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on the deployment of the European rail signalling system ERTMS/ETCS
(2005/2168(INI))

Committee on Transport and Tourism

Rapporteur: Michael Cramer

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on the deployment of the European rail signalling system ERTMS/ETCS (2005/2168(INI))

The European Parliament,

- having regard to the Commission communication to the European Parliament and the Council on the deployment of the European rail signalling system ERTMS/ETCS (COM(2005)0298) and the accompanying Commission staff working paper (SEC(2005)0903),
 - having regard to the agreement, known as the ‘Memorandum of Understanding’, signed in Brussels on 17 March 2005 by the Commission and European rail industry associations (CER, UIC, UNIFE, EIM), which lays down the main principles governing the deployment of ERTMS,
 - having regard to Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system¹ and 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 system²,
 - having regard to 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 network³,
 - having regard to the proposal for a regulation of the European Parliament and of the Council determining the general rules for the granting of Community financial aid in the field of the trans-European transport networks and energy and amending Council Regulation (EC) No 2236/95 (COM(2004)0475),
 - having regard to the hearing held by the Committee on Transport and Tourism on 24 January 2006, at which representatives of railway companies, infrastructure managers, and the rail industry spoke out unanimously in favour of the deployment of ERTMS,
 - having regard to the current programme and the future seventh framework programme of the European Community for research, technological development and demonstration activities,
 - having regard to Rule 45 of its Rules of Procedure,
 - having regard to the report of the Committee on Transport and Tourism (A6-0000/2006),
- A. whereas the present situation, in which there are more than 20 different national train protection and signalling systems, is not only inefficient and costly, but also greatly complicates the work of train guards, especially in cross-border traffic, and constitutes a potential source of danger,

¹ OJ L 235, 17.9.1996, p. 6.

² OJ L 110, 20.4.2001, p. 1.

³ OJ L 167, 30.4.2004, p. 1.

- B. whereas ERTMS has been successfully tested on various pilot routes and a consolidated prototype version is now available; whereas, however, the long service life of trackside and on-board safety devices – generally over 20 years – might mean that ERTMS and national systems will coexist side by side for many years,
- C. whereas national train protection and signalling systems will disappear as a result of technological obsolescence or because the markets concerned are too small; whereas the future of the European signalling industry will depend on its ability to produce modern standardised equipment for the world market; whereas, in addition, the ERTMS project is vital for the medium- to long-term development of the industry and its 15 000 highly skilled jobs,
- D. whereas ERTMS is becoming an export-oriented project because railway companies outside Europe have likewise already decided to replace their obsolete systems with ERTMS; whereas current locomotive orders from Korea, Taiwan, India, Saudi Arabia, and the People's Republic of China, as well as infrastructure projects in those countries, are a clear measure of the market potential; whereas, moreover, those projects, spread as they are across the globe, demonstrate the huge potential of this European technology, which could become the world standard, if it can be built upon a strong enough European market base,
- E. whereas it is therefore particularly important, as regards the next step, to lay down a clear-cut coordinated migration strategy so as to afford the rail industry the necessary certainty as to planning,
- F. whereas the agreement between the rail industry and the Commission signed in March 2005, the 'Memorandum of Understanding', has sent a significant message from that point of view,
- G. whereas the consolidated version of the ERTMS technical specifications, which the Commission is due to adopt in the next few months, provides a sufficient basis on which to set up interoperable systems and organise invitations to tender regarding the corridors,
- H. whereas the deployment of ERTMS is a major cross-border European economic project and whereas progress as regards a standard train protection and signalling system could play a central role in the strategy of easing the strain on the roads and shifting transport flows to the railways,

Fundamental considerations: migration and strategy

1. Recognises that, as a train protection and signalling system, ERTMS is superior to the national systems to the extent that it is cheaper as far as new acquisitions and maintenance are concerned – for instance because signal posts will no longer be necessary – safer in terms of troubleshooting and monitoring, and very often will enable line capacity to be increased substantially;
2. Notes that, through ERTMS, digital technology will be applied uniformly to European rail infrastructure as well, thus enabling congestion at junctions and bottlenecks to be eliminated, without need for costly new building; notes, however, that during the migration stage considerable additional costs will be incurred, which will be economically

impossible for building firms to meet on their own; considers that continuous traction without time-consuming changes of locomotive and driver when crossing a border cuts costs and journey times;

3. Recognises that ERTMS technology will give the rail industry a historic opportunity to exploit digital technology to the full for the benefit of the railways, gain in competitiveness, and make up ground on the other modes of transport, especially since trains will be able to 'steal a march' by transporting goods in cross-border carriage over long stretches at a time;
4. Recognises that ERTMS has been developed with the aid of the previous research framework programmes, and at present exists in a consolidated prototype form that can thus be deployed widely as of now; also notes that the deployment of GSM-R is proceeding apace and good progress is being made as regards ETCS; stresses, however, that this has not yet sufficed to create an automatic cause and effect relationship whereby, irrespective of the financial and safety aspects and the matter of boosting capacity, ERTMS will be established on the entire trans-European rail network without further intervention and the 20 different train protection and signalling systems still existing today will in a few years' time be a thing of the past because they will have been superseded by a single system – ERTMS – in all the EU Member States;
5. Points out that, trackside, ETCS requires only the 'eurobalise' radio beacons for data transmission and that, as far as on-board devices are concerned, an ETCS on-board unit processes the train protection data;
6. Points out that, despite all the progress, there are still functional gaps in standard 2.3.0 that rule out its early commercial application in Europe; considers that further efforts must be made in order to move swiftly to the higher standard urgently needed for cross-border rail transport in particular; believes more extensive standardisation, leading to fully comparable ERTMS specifications in all EU countries, to be the only way of enabling system components to be manufactured in larger numbers and achieving economies of scale; considers that the price level, which today is up to eight times as high as the target prices originally specified, could then be reduced and ERTMS could be placed on an economically rational footing;
7. Realises that it would be unsatisfactory for old systems and ERTMS to coexist side by side for decades and that it will accordingly be vital to coordinate the migration and make the migration stage as short as possible; considers, in view of the foregoing, that a sound migration strategy for the whole network, as likewise called for in the agreement between the Commission and the European rail industry associations, has a key role to play; calls on the Commission, therefore, to submit a binding 'ERTMS master plan' without delay;
8. Assumes that a successful migration to ERTMS will pose a considerable challenge to all concerned; believes that Member States, transport ministries, rail transport operators, infrastructure managers, and the rail industry will have to agree on the goals and that roles and responsibilities must be clearly defined; welcomes the fact, therefore, that the Commission has appointed Karel Vinck to coordinate this major project;
9. Maintains that a decisive breakthrough would be impossible to achieve if ERTMS were to take the form of, say, a patchwork of fairly small pockets that could be reached or crossed

only by using a multitude of national systems; considers on the contrary that the key to success lies firstly in equipping selected corridors with ERTMS throughout and secondly in attaining 'critical mass' as quickly as possible in terms of equipped lines and trains so as to bring about further economies of scale;

10. Maintains that ERTMS, a standard train protection system, will reduce, or remove the need for, the costly manufacture and operation of rolling stock with numerous obsolete systems added on and greatly simplify and speed up interoperability; points out that only 13% of freight in the Union is carried by rail, whereas the figure in the US stands at about 27%; believes, given that the EU at present constitutes such a technical and political hotchpotch, that the above percentage is scarcely possible to raise to any appreciable extent and that it would accordingly be desirable to invest resolutely in ERTMS as a matter of priority;

Priorities

11. Is consequently of the opinion that if ERTMS is to succeed, it will be essential for the corridors dealt with, first and foremost the Rotterdam-Genoa freight corridor (priority TEN project No 24 in Decision No 884/2004/EC), and the trains running on them to be equipped quickly and completely with ERTMS, not least because this will encourage all concerned to adopt a 'Community approach' instead of thinking in purely national terms;
12. Also takes the view that the most recent enlargement of the Union, in 2004, should cause the focus of attention to shift very definitely towards east-west links; believes, therefore, that, in addition to the above-mentioned Rotterdam-Genoa north to south corridor, the second priority should be to equip an east to west corridor with ERTMS; considers that the second corridor should link Antwerp and Tallinn, this being an extension of the axis provided for in the Memorandum of Understanding; considers it important to bear in mind that the Baltic States and Poland will incur little additional outlay, since extensive modernisation work will need to be carried out in any case on their lines;
13. Points out that disparities in national licensing procedures for railway vehicles pose a fundamental problem for the European rail industry that becomes more acute when considered together with ERTMS; calls on the Commission, assisted by the European Railway Agency, to press determinedly ahead with the work on a standard simplified EU-wide licensing procedure and to define and permanently establish binding standards for all, so as to enable manufacturing and fitting-out costs to be reduced substantially; considers that the foregoing should apply not just to new vehicles, but also to railway vehicles already in use;

The 'home straight' problem

14. Is of the opinion that when a route is equipped with ERTMS, the system should be complete, extending from platform to platform or freight centre to freight centre as far as the national border or the port served; also takes the view that no EU support should be granted if the above criterion is not fulfilled and calls on the Commission to ensure strict compliance with this point;
15. Calls for the limited supervision application mode to be implemented rapidly in the ETCS standard, since this will enable various national systems to be replaced by, or combined

with, ETCS; notes in addition that limited supervision could offer an economical way to fill gaps, especially at junctions;

16. Is of the opinion that the ERA, in agreement with the national transport ministries, must ensure that no new locomotives will be licensed in the future unless they are fitted with ERTMS as well as with the national train protection and signalling system;
17. Points out that national variants of ETCS 2.3.0 are currently being used on high-speed routes (for example Rome to Naples, Madrid to Llerida, or Berne to Olten); notes, however, that the use of the system in the conventional rail sector (freight traffic) and especially in cross-border traffic still poses problems; maintains that solutions need to be found as a matter of urgency regarding key functions such as level crossings with barriers, parameterised graphical braking representation, the limited supervision application mode, and radio infill;
18. Notes that the Paris-eastern France-south-west Germany high-speed rail link, like the Rotterdam-Genoa north to south corridor, cannot yet be operated using ERTMS throughout and consequently calls on all concerned to fill the gaps as quickly as possible;
19. Believes that the railway companies, the rail industry, and the ERA must together draw up the standard of the future and the EU must lay down migration on a common and binding basis for all; considers that independent national initiatives to develop the system further must be prevented so as to ensure that the 20 different existing systems will not be replaced by 20 incompatible ERTMS-based systems;
20. Is aware that the Member States or railway companies differ greatly in terms of their investment requirements, national train protection and signalling systems, and the 'marketing stages' which those systems have reached; considers, however, that such differences are unavoidable in the EU and do not constitute a reason for rejecting ERTMS;

Financing

21. Recognises, given that the project has a European dimension, that it is both legitimate and necessary to grant EU aid for the deployment of ERTMS; is of the opinion that the costs must be apportioned fairly among Member States, the EU, railway companies, and the rail industry; consequently calls on the Member States to treat ERTMS as a priority in their transport and budget decisions in the coming years;
22. Maintains, therefore, that the necessary provisions should be incorporated in the proposal for a regulation of the European Parliament and of the Council determining the general rules for the granting of Community financial aid in the field of the trans-European transport networks and amending Council Regulation (EC) No 2236/95 (COM(2004)0475 – 2004/0154(COD)), which Parliament dealt with at first reading¹ on 26 October 2005;
23. In this connection supports the proposal approved by Parliament at first reading that investment in ERTMS should be treated as infrastructure investment under the regulation; also takes the view, given that ERTMS is a 'cross-border' project, that the maximum aid

¹ Texts adopted, 26 October 2005, P5_TA(2005)0403.

rate should be set at 50%;

24. Is of the opinion, bearing in mind not only the technical considerations outlined above, but also the limited budget funding available, that resources should be concentrated on selected corridors;
25. Suggests that the possibility of degressive aid be considered with a view to accelerating the migration process; believes that railway companies which opt early to deploy ERTMS should receive more aid than latecomers, since the former would be taking a greater investment risk and could not immediately capitalise to the full on the advantages of the new system;
26. Calls on the Commission to give greater thought to possible ways of supporting rolling stock leasing arrangements, since this might help to reduce the high initial costs and enable smaller and medium-sized enterprises to enter the market more easily;
27. Recognises that ERTMS has progressed well beyond the pilot phase and constitutes both a fully fledged system and a major European industrial project, which the EU should support, as a matter of principle, using TEN-T and cohesion budget appropriations; believes, however, that it should also be admissible to support individual areas by means of appropriations from the EU research budget;
28. Looks to the rail industry to take the social and professional interests of employees duly into account when ERTMS is to be deployed and to devise appropriate skills and further training programmes; believes that the deployment of ERTMS will help in the medium term to protect jobs on the one hand because of the system's export potential and secondly because of the higher market shares that rail is expected to gain;

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29. Instructs its President to forward this resolution to the Council and Commission.

EXPLANATORY STATEMENT

The hearing held by the Committee on Transport and Tourism on 24 January 2006 was attended by numerous experts drawn from various branches of the rail industry and from different countries:

- Karel Vinck, the ERTMS coordinator appointed by the Commission
- Marcel Verslype, Executive Director of the European Railway Agency
- Dr Friedrich Hagemeyer, Senior Director, Siemens AG (in this instance representing UNIFE)
- Dr László Mosóczi, Chief Director, Infrastructure Business Unit, MAV (Hungarian Railways)
- Jean Yves Petit, ETF (European Transport Workers' Federation)
- Dr Zbigniew Szafranski, Vice-Chairman, PKP PLK S.A. (Polish Railways)
- Michele Elia, Technical Director, RFI (Rete Ferroviaria Italiana – Italian rail network)
- Dr Benedikt Weibel, Management Board Chairman, SBB (Swiss Federal Railways)
- Joachim Fried, authorised representative responsible for European affairs and regulation, Deutsche Bahn AG
- Pierre Messulam, ERTMS Project Manager, SNCF (French Railways)
- Dr Johannes Ludewig, Executive Director of the CER (Community of European Railway and Infrastructure Companies)

Your rapporteur has also held talks individually with many industry representatives and thus managed to gain a picture of the different matters related to ERTMS. Since the subject has already been outlined in the working document of 19 December 2005 (PE 367.792), the distinguishing features of ERTMS and ETCS will not be discussed again here. The summary below is intended purely to assist understanding of the system.

ERTMS consists of two components, GSM-R (digital radio for data transmission) and ETCS (European Train Control System). GSM-R is also the future transmission standard for the new European control and protection system, ETCS. ETCS is to replace the various national systems in the long term; it operates, or is to be provided in the future, at three different levels. In essence, only one visible new ETCS component is to be installed trackside, namely 'eurobalises' for data transmission. As far as on-board devices are concerned, the ETCS 'on-board unit' processes train protection data.

- At ETCS level 1 the eurobalise replaces conventional intermittent monitoring, there are still trackside signals, and GSM-R has no train protection function.

- At ETCS level 2 trackside signals are no longer necessary; running is protected and controlled by means of an exchange of information between the signal box and the on-board unit via the central radio unit and GSM-R. The eurobalise serves merely to locate the train.
- Finally, at ETCS level 3, the track-release installations required at levels 1 and 2 can be dispensed with.

Viewed as an overall system, GSM-R and ETCS make up the European Rail Traffic Management System (ERTMS).

Regarding your rapporteur's conclusions and recommendations:

The first point to bear in mind is that all those who attended the hearing were agreed that ERTMS is the system of the future. It became clear that the advantages and opportunities offered by ERTMS/ETCS are generally recognised:

- ERTMS enables trains to run across borders using an interoperable system;
- the costly manufacture and operation of 'multi-system' vehicles will be scaled down; tracks will be considerably cheaper to build and maintain than under the systems used to date;
- the use of a single system will simplify operation and maintenance; driver training will be made easier;
- on the whole, ERTMS, if it is the sole system used, will cost less than conventional systems;
- lines can be used more intensively;
- ERTMS will also increase the level of safety;
- last but not least, ERTMS is a highly promising export item.

Despite these extremely encouraging findings, an automatic cause and effect relationship plainly cannot be assumed to apply: given the long service life of signalling installations and rolling stock, ERTMS and conventional systems will inevitably coexist side by side for several years. What is needed, therefore, is to lay down a clear public policy so as to afford the industry certainty from an investment planning perspective and thus keep the migration stage as short as possible.

What do all the parties concerned need to do now? Rail industry representatives have spelt out their expectations addressed specifically to the EU:

- The EU's explicit commitment to ERTMS must now be translated into practice.
- The commitment must also be reflected in terms of financial support: EU aid is essential in the present start-up phase in order to attain 'critical mass'. The rapporteur believes that the necessary aid should be provided for in the regulation determining the general rules for

the granting of Community financial aid in the field of the trans-European transport networks and energy (COM(2004)0475) and granted at rates up to 50%. Degressive aid is an option to consider because a company that invests early undoubtedly takes a greater risk than a latecomer.

- The emergence of ERTMS ‘pockets’ will not suffice to bring about a general breakthrough: on the contrary, ERTMS must be implemented throughout on the corridors selected, to enable its advantages to produce their full effect. Aid must be channelled accordingly. The rapporteur considers that the first priority should be to equip the Rotterdam-Genoa north to south corridor. The enlargement of Europe has also generated new traffic flows, implying a need to take a correspondingly broader view. The rapporteur believes that the second priority should be to determine a corridor running from east to west; the Antwerp-Tallinn link is proposed.
- The ultimate prospect must be to replace the 20 different national train protection and signalling systems with a single European system.

Migration will pose a considerable challenge. It must be coordinated under the responsibility of the coordinator, Karel Vinck, and the European Railway Agency, headed by Marcel Verslype; Member States, railway companies, infrastructure managers, and the rail industry should all be involved in the process, in which the roles and responsibilities of the parties concerned must be clearly defined. The migration strategy should be laid down in a binding ‘master plan’.

One fairly important factor to take into account is the complex balance to be maintained between fixed, reliable ETCS standards and an evolving, growing system: the rapporteur considers it important for the rail industry to be able to rely on an established 2.3.0 standard and work undisturbed on that basis. This does not mean, however, that no further research projects should be carried out: these are necessary and should likewise be eligible for support, although the funding should of course be provided by the research budget.

The rapporteur would point once again to the opportunities that ERTMS offers for the rail industry and hopes that, through this own-initiative report, he can advance the parliamentary debate and help ensure that Parliament contributes its share to the necessary commitment to ERTMS at EU level. He is looking forward with interest to the amendments that will be proposed by fellow Members and to suggestions from the Commission, the Council, the transport ministries, railway companies, infrastructure managers, and the rail industry.