



TEXTS ADOPTED

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Railway safety and signalling: Assessing the state of play of the ERTMS deployment

European Parliament resolution of 7 July 2021 on railway safety and signalling: assessing the state of play of the European Rail Traffic Management System (ERTMS) deployment (2019/2191(INI))

The European Parliament,

- having regard to Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union¹,
- having regard to Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU, and in particular Article 47(2) thereof² (the TEN-T Regulation),
- having regard to Commission Implementing Regulation (EU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European deployment plan³,
- having regard to the special report of the European Court of Auditors (ECA) of 3 October 2017 entitled ‘A single European rail traffic management system: will the political choice ever become reality?’,
- having regard to the European Green Deal,
- having regard to the Commission communication of 9 December 2020 entitled ‘Sustainable and Smart Mobility Strategy – putting European transport on track for the future’ (COM(2020)0789),
- having regard to the Commission’s seventh monitoring report of 13 January 2021 on the development of the rail market under Article 15(4) of Directive 2012/34/EU of the European Parliament and of the Council (COM(2021)0005),

¹ OJ L 138, 26.5.2016, p. 44.

² OJ L 348, 20.12.2013, p. 1.

³ OJ L 3, 6.1.2017, p. 6.

- having regard to Decision (EU) 2020/2228 of the European Parliament and of the Council of 23 December 2020 on a European Year of Rail (2021)¹,
 - having regard to its resolution of 9 June 2016 on the competitiveness of the European rail supply industry²,
 - having regard to Rule 54 of its Rules of Procedure,
 - having regard to the report of the Committee on Transport and Tourism (A9-0181/2021),
- A. whereas the European Rail Traffic Management System (ERTMS) is the EU standard for automatic train protection, which creates an interoperable railway system in Europe;
 - B. whereas four memoranda of understanding on cooperation for the deployment of the ERTMS have been signed by the Commission and European rail manufacturers, infrastructure managers and railway undertakings, with the last one being in September 2016;
 - C. whereas important legislative steps have been taken, including the adoption in June 2016 of the Fourth Railway Package – which regulates rail governance issues and reinforces the role of the European Railway Agency (the Agency) as the system authority for the ERTMS – and the revision of the technical specifications for interoperability (TSIs) for the on-board and trackside control command and signalling (CCS TSI) subsystems adopted through Commission Regulation (EU) 2016/919³, which gives legal status to the European Train Control System (ETCS) Baseline 3 Release 2 and GSM-R (Global System for Mobile Communications – Railway) Baseline 1 specifications;
 - D. whereas a new ERTMS European deployment plan (EDP) was adopted on 5 January 2017⁴, laying down the timetable for the deployment of the ERTMS on core network corridors (CNCs);
 - E. whereas a fully deployed ERTMS would allow for traffic capacity to be increased by up to 30 % on existing railway infrastructure;
 - F. whereas the Commission also published an ERTMS action plan⁵ identifying actions to address barriers to ERTMS implementation and interoperability and aiming for a target of converting about one third of the CNCs by 2023;
 - G. whereas between 2014 and 2020, the EU budget supported ERTMS deployment with an estimated total budget of EUR 2,7 billion, out of which EUR 850 million came from the

¹ OJ L 437, 28.12.2020, p. 108.

² OJ C 86, 6.3.2018, p. 140.

³ Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the ‘control-command and signalling’ subsystems of the rail system in the European Union (OJ L 158, 15.6.2016, p. 1).

⁴ Implementing Regulation (EU) 2017/6.

⁵ Commission staff working document of 14 November 2017 entitled ‘Delivering an effective and interoperable European Traffic Management System (ERTMS) - the way ahead’, SWD(2017)0375.

Connecting Europe Facility (CEF)¹ and EUR 1,9 billion came from European Structural and Investments Funds (the European Regional Development Fund (ERDF) and the Cohesion Fund) in the eligible regions;

- H. whereas the deployment of the ERTMS must involve the decommissioning of Class B system installations of ETCS trackside components along with the widespread retrofitting of rolling stocks with ERTMS on-board unit interoperable subsystems;
 - I. whereas there is no legal obligation in place for Member States to adopt measures to ensure that railway undertakings invest in the ERTMS;
 - J. whereas the ECA has warned that the full core network deployment of the ERTMS is currently far behind schedule and will not be completed by the 2030 deadline, citing the lack of Member State coordination as one of the primary reasons for this delay;
 - K. whereas the Alvia train accident in Santiago de Compostela on 24 July 2013 caused the death of 80 people and left a further 144 injured;
 - L. whereas for the new programming period, according to the EU climate tracking methodology for EU expenditure, the ERTMS accounts for 40 % of the contribution to climate and environment objectives and whereas 30 % of expenditure under the Cohesion Policy Funds and InvestEU, 37 % under the Recovery and Resilience Facility (RRF)² and 60 % under the CEF must be allocated to actions combating climate change;
 - M. whereas the RRF establishes that 20 % of investments should be digitally oriented and whereas in its methodology for digital tagging established in Annex VII of the RRF Regulation, 100 % of investment in the ERTMS is digital;
1. Underlines that rail is the most sustainable and energy-efficient mode of mass passenger and freight transport, but that it is not yet achieving its full potential, in spite of the positive developments in the sector, such as the constant increase in rail passenger volumes and rail freight volumes, even if these have been uneven over the past few years;
 2. Points out that the European Green Deal calls for a major modal shift to rail and that the new Sustainable and Smart Mobility Strategy sets the milestones of doubling high-speed rail traffic by 2030 and rail freight traffic by 2050, which require a share increase in rail transport capacity that cannot be obtained without a large-scale acceleration of the roll-out of the ERTMS throughout the EU;
 3. Stresses that one of the EU's main objectives for rail coordination is to strengthen the robustness of the core network and to increase the share of freight and passenger transport by rail;

¹ Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010 (OJ L 348, 20.12.2013, p. 129).

² Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility (OJ L 57, 18.2.2021, p. 17).

4. Recalls that the ERTMS was launched in the 1990s and that its aim is to ensure the safety of railway traffic, to foster interoperability among national rail networks and cross-border rail transport, to reduce the costs of purchasing and maintaining signalling systems and to increase the capacity of rail infrastructure and the reliability of the rail transport system;
5. Stresses that the full deployment of the ERTMS will help to create a single European railway area, is essential for making the European railway sector fit for the digital age, will increase the profitability of rail transport, will enable the operating density of a line to be increased, and is a prerequisite for rail to finally be competitive with other modes of transport; welcomes, therefore, the fact that the new Sustainable and Smart Mobility Strategy confirms that the ERTMS should be a key priority in order to create a truly smart and efficient transport system by achieving objectives such as sufficient capacity allocation and traffic management for both passengers and freight;
6. Stresses that the ERTMS has become a global standard for train control and communication, and has been deployed in almost 50 countries around the world, providing excellent opportunities to increase high-added-value business and to create expertise within the EU and for deployment in non-EU countries; calls for the establishment of a standardised EU traffic management system and believes that an EU standard must be swiftly developed before a global rail traffic management system standard is imposed on the EU; calls on the Commission, moreover, to use bilateral EU cooperation to promote the deployment of the ERTMS in non-EU countries;
7. Welcomes the Commission's work to establish a CCS architecture framework to ensure that rail fully embraces digitalisation that builds the ERTMS, which should allow for easier and more affordable updates and upgrades thanks to further standardisation and modularisation, the introduction of the 'plug and play' principle and the harmonisation of data modelling;

Governance

8. Welcomes the new tasks entrusted to the Agency under the Fourth Railway Package and recognises the prominent role of the Agency as a one-stop shop which ensures consistency in the development of the interoperable ERTMS, that ERTMS deployment complies with the specifications in force, and that ERTMS-related European research and innovation programmes are coordinated with the development of ERTMS technical specifications; regrets, therefore, the recent reduction of the yearly budget of the Agency;
9. Believes that the Agency should be provided with the appropriate financial and human resources and be further empowered to overcome the challenges of ERTMS deployment and functioning that still exist (harmonisation of operational rules and requirements, specification maintenance and change, conformity-to-type and length-of-type approval procedures and public procurement procedures etc.), to increase competitiveness and to lead the technical introduction of new technologies;
10. Highlights the role of the ERTMS Coordinator in determining which lines and corridors need to be equipped with the ERTMS as a matter of priority, and in ensuring its deployment in the most cost-efficient way in close cooperation with the Member States and the stakeholders;

11. Believes that the role of the ERTMS Coordinator needs to be significantly improved, both in terms of resources and implementing powers, in order for the deployment targets to be met; welcomes, therefore, the opportunity to strengthen the role of the ERTMS Coordinator in the upcoming revision of the TEN-T Regulation by providing them with, for instance, a decisive role in the selection of projects, expanded oversight responsibilities and by making receipt of CEF grants contingent upon their consent, particularly in relation to the main cross-border links;
12. Welcomes the fact that the ERTMS Coordinator reports back to Parliament on a yearly basis;
13. Underlines that an approach to ERTMS deployment coordinated between all Member States and led by the ERTMS Coordinator is the only way to overcome the current patchwork situation, especially with regard to cross-border projects; invites, therefore, the Commission to establish a framework for discussion and coordination among Member States, infrastructure managers and railway undertakings on ERTMS deployment led by the ERTMS Coordinator, with the aim of fostering the exchange of best practices, aligning national deployment plans, encouraging joint actions for ERTMS deployment on cross-border corridors, improving conformity authorisation procedures, and increasing the overall commitment of the Member States; recalls that more efforts need to be made by railway infrastructure managers collectively to equip and put ERTMS into operation on cross-border sections simultaneously and in a technical consistent manner;
14. Believes there is a need for a regulatory framework for the digitalisation of the rail system which puts the ERTMS at the heart of a digital rail system evolution; welcomes, in this respect, the commitment of the railway sector to enable the industrialisation of the ERTMS and the contribution of the Shift2Rail Joint Undertaking (S2R JU) to research and innovation with the aim of addressing the removal of the remaining technical obstacles that are holding back the rail sector in terms of interoperability and ensuring the transition to a more integrated, efficient and safe EU railway market, guaranteeing the proper interconnection of technical solutions and aiming to make the EU's railway system more sustainable, digital, competitive, reliable and attractive; strongly supports its new successor initiative, the Europe's Rail Joint Undertaking System pillar, which coordinates the evolution of the system, new technology developments, technological migration plans, industrialisation and deployment, especially for the ERTMS, with a view to ensuring more efficient collaboration and better use of scarce resources;
15. Calls for coordination between the Agency and S2R JU to be further strengthened in order to better prioritise investments in the digitalisation of European railways; underlines, in this regard, that the Agency should have a more prominent role than just being an observer of the S2R JU governing board;

Interoperability and deployment

16. Welcomes the satisfactory results demonstrated by the ERTMS in terms of speed, capacity and safety wherever it has been deployed; regrets, therefore, that compared with the targets set in the EDP, at the end of 2020 only around 13 % of the CNCs were operated in accordance with the ERTMS, and ERTMS deployment in most of the corridors ranged between 7 % and 28 %; notes, moreover, that investment in ERTMS is

not a systematic target for the core network – despite the TEN-T deployment plans and guidelines recommending such investment – or even on isolated sections unconnected to the core network; believes, therefore, that a corridor approach must be strengthened to overcome the obstacles to the deployment of ERTMS, in particular in the corridors with the lowest rates of deployment such as the Atlantic corridor, and especially within the Iberian Peninsula; calls, moreover, on the Commission to list the cross-border rail connections on the core network where full trackside deployment of the ERTMS has not been achieved and to publish its findings in order to draw attention to the EU added value of fully deploying the ERTMS on these rail connections;

17. Believes that a ten-fold increase in the deployment pace of the ERTMS is urgently needed to achieve the digital transition and to improve the safety of the EU railway system, railway passengers and workers; is of the opinion that the ERTMS needs to be rolled out on the core network by 2030 and on the comprehensive network by 2040; recalls the need to avoid delays to installations and activations of the ERTMS, which could compromise safety; calls on the Commission, in this regard, to maintain and reinforce the binding nature of the targets in its revisions of the TEN-T guidelines, the ERTMS EDPs and the CCS TSIs;
18. Believes that harnessing the full potential of the ERTMS unquestionably depends on the completion of the TEN-T core network; therefore calls on the Commission to strengthen the role of the core network coordinators in the upcoming revision of the TEN-T Regulation and includes measures on EU management of the core network infrastructure;
19. Points out that there are still currently roughly 30 different national signalling systems, especially in areas with predominantly local, domestic traffic, where existing Class B systems have a remaining economic lifetime, and that this diversity of systems partly explains the fragmentation and the variability in ERTMS deployment costs; highlights that the Class B systems are a bottleneck for ERTMS roll-out and for rail traffic cross-border operations in the EU network, as they require a more expensive and difficult safety authorisation for rail transport operators and constitute a major barrier to the competitiveness of rail transport, hampering the technical and operational compatibility of railways across the EU and resulting in additional costs for the sector, including maintenance costs;
20. Stresses that the Class B decommissioning process is moving at a slow pace; regrets that only a few Member States have adopted plans to decommission Class B signalling systems in their ERTMS national implementation plans (NIPs) and that there is at present no legal obligation nor timetable at EU level to decommission Class B systems;
21. Believes that an efficient and quick deployment of the ERTMS can only be achieved by setting binding targets, reinforced with penalties for infrastructure managers in the event that adequate budget and resources are made available, but the deployment deadline is missed;
22. Urges the Commission to come up with an overarching decommissioning strategy for Class B systems, with regulatory deadlines aligned with the binding targets to be set at EU level; believes that the effectiveness of this strategy and its long-term worthiness for investment depend on the involvement of all stakeholders, including railway

undertakings and suppliers, and the willingness of Member States to fulfil their obligations under the TEN-T Regulation;

23. Calls on the Commission, moreover, to introduce a regulatory provision to ensure that the ERTMS NIPs are legally aligned – in both regulatory and geographic terms – with the binding ERTMS deployment targets set in EU legislation, in order to complete its introduction within the core network by 2030 and within the comprehensive network by 2040;
24. Points out that current national rules and the lack of harmonisation of operational requirements relating to the ERTMS, such as engineering rules, and technical barriers, such as variable axle gauges, voltage and dimension of the wagons, which may differ along the entire railway network, affect interoperability, impeding the seamless operation of the EU rail network and hampering the profitability of railway operators;
25. Stresses that the cost of upgrading trackside and on-board systems varies widely depending on the network; notes that the equipment's lifespan implies a long period of depreciation of investments, which is a major economic criterion for future investments; draws attention to the difficulties associated with frequent changes in standards, which limit the lifespan of equipment in an unpredictable way for the rail sector, resulting in a disincentive to invest; stresses, therefore, the importance of regulatory stability in order to allow for a return on the investment made; asks the Commission to carefully analyse further changes when updating the TSI for 2030 and to ensure compatibility;
26. Deplores the fact that in the five years till mid-2019 almost 80 % of new vehicles put into use in the EU were either subject to a derogation or were exempted from the requirement to fit the ERTMS; believes that given the deployment of the ERTMS in the comprehensive network, no derogations or exemptions from the requirement to fit ERTMS should be granted to new rolling stock; urges the Commission, in this respect, to undertake concrete initiatives to tackle this issue by enacting an appropriate regulatory framework and ensuring that a set of economic incentives are in place to foster the investments of railway undertakings in ERTMS on-board units;
27. Stresses that the timeframes for authorisation processes for retrofit projects, especially for conformity-to-type authorisation processes for rolling stock for the national area of use only, still differ because of diverging assessments by national safety agencies on the need to re-authorise certain modifications, resulting in it taking up to one month to re-authorise each rolling stock; calls on the Commission to undertake legislative initiatives, including updates of current implementing regulations, to ensure that the authorisation procedures following type authorisation processes, especially conformity-to-type authorisation procedures related to the retrofit of on-board ERTMS subsystems for the national area of use, are streamlined and harmonised by means of fast-tracked control operations in order to reduce the time needed to grant conformity-to-type certificates; believes, moreover, that conformity processes should further strengthen the involvement at an early stage of the industrial suppliers and national safety agencies concerned in order to avoid discouraging railway undertakings from undertaking large-scale and ambitious deployment projects; calls, moreover, for greater involvement of the Agency in conformity-to-type procedures carried out when the retrofitted rolling stocks are destined for the national area of use only;

28. Calls for a systematic approach to the roll-out of the ERTMS, both on-board and trackside;
29. Recalls that according to the recent business case study on the nine CNCs, the dual on-board migration strategy for ERTMS deployment, which focuses on first equipping the fleet with the ERTMS, has a better economic outcome compared to the dual trackside migration strategy;
30. Notes that the slow pace of the trackside installation disincentives a steady ERTMS deployment; believes that the trackside migration strategy, which focuses on installing ERTMS on top of legacy systems which are kept operational until the whole fleet is equipped, should also be accelerated, especially in the light of the upcoming alignment of the Rail Freight Corridors Regulation¹ with the revision of the TEN-T guidelines, and in this respect calls for further cooperation between the European Union Agency for Railways (ERA), infrastructure managers and national safety authorities to achieve full compatibility of ERTMS trackside versions; recalls that the incompatibilities between the different ERTMS trackside versions already deployed must be resolved and future compatibility for all ERTMS lines must be ensured, and in this sense calls for further cooperation between ERA and infrastructure managers and national safety authorities;
31. Calls on the Commission to take account of ERTMS equipment when drawing up the rail connectivity index;
32. Stresses that prototypes are one of the major bottlenecks for on-board retrofitting due to the complicated, time-consuming and expensive nature of their development; points out, moreover, the current possible risk of the same prototype project receiving funding from multiple EU sources; calls for the creation of an EU platform for the development of prototypes in order to favour large economies of scale, harmonisation and competitiveness, as well as the creation of a transparent register of solutions that have already been funded;
33. Underlines that without standardised interfaces with ‘plug and play’ technology – both trackside and on-board – the rail system will not be able to introduce and grasp the benefits of ERTMS game changers like automatic train operation, the future radio mobile communication system, satellite positioning or Level 3 technology; calls on the Commission to take into consideration the fact that GSM-R technology, which was state-of-the-art when the ERTMS was first launched, is becoming obsolete owing to the roll-out of 4G and 5G;
34. Points out the need to ensure synergies between the ERTMS and the European Global Navigation Satellite System (GNSS) as soon as possible, especially since GNSS signal availability relies on virtual balises, which would be less costly to deploy and to maintain, since it would speed up the ERTMS roll-out and since it would enhance the competitiveness of the ERTMS outside the EU; calls on the EU rail industry to develop technical solutions in order for the GNSS to enable the ERTMS on a large scale; calls on the Commission, moreover, to consider introducing the GNSS in the upcoming ERTMS TSI CCS revision in order to close the remaining technological gaps and

¹ Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight (OJ L 276, 20.10.2010, p. 22).

embrace innovation; calls on ERA to closely coordinate, support and streamline research and development projects of space and rail stakeholders in order to include GNSS train location data in the ERTMS as early as possible; calls, moreover, for cooperation between the Agency and the GNSS Agency to be stepped up in order to phase the GNSS into ERTMS standards;

35. Underlines the current inefficiencies and difficulties in public procurement for ERTMS deployment; calls on the Commission to work with the Agency to establish a common EU tender format for procurements, based on the proposal agreed by the sector in 2018, and to address in a legislative proposal all the technical aspects for ensuring successful procurement (e.g. maintenance clauses) and compatibility with the latest ERTMS baseline available;
36. Recognises that the ERTMS is the flagship of EU industry's innovative power; calls on the Commission to present a legislative proposal for an ERTMS industrial strategy as part of the New Industrial Strategy for Europe, addressing insufficient industrial capacity, the lack of suitable workshops for retrofitting, the lack of an adequate, stable and predictable budget and the shortage of qualified staff and ensuring the transition from the current project-approach to the industrialisation of the ERTMS roll-out;
37. Calls on the Commission and the Member States to boost, under the European Green Deal, dual vocational training for new jobs created by digitalisation and innovation in relation to the new challenges generated by ERTMS deployment, by providing sufficient support for the re-skilling and upskilling of railway workers, such as training on the new signalling system;

Funding

38. Recalls that the proper functioning of the EU railway network relies on proper investment in infrastructure and rolling stocks and on good maintenance;
39. Notes that between 2014 and 2020, the EU budget supported ERTMS deployment with an estimated total budget of EUR 2,7 billion, out of which EUR 850 million came from the CEF and EUR 1,9 billion came from the European Structural and Investments Funds (the ERDF and the Cohesion Fund) in the eligible regions;
40. Stresses that the investment needed to deploy the ERTMS on the core network is estimated at EUR 12 billion for trackside systems and EUR 5 billion for on-board systems;
41. Stresses that investments in the deployment of the ERTMS contribute to achieving the climate and digital mainstreaming targets of EU financial instruments, and should therefore be considered a priority in the implementation of these instruments;
42. Recalls that EU financial support is available for both trackside and on-board ERTMS investments, but that this can only cover a limited amount of the overall cost of deployment, leaving individual infrastructure managers and railway undertakings to shoulder most of the costs; believes that it is necessary to improve the financial instruments in place to incentivise large-scale investments in the ERTMS; invites the Commission, in this respect, to draw up all-encompassing guidelines in support of a large-scale strategy for the funding of the ERTMS both trackside and on-board;

43. Calls on the Commission to identify a basket of measures that the Member States and the European Union may undertake to scale up the deployment of the ERTMS on board while ensuring that businesses are viable for the undertakings involved, and taking into due consideration the role of network managers as potential providers;
44. Recalls the ECA's finding that, overall in the EU, 50 % of TEN-T funds originally allocated to ERTMS projects have been decommitted and that implementation delays and reductions in project scope were the main reasons for this; calls on the Commission and the Member States to address this problem;
45. Recalls that EU funds are not sufficient to cover all the expected needs and therefore calls on the Commission and the Member States to cooperate closely and to make planning, financial and political commitments to further improve the attractiveness of investing in the ERTMS, and to guarantee legal certainty for private investors; notes that the duration of CEF grant agreements could be extended to better reflect the actual time needed to implement ERTMS projects;
46. Stresses the priority nature of funding equipment for cross-border links; takes the view that since EU co-financing rates for the ERTMS are insufficient, they should be increased; calls on the Commission, in this respect, to evaluate the opportunity to grant ERTMS projects a co-financing factor even higher than 50 % under CEF funding when such projects are embedded in ambitious large-scale accelerated plans to scale up ERTMS deployment, in order to incentivise ambitious strategies for the ERTMS in the Member States;
47. Calls on the Commission and the Member States to ensure, promote and facilitate synergies between all EU financial instruments such as the CEF and its Blending Facility, the Cohesion Funds and InvestEU, and access to Next Generation EU, and calls on the Commission to encourage the Member States to make the ERTMS one of their main priorities in their national recovery and resilience plans (NRRPs);
48. Recalls the strategic importance of Next Generation EU and the RRF in supporting the ambitious large-scale deployment plan for the ERTMS in the NRRPs of the Member States, and invites the Commission to ensure that ERTMS funding is granted adequate relevance during the preparatory phase of the NRRPs;
49. Stresses the need for EU funds to be granted for new railway line projects only if they include ERTMS equipment; calls, moreover, for the Agency to systematically assess the compliance of EU-funded projects with the TSIs to avoid difficulties concerning the compatibility of the ERTMS versions installed;
50. Calls on the Member States to grant a reduction of 75 % in track access charges for 10 years to railway undertakings that successfully equip 100 % of their locomotives with ERTMS Baseline 3;
51. Stresses that the method of calculating EU aid for ERTMS equipment, based on a flat rate per kilometre, is suitable for linear sections but less appropriate for urban nodes which require many trackside objects and complex ERTMS settings over a short distance; suggests considering breaking costs down by the number of sets of points on the track;

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