

# **Memorandum of Understanding**

**between**

**the European Commission,  
the European Union Agency for Railways  
and**

**the European rail sector associations  
(CER, EIM, EPTTOLA, ERFA, the ERTMS  
Users Group, GSM-R Industry Group, UIC,  
UNIFE and UNISIG)**

**concerning the**

**cooperation for the deployment of the  
European Rail Traffic Management System**

**Memorandum of Understanding between the European Commission, the European Union Agency for Railways and the European rail sector associations (CER, EIM, EPTTOLA, ERFA, the ERTMS Users Group, GSM-R Industry Group, UIC, UNIFE and UNISIG) concerning the cooperation for the deployment of the European Rail Traffic Management System**

**Preamble**

- I. On 17<sup>th</sup> March 2005, the European Commission and the European rail manufacturers, infrastructure managers and railway undertakings ('the Sector') signed a Memorandum of Understanding (MoU) establishing the basic principles of an EU deployment strategy for the European Rail Traffic Management System (ERTMS). This document was subsequently followed by the signature of another MoU concerning the strengthening of cooperation for speeding up the deployment of ERTMS on 1<sup>st</sup> July 2008.
- II. On 27<sup>th</sup> April 2012, the European Commission, the European Union Agency for Railways ('the Agency') and the Sector signed the third MoU specifying the further steps to be taken to push for the deployment of ERTMS in the EU for the subsequent years.
- III. Considerable progress has been achieved since the signature of these agreements, the adoption of the System Requirement Specification 2.3.0d in 2008 and the first release of Baseline 3 in 2012.
- IV. The revised Technical Specification for Interoperability for the on-board and trackside Control Command and Signalling (CCS TSI) subsystems adopted by Commission Regulation (EU) 2016/919, published in the Official Journal of the European Union on 15<sup>th</sup> June 2016, gives legal status to the ETCS Baseline 3 Release 2 and GSM-R Baseline 1 specifications.
- V. ERTMS is a major initiative to harmonise the automatic train control and communication system, ensure interoperability throughout the rail system in Europe and contribute to the Single European Rail Area. The stakeholders committed to deploy ERTMS are managing fundamental process changes that will enable the digitalisation of railways.
- VI. This MoU recognises that more than 23.000 kilometres of lines and almost 7.000 vehicles are equipped today with ETCS in the EU in addition to 90.000 kilometres of lines covered by GSM-R. Equipment rate is still expected to further increase considering the implementation plans currently on-going in several EU Member States and neighbouring countries.
- VII. The ERTMS European Deployment Plan (EDP) was first adopted by the European Commission in 2009 and is currently being revised. The Sector acknowledges the role of the Commission in spearheading the EDP and its follow up, and commits to support the Commission and provide input on relevant issues, risks and opportunities.
- VIII. The timely realisation of the ambitious goals of ERTMS deployment will depend on the availability and efficient use of financial support at national and EU level.
- IX. The Agency should define relevant processes and milestones supporting the consensual development of the ERTMS Longer Term Perspective, presented to the Rail Interoperability and Safety Committee on 10<sup>th</sup> February 2016, with transparent project

management for the timely resolution of errors, compatible enhancements and delivery of the specifications for the game changers as defined in the ERTMS Longer Term Perspective.

- X. The Agency should drive a roadmap on ERTMS maturity and cost reduction, supporting the Sector in defining tender templates, software evolution clauses and ensuring that the CCS TSI revision process will not cause uncertainty for users' investments.
- XI. It is essential that the radio evolution roadmap will become part of the EU Digital Single Market Strategy. This will ensure future proof definition of the new generation technology for the communication system and the relevant spectrum provision supporting the availability and reliability of the ERTMS communication system. A dedicated roadmap with the Sector must also consider the key aspects of migration and co-existence.
- XII. This MoU fixes the main objectives of the cooperation and commitment between the signatories from 2016 onwards.

#### **A. OBJECTIVES**

- 1. The European Commission, the Agency and the Sector acknowledge that ERTMS success can only result from a commonly agreed, collective, disciplined and structured approach.
- 2. The signatories recognise the value brought by the ERTMS Longer Term Perspective.
- 3. To that end, this MoU has the following specific objectives:
  - (a) Achieve and maintain compatibility. Compatibility means legal and technical certainty that a compliant Baseline 3 ERTMS On-board Unit can safely run on any compliant ERTMS line with an acceptable level of performance. Maintaining compatibility entails that the game changers will not create technical barriers to accessing infrastructure.
  - (b) Reach the best economic and environmental performance by deploying ERTMS under the optimal revenue, cost and financing conditions, and speed up the ERTMS deployment in the EU. To achieve this, a coherent policy on stable specifications, as the critical factor for the economic viability of the EDP, shall be maintained.
  - (c) Protect investments made in CCS TSI compliant systems and products.

#### **B. KEY COMMITMENTS**

- 4. The signatories commit that when ERTMS is implemented, ERTMS equipment is fully compliant to the CCS TSI without national or project specific deviations.
- 5. The CCS TSI defines the legal requirements in force, and currently allows the use of the Baseline 2 or Baseline 3 for ETCS. The signatories recognise that the set of specifications #3 in the Annex A of the CCS TSI represent the most advanced status of the technical specifications, providing the functionalities from Baseline 3 Release 2, Baseline 3 Maintenance Release 1 and Baseline 2.

6. The infrastructure managers and the manufacturers agree to use, for future projects, any set of specifications in the CCS TSI, to implement System Version 1 or 2 (X=1 or X=2) trackside projects being compatible with on-boards which are compliant with the specification #3. Existing trackside installations need to be migrated to be interoperable with on-boards that are compliant with the specifications #3.
7. The manufacturers agree to propose, for future ERTMS projects, updated software releases to their customers, to automatically include the corrections of errors in the specifications commonly agreed in the frame of the Change Control Management and adopted as Technical Opinions. This mechanism shall not encompass new “functions” or enhancements to the specifications.
8. ERTMS software changes must be managed according to the compatibility objective so that additional costs on already existing equipment are minimal, e.g. avoiding impact on hardware, and do not have an adverse effect on efforts to make the authorisation process more efficient and less costly. To that end, based on guiding principles to be developed jointly by the signatories, railway undertakings and infrastructure managers commit to include software upgrade clauses in their contracts, supported by the manufacturers. This will ensure that possible software upgrades are handled in a predictable, clear and transparent way from a cost perspective.
9. Strategic guidance for Change Control Management will be provided by the ERTMS Stakeholders Platform.
10. Infrastructure managers commit, for any future project, to cooperate with the Agency providing at the earliest possible stage (when the relevant procedures and documents will be defined) the information foreseen in the 4<sup>th</sup> Railway Package necessary to issue a positive approval for ERTMS trackside implementations.
11. The Agency commits to discuss with infrastructure managers the information required by the CCS TSI to demonstrate compliance.
12. Infrastructure managers commit to the objective to ensure the "free circulation of ERTMS equipped vehicles"; inter alia, they will only implement transitions between ETCS and legacy systems that are fully compliant with the CCS TSI. Within this pre-condition, there is the freedom of the railway undertakings to choose manufacturers and architecture for the on-board systems.
13. Deployment of ERTMS needs to be synchronised between the Member States, including the planning for equipping rolling stock. The migration to ERTMS will be part of the action plan of this MoU. The signatories recognise that the current version of the specifications in the CCS TSI provides a stable basis for the foreseeable future. Additional evolutions not in the scope of the ERTMS Longer Term Perspective may require changing the present MoU, following a strategic review by the ERTMS Stakeholders Platform.
14. The “game changers initiatives” contributing to the future evolution shall be developed according to an agreed planning and recognising the compatibility concept. Should the full benefits of the “game changers initiatives” be constrained by the compatibility concept and an affordable business case exists, this MoU will be reviewed by the ERTMS Stakeholders Platform prior to any suggested changes. Adequate coordination with related activities in Shif2Rail shall be also ensured.

15. The signatories acknowledge the expertise and the relevant activities in promoting ERTMS specific to UIC, the ERTMS Users Group and UNISIG. Their contributions are essential for the successful implementation of the system.
16. The worldwide railway organisation UIC is a leading player in the European railway sector in the topic areas of research, innovation, and standardisation. As an example, within the framework of UIC the functional specification for GSM-R has been developed. UIC commits to fully cooperate with the Agency in the future development of ERTMS and will, in addition to the specification of operator requirements, in particular contribute by coordinating the feedback on operational aspects of ERTMS deployment on behalf of their members. UIC will specifically provide technical expertise in the area of communication systems. UIC further commits to endorse and promote the operational added-value of European ERTMS in its dealings with rail companies that are beyond Europe.


### **C. WORKING PRINCIPLES AND ARRANGEMENTS**

17. Further to the signature of this MoU, a detailed plan with concrete actions and defined deadlines will be prepared to support the implementation of the objectives agreed upon in this document.
18. The actions will be implemented by the signatories, and the follow up of progress will be ensured with the appropriate organisational arrangements to be defined by the Stakeholders Platform.
19. The representatives of individual Stakeholders will sign up Letters of Intent with the Agency, committing to support the objectives defined in this MoU.



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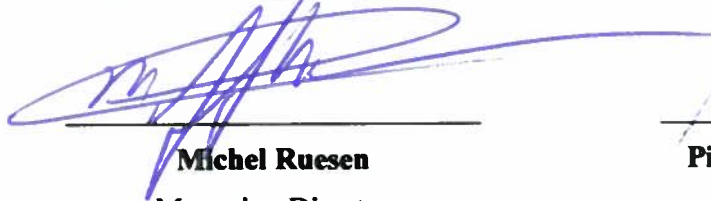
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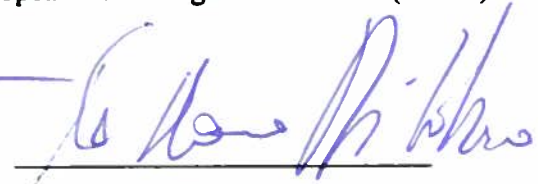
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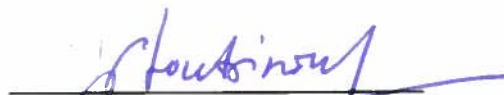
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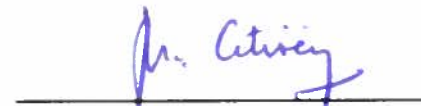
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