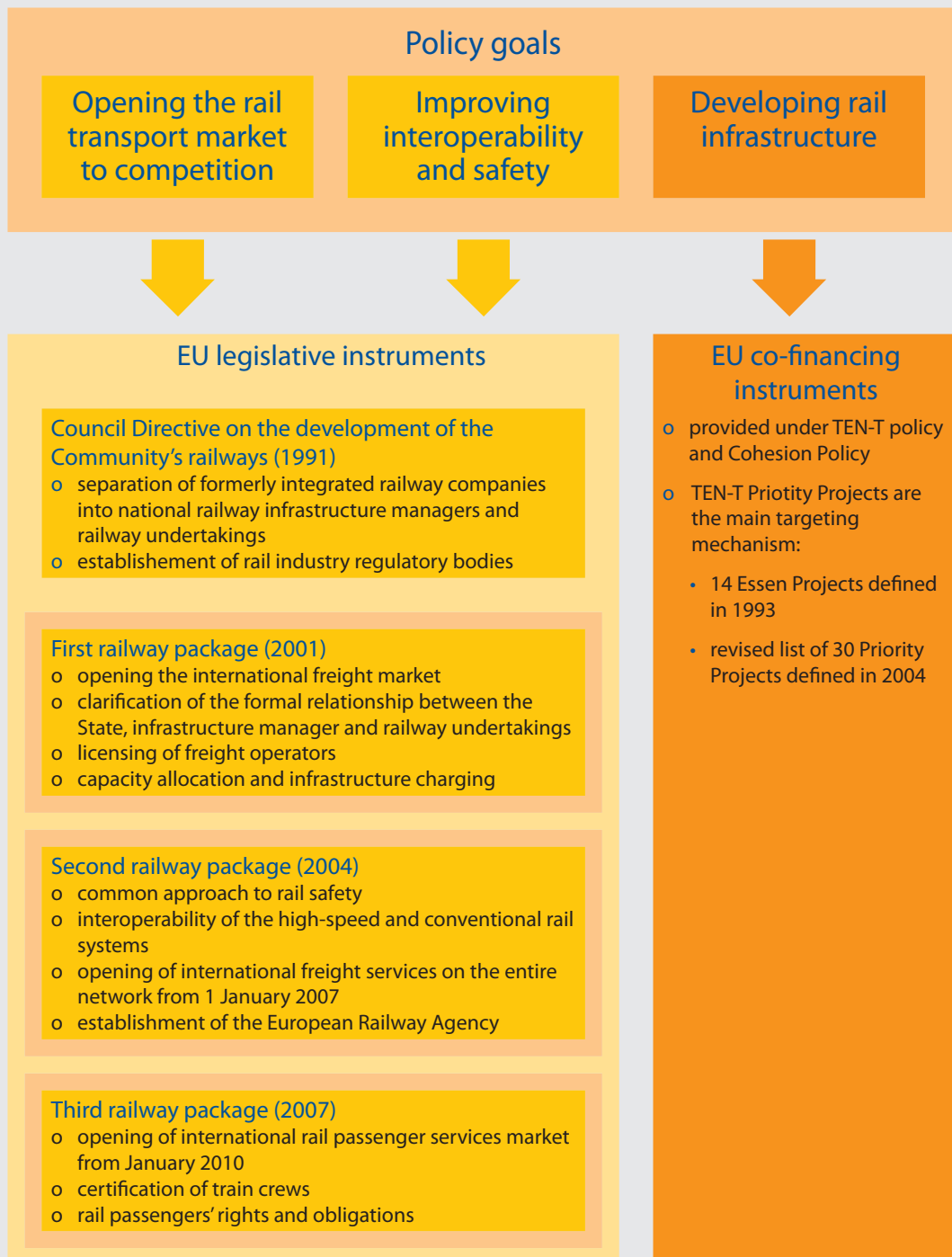
FORECAST PASSENGER TRANSPORT GROWTH EU-25 (1998-2020)



Source: Keep Europe Moving, ASSESS, DG Transport and Energy, Annex II, pp. 35-36.

FIGURE 4

EU POLICY GOALS AND INSTRUMENTS IN RESPECT OF RAILWAYS



LEGISLATIVE MEASURES AT EU LEVEL

MARKET, INTEROPERABILITY AND SAFETY

5. EU legislation in 1991¹ required integrated railway companies to be separated into national rail infrastructure managers ('IMs') and railway undertakings ('RUs'). It also required that national rail industry regulatory bodies be set up to supervise the rail market at national level.
6. Since 2001, EU directives have been pulled together in so-called railway 'packages' addressing aspects of market opening, interoperability and safety which have to be transposed into national legislation and implemented by Member States (see **Figure 4** for a summary of EU legislative instruments and **Annex I** for detailed references thereto).
7. Common technical standards have been formalised at EU level through Technical Specifications for Interoperability ('TSIs'), which include, *inter alia*, standards regarding the European Rail Traffic Management System ('ERTMS') (see **Box 1**). The task of developing TSIs has been delegated by the Commission to the European Railway Agency (see **Annex II** for a summary of published TSIs).

¹ Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways (OJ L 237, 24.8.1991, p. 25).

BOX 1

EUROPEAN RAIL TRAFFIC MANAGEMENT SYSTEM ('ERTMS')

ERTMS seeks to contribute to the creation of a seamless European railway system by replacing the different national train control systems in Europe. It also facilitates high speed rail transport, allows for increased capacity on rail lines and improves safety. Several Commission Decisions, including regarding the ERTMS deployment plan², require that newly constructed lines are equipped with ERTMS and that certain corridors are so equipped by specific dates. 500 million euro out of a total budget for TEN-T of 8 billion euro in the period 2007-2013 was earmarked to support the adoption of ERTMS by railway undertakings and infrastructure managers.

² Commission Decision 2009/561/EC of 22 July 2009 amending Decision 2006/679/EC as regards the implementation of the technical specification for interoperability relating to the control-command and signalling subsystem of the trans-European conventional rail system (OJ L 194, 25.7.2009, p. 60).

TEN-T NETWORK AND THE PRIORITY PROJECTS

8. The Treaty provides for the EU to promote the inter-connection and inter-operability of national networks³. The trans-European Transport Network (TEN-T) sets out the main transport axes along which European financial support for rail infrastructure has been directed.
9. Of particular importance are the Priority Projects which, initially identified following the Essen European Council in 1993, were defined in order to further concentrate EU investments on the most important axes. Since 2004, the list has increased to 30 Priority Projects (19 of which refer to rail transport) which has been enshrined in TEN-T guidelines⁴. This list was informed by the recommendations of a High Level Group chaired by former Commissioner Karel Van Miert (see **Figure 5** for a summary of the main milestones in the development of the TEN-T network and the Priority Projects and **Annex III** for a list of the Priority Projects). **Box 2** shows sources of finance for the Priority Projects.
10. In 2009, the Commission initiated a broad review of TEN-T policy in which future political and economic challenges such as the achievement of climate change objectives, further economic growth, economic and social cohesion as well as the strengthening of Europe's international role were considered⁵. The Commission proposed options for future TEN-T development with a view to preparing a major legislative proposal, including a revision of the TEN-T guidelines.

³ The Treaty establishing the European Community (1992), Article 154. Trans-European networks exist in the fields of transport, telecommunications and energy.

⁴ Decision No 884/2004/EC of the European Parliament and of the Council of 29 April 2004 amending Decision No 1692/96/EC on Community guidelines for the development of the Trans-European Transport network (OJ L167, 30.4.2004, p. 1).

⁵ Green Paper TEN-T: A policy review: Towards a better integrated Trans-European transport network at the service of the common transport policy, COM(2009) 44 final, 4.2.2009.

BOX 2

SOURCES OF FINANCE FOR THE PRIORITY PROJECTS

According to recent estimates, up to 2007 126,35 billion euro had already been invested on the Priority Projects, 154 billion euro was expected to be invested between 2007 and 2013, with 119 billion euro still to be invested thereafter. Member States' own national budgets account for 66 % of the total invested on the Priority Projects between 1996 and 2013 (see **Table 1**).

FIGURE 5

MILESTONES IN THE DEVELOPMENT OF THE TEN-T NETWORK AND PRIORITY PROJECTS

1994 A group of representatives of the Heads of State or governments proposed a list of 14 'projects of European interest' (10 referring to rail infrastructure). The so-called 'Essen Projects' were included in the first formal TEN-T guidelines.

2001 The Commission issued a White Paper on the European transport policy for 2010, particularly noting the need to revitalise the railways.

2004 Based on proposals from the Member States and acceding countries, a High Level Group recommended TEN-T network projects of common interest up to 2020. 30 so-called Priority Projects (19 referring to rail infrastructure) were eventually formally agreed upon by the Council.

2005 The revised Lisbon strategy emphasised the importance of transport infrastructure for Europe's strategic development highlighting the need to efficiently accommodate increasing global and intra-European trade flows, address environmental concerns and support social and economic development.

2006 Updated TEN-T guidelines came into force, introducing the possibility of a 30% co-financing rate for cross border locations and providing for the appointment of co-ordinators.

2009 The Commission carried out a formal consultation with stakeholders concerning the basis for a better integrated TEN-T network and the possible future nature of the Priority Projects. Issues highlighted for debate included the definition of core networks and the development of intelligent transport systems.

2010 The Commission is due to publish a White Paper concerning the TEN-T network.

EU CO-FINANCING OF RAIL INFRASTRUCTURE

11. Sources of funding for the 30 Priority Projects (except Galileo) including rail transport, are summarised in **Table 1**⁶.
12. Rail infrastructure sections co-financed by the EU under TEN-T and Cohesion Policy are based on national proposals and implemented by national authorities. There are different award and selection procedures for these two schemes at the Commission.

⁶ Article 17 of Regulation (EC) No 680/2007 of the European Parliament and of the Council of 20 June 2007 laying down general rules for the granting of Community financial aid in the field of the trans-European transport and energy networks (OJ L 162, 22.2.2007, p. 1). Every two years the Commission is required to submit a report on TEN-T activities. Whilst generally providing a sound description of the current situation, the audit revealed that the Commission's May 2008 report contained inaccuracies in the figures presented regarding historic investments.

TABLE 1

FUNDING SOURCES FOR INVESTMENTS IN THE 30 PRIORITY PROJECTS (EXCLUDING GALILEO), 1996-2013

		<i>(billion euro)</i>				
		1996-1999 EU-15	2000-2006 EU-27	2007-2013 EU-27	Totals	%
EU grants	TEN-T	1,35	2,80	5,40	9,55	3 %
	Cohesion Fund	3,83	7,00	12,30	23,13	8 %
	ERDF	1,46	4,81	4,70	10,97	4 %
EIB		9,78	16,10	25,00	50,88	18 %
Other sources (national)		16,23	63,00	106,60	185,83	66 %
Total investments in TEN-T Priority Projects		32,65	93,70	154,00	280,35	100 %

The Court noted the difference in overall investments in the period 2007-2013 of 154 billion euro to 151 billion euro reported by TEN-T Priority Project Progress report.

Source: 'TEN-T Funding in Figures' DG Transport and Energy website:
http://ec.europa.eu/transport/infrastructure/funding/doc/funding_figs.pdf

- 13.** Under TEN-T Policy, the EU co-finances studies and works (see **Table 2** for maximum co-financing rates). Co-financed projects in respect of works typically address the construction of certain parts or technical elements of a section of the Priority Projects. Projects are selected on a competitive basis following the assessment of proposals submitted by Member State authorities. Proposal evaluation procedures culminate in a ranking of projects with EU co-financing being allocated to the projects evaluated as the best. DG Mobility and Transport is responsible for TEN-T policy. Organising the evaluation procedure is one of the tasks recently delegated to the TEN-T Executive Agency.
- 14.** Under Cohesion Policy, EU co-financing is available for qualifying Member States under the Cohesion Fund⁷ and the ERDF (see **Table 2** for maximum co-financing rates). DG Regional Policy is responsible for Cohesion Policy. Co-funding for Cohesion Fund projects⁸ and for major projects under the ERDF⁹ is subject to Commission approval under specific rules applying to each Fund. The Commission's approval procedures involve checking the consistency of proposed projects with national and regional strategies and reviewing their overall feasibility and degree of preparation. Cohesion Fund regulations stipulate that funding for transport should be allocated to the TEN-T network, in particular the Priority Projects¹⁰.

⁷ Until 2004, financing was also available to accession countries under ISPA. The projects were converted into Cohesion Fund projects at accession.

⁸ Since 2007, projects under 50 million euro submitted for co-financing under the Cohesion Fund do not require approval by the Commission.

⁹ The concept of 'major projects' is mainly defined on the basis of the volume of finance involved in the projects. The definition covers projects 'whose total cost taken into account in determining the contribution of the Funds exceeds 50 million euro (Article 25 of Council Regulation (EC) No 1260/1999 (OJ L 161, 26.6.1999, p. 1) and Article 39 of Council Regulation (EC) No 1083/2006 (OJ L 210, 31.7.2006, p. 25) as amended by Regulation (EU) No 539/2010 of the European Parliament and the Council (OJ L 158, 24.6.2010, p. 1)). For more information on the subject, see Special Report No 1/2008 concerning the procedures for the preliminary examination and evaluation of major investment projects for the 1994-1999 and 2000-2006 programming periods.

¹⁰ Article 3 of Council Regulation (EC) No 1164/94 (OJ L 130, 25.5.1994, p. 1), Article 3(1) of Regulation (EC) No 1264/1999 (OJ L 161, 26.6.1999, p. 57), Article 2(1) (a) of Regulation (EC) No 1084/2006 (OJ L 210, 31.7.2006, p. 79) stipulate that transport spending under the Cohesion Fund shall be allocated to TEN-T projects and, in particular, projects of common interest as defined by the TEN-T guidelines in 2004.

TABLE 2

MAXIMUM CO-FINANCING RATES UNDER TEN-T AND COHESION POLICY (2000-2013)¹

		2000-2006	2007-2013
TEN-T	Studies	50 %	50 %
	ERTMS trackside / on-board	10 %	50 %
	Cross-border sections on Priority Projects	10 % (20 % from 2004)	30 %
	Other sections on the Priority Projects	10 % (20 % for bottlenecks)	20 %
Cohesion policy	Cohesion Fund	85 %	85 %
	ERDF	75 %	75 % (80 % for Member States qualifying for Cohesion Fund)
	ISPA (until 2004)	75 %	–

¹ Co-financing rates apply to only those project costs deemed to be eligible under the rules governing EU support.

AUDIT SCOPE AND APPROACH

- 15.** The audit focused on EU co-financing of rail infrastructure and examined its effectiveness in improving the performance of trans-European axes. In carrying out the audit, the Court focused on the four main areas of risk, namely:
- whether the Priority Projects have been effective as a mechanism for concentrating EU funds on the main trans-European axes, in particular, insofar as they have been defined according to demonstrable needs in terms of existing and anticipated rail services;
 - whether financial support under TEN-T and Cohesion Policy has been effectively targeted on priority areas, and the extent to which this is supported by robust selection and approval procedures;
 - whether sections of infrastructure co-financed by the EU have been constructed according to specifications and, thereafter, whether they have become ready for use without undue delay; and
 - whether the infrastructure sections co-financed by the EU have been used in line with expectations, including in the context of the trans-European axis on which they are located.

Photo 2 – Freight train in München ready for departure to Verona via Brennersee station



© European Court of Auditors, February 2009.

- 16.** To carry out the audit, the Court analysed a sample of 21 specific sections co-financed by the EU during the 2000-2006 period (14 primarily funded under the TEN-T financial instrument and seven mainly under Cohesion Policy). These sections related to eight of the Priority Projects defined in the TEN-T guidelines. Taken together, the sample covers a total of 8 683 million euro of EU investments representing 77 % of all EU co-financing investments on the sampled eight Priority Projects, and 36 % of investments from all sources thereon (see **Annex IV** for further details of the sample and **Box 3** for definition of terms used in the report).
- 17.** The audit field work was carried out between October 2008 and May 2009¹¹, and audit evidence was collected through interviews with Member State officials, project promoters and rail industry stakeholders, review of documents held by the Commission, technical questionnaires completed by Member State institutions and visits on-the-spot in the Member States. Data regarding transport performance was provided by national infrastructure managers.
- 18.** The audit did not assess the financial or technical supervision mechanisms in place in the Member States.

¹¹ The audit team was assisted in the execution of the fieldwork by an independent rail industry expert.

BOX 3

DEFINITION OF TERMS USED IN THE REPORT

A **rail axis** is a rail line (or collection of rail lines) that spans a long distance and provides connections between several important commercial and/or industrial locations en route. **Trans-European rail axes** span more than one Member State.

A **Priority Project** refers to a grouping of **sections** each of which relate to connections between specific commercial and/or industrial locations that have been formally identified as 'projects of common interest' in EU legislation in 2004 (Decision No 884/2004/EC - see **Figure 5**). Although sometimes referred to as axes, these Priority Project groupings of sections are not, in all cases, linked to together.

A co-financed **project** relates to equipment or infrastructure located on a rail section that is part of a Priority Project and for which an EU grant has been approved.

For example, Priority Project 1 concerns the railway axis Berlin-Verona / Milano-Bologna-Napoli-Messina-Palermo. For this Priority Project, the Court examined EU co-financed projects relating to sections at Berlin Central Station, Nürnberg-Ingolstadt, Kufstein-Innsbruck, Brenner Base Tunnel, Bologna-Firenze, Roma-Napoli and Messina Patti.

OBSERVATIONS

DEFINITION OF PRIORITY PROJECTS ACCORDING TO DEMONSTRABLE NEEDS IN TERMS OF EXISTING AND ANTICIPATED RAIL SERVICES

- 19.** Given the importance of the Priority Projects as a mechanism for co-ordinating and concentrating Community financial resources, it is important that their definition is informed by an analysis of demonstrable needs in terms of existing and anticipated rail services.
- 20.** The Court assessed whether the procedure by which the list of Priority Projects was defined in 2004 was robust.

¹² Made up of one representative from each Member State, one observer from each acceding country and an observer from the European Investments Bank, chaired by former Commissioner Karel van Miert.

THERE WERE WEAKNESSES IN THE PROCEDURE TO DEFINE PRIORITY PROJECTS IN 2004

- 21.** One hundred proposals for specific projects and sections were submitted by current and future Member States to a High Level Group constituted in 2003¹². These were assessed first against pre-selection criteria and, then, against a set of evaluative criteria defined by the Group. The Group's recommendations took the form of four lists of Priority Projects including 14 projects in the process of completion (essentially the Essen Projects), 18 projects to start before 2010, four longer term projects and 15 other important projects for territorial cohesion. These recommendations formed the basis of the deliberations of the European Council when it defined a list of 30 Priority Projects (19 of which referred to rail) in the TEN-T guidelines in 2004. The Court's analysis revealed important weaknesses in the application of the pre-selection and evaluation criteria defined by the Group:
- o given the absence of a clear understanding of what constituted a major European axis, the evaluators stated that they had difficulty to consistently assess the merits of the location of proposed sections;

- o variations in quantity of and a lack of consistency in the analysis presented in support of proposed section's economic viability and socio-economic benefits meant that evaluators had problems to compare the proposed projects' merits; and
- o project proposals provided insufficient and inconsistent information about projects' expected European added value, especially as regards the extent of expected trans-European traffic.

¹³ High Level Group on the Trans-European Transport network, 23 June 2003, Report, p. 49.

THE PRIORITY PROJECTS DO NOT REPRESENT DEFINITIVE DESCRIPTIONS OF THE MAIN TRANS-EUROPEAN RAIL AXES

22. Whilst there may be significant similarities between the Priority Projects and the main trans-European railway axes as defined by industry, the Priority Projects cannot themselves be regarded as definitive descriptions of such axes. The following observations confirm this view:

- o firstly, the High Level Group's work did not take as its starting point an analysis of the current and expected traffic flows of the main axes, and the Group noted this weakness in its report; 'The Group did not have the time to identify these main axes... [and] ...The Priority Projects make it possible to have a first idea of the likely mapping of such axes'¹³;

BOX 4

EXAMPLES OF ERTMS CORRIDORS NOT COINCIDING WITH PRIORITY PROJECTS

ERTMS corridor B that crosses Germany in a north-south direction does not coincide with a Priority Project between Hannover and München;

ERTMS corridor D between Barcelona and Valencia only partly coincides with a Priority Project;

ERTMS corridor F that crosses Germany and Poland in an east-west direction does not coincide with any Priority Project. Polish authorities have placed more emphasis on this east-west axis, investing 528 million euro thereon to date compared to 449 million euro invested on north-south Priority Project 23.

- o secondly, in a subsequent exercise to identify trans-European rail corridors on which the deployment of ERTMS should be prioritised (sponsored by Karel Vinck the Commission-appointed Co-ordinator (see paragraph 26)), a broad consensus from the rail industry was reached and six such corridors were agreed in 2008¹⁴. It is observed that not all of these six industry-agreed corridors fully coincide with the routes of the Priority Projects (see **Box 4**);
- o thirdly, connections to certain important sea ports are not included in the Priority Projects, including Marseille, Rostock, Bremerhaven and Le Havre; other important ports, such as Gioia Tauro, are located close to a section of a Priority Project, but the connections thereto are not included in the Priority Projects; and,
- o finally, the Priority Projects do not always coincide with trans-European axes defined by industry associations.

23. The implication of these weaknesses is that improvements in the definition of the Priority Projects could further enhance the co-ordination and concentration of EU financial resources.

24. In its report in 2003, the High Level Group called upon the Commission to improve the analysis of trans-European traffic flows so that future revisions of the list of Priority Projects could be based thereon¹⁵. In 2009, the Commission launched a debate on the future of the trans-European transport policy recognising the need to refine the concepts underlying the trans-European rail network and suggested that clearer thinking is needed with respect to defining investment priorities¹⁶. The Commission has also suggested that the development of trans-European rail freight transport would benefit from the definition of dedicated corridors based on business cases¹⁷.

¹⁴ Memorandum of Understanding Between the European Commission and the European Railway Associations (CER – UIC – UNIFE – EIM – GSM-R Industry Group – ERFA) concerning the strengthening of cooperation for speeding up the deployment of ERTMS, July 2008.

¹⁵ High Level Group on the Trans-European transport network – Report, Section 6.4.3, paragraph 11, 27 June 2003, Brussels.

¹⁶ COM(2009) 279 final Communication from the Commission - A sustainable future for transport: Towards an integrated, technology-led and user friendly system, Brussels 17.6.2009.

¹⁷ COM(2008) 852 final, Proposal for a Regulation of the European Parliament and of the Council concerning a European rail network for competitive freight, Brussels, 11.12.2008.

TARGETING, SELECTION AND APPROVAL OF EU FINANCIAL SUPPORT

- 25.** The targeting of EU investments is important because:
- financial needs on the Priority Projects are significant and financing from all sources is scarce; and
 - Priority Projects have a trans-European dimension which may go beyond national interests.
- 26.** EU legislation identifies the elimination of bottlenecks and the filling-in of missing links (in particular cross border sections) as key priorities for the trans-European network¹⁸. In a Special Report published in 2005, the Court observed that **'TEN-T financial aid is allocated in an overly fragmented way and is not sufficiently focused on cross-border projects (or project sections), and as such, TEN-T could not achieve its European added value to the fullest'**¹⁹. Since those observations were made, important changes have taken place:
- an update to the TEN-T regulation which *inter alia* introduced the possibility of TEN-T grants for cross-border sections up to a maximum of 30 % of eligible costs; and
 - in July 2005, the Commission appointed six Co-ordinators²⁰ **'to facilitate the coordinated implementation of certain projects, in particular cross-border projects or sections of cross-border projects'**²¹ (see **Annex V**).
- 27.** For the current report, the Court took stock of these developments, in particular, it reviewed:
- the concentration of TEN-T co-financing on cross-border sections and the progress in this respect to date on the Priority Projects in the sample;
 - the role played by the Commission-appointed co-ordinators;

¹⁸ See Decision No 884/2004/EC and Regulation (EC) No 680/2007. Furthermore, in its response to the Commission's communication 'Reforming the Budget, Changing Europe', the Court highlighted that 'expenditure with trans-frontier effects or common interest is prima facie a stronger candidate for EU action than expenditure with limited geographical effects.

¹⁹ Special Report No 6/2005 on the Trans-European network for transport (TEN-T) together with the Commission's replies.

²⁰ The Commission subsequently updated this list in 2007, 2009 and 2010.

²¹ Article 17a of Decision No 1692/96/EC of the European Parliament and of the Council (OJ L 228, 9.9.1996, p. 1).

- o the quality of the analysis available to help target bottlenecks on trans-European axes; and
- o the extent to which approval procedures under the Cohesion Fund (and ERDF major projects) are sufficiently robust to identify weaknesses in project definition and preparation, and the extent to which changes to selection procedures under TEN-T have addressed weaknesses observed by the Court in its previous Special Report.

CONCENTRATION OF TEN-T CO-FINANCING AT CROSS-BORDER LOCATIONS HAS IMPROVED SINCE 2006, BUT MUCH REMAINS TO BE ACHIEVED

- 28.** The extent to which investments of TEN-T funds have been concentrated on cross-border locations has increased significantly in the 2007-2013 programming period compared to the 2000-2006 period. Investments in cross-border locations represented 37 % of TEN-T investment during 2000-2006, whilst such allocations for the period 2007-2013 are expected to account for 71 %. Whilst there is no direct evidence to conclusively prove their influence on this improvement, the increase of TEN-T co-financing rates from 10 % to 30 % for cross-border sections and the activities of the Co-ordinators in encouraging Member States to propose cross-border sections have been factors during this period.
- 29.** Consistent with the Court's previous finding, according to the proposal forms submitted by Member States, 14 of the sections reviewed for this audit co-financed by TEN-T that were approved before 2006 would have gone ahead anyway, albeit with modifications and/or with additional risk. In contrast, the proposal for an important project approved in the 2007-2013 period (Brenner Base Tunnel) states it would not proceed without EU co-financing.
- 30.** For eligible Member States, the Cohesion Fund and ERDF are also available for rail infrastructure developments (7 out of the 21 sections reviewed for the audit received funding from these sources); for example in Spain, all of the Cohesion Fund spent on rail infrastructure in the 2000-2006 period was concentrated on the Priority Projects. However, there is no formal requirement to prioritise Cohesion Fund investments at cross border locations.

31. Making progress on infrastructure developments at cross border locations involves political challenges as well as technical ones. They often require lengthy negotiations between neighbouring Member States based on inter-governmental conferences before bi-lateral agreements are signed, usually involving formal treaties. An overall review of the state of development at 13 cross-border locations on the sampled Priority Projects revealed that much remains to be achieved, and significant continued work is required before developments on these sections are completed (see **Table 3**).

TABLE 3

INFRASTRUCTURE DEVELOPMENTS AT CROSS BORDER LOCATIONS ON THE SAMPLED PRIORITY PROJECTS

		Location	In place	Under construction	Study / preparatory	Planning not started
Priority Project 1	Germany-Austria	München-Kufstein			✓	
	Austria-Italy	Brenner Tunnel			✓	
Priority Project 2	Germany-Belgium	Aachen-Düren-Köln		✓		
	Netherlands-Belgium	Rotterdam-Antwerpen	✓			
Priority Project 3	France-Spain (Atlantic)	Dax-Vittoria				✓
	France-Spain (Mediterranean)	Perpignan-Figueras	✓			
Priority Project 6	France-Italy	Lyon-Turin			✓	
Priority Project 17	France-Germany	Kehl bridge		✓		
	Germany-Austria	Mühldorf-Freilassing				✓
	Austria-Slovakia	Vienna-Bratislava			✓	
Priority Project 23	Poland-Slovakia	Bielsko Biala - Zwardon			✓	
Priority Project 24	Netherlands-Germany	Zevenaar-Emerich		✓		
	Germany-France	Mulhouse			✓	

THE CO-ORDINATORS HAVE HAD A POSITIVE INFLUENCE IN CONCENTRATING INVESTMENTS AND FACILITATING DEVELOPMENTS ON THE PRIORITY PROJECTS

32. The Co-ordinators have had a positive influence in the targeting of EU investments, in particular through:

- o facilitating contacts between stakeholders in order to progress developments on problematic sections of the Priority Projects, especially where it has proved necessary to agree a clear shared vision of the target rail transportation market and the specifications of the required infrastructure developments²² (for example, agreement between French and Spanish authorities on the Mediterranean branch of Priority Project 3²³, and the Brenner Corridor Platform (see **Box 5**));
- o emphasising to Member States the importance of proposing particular sections for EU co-financing (for example, regarding the Brenner Corridor on Priority Project 1 and bottlenecks and cross-border sections at Stuttgart and between München and Freilassing on Priority Project 17) whilst emphasising that other sections would not be positively received, such as those including station infrastructure not relating directly to the operation of trains; and
- o encouraging co-operation between rail authorities in Member States regarding improving transport performance and alleviating operational and other problems on existing corridors (such as the IQC (see **Box 14**), the technical working group put in place on Priority Project 6 and the ERTMS corridors).

²² Position Paper of the European Transport Coordinators: Mr. Karel Van Miert, Mr. Etienne Davignon, Mr. Carlo Secchi, Mr. Laurens Jan Brinkhorst, Mr. Péter Balázs, Ms. Karla Peijs, Mr. Luis Valente De Oliveira, Mr. Pavel Telička, Mr. Karel Vinck on the Future of Ten-T Policy, Brussels, 6 October 2009.

²³ Annual Report of the European Coordinator, Etienne Davignon, PP No 3, "South-West European High-Speed Rail Link", Brussels, August 2009.

BOX 5

BRENNER CORRIDOR PLATFORM

By facilitating interactions amongst Italian, Austrian and German stakeholders, Karel Van Miert, the Co-ordinator at the time, contributed to the creation of the Brenner Corridor Platform which, building on earlier collaboration, has been the key forum for reaching agreement on the objectives and design specifications of proposed infrastructure developments (including the Brenner Base Tunnel).

IDENTIFICATION OF BOTTLENECKS COULD BE IMPROVED

- 33.** Accurate and reliable analysis is an important prerequisite for the identification of bottleneck sections of the Priority Projects, and is therefore a key consideration for the prioritisation of EU investment. However, a robust empirical analysis of bottlenecks on key trans-European axes is not available and the Commission relies primarily on Member States' own analysis complemented, in recent years, by information gathered by the Co-ordinators to identify such bottlenecks.

THERE WERE WEAKNESSES IN SELECTION AND APPROVAL PROCEDURES AT THE COMMISSION

PROJECTS THAT WERE NOT THOROUGHLY PREPARED WERE APPROVED UNDER THE COHESION FUND

- 34.** The Court reviewed the extent to which approval procedures for rail infrastructure projects submitted for co-financing under the Cohesion Fund and as major projects under the ERDF are sufficiently robust to identify weaknesses in project definition and preparation.

- 35.** For rail infrastructure projects co-financed by the Cohesion Fund, the Court observed that the evaluation carried out of proposed projects technical aspects was insufficient. In the cases examined, the only review of projects submitted under the Cohesion Fund was the internal Commission so-called inter-service consultation, through which project proposal documents were circulated by DG Regional Policy to other Commission services to obtain an opinion. However, a review of the Commission's files revealed that there is no evidence of a thorough technical review in support of this opinion. As no external rail infrastructure experts were consulted in the process, relying solely on such an internal consultation does not constitute a sufficient mechanism for technical review. Moreover, insufficient attention was paid to ensuring that approved projects were adequately prepared. In the case of the Madrid-Levante project, DG Regional Policy requested advice from the European Investment Bank (EIB) regarding project proposals. However, despite the EIB raising specific concerns about the extent to which the project had been adequately specified, the project was approved for Cohesion funding. The project has subsequently experienced cost escalations of 89 % compared to the amount specified in the project proposal documents (see **Box 8**). The Court notes that the procedure for approving major projects has changed since 2007.

PROJECT SELECTION PROCEDURES UNDER TEN-T HAVE BEEN UPDATED BUT THERE REMAINS ROOM FOR FURTHER IMPROVEMENT

- 36.** The Court reviewed the changes to selection procedures for rail infrastructure project proposals submitted for co-financing under TEN-T, in particular, insofar as the weaknesses observed by the Court in its previous Special Report have been addressed.

37. Changes have taken place in selection procedures for TEN-T projects following the Court's previous recommendations²⁴, in particular:

- o the updating of proposals evaluation procedures, in particular to include the use of external experts;
- o the contribution made by the Co-ordinators in providing contextual information about the situation on the ground on the Priority Projects; and
- o the delegation of a range of tasks to the recently created TEN-T Executive Agency²⁵.

38. Notwithstanding the above, there is room for improvement as regards the use of cost benefit analysis. It is important that cost benefit analysis, along with environmental and socio-economic analysis, allows for the merits of proposed projects to be compared during the selection procedure. A review of project selection documents revealed that only summary information was submitted regarding a proposed project's cost benefit analysis and that, in practice, the information contained in these summaries is not consistent in terms of the variables covered, the level of detail or about the assumptions on which the analysis has been based. Assumptions made regarding projected future traffic flows are essential elements for such analyses. Whilst some initiatives have been taken to ensure that traffic flow assumptions are consistent (for example, in respect of the Alpine tunnels), these have been isolated exercises. A coherent model of European rail traffic flows, which could inform overall policy as well as specific project selection, has yet to be developed.

²⁴ Special Report No 6/2005, paragraphs 35, 43, and 52 to 58.

²⁵ Commission Decision 2007/60/EC of 26 October 2006 establishing the Trans-European Transport Network Executive Agency pursuant to Council Regulation (EC) No 58/2003 (OJ L 32, 6.2.2007, p. 88).

CONSTRUCTION OF EU CO-FINANCED INFRASTRUCTURE ACCORDING TO SPECIFICATIONS AND ITS AVAILABILITY FOR USE

39. For each of the co-financed sections sampled for the audit, the Court examined the execution of the project insofar as the section infrastructure has been constructed according to specifications, and thereafter whether the infrastructure was made available for use without undue delay. The situation with respect to escalations of project costs was also reviewed.
40. *Annex VI* shows the status of use of the 21 EU co-financed sections reviewed for the audit.

PLANNED INFRASTRUCTURE IS DELIVERED IN LINE WITH SPECIFICATION

41. The 14 completed sections in the sample delivered the technical infrastructure defined in the specifications. Justifiable amendments to technical specifications were made due to circumstances that came to light during construction. In one case, certain technical conditions were not fully anticipated in the design specifications (see **Box 6**).

BOX 6

TECHNICAL CONDITIONS NOT FULLY ANTICIPATED IN THE DESIGN SPECIFICATIONS

Whilst the [Nürnberg-Ingolstadt](#) line was constructed according to specification to support mixed use, it became clear during safety testing that, because of air pressure issues, trains could not pass each other in the tunnel sections. The line is now used only by high-speed passenger trains.

42. The five sections under construction at the time of the audit were also being built as specified. For the two long-term Alpine tunnel sections (Mont-Cenis, Brenner (see **Photo 5**, p. 37)), the nature and extent of adjustments to technical specifications that are being made during the planning and exploratory stages are in line with what can be expected given these sections' particular complexity. These adjustments are being made, for example, in order to take account of environmental concerns or other developments.
43. The Court noted the experience of a project supported by the Commission to facilitate a network for the dissemination of knowledge on the management and organisation of large infrastructure projects in Europe²⁶. It provided useful outcomes in terms of developing contacts between project managers and exchanging practical knowledge, and offers an experience that could be built upon in future initiatives.

²⁶ The Netlipse project supported under the Sixth European Framework Programme for Research and Technological Development (www.netlipse.eu).

BOX 7

PERPIGNAN-FIGUERAS INTERNATIONAL SECTION

The **Perpignan-Figueras international section** (44 km long including the 8 km Perthus tunnel) will allow appropriately equipped UIC-gauge trains to travel between France and Spain without stopping and provide for improved flow of freight and passenger traffic. It was one of the only public-private partnerships in the audit sample, and the contractor completed construction of the infrastructure at the end of 2009. As a result of thorough and detailed preparation, the project was completed more or less on time and on budget. However, whilst the line is connected to the rail network at Perpignan, there is, as yet, no connecting line on the Spanish side in Figueras. The works between Barcelona and Figueras to make this connection in UIC gauge are ongoing, but will not be completed before 2012. There is, therefore, no prospect of the new international section being available for full use for at least two years after completion. An interim solution involving the installation of a third rail between Girona and Figueras to allow both UIC and Iberian gauge trains to use the line may be in place by the end of 2010, but, at best, it will provide for only partial use of the new line.

Photo 3 – New lines on the Perpignan-Figueras international section not yet used



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THERE ARE SOMETIMES DELAYS BEFORE INFRASTRUCTURE BECOMES AVAILABLE FOR USE

44. At the time of the audit, all except two of the 14 completed sections had become available for use. However, for one important cross-border section (the Perpignan-Figueras international section between France and Spain (see **Box 7** and **Photo 3**), a delay in connecting with neighbouring sections mean that, despite the infrastructure being completed, it has not become available for use.

COST ESCALATIONS WERE OBSERVED FOR ALL SECTIONS, MOSTLY DUE TO UNFORESEEABLE REASONS

45. Escalations in project costs were observed in all cases (see **Box 8**). In nearly all cases, these escalations arose for reasons linked to unforeseeable factors that came to light during the construction phase, such as unexpectedly difficult geographical conditions, environmental protection requirements, safety requirements and higher than expected bids from contractors²⁷.

²⁷ Academic research reports that mega-projects are very complex undertakings and, historically, escalations of costs significantly beyond initial budgets are very common, indeed 'cost overruns of 50 % to 100 % in real terms are common, and overruns above 100 % are not uncommon'. Flyberg B, Bruzelius N and Rothengatter W, 'Megaprojects and risk: An anatomy of ambition', Cambridge University Press, 2003, page 44. See also Hugo Priemus, Bent Flyvbjerg, Bert Van Wee: Decision-making on Mega-projects: Cost-benefit Analysis, Planning and Innovation, Edward Elgar Publishing Ltd, 2008, ISBN 1845427378.

BOX 8

COST ESCALATIONS OBSERVED IN THE SECTION REVIEWED FOR THE AUDIT

Cost information was available for 19 out of the 21 sections audited. 11 sections experienced cost escalations of up to 49 %, six sections experienced escalations between 50 % and 100 % and two sections experienced escalations of more than 100 %. Overall, the extent of these escalations was in line with those observed in other studies of large scale transport infrastructure projects. Of the sections reviewed, the [Warsaw-Gdynia](#) section (funded under Cohesion Policy) has seen the most significant cost escalation, a rise of 166 % from an estimate of 475 million euro in the project proposal in 2004 to 1 265 million euro according to latest estimates in November 2009.

- 46.** Projects that were subject to thorough and detailed preparation were less likely to experience escalations; for example, the Perpignan-Figueras which was completed more or less on time and on budget (see **Box 7**). In comparison, projects whose preparation was less thorough and detailed faced a higher risk of experiencing more significant escalations; for example, the Madrid-Levante section, about which the EIB expressed concerns, has to date seen a cost escalation of 89 % (see paragraph 35).
- 47.** These cost escalations did not have a direct impact on the EU budget because the investment by the EU was limited to the amounts initially granted. However, they should be considered in the light of the large scale investment needs on the Priority Projects, and the fact that the attraction of private sector investment has been recognised as being increasingly important. The risk of project cost escalations can exacerbate concerns regarding low rates of return and therefore represent a disincentive for private sector investors.
- 48.** In order to take account of the complicated nature of the projects and the risk that cost escalations may be experienced, some projects (for example, Brenner Base Tunnel) set aside contingencies, in order to mitigate the impact that such escalations could have on overall budgets.

TRANSPORT PERFORMANCE ON THE SECTIONS BENEFITING FROM EU INVESTMENT IN THE CONTEXT OF THE PRIORITY PROJECTS

- 49.** High-speed passenger services are generally conceived as serving the market between important urban areas capable of competing with road and short-haul air transport; offering point-to-point journeys that are reliable, comfortable and above all fast is therefore of prime importance. For freight transport, the rationale is different; the longer the journey the more potential there is for rail to be competitive vis-à-vis other modes of transport, especially roads. Travelling across more than one national network is necessary for longer distance trans-European routes.

50. When it is completed and in service, the extent to which rail infrastructure is fully used depends on rail services operating as anticipated. The Court examined:
- o whether transport performance is in line with expectations, on the one hand on sections dedicated to high-speed passenger services, and on the other, on conventional sections for freight or mixed use; and
 - o the extent to which system constraints limit the performance on the axes on which the EU co-financed sections are located and the progress made to alleviate them.
51. **Annex VI** shows the status of use of the EU co-financed sections reviewed for the audit.

Photo 4 – AVE High-speed passenger train at Chamartin station before departure on the Madrid-Segovia-Valladolid line passing through the 28 km Guadarrama tunnel



© European Court of Auditors, March 2009.

PERFORMANCE ON SECTIONS DEDICATED TO HIGH-SPEED PASSENGER SERVICES IS IN LINE WITH EXPECTATIONS

52. Eight of the 21 sections reviewed for the audit contributed to the construction of new high-speed passenger lines, of which, at the time of the audit, seven are in service (**Photo 4**). Rail services are running as expected on six of these lines, and the problems delaying the commencement of full rail services on the other line have recently been resolved (HSL Zuid). Project promoters typically predicted that the projects would have significant impacts in the target markets, and data available shows that actual performance achieved has been in line with these expectations (see **Box 9**). The fact that this infrastructure is dedicated to well defined and homogenous services means that its use, while highly technical, is not complicated by the need to accommodate a mixed use.

BOX 9

HIGH SPEED PASSENGER SERVICES MEETING OBJECTIVES

The **Madrid-Barcelona AVE** section has led to a decrease in travel time between the two cities from 6h35 (in 1998) to 2h30, gaining market share from air services routes. Passenger numbers increased from 2,62 million (2007) to 5,8 million (2008).

The **Berlin Central Station** section achieved a 25 minutes saving when changing trains between North-South and East-West axes, and also provides completely new journey opportunities.

The **TGV Est (Phase 1)** section allows for speeds up to 320 km/h and thereby travel time between Paris and Strasbourg has decreased from 3h50 to 2h20, and between Paris and Luxembourg from 3h35 to 2h05, leading to reduced air services between Paris and airports close to the cities now benefitting from the high-speed rail connection.

As well as improving direct passenger transport, the **Frankfurt a.M.-Köln** and **Nürnberg-Ingolstadt** high-speed passenger lines freed capacity on the established mixed use / freight lines.

**FOR SECTIONS SUPPORTING CONVENTIONAL
FREIGHT OR MIXED TRAFFIC, TRANSPORT
PERFORMANCE HAS NOT YET MET EXPECTATIONS**

- 53.** Of the sections reviewed for the audit, 13 related to infrastructure for mixed use or for freight, of which only five had entered service. These sections generally had as their objectives the alleviation of bottlenecks, increasing capacity and shortening journey times (see also **Box 10** regarding the Alpine tunnels).
- 54.** The achievement of performance objectives on the five sections that are in service has been problematic to the extent that none are yet being used as planned. The main factors influencing the achievement of performance objectives are those relating, on the one hand, to the demand for services that could potentially operate on the infrastructure and, on the other, to interoperability and other constraints in the rail system that cause trans-European rail services to be interrupted. This confirms that overall progress on trans-European rail transport depends on achieving synergies between the effects of legislative measures in respect of markets and interoperability and co-financing policy measures, a view also emphasised by the co-ordinators²⁸.

²⁸ Position Paper of the European Transport Coordinators: Mr. Karel Van Miert, Mr. Etienne Davignon, Mr. Carlo Secchi, Mr. Laurens Jan Brinkhorst, Mr. Péter Balázs, Ms. Karla Peijs, Mr. Luis Valente De Oliveira, Mr. Pavel Telička, Mr. Karel Vinck on the Future of Ten-T Policy, Brussels, 6 October 2009.

BOX 10

SPECIAL SECTIONS: THE ALPINE TUNNELS AT BRENNER AND MONT-CENIS

These are particularly large scale sections creating tunnels between Austria and Italy ([Brenner](#)) and France and Italy ([Mont-Cenis](#)) to facilitate more efficient freight and passenger transport by avoiding the need to traverse over the Alps via the existing restricted routes, which is undesirable from both a transport and an environmental perspective. While anticipating mixed use, the tunnels have freight transport as their primary focus; project promoters expect to have a transformational market impact on the target routes by facilitating significantly higher freight volumes than is currently possible, gaining significant overall market share compared to other transport modes. The projects are long term endeavours spanning 10-15 years which are currently in their planning and exploratory phases.

Photo 5 – Entrance to the exploratory tunnel for the Brenner Base Tunnel at Fortezza



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SYSTEM CONSTRAINTS HAVE A NEGATIVE EFFECT WHICH CAN BE SIMILAR IN SCALE TO THE PERFORMANCE GAINS RESULTING FROM COSTLY INFRASTRUCTURE INVESTMENTS

- 55.** The use which is made of rail infrastructure depends on a variety of factors, including general economic conditions²⁹, related developments at ports, tunnels etc (see **Box 11**) and also investment elsewhere in the rail system (see **Box 12**).
- 56.** System constraints are also of considerable importance. For Trans-European high-speed passenger services such as those operated between Paris, Brussels and London, specific arrangements are made to ensure that trains do not have to stop at borders. For example, locomotives are equipped to be interoperable with multiple traction energy and train control (signalling) systems, and there is agreement about operational rules governing these specific lines etc. Whilst complicated, this is made possible because the service is dedicated to this single purpose, and there is a clear willingness of the part of the main stakeholders to address potential problems.

²⁹ Report from the Commission to the Council and the European Parliament, Second report on monitoring development of the rail market, COM(2009) 676 final, Brussels, 18.12.2009.

Photo 6 – Stock of wagon axles at the TRANSFESA gauge changing facility at Cerbère on the France / Spain border



© European Court of Auditors, February 2009.

BOX 11

SECTIONS OF INFRASTRUCTURE WHOSE EXPLOITATION CAN BE REALISED ONLY WHEN OTHER DEVELOPMENTS TAKE PLACE

The [Betuweroute](#) runs in an east-west direction between the port of Rotterdam and the border between the Netherlands and Germany; it is dedicated solely to freight traffic. Whilst the line infrastructure became fully available for rail services in June 2007, with a realistic maximum capacity of 380 trains a day on average, 20 trains a day are currently running which is expected to increase to 150 per day by 2013: the phasing-in of locomotives compatible with the ERTMS level 2 signalling system has been a limiting factor to date. It is anticipated that traffic will increase to 380 per day after planned developments of the second Maasvlakte at the port have been realised.

The utilisation of the EU co-financed section being constructed at [Kufstein-Innsbruck](#), on the Brenner Corridor between München and Verona, will be constrained by the volume of traffic that can cross the mountain pass at the Brennersee station. This situation will be significantly improved only in 2022, when the rail lines through the [Brenner Base Tunnel](#) currently under construction come into operation on the corridor.

The exploitation of the [Perpignan-Figueras](#) international section depends in part on the flows of freight traffic between Spain and France, and developments that take place at ports (such as Barcelona) will have an important influence.

BOX 12

INFRASTRUCTURE DEVELOPED TO SUPPORT SERVICES FOR WHICH SPECIFIC DEMAND IS NOT EXPECTED IN THE SHORT TO MEDIUM TERM

The [Roma-Napoli](#) and [Bologna-Firenze](#) high-speed high-capacity lines have been constructed to carry both freight and passenger trains. To allow for freight trains to run as well as passenger trains, significant investments were required in respect of inter-connections to the conventional line. The construction of tunnels, bridges and viaducts in order to reduce gradients was also necessary as well as increasing axle load capacity. No freight trains yet operate on these lines, and, whilst such developments are expected at some points in the future, there are not yet specific plans amongst train operators in place to do so.

On [Roma-Napoli](#), [Bologna-Firenze](#) and [Pioltello-Treviglio](#), the available freight locomotives are not capable of travel at the stipulated minimum speed of 120 km/h.

The [Raca-Trnava-Piestany](#) line supports train speeds up to 160 km/h; however, no trains capable of these speeds currently run in Slovakia.

57. However, the situation for conventional lines which support mixed freight and passenger use is more problematic. Crossing borders between some national rail systems remains complicated to the extent that many trans-European rail services are interrupted by the necessity to stop at border locations. The Court observed various complications, including differences in gauge, traction energy, train control (signalling) systems, train length and operational rules. Additional reasons why trains have to stop are non acceptance of rolling stock authorised for use in other Member States, train crew training and certification, technical and commercial controls, real-time traffic management (see **Annex VII** for a review of these problems together with examples from the sections sampled for the audit and the trans-European axes on which they are located). Whilst these complications at the borders do not necessarily individually entail significant delays, their cumulative effect can be significant, in particular they can lead to traffic management problems, running the risk of traffic jams and consequent delay (see **Box 13**).

Photo 7 – Traffic control facility at Brennersee station



© European Court of Auditors, February 2009.

BOX 13

FREIGHT TRAIN JOURNEY FROM MÜNCHEN TO BRENNERSEE STATION

A technical and commercial control is carried out before departure from München (see **Photo 2**, p. 18), checking that the train is properly constituted and that the braking system is fully operational. The train, which is equipped with two locomotives, is driven by a single German-speaking driver.

Entering the Austrian rail network at Kufstein, no changes are necessary to the train because the operational rules in Germany and Austria are harmonised, the respective rail authorities formally accept each other's standards regarding certain small differences. A third locomotive is added to assist in the ascent to Brennersee (see **Photo 8**).

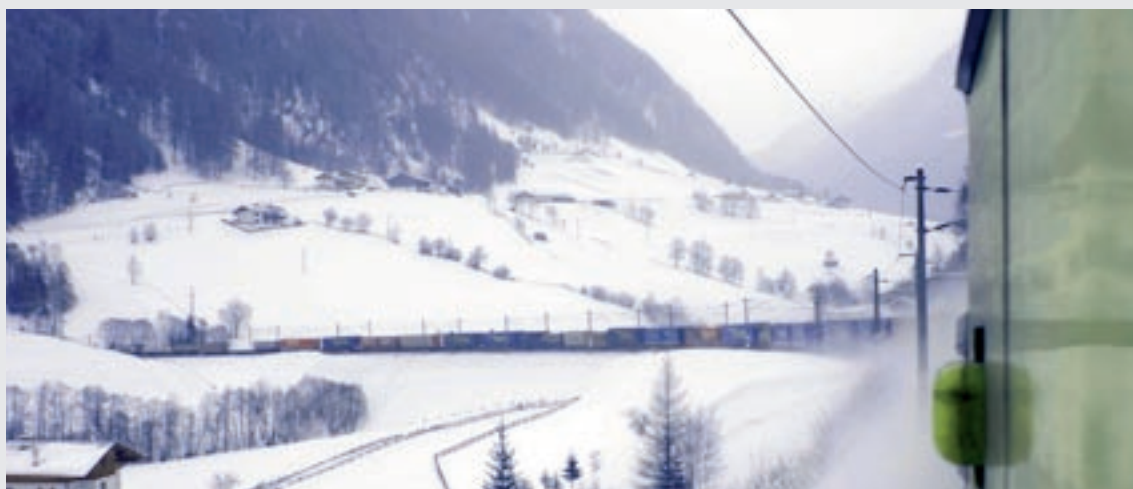
On reaching the mountain-top Brennersee station (Austria-Italy border), shunting is carried out to remove the two locomotives no longer required. Other tasks made necessary by differences between the Italian and Austrian operational rules are carried out, namely:

- o change of driver: Italian operational rules require two Italian-speaking drivers (licensed to drive in Italy), who replace the single German speaking driver (licensed to drive in Germany and Austria);
- o change of tail markers: in Germany and Austria, reflective boards are required at the back of the train³⁰, whereas it is not acceptable to carry reflective boards in Italy where illuminated tail lights are required (see **Photo 9**, p. 47).

Although a technical control was carried out before leaving München and the journey to Verona is only 448 km (namely less than the maximum 700 km required by Italian regulations), a further control is carried out at Brennersee station which takes about 25 minutes. This additional control is carried out because the Italian RU does not accept the technical control done by the German railway undertaking in München. No such additional control is carried out on the journey in the opposite direction because the German railway undertaking accepts the control done earlier by its Italian counterpart.

³⁰ The precise designs of the reflective boards under German and Austrian operational rules differ slightly but each accepts the boards of the other.

Photo 8 – Freight train climbs the Alps in Austria towards Brennersee station



© European Court of Auditors, February 2009.

- 58.** Making progress on alleviating such constraints has the potential to facilitate improvements in trans-European transport that are of comparable scale to performance gains that result from significant investments in infrastructure (**Table 4** shows a comparison from Priority Project 1). Such progress would entail more in terms of co-operation between Member States authorities than financial investment in infrastructure.

TABLE 4

25 MINUTES SAVED AND 25 MINUTES DELAY ON PRIORITY PROJECT 1

25 minutes

The journey time saved by constructing a new high speed line between Nürnberg and Ingolstadt in Germany at an overall cost of 2 336 million euro (with EU co-financing of 134 million euro from TEN-T)

The additional time needed for a technical control for trains entering Italy at the Brennersee station at the Austrian-Italian border, because the Italian railway undertaking does not accept the technical control already carried out at the point of departure in München by its German counterpart

59. Whilst the existence of these constraints on important corridors is well known in the rail industry in Europe, a study that fully describes such problems, quantifies their impact and identifies possible solutions is not available at European level for all the important axes.
60. Alleviating system constraints on trans-European axes requires agreement between Member States. Attempts to do so at European level are relatively recent developments as achieving progress in a bilateral context has historically been difficult. There is a notable exception, which has seen some important successes, where institutions from Member States are co-operating to improve the performance of rail transport on a railway axis (see **Box 14**). Other such initiatives are developing, often with the support of the Commission appointed Co-ordinators, for example in respect of the Brenner Corridor.
61. Progress on one topic has been addressed at European level, with EU legislation adopted in 2008 aimed at facilitating the mutual acceptance of rolling stock amongst national rail networks³¹.

³¹ Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community (OJ L 191, 18.7.2008, p. 1).

BOX 14

INTERNATIONAL GROUP FOR IMPROVING THE QUALITY OF RAIL TRANSPORT IN THE NORTH-SOUTH CORRIDOR (ROTTERDAM-GENOA) ('IQC')

Since 2003, German, Dutch, Italian and Swiss authorities relating to rail transport have been co-operating to analyse and solve problems on the corridor. They have made some notable achievements, for example in respect on mutual recognition of drivers and cross acceptance of approval procedures for rolling stock. In 2008, a European Economic Interest Group was set and a programme management office was established to manage the work of the Group. A 14-point action plan has been approved, which echoes the findings of this report by highlighting the importance of aspects such as ERTMS deployment, operational rules and train crew certification as key constraints for trans-European transport.

CONCLUSIONS AND RECOMMENDATIONS

62. Through co-financing the development of rail infrastructure, the EU has contributed to providing new possibilities for trans-European rail transport. Some actions could however be taken in order to achieve greater value for EU money.
63. The Priority Projects are the main mechanism for co-ordinating and concentrating financial resources, it is therefore important that their definition reflects present and anticipated needs. However, they have not, to date, been defined based on an analysis of current and expected traffic flows and do not represent definitive descriptions of the main trans-European rail axes (see paragraphs 19 to 24).

RECOMMENDATION 1

The Commission should, in order to **concentrate EU funds**, in future considerations of the definition of the Priority Projects:

- o work with Member States and railway institutions to strengthen the European-level **knowledge and analytical bases** concerning existing and expected rail traffic flows; and
- o identify those trans-European corridors for which there is significant **actual or anticipated demand**.

64. The targeting of EU infrastructure investments under TEN-T is important. Concentration of TEN-T co-financing at cross-border locations has improved, but much remains to be achieved at these locations on the Priority Projects sampled. The Co-ordinators have made a positive contribution but there is a need to improve analysis about bottlenecks. There were weaknesses at the Commission in approval procedures for Cohesion Fund project, and there remains room for improvements for TEN-T project selection procedures (see paragraphs 25 to 38).

RECOMMENDATION 2

The Commission should:

- o ensure that a robust analysis of the most important **bottleneck sections** on the Priority Projects is available to support decisions regarding the targeting of TEN-T funds;
- o build on the roles played to date by the co-ordinators and consider appointing further **co-ordinators** to cover other Priority Projects;
- o make sure that **procedures for approving projects under the Cohesion Policy are robust**, in particular as regards review of technical characteristics and, in view of the substantial risks of cost escalations, ensure that proposed projects have been thoroughly prepared, drawing on industry good practices as demonstrated by projects that have been realised on time and on budget; and
- o improve the quality of cost-benefit analyses in support of **selection procedures under TEN-T**.

- 65.** EU co-financed infrastructure projects delivered the planned infrastructure to specification, and, once completed, have created new and improved rail transport possibilities on key sections of the Priority Projects. In many cases amendments to technical specifications were made due to circumstances that came to light during construction (see paragraphs 39 to 48).

RECOMMENDATION 3

The Commission should take the lead in **facilitating the exchange of knowledge** and experience about rail infrastructure development amongst project promoters, building on past experience such as the Netlipse project to do so.

66. Measurable improvements have been achieved on lines dedicated to high-speed passenger services that are operating fully as planned. However, the use of conventional sections for mixed and freight use benefiting from EU co-financing is influenced by a range of factors that mean that rail services are not yet operating fully at anticipated levels. System constraints persist in the European rail network, especially at border locations (see paragraphs 49 to 61).

RECOMMENDATION 4

The Commission should:

- o consider the extent to which greater value for EU money could be achieved by placing increased emphasis on **alleviating practical constraints** for cross-border rail transport that are not per se related to infrastructure; and
- o encourage the emergence of and provide support for **collaboration amongst Member State rail institutions at corridor level** (such as the structure in place on the Rotterdam-Genoa corridor) in order to address barriers to smooth rail transport on existing infrastructure.

This Report was adopted by Chamber II, headed by Mr Morten LEVYSOHN, Member of the Court of Auditors, in Luxembourg at its meeting of 8 September 2010.

For the Court of Auditors



Vítor Manuel da SILVA CALDEIRA
President

Photo 9 – Tail lights required for operation in Italy awaiting attachment at Brennersee station



© European Court of Auditors, February 2009.

SUMMARY OF MAIN EUROPEAN LEGISLATION IN RESPECT OF THE RAIL INDUSTRY

		Legislative act	Amendments	
Bodies and markets	Development of the Community's railways	Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways	Directive 2001/12/EC Directive 2004/51/EC Directive 2007/58/EC	
	European Railway Agency	Regulation (EC) No 881/2004 of the European Parliament and of the Council of 29 April 2004 establishing a European Railway Agency	Regulation (EC) No 1335/2008	
	Licensing	Council Directive 95/18/EC of 19 June 1995 on the licensing of railway undertakings	Directive 2001/13/EC Directive 2004/49/EC	
	Allocation of railway infrastructure capacity and charging for the use of infrastructure	Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure	Decision 2002/844/EC Directive 2004/49/EC Directive 2007/58/EC	
	State Aid rules	Communication from the Commission Community guidelines on State aid for railway undertakings	(2008/C 184/07)	
Safety and interoperability	Interoperability	Interoperability of the conventional rail system	Directive 2001/16/EC of the European Parliament and of the Council of 19 March 2001 on the interoperability of the trans-European conventional rail system	Directive 2004/50/EC Directive 2007/32/EC
		Interoperability of the trans-European high-speed rail system	Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system	Directive 2004/50/EC Directive 2007/32/EC
		Interoperability of rail system within Community	Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community	
	Safety	Railway safety	Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways Commission Regulation (EC) No 653/2007 of 13 June 2007 on the use of a common European format for safety certificates and application documents in accordance with Article 10 of Directive 2004/49/EC of the European Parliament and of the Council and on the validity of safety certificates delivered under Directive 2001/14/EC	Directive 2008/110/EC

		Legislative act	Amendments
Railway workers	Train drivers	Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 on the certification of train drivers operating locomotives and trains on the railway system in the Community	
	Mobile workers	Council Directive 2005/47/EC of 18 July 2005 on the Agreement between the Community of European Railways (CER) and the European Transport Workers' Federation (ETF) on certain aspects of the working conditions of mobile workers engaged in interoperable cross-border services in the railway sector	
Passenger rights	Public service obligations	Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70	
	Passenger rights	Regulation (EC) No 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations	

TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY

Category	Description	Reference
High Speed TSIs (adopted by Commission Decision)	Maintenance Subsystem	
	Control-command and signalling Control-command and signalling - Corrigendum	2002/731/EC
	Infrastructure Subsystem	2002/732/EC
	Energy Subsystem	2002/733/EC
	Rolling stock Subsystem	2002/735/EC
	Operation Subsystem	2002/734/EC
	Control and command Subsystem ERTMS and modifying Annex A to 2006/679	2006/860/EC
	Control and command Subsystem ERTMS modifying Annex A to 2006/679 and Annex A to 2006/860	2008/386/EC
Revised High Speed TSIs (adopted by Commission Decision)	Infrastructure Subsystem	2008/217/EC
	Operation Subsystem Annex A, Annex P 9	2008/231/EC
	Rolling stock Subsystem Rolling Stock - Corrigendum	2008/232/EC
	Energy Subsystem	2008/284/CE
	Control-command and signalling - modifying Annex A to Decision 2002/731/EC of 30 May 2002 Control-command and signalling - modifying Annex A to Decision 2002/731/EC of 30 May 2002 - Corrigendum	2004/447/EC
	Control-command and signalling - modifying Annex A to Decision 2006/860 for high speed and conventional rail	2007/153/EC

Category	Description	Reference
Conventional rail TSIs (adopted by Commission Decisions / Regulations)	Telematics applications for freight services	62/2006/EC
	Noise aspects of conventional rolling stock	2006/66/EC
	Control-command and signalling	2006/679/EC
	Control-command and signalling	2009/561/EC
	Control and command Subsystem ERTMS and modifying Annex A to 2006/679/EC	2006/860/EC
	Command Subsystem ERTMS modifying Annex A to 2006/679 and Annex A to 2006/860	2008/386/EC
	Rolling stock – freight wagons - Amendment of Decisions 2006/861/EC and 2006/920/EC	2006/861/EC 2009/107/EC
	Operation and traffic management - Annex P 5: Amendment of Decisions 2006/861/EC and 2006/920/EC Annex P 9	2006/920/EC 2009/107/EC
	ERTMS deployment plan	2009/561/EC
Transversal TSIs (High Speed and Conventional Rail) (adopted by Commission Decision)	Safety in railway tunnels	2008/163/EC
	Persons with reduced mobility	2008/164/EC

LIST OF TEN-T PRIORITY PROJECTS

'Essen Projects' (1996 TEN-T Guidelines)	Priority Projects (2004 TEN-T guidelines)
High-speed train/combined transport north-south: Nürnberg-Erfurt-Halle/Leipzig-Berlin Brenner axis: Verona-München	PP1 Railway axis Berlin-Verona/Milan-Bologna-Napoli-Messina-Palermo
High-speed train (Paris-Brussels-Köln-Amsterdam-London)	PP2 High-speed railway axis Paris-Brussels/Brussels-Köln-Amsterdam-London
High-speed train south: Madrid-Barcelona-Perpignan-Montpellier; Madrid-Vitoria-Dax	PP3 High-speed railway axis Lisboa/Porto-Madrid-Barcelona-Perpignan-Montpellier; Madrid-Vitoria-Dax-Bordeaux-Tours
High-speed railway axis east	PP4 High-speed railway axis east
Betuweroute	PP5 Betuweroute
High-speed train/combined transport: Lyon-Trieste	PP6 Railway axis Lyon-Trieste-Divaca/Koper/Divaca-Ljubljana-Budapest-Ukrainian border
	PP8 Multimodal axis Portugal/Spain-rest of Europe
Railway axis Cork-Dublin-Belfast-Stranraer	PP9 Railway axis Cork-Dublin-Belfast-Stranraer
Öresund fixed link	PP11 Öresund fixed link
Nordic triangle railway-road axis	PP12 Nordic triangle railway-road axis
West Coast Main Line	PP14 West Coast Main Line
	PP16 Freight railway axis Sines/Algeciras-Madrid-Paris
	PP17 Railway axis Paris-Strasbourg-Stuttgart-Vienna-Bratislava
	PP19 High-speed rail interoperability on the Iberian peninsula
	PP20 Fehmarn Belt railway axis
	PP22 Railway axis Athina-Sofia-Budapest-Vienna-Prague-Nürnberg/Dresden
	PP23 Railway axis Gdańsk-Warsaw-Brno/Bratislava-Vienna
	PP24 Railway axis Lyon/Genoa-Basel-Duisburg-Rotterdam/Antwerp
	PP26 Railway-road axis Ireland/United Kingdom/continental Europe
	PP27 Rail Baltica axis Warsaw-Kaunas-Riga-Tallinn-Helsinki
	PP28 Eurocaprail on the Brussels-Luxembourg-Strasbourg railway axis
	PP29 Railway axis if the Ionian/Adriatic intermodal corridor

EU CO-FINANCED INFRASTRUCTURE SECTIONS SAMPLE FOR THE AUDIT

1. A sample of 21 sections of rail infrastructure that benefited from EU co-financing (and related financing decisions) was analysed. The sections were located on eight of the Priority Projects (1, 2, 3, 5/24, 6, 4/17, 19, 23). Details of the sample are shown in the table below.
2. The sample covered a high proportion of EU investments on rail infrastructure. Taken together, the sample covers a total of 8 683 million euro (1 613 million euro from TEN-T and 7 070 million euro from Cohesion Fund, ISPA and ERDF). This represents 77 % of all EU co-financing investments on the sampled Priority Projects, and 36 % of investments from all sources thereon.
3. The sections in the sample, concerned, where possible:
 - o sections that were completed or nearing completion,
 - o cross-border and bottleneck sections,
 - o important passenger and freight corridors (providing some coincidence with ERTMS corridors),
 - o connections between EU-15 and EU-10 Member States,
 - o sections where private financing had been invested, and,
 - o major Alpine tunnelling sections.

SECTIONS OF THE PRIORITY PROJECTS CO-FINANCED BY TEN-T, COHESION FUND (CF) OR ERDF REVIEWED FOR THE AUDIT

		Dedicated passenger lines	Mixed use line	Dedicated freight lines
Completed sections	In service	Berlin Central Station (DE) [TEN-T] Frankfurt a.M.-Köln (DE) [TEN-T] Nürnberg-Ingolstadt (DE) [TEN-T] TGV Est Phase 1 (FR) [TEN-T] Madrid-Valladolid (ES) [CF, ERDF, TEN-T] Madrid-Barcelona (ES) [CF, TEN-T] HSL Zuid (NL) [TEN-T]	Pioltello-Treviglio (IT) [TEN-T] Raca-Trnava-Piestany (SK) [CF] Roma-Napoli (IT) [ERDF, TEN-T] Messina-Patti (IT) [ERDF]	Betuweroute (NL) [TEN-T]
	Awaiting entry into service		Perpignan-Figueras (FR, ES) [TEN-T] Bologna-Firenze (IT) [TEN-T]	
Sections under construction		Madrid-Levante (ES) [CF, ERDF, TEN-T]	Karlsruhe-Basel (DE) [TEN-T] Kufstein-Innsbruck (AT) [TEN-T] Linz-St Polten (AT) [TEN-T] Warsaw-Gdynia (PL) [CF]	
Sections in planning and exploratory stages			Brenner Base Tunnel (AT, IT) [TEN-T] Lyon-Turin Base Tunnel (FR, IT) [TEN-T]	

CO-ORDINATORS APPOINTED BY THE COMMISSION IN RESPECT OF RAIL PRIORITY PROJECTS AS AT JUNE 2010

Rail Priority Project	Co-ordinator
1	Pat Cox
3	Carlo Secchi
6	Laurens Jan Brinkhorst
17	Péter Balázs
19	Carlo Secchi
22	Gilles Savary
27	Pavel Telička
ERTMS deployment	Karel Vinck

EU CO-FINANCED SECTIONS REVIEWED FOR THE AUDIT: STATUS OF CONSTRUCTION AND USE

		Ready for use			Extent of use				
		Construction completed	Under construction	Available for use	Fully used	Full use expected	Awaiting other developments in the transport network	Full use of potential unlikely in short to medium term	Longer term sections
Freight section	Betuweroute	✓		✓			✓		
Mixed use (conventional) sections	Lyon-Turin Base Tunnel		✓						✓
	Brenner Base Tunnel		✓						✓
	Warsaw-Gdynia		✓			✓			
	Linz-St Polten		✓			✓			
	Kufstein-Innsbruck		✓				✓		
	Karlsruhe-Basel		✓			✓			
	Bologna-Firenze	✓						✓	
	Perpignan-Figueras	✓					✓		
	Messina-Patti	✓		✓				✓	
	Roma-Napoli	✓		✓				✓	
	Raca-Trnava-Piestany	✓		✓				✓	
	Pioltello-Treviglio	✓		✓				✓	
Dedicated passenger sections	Madrid-Levante		✓			✓			
	HSL Zuid	✓		✓		✓			
	Madrid-Barcelona	✓		✓	✓				
	Madrid-Valladolid	✓		✓	✓				
	TGV Est (Phase 1)	✓		✓	✓				
	Nürnberg-Ingolstadt	✓		✓	✓				
	Frankfurt a.M.-Köln	✓		✓	✓				
	Berlin Central Station	✓		✓	✓				

OVERVIEW OF SYSTEM CONSTRAINTS AT CROSS-BORDER LOCATIONS ON TRANS-EUROPEAN RAIL AXES OBSERVED DURING THE AUDIT

GAUGE

1. Most of the railways in the European Union operate on the UIC¹ standard gauge. An important exception to this is the traditional rail network in Spain, which operates on a wider gauge. The gauge difference means that only passenger trains equipped with special gauge-adjusting technology are able to pass between France and Spain; all other trains have to stop at the border. Freight trains crossing the border are either unloaded and reloaded, or have their axles changed at special facilities (see **Photo 6**). Progress on addressing this problem is being made through investments in infrastructure (four sections reviewed for the audit located on Priority Projects 3 and 19 relate to this):
 - o the AVE high-speed passenger train network in Spain is being constructed using the UIC gauge and is planned to connect to the French network between Perpignan and Figueras and between Irun and Hendaye, and;
 - o at intersections between the UIC and Iberian gauges within the Spanish network, interoperability will be supported through gauge changing devices, for example, near Chamartin station in Madrid and near Medina del Campo.

¹ Union International de Chemins de Fer.

TRACTION ENERGY

2. The interoperability of some national systems remains problematic because electricity supplied to the railways of neighbouring Member States operate according to different technical standards and this causes complications at cross-border locations (see **Box A**). In view of the significant costs and technical challenges, the problem is unlikely to be fully solved by investing in new dedicated energy supply infrastructure at national level and pragmatic approaches are taken in practice. For example, where energy systems are not interoperable either:
 - o single power system trains have to stop at borders to change locomotives, implying a minimum of about 15 minutes shunting and the risk of consequent cumulative further delays;

- o investments are made by railway undertakings to equip their locomotives to operate on more than energy systems, or;
- o diesel locomotives are used, which whilst still in common use are seen as less efficient and also undesirable from a clean energy perspective.

TRAIN LENGTH

3. The length of trains allowed on national networks is not always consistent, even on the same trans-European corridor. Such restrictions are often imposed as a result of characteristics of the infrastructure such as the availability of passing places, tight curves in the lines or the presence of steep gradients (such as on Alpine crossings). For example, trains in France can be up to 600 metres long, whilst only 450 metres is allowed in Spain (Priority Project 3). Irrespective of gauge differences at this border, therefore, either freight trains of only 450 metres are run on the French side or, if longer trains are to travel to and from France, time needs to be taken to split and rebuild trains thus running the risk of additional delays at the border.

EXAMPLES OF INTEROPERABILITY OF TRACTION ENERGY SUPPLY SYSTEMS

The energy systems of Germany and Austria are compatible and this does not represent an interoperability problem for single system locomotives, whereas the Dutch and German (Priority Project 5) are not interoperable and neither are those of Austria and Italy (Priority Project 1). This is one source of complications at cross border locations such as Brennersee.

TRAIN CONTROL (SIGNALLING) SYSTEMS

4. There are currently more than 20 stand-alone train control (signalling) systems across the European Union that are not interoperable and this represents an important barrier to trans-European interoperability. ERTMS seeks to contribute to the creation of a seamless European railway system by replacing the different national train control systems in Europe. It also facilitates high speed rail transport, allows for increased capacity on rail lines and improves safety. ERTMS has two basic components: the European Train Control System (ETCS), an automatic train protection system to replace the existing national systems; and GSM-R, a radio system for providing voice and data communication between the track and the train. A European Deployment Plan has been agreed amongst the Member States² in respect of ERTMS however, based on current time horizons, its deployment is expected to be long, often linked to the timescales on the renewal of existing train control systems. During this deployment phase, in circumstances where ERTMS is not in operation along the entirety of a corridor and some sections continue to be served with only the existing system, locomotives will have to be fitted with both ERTMS and the existing systems and implies increased installation and maintenance costs for the train operator. This would affect freight transport in particular, where locomotives are normally called upon to operate over a wider range of routes.

² Commission Decision 2009/561/EC of 22 July 2009 amending Decision 2006/679/EC as regards the implementation of the technical specification for interoperability relating to the control-command and signalling subsystem of the trans-European conventional rail system ("the European Deployment Plan") [C(2009) 5607 final].

DIFFERENCES IN OPERATIONAL RULES

5. Each Member State has its own established set of operational rules for rail traffic on the national networks (similar to highway codes for roads). These rules dictate key elements of safety-related train equipment and stipulate how drivers have to behave in all foreseeable traffic circumstances. In some cases, neighbouring Member States have broadly similar operational rules and accept the operational practices of their neighbours to the extent that trains can run between them without differences in rules necessitating a stop at the border (for example, Germany and Austria). In many other cases, however, differences in operational rules between neighbouring networks mean that trains cannot drive from one network to another without stopping at the border either to make adjustments to the train (examples of such variations include rules concerning tail markers, numbers of drivers, fire extinguishers etc) or to change locomotives (see **Box 13**). Whilst these adjustments at the borders do not themselves entail significant delays, the fact that trains stop at border locations cause complications for traffic managements and runs the risk of cumulative consequent delay.

CROSS ACCEPTANCE OF ROLLING STOCK

6. Railway rolling stock has to be subjected to technical checks to make sure that it is suitable for using the rail infrastructure (a process called homologation). These checks are carried out in one Member State in respect of its own infrastructure (by national rail safety authorities) and results in certificates being issued in respect of the rolling stock. However, in order for a locomotive or wagon to travel on the network of more than one Member State, they normally have to undergo the authorisation procedure in each country. This can be a lengthy and sometimes costly process. Therefore, in the interests of facilitating access to the European rail network generally, it is desirable that rolling stock that has been approved in one Member State can be accepted on the rail network of another. This is not always the case, and trains with locomotives that have not been authorised for use in the neighbouring country would have to stop at the border to change locomotives (even if there were otherwise no interoperability or other constraints). Measures are being taken at European Union level to improve the situation³.

³ Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community.

TRAIN CREW CERTIFICATION

7. It is important that communication between train crews and train control centres can take place effectively and that train crews are able to drive according to the operational rules. Addressing such matters is relatively straightforward for trains that travel only on the rail network of one Member State. However, for trans-European routes, on which trains cross borders between national networks, the situation is more complicated as train crews may be required to speak different languages and to be certified to drive under the operational rules of more than one Member State. Changing train crews is, therefore, another reason why trains stop at borders. Railway undertakings often pragmatically plan trans-European services so that changes of train crew take place at the same time as other actions commonly necessary at borders, such as change of locomotives, hand-over of trains to a different railway undertaking and other factors resulting from differences in operational rules. It is also planned so that drivers can return home within one working day. However, where Trans-European services require crossing borders without stopping, for example high speed passenger services solutions have to be found regarding train crew training and certification (see **Box B**). Measures are being taken at European Union level to improve the situation⁴.

⁴ Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 on the certification of train drivers operating locomotives and trains on the railway system in the Community (OJ L 315, 3.12.2007, p. 51).

BOX B

CROSS BORDER SOLUTIONS REGARDING TRAIN CREW CERTIFICATION

On the [Paris-London](#) high speed lines section of Priority Project 2, a common set of vocabulary was agreed between the French and British rail authorities so that specially trained drivers could drive the entire journey.

For the [Mannheim and Metz](#) section of Priority Project 4, historically a complicated cross-border location, a dedicated training programme to provide special certification for German and French train crews was agreed upon.

TECHNICAL AND COMMERCIAL CONTROLS

8. There are two main reasons why technical and commercial controls are carried out. Firstly, for long distance services, some national regimes set maximum intervals at which such controls aimed at ensuring the safety of the train have to be carried out (for example, a maximum of 700 km is relevant in Italy). However, one case was observed where such controls were required at a border station in the middle of a journey whose entire length was less than the stipulated maximum. Secondly, for rail services that involve crossing borders (in particular freight), different railway undertakings acting as commercial partners commonly take responsibility for the train on the different national networks handing over the train at border stations. Traditionally, both railway undertakings carry out their own technical and commercial controls, which essentially repeat the same control twice. One case was observed where railway undertakings from different Member States were working towards agreeing to accept the controls carried out by the other. Such 'on-trust' handovers can save time at border stations (see **Box C**). Measures are being taken at European Union level on the basis of Directive 2008/57/EC to improve the situation.

ON-TRUST HANDOVERS AT BRATISLAVA VYCHOD

For the handover of trains at the border terminal, both Austrian and Slovak railway undertakings carried out technical and commercial controls, each requiring at least 30 minutes. In order to alleviate this unnecessary delay, a reciprocal arrangement is being developed whereby the controls carried out by one railway undertaking are accepted by the other, with a potential saving of 30 minutes.

REAL-TIME TRAFFIC MANAGEMENT

9. Real-time traffic management is especially important for those sections that are prone to congestion, such as bottlenecks and cross-border locations where many trans-European trains have to stop (examples on the Priority Projects reviewed for the audit include the Dutch-German border at Emmerich and the Austria-Italian border at Brennersee (see **Photo 7**)). Congestion can occur at these locations when trains do not arrive in time to take-up their allocated 'slot' to enter the neighbouring rail network and consequently have to await the allocation of a new 'slot'. Knowledge of the real-time location of trains and communication between the traffic managers of neighbouring networks are important for managing such circumstances. Communication tools need not be complicated (for example, contacts between Dutch and German traffic managers at Emmerich have reportedly improved by using telephone and email). Whilst effective IT-based interfaces aimed at integrating national traffic management systems have yet to emerge, some projects are under development to improve the real-time information available to railway undertakings about the progress of their trains (see **Box D**).

BOX D

EUROPTIRAILS

The EUROPTIRAILS tool (under the responsibility of RailNetEurope since 2007) has the potential to make real-time, online supervision of European rail traffic possible for the first time, and, in doing so, highlight where suitable measures for quality improvement could be developed. It could also provide a basis for evaluating performance, for example, by comparing planned with actual travel time.

REPLY OF THE COMMISSION

EXECUTIVE SUMMARY

II. first indent

The Commission agrees that the definition of the Priority Projects has not been based on an analysis of the actual and anticipated traffic flows. It is important to note, however, that while such studies have been carried out, both for individual projects and the network, they have yet to lead to conclusive results and so could not be used as such.

The Commission considers that providing a definitive description of the main trans-European rail axes is likely to be particularly difficult, as they are in a constant state of flux depending on migration, trade patterns and the geopolitical context. The Commission, however, also shares the view that the definition of the main network should be based on objective criteria. Therefore, in the future, Priority Projects should continue to be based on political agreement between the Council and European Parliament, but relying even more on the best available evidence.

II. second indent

The Commission welcomes the Court's recognition of the improvements flowing from the concentration of TEN-T co-financing at cross-border locations and the work of the Coordinators. It agrees that further work on defining a bottleneck is needed and will work on this.

The Commission considers that the procedures for approving projects are sound, particularly following their substantial overhaul for the 2007-2013 programming period. These procedures were substantially strengthened by the integration of the Cohesion Fund in programming and specific measures to improve project preparation, documentation and the quality of Commission appraisals.

II. third indent

The Commission welcomes this positive assessment of what the TEN-T and Cohesion co-financed projects have delivered. It would emphasise that, as the Court states in its paragraph 47, cost escalations do not have an impact on the EU budget because the EU's contribution is fixed at the beginning of the project.

II. fourth indent

The Commission shares the Court's analysis of the measurable improvements on lines dedicated to high-speed passenger services. It is working to improve the situation on conventional mixed and freight lines.

III. first indent

The Commission already has close contacts with the Member States and the Railway Institutions. It will continue to work closely with them. In addition, as part of its ongoing stakeholder consultation exercise on the TEN-T guidelines, the Commission is looking for input on how trans-European corridors for which there is significant actual or anticipated demand can best be delivered.

III. second indent

The Commission agrees that the Coordinators play a vital role and it appointed three new ones on 8 June 2010, bringing their number to nine.

The Commission agrees that further work on defining a bottleneck is needed and will continue to work on this. The European coordinators have analysed the bottlenecks on the Priority Projects for which they are responsible. The Commission has also reported on the bottlenecks in its yearly reports.

REPLY OF THE COMMISSION

INTRODUCTION

III. third indent

The Commission considers that the procedures for approving projects under the Cohesion Policy for the 2007-2013 programming period are sound. The Commission continues to work on their improvement and is investing significant resources to contribute to the improvement of project preparation.

The Commission welcomes the Court's recognition of the improvements made to TEN-T selection procedures; however, it accepts that there is room for improvement as regards the use of cost-benefit analysis. The TEN-T Executive Agency is working to develop this further; nevertheless, given that TEN-T financing only co-funds a limited amount of each project compared to that funded by Member States, it is logical that the onus for assessing costs and benefits should fall on them, particularly as almost all data and assumptions originate from them.

III. fourth indent

The Commission recognises the importance of exchanges of information amongst project promoters. The TEN-T Executive Agency will facilitate this by organising discussions at its regular workshops with current and potential beneficiaries on best practices and knowledge exchange between all project promoters, particularly in the rail sector.

III. fifth indent

By adopting Technical Specifications for Interoperability the Commission has worked, and will continue to work, on these 'practical constraints'. The European Coordinators also devote particular efforts to these issues.

11. footnote 6

When presenting figures related to investments in its documents the Commission bases itself on the information provided by Member States. Recognising that the quality of the financial data would benefit from improvement, the Commission invested significant efforts which resulted in the information in the Commission's June 2010 report being significantly better than in previous reports.

14.

The Commission underlines that, prior to 2007, Cohesion Fund projects were adopted on a project-by-project basis and in line with the available budget credits. The legal basis for the Priority Projects only applied after 2004.

REPLY OF THE COMMISSION

OBSERVATIONS

22.

The Commission understands that the Court means by stating that 'the Priority Projects do not represent definitive descriptions of the main trans-European rail axes' that there needs to be general agreement on what are the main axes, and that this agreement should remain as stable as possible over time.

The Commission considers that it is likely to be particularly difficult to provide a definitive description of the main trans-European rail axes, as they are in a constant state of flux as a function of migration, trade patterns and the geopolitical context. The Commission, however, also shares the view that the definition of the main network should be based on objective criteria. Therefore, in the future, Priority Projects should continue to be based on political agreement between the Council and European Parliament, but relying even more on the best available evidence.

22. third indent

While the Commission acknowledges that connections to some important sea ports are not included in the Priority Projects, it would underline that many are. On 4 May 2010, as part of its TEN-T revision process, it put forward a working document that establishes the methodology for identifying a future TEN-T network. This should avoid any future occurrence of the situation described by the Court.

Box 4

The Commission acknowledges that the ERTMS corridors do not 100 % coincide with Priority Projects. ERTMS has requirements that need to be met for both infrastructure and rolling stock. The TEN-T revision process is designed to tackle this, and one possibility being considered is to include ERTMS corridors directly into the Priority Projects.

The Commission understands that the Polish authorities will submit an application for funding for the part of the Polish north-south axis from Warsaw to Gdynia in late 2010, that this will include ERTMS and that it will have an indicative total cost of 386 million euro.

23.

The Commission agrees that there is scope for improving the definition of Priority Projects. This is something that is being addressed through the TEN-T revision process.

24.

The Commission agrees that the definition of the Priority Projects has not been based on an analysis of the actual and anticipated traffic flows. It is important to note, however, that while such studies have been carried out both for individual projects and the network, they have yet to lead to conclusive results and so could not be used as they stood.

REPLY OF THE COMMISSION

As the Court has stated, the Commission acknowledges the need to review the TEN-T policy. This review is currently being carried out and includes an examination of the methodology for defining the future TEN-T network.

29.

The Commission considers that EU financing has had a significant influence on all the TEN-T sections reviewed by the Court for this audit. This has included improving the projects originally planned or reducing their risk.

30.

The Commission considers that, in countries covered by the Cohesion Fund, many rail projects would simply not go ahead without the substantial EU co-financing from the Cohesion Fund or the ERDF including cross-border sections, thereby improving accessibility and performance for all users. The requirement is to give priority to technically and economically mature projects that are feasible within the programming period; otherwise the Funds may be lost to the beneficiaries.

The definition of major projects in Article 39 of Regulation (EC) No 1083/2006 has been amended to make it easier for the Member States to submit major cross-border projects.

33.

The Commission agrees that further work on defining a bottleneck is needed and will continue to work on this. The European coordinators have analysed the bottlenecks on the Priority Projects they are responsible for. The Commission also reported on the bottlenecks in its yearly reports.

34.

The Commission for the 2007-2013 period improved its approval procedures for major projects co-funded by the ERDF and the Cohesion Fund. Large projects co-financed under the Cohesion Fund in the 2000-2006 period were often approved section by section for budgetary reasons. In this sense the quality of the preparation of individual sections may not reflect the quality of preparation and development of the overall axis.

35.

Internal consultation of the relevant Commission services ('inter-service consultation') has been and still is a crucial element in the appraisal and approval process.

In the 2007-2013 programming period the Commission has established JASPERS, which provides technical assistance to the new Member States in order to contribute to the improvement of quality of projects at an early stage. It also has a contract with outside experts for technical advice in the appraisal of major projects.

Under shared management, the project promoter is responsible for adequately defining the technical specifications of projects. The adoption of technical specifications (see annex I) makes a significant contribution to improving the technical quality of rail infrastructure. The Madrid-Levante project was approved in stages, section-by-section, for budgetary reasons, and not in its totality, as the network involves a total of 940 km of high-speed rail. The EIB was consulted and its recommendations were progressively taken on board in this project. The EIB considered the financing of this projects justified and itself is providing substantial loans for it, in addition to the Cohesion Fund support.

REPLY OF THE COMMISSION

The Commission disagrees with the implication that subsequent cost escalations were all linked to the EIB's concerns. It considers that as explained in reply to 46 other factors were responsible.

37. first indent

The Commission would like to emphasise that external experts are at the heart of the TEN-T project selection process. There is also an external observer who provides comprehensive feedback to the TEN-T Executive Agency on the whole external evaluation process.

38.

While the Commission welcomes the Court's recognition of the improvements made to selection procedures, it accepts that there is room for improvement as regards the use of cost-benefit analysis. In the future, the TEN-T Executive Agency will develop a more systematic approach to cost-benefit analysis taking into account existing work. In order to do this it will work with the projects selected in priority 3 of the 2010 annual call to improve project preparation, including by developing consistent approaches to cost-benefit analysis.

Nevertheless, given that TEN-T financing only co-funds a limited amount of each project when compared to that funded by Member States, it is logical that the onus for assessing costs and benefits should fall on them, particularly as almost all data and assumptions originate from them.

As far as the coherent model of European rail traffic flows is concerned, the Commission remains to be convinced that the additional insights it would provide would justify the potentially significant level of resources needed in order to bring it to fruition.

44.

A Memorandum of Understanding was adopted on 8 June 2010, setting out the steps to remedy this situation. The three Member States concerned by PP3 (France, Spain and Portugal) have signed it.

45.

The Commission would like to emphasise that cost escalations are typical for large infrastructure projects.

46.

The Commission agrees on the benefits of thorough and detailed project preparation; however, as the Court states in the previous paragraph, cost escalations in the cases studied generally arose for reasons linked to unforeseeable factors.

Concerning the Madrid-Levante section (but also other equally complex projects), the cost increases mentioned by the Court could be due to a variety of factors, some of which are unforeseeable. For example, high inflation in construction projects in Spain and an unforeseen increase in costs due to difficult geological conditions have had a significant effect on the Madrid-Levante project cited by the Court.

REPLY OF THE COMMISSION

47–48.

The Commission shares the Court's opinion that the cost escalations did not have a direct impact on the EU budget and notes that the Court has not documented any indirect impacts either.

The Commission would like to underline that, according to the new model of financing decisions for TEN-T funds for the period 2007-2013, the beneficiaries and project promoters have to submit a Strategic Action Plan (SAP) detailing how the project will be implemented, including in terms of project planning, the risk management plan and project governance. The TEN-T Executive Agency has already developed guidelines on this issue and is working on the exchange of good practices between beneficiaries.

Box 8

The Warsaw-Gdynia, stage II project faced many problems that are independent of the Commission's approval procedures, such as significant delays in the tendering procedures, problems with land purchase and ensuring access to the building site, as well as disputes with contractors. The Commission has repeatedly raised the issue of cost overruns on the Warsaw-Gdynia, stage II project, and the Polish authorities have announced that they will submit a modified proposal for it. The Commission made it clear that it will not process this modification without the Polish authorities submitting a horizontal analysis on cost overruns in the rail sector and how they are dealt with.

54.

The Commission agrees with the Court that overall progress on trans-European rail transport depends on achieving synergies between the effects of legislative measures affecting markets and interoperability and co-financing policy measures.

Box 11

The Commission is closely monitoring this situation in the framework of ERTMS Corridor A. It has adopted a European Development Plan for ERTMS, as well as a proposal for a regulation for Rail Freight Corridors, which was adopted on 15 June 2010 by the European Parliament and the Council. Moreover, the Commission has appointed TEN-T Coordinators.

Box 12

The Commission is aware that no freight trains currently use the Roma-Napoli and Bologna-Firenze high-speed, high capacity lines. However, thanks to the introduction of these high-speed, high-capacity lines, there has been more capacity for freight transport on the existing conventional lines. In any case, most of the expected benefits from the ERDF funded sections relate to passengers' improved access to the rail network and not to freight transport.

57.

The Commission acknowledges that progress towards interoperability is slow. Radical harmonisation is not possible, given that rail infrastructure and rolling stock have long lifetimes and the sector's investment costs need to remain realistic.

Nevertheless, the amount of interoperable infrastructure and rolling stock is increasing and the number of derogations requested by Member States from the Commission's implementing legislation setting out Technical Specifications for Interoperability (TSI) is limited. This shows that the existing TSIs are being implemented successfully. As far as the TEN-T network is concerned, the TSIs are expected to be completed in 2010. This will benefit both TEN-T and Cohesion policy funded projects.

REPLY OF THE COMMISSION

The Commission will continue its efforts by concentrating on the implementation of TSIs that will deliver significant benefits in the short and medium term, such as telematics applications in signalling, freight and passenger transport. It has also set up corridor organisations to identify and tackle all issues that hamper the competitiveness of rail freight along axes.

As far as the measures in paragraph 8 of Annex VII are concerned, the Commission considers that steps are being taken at the European level to improve the situation:

- 1) in the framework of Directive 2008/57, activities are ongoing to classify all national rules regarding rail traffic, assess which ones are equivalent and thus avoid duplication of controls, in particular at the borders
- 2) in the framework of the ERTMS corridors, working groups are identifying all existing obstacles - in particular delays at the borders - by looking at the obstacles specific to each border.

60.

The European coordinators have made efforts to alleviate system constraints on corridors, which will be extended as a result of the proposed regulation on rail freight.

The Commission's November 2008 proposal for a regulation creating a structure for each rail freight corridor is also significant in this respect. It will develop reinforced cooperation between Infrastructure Managers on traffic management (operational measures) and investment (mainly to remove bottlenecks and harmonise technical conditions). It is based on the experience with the Rotterdam-Genoa and Antwerp-Lyon/Basle corridors.

REPLY OF THE COMMISSION

CONCLUSIONS AND RECOMMENDATIONS

62.

The Commission welcomes the work of the Court, which is especially timely given the upcoming revision of the TEN-T networks.

63.

The Commission agrees with the Court that Priority Projects are the main mechanism for co-ordinating and concentrating financial resources on TEN-T networks and continues to pursue this course, while ensuring complementarity with regional development objectives and cohesion policy. In this light, it understands why the Court wishes that Priority Projects should be defined on the basis of an analysis of current and expected traffic flows. It is important to note, however, that while such studies have been carried out, both for individual projects and for the network, they have yet to lead to conclusive results and so cannot currently be used as such.

The Commission considers that arriving at a definitive description of the main trans-European rail axes is likely to be particularly difficult, as they are in a constant state of flux depending on migration, trade patterns and the geopolitical context. The Commission, however, also shares the view that the definition of the main network should be based on objective criteria. Therefore, in the future, Priority Projects should continue to be based on political agreement between the Council and European Parliament, but relying even more on the best available evidence.

Recommendation 1. first indent

The Commission already has close contacts with the Member States and the Railway Institutions. It will continue to work closely with them on rail traffic matters.

Recommendation 1. second indent

As part of its ongoing stakeholder consultation exercise on the TEN-T guidelines, the Commission is looking for input on how this can best be done.

64.

The Commission welcomes the Court's acknowledgement of the improvements flowing from the concentration of TEN-T co-financing at cross-border locations and the work of the Coordinators. It agrees that further work is needed to define a bottleneck and will work on this.

The Commission notes that Cohesion Fund project approval procedures have substantially changed from 2007.

The Commission welcomes the Court's recognition of the improvements made to TEN-T selection procedures; however, it accepts that there is room for improvement as regards the use of cost-benefit analysis.

REPLY OF THE COMMISSION

Recommendation 2. first indent

The Commission agrees that further work on defining bottlenecks is needed and will continue to work on this. The European Coordinators have analysed the bottlenecks on the Priority Projects for which they are responsible. The Commission also reported on the bottlenecks in its yearly reports.

Recommendation 2. second indent

The Commission agrees that the Coordinators play a vital role and appointed three additional Coordinators on 8 June 2010.

Recommendation 2. third indent

The Commission considers that the procedures for approving projects are sound, particularly following their substantial overhaul for the 2007-2013 programming period. The Commission continues to work on their improvement and is investing significant resources to contribute to the improvement to project preparation and appraisal. As far as the technical characteristics of projects are concerned, their review will be greatly improved through the continued development of TSIs.

Recommendation 2. fourth indent

The Commission accepts that there is room for improvement as regards the use of cost-benefit analysis. In the future, the TEN-T Executive Agency will develop a more systematic approach to cost-benefit analysis. To do this it will work with the projects selected in priority 3 of the 2010 annual call to improve project preparation, including by developing consistent approaches to cost-benefit analysis.

Nevertheless, given that TEN-T financing only co-funds a limited amount of each project when compared to that funded by Member States, it is logical that the onus for assessing costs and benefits should fall on them, particularly as almost all data and assumptions therefore originate with them.

Recommendation 3

The Commission recognises the importance of exchanges of information amongst project promoters. The TEN-T Executive Agency will facilitate this by organising discussions at its regular workshops with current and potential beneficiaries on best practices and knowledge exchange between all project promoters, particularly in the rail sector.

66.

The Commission shares the Court's analysis of the measurable improvements on lines dedicated to high-speed passenger services. It is working to improve the situation on conventional mixed and freight lines.

Recommendation 4. first indent

Through adopting Technical Specifications for Interoperability the Commission has worked on these 'practical constraints' and will continue to do so. The European Coordinators also devote special efforts to these issues.

Recommendation 4. second indent

In November 2008, the Commission proposed a regulation creating a structure for each rail freight corridor that will strengthen cooperation between Infrastructure Managers (supervised by Member States), for traffic management (operational measures) and for investment (mainly in removing bottlenecks and harmonising technical conditions). It is based on the experience with the Rotterdam-Genoa and Antwerp-Lyon/Basle corridors.

European Court of Auditors

Special Report No 8/2010
Improving transport performance on trans-European rail axes:
Have EU rail infrastructure investments been effective?

Luxembourg: Publications Office of the European Union

2010 — 71 pp. — 21 × 29,7 cm

ISBN 978-92-9207-818-8

doi:10.2865/97788

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EUROPEAN COURT OF AUDITORS



Publications Office

ISBN 978-92-9207-818-8



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