ANNEX

Memorandum of Understanding (MoU)

between the European Commission, the European Railway Agency and the European Rail sector Associations (CER — UIC — UNIFE — EIM — GSM-R Industry Group — ERFA) concerning the strengthening of cooperation for the management of ERTMS

Preamble

(1) On 17 March 2005, the European Commission and the rail industry (manufacturers, infrastructure managers and railway undertakings) signed a Memorandum of Understanding establishing the basic principles of an EU deployment strategy for the European Rail Traffic Management System (ERTMS). The main objective of that Memorandum of Understanding was to define the contribution of the actors in order to ensure the progressive setting up of an ERTMS equipped network within 10-12 years.

(2) This document was subsequently followed by the signature on 4 July 2008 of another Memorandum of Understanding on the strengthening of cooperation for speeding up the deployment of ERTMS. This last document established in particular the action plan aimed at obtaining a tested and legalised Baseline 3 by 2012.

(3) In the meantime, on 23 April 2008, the European Commission adopted[1] System Requirements Specifications (SRS) 2.3.0d as the current unique and interoperable technical reference to ensure the interoperability of all ETCS equipment deployed in Europe.

(4) Considerable progress has been achieved since the signature of both these agreements and the adoption of SRS 2.3.0d. ERTMS has become a reality and is now implemented in an ever-growing number of Member States. It is also increasingly successful outside Europe, and has become a *de facto* worldwide signalling standard.

(5) ERTMS is a horizontal priority in the European Commission's proposal for a Regulation establishing the Connecting Europe Facility, an EU plan which will fund €50 billion worth of investment to improve Europe's transport, energy and digital networks.

(6) ERTMS plays a vital role in strengthening the competitiveness and dynamism of the rail sector, promoting the integration of the rail freight and passenger services markets and stimulating the European rail equipment market. Cost reductions and

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[1] OJ L 136, 24.5.2008, p. 11

quality improvements in rail transport are additional factors which underpin the growth of the economy as a whole and bolster the dynamism of the internal market.

(7)   The adoption[2] in September 2010 of the European Parliament and Council Regulation concerning a European rail network for competitive freight stressed the need to implement ERTMS together with operational and infrastructure measures along corridors.

(8)   In July 2009, the European Commission adopted[3] a European ERTMS Deployment Plan, making the deployment of ERTMS along six international corridors and a number of freight/mixed traffic lines a mandatory requirement in the coming years.

(9)   Several EU Member States have chosen to go far beyond these mandatory EU requirements and have launched investments to re-signal their entire network with ERTMS.

(10)   In parallel, significant experience has been gained in putting lines and vehicles into service and in terms of specification writing and cooperation between the European Railway Agency (ERA) and the European Railway Associations. In accordance with the July 2008 Memorandum of Understanding, Baseline 3 is now becoming a reality with the recommendation issued by ERA on 16 April 2012 to include the key Baseline 3 documents in the Technical Specification for Interoperability related to the Control-Command and Signalling Subsystem (TSI CCS).

(11)   This inclusion will mark an important step for ERTMS as a whole. It also means that proper processes must be applied for the maintenance of Baseline 3.

(12)   This new MoU recognises that today more than 4.000 kilometres of lines and more than 1.500 vehicles are equipped with ERTMS/ETCS in the EU. Contracts for the equipment of more than 4.000 additional kilometres have been signed and the number of kilometres equipped will grow substantially in the next three years. A further increase in equipment rate is expected after 2015. In this context, it is essential to protect the investments made by adopting a consistent approach to ERTMS specifications and their maintenance and ban national specificities that may hamper interoperability.

(13)   The Navigation Satellite System (GNSS) can play a major role in the rail sector, both for fleet management and rail safety (signalling and train control). The European Geostationary Navigation Overlay Service (EGNOS) and Galileo would fundamentally contribute to increase reliability and reduce cost of the ERTMS odometer and this technology can be introduced in new trains without this having any impact on already equipped lines and trains.

(14)   Funding remains an essential tool for achieving the creation of a coherent ERTMS network, in particular to align specification documents with the System Requirement Specifications (SRS) version 3, testing of Baseline 3 (including GSM-R specifications, testing and ensuring backward compatibility and, wherever

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[2]   OJ L 276, 20.10.2010, p22
[3]   OJ L194, 22.07.2009, p.64

technically possible, forward between Baseline 3 and 2.3.0d) and upgrades of trackside and on-board installations to the legal references (including maintenance releases).

(15) This new MoU replaces the two existing Memoranda of Understanding on ERTMS (as mentioned in paragraphs 1 and 2) and aims more specifically at fixing the main objectives of the cooperation between the signatories from 2012 onwards.

1. PRINCIPLES AND OBJECTIVES

(16) SRS 2.3.0, as adopted by the European Commission on 23 April 2008, and known as '2.3.0d' currently constitutes the unique and interoperable technical reference which will ensure the interoperability of all ETCS equipment deployed in Europe.

(17) This MoU recognizes that this version shall remain in force in the future. This will protect the investments made by the sector and interoperability in countries that have chosen Baseline 2 as their reference.

(18) On 16 April 2012, the European Railway Agency issued a recommendation to include the Baseline 3 SRS in the TSI. This recommendation is the result of the joint work of ERA and the European Rail sector Associations over the past four years. In June 2012 the European Commission intends to submit this recommendation to the Committee established under Directive 96/48/EC with a view to securing the adoption of a revised TSI before the end of 2012, as foreseen in the MoU signed in 2008.

(19) As laid down in the 2008 MoU, trains equipped with ERTMS Baseline 3 will be able to run on lines equipped with Baseline 2 version 2.3.0d without any additional technical or operational restrictions created by ERTMS/ETCS. Baseline 3 specifications are based on this principle of backward compatibility. This principle has been the basis of the work performed by the sector and ERA throughout the writing of the specifications and will be validated as a priority during the finalisation of the Baseline 3 specifications.

(20) Through this new MoU, the European Commission, ERA and the European Rail sector Associations decide to deepen their cooperation in order to promote further the swift and coordinated deployment of ERTMS in Europe.

(21) To that end, the MoU has the following specific objectives:

(a) to ensure that the ERTMS specifications, i.e. Baseline 2 version 2.3.0d and Baseline 3, and GSM-R Baseline 0, are maintained in a controlled way, by applying the ERA Change Control Management (CCM) process; which can be adapted to ensure it fulfils the objectives of this MoU;

(b) to set up and support an appropriate mechanism to provide ERA in a timely manner with feedback on the early implementation of Baseline 3-based projects so that this can be taken into account for the validation and maintenance of the Baseline 3 specifications;

(c) to streamline the current procedure of testing and authorisation in order to ensure full application of the existing legislation and thus progressively reach a point where all procedures related to testing and authorisation of ETCS and GSM-R on-board units can be completed by means of a common, unique and cost-effective procedure;

(d) to confirm the commitment of the European Rail sector Associations to report, with due respect to their mission to defend their member interests, concrete cases where requirements deviating from the TSI would be imposed and/or cases where national rules or requirements would hamper the objectives laid down under point c;

(e) to acknowledge the fact that GSM-R is affected by interferences coming from public operators, and the need to adapt railway telecommunication systems to technical progress while protecting investments already made;

(f) to confirm the sector's agreement on a number of measures aimed at speeding up the implementation of the ETCS, taking economic aspects into account.

2. UPGRADING EXISTING EQUIPMENT TO AN INTEROPERABLE BASELINE

(22) The Parties note that some ETCS lines may still need to be upgraded in order to ensure that '2.3.0d trains' and 'Baseline 3' trains can operate on these lines. Conversely, the upgrading of these lines may also necessitate the upgrade of vehicles equipped with earlier versions of ETCS.

(23) To this end, the signatories welcome the initiative taken by the European Commission to discuss with Member States the best way to ensure that, by 2015 at the latest, all existing ETCS equipped lines will be upgraded to an interoperable Baseline. The European Railway Associations suggest that the European Commission should adopt a binding plan for the upgrade of the lines by the end of 2015 in order to allow TSI-conform vehicles to operate on these lines without additional authorisation costs for these vehicles.

(24) The signatories note that many lines in Europe are already '2.3.0d' compatible, in the sense that '2.3.0d trains' are already able to run on these lines without any technical or operational restrictions. The signatories welcome the fact that the vast majority of remaining lines are being upgraded to '2.3.0d compatible and/or Baseline 3 compatible'.

(25) The European Rail sector Associations are committed to facilitating the process of identifying outstanding incompatibilities on remaining lines and the 2.3.0d upgrade process. In this context, the European Rail sector Associations will call upon their members to give all useful information to the national and European authorities.

3. FINALISATION OF BASELINE 3 SPECIFICATIONS

(26) The documents included in the ERA recommendation of 16 April 2012 are necessary to ensure interoperability between lines and trains and allow for the launch of Baseline 3 implementation projects. These documents will be completed with

additional documents to ease and speed up the process of certification and authorisation to put ERTMS into service and reduce its costs.

(27)   The main documents expected are the following:

(a)   Test specifications. The parties note that the test specifications for Baseline 3 are under development but need to be validated by means of lab test campaigns involving one or several industrial on-board prototypes. The railway organisations will encourage their members to make every effort to ensure that the test specifications can be validated in the shortest possible time, and at any rate by 1 June 2013.

(b)   Internal interfaces. With a view to reducing the costs of equipping new vehicles with ERTMS, a number of internal interfaces will be defined or studied. The document relating to the interface to the Train Interface Unit – that includes the braking system- will be handed over by UNIFE for further discussion with the European Rail sector Association by 31 August.2012, with a view to its finalisation by the end of 2012.

(c)   Regarding the track side, the RBC-RBC (radio block centre) interface specification will be finalised by 31 December 2012.

(d)   ERA, with the support of the signatories, will produce a concept paper setting out the main options, challenges, costs and benefits related to the definition of the DMI interfaces and of odometer interfaces by 1 June 2013. A first draft should be ready by the end of 2012.

4.   ETCS SPECIFICATIONS MAINTENANCE

(28)   The parties recognise that, as a software-based system, ETCS is subject to natural evolution, corrections and changes.

(29)   In practice suppliers develop software versions and periodically issue new releases, in order to take account of three main elements:

(a)   Corrections or improvements in a given supplier product, independent of the European specifications. These corrections or improvements represent the majority of changes and are usually the result of feedback from experience at project level, such as correction of programming bugs. These corrections/improvements have no impact on the interoperability specifications and should be handled in regular contractual relationships between suppliers and their clients.

(b)   Corrections of the European specifications to resolve potential issues or ambiguities related to interoperability and operations. Experience gained from Baseline 2 projects, the finalisation of the Baseline 3 specifications (postponement of some Change Requests), the development of Baseline 3 products and the first early implementation projects based on Baseline 3 may indicate a need to introduce some corrections in the specifications. Although many of these corrections in the European specifications are clarifications, sometimes they may lead to software upgrades in given suppliers' products.

Mitigation measures, using the possibilities of the existing functionality are the preferred option as defined in the CCM (change control management) process. Furthermore, the possibility will be investigated of a 'light' maintenance mechanism allowing for quick and efficient adoption and publication of the corrections of the ERTMS Baselines. This mechanism should not encompass new 'functions' and should focus on minor corrections with a potential impact on interoperability or operations.

(c)   Improvements to the specifications, as detailed in the next section.

(30)   To take these changes into account, release management should be planned in order to ensure that ERTMS users and stakeholders can plan their investments accordingly in the most effective way. The planning shall be presented by the Agency within six months of the signature of this Memorandum and reviewed by the Steering Committee set up according to section 10.

(31)   ERTMS software changes must be managed in such a way that additional costs on already existing equipment are minimal and do not have an adverse effect on efforts to make the authorisation process more efficient and less costly. To that end, railway undertakings and infrastructure managers are recommended to include software upgrade clauses as mentioned below. Use of such clauses will ensure that possible software upgrades are handled in a clear and transparent way from a cost perspective.

(32)   The signatories recognize that the use of formal methods for software specifications and developments is an interesting perspective for the cost reduction of the system and the management of errors.

(33)   CER considers that use of formal methods should evolve towards application of the open source software and open proof philosophy.

(34)   Feedback on the experience of early implementations of Baseline 2 and Baseline 3 projects will be of the utmost importance to ensure a high quality, common standard. To this effect, manufacturers and railways commit themselves to passing on to the European Railway Agency any finding potentially related to the European specifications in a timely and proactive manner, as part of the CCM process.

5.   IMPROVEMENTS TO THE SPECIFICATIONS

(35)   The Parties recognise that ERTMS specifications are important both for ensuring the interoperability of the European rail network and for strengthening ERTMS as the global standard for a worldwide signalling system.

(36)   The Parties recognise that Baseline 3 offers fully-fledged system version management, (among others defined in subset 104 and implemented in the other subsets), which on the one hand can be used to improve the specification, while on the other hand ensuring that backward and, wherever technically possible, forward compatibility is secured. In this context, the Parties agree that Change Requests for which a solution has been unanimously reached by the European Rail sector Associations will be handled by ERA as a priority and with specific attention. To that end, ERA will, together with the Rail sector organisations, ensure that the CCM process is adapted to fulfil the objective of stable Baselines 2 and 3.

(37)   The Parties recognise that, once adopted, Baseline 3 will provide a stable basis and they do not consider the need to envisage another Baseline in a foreseeable future. In addition, they recognise that the following modifications could be introduced in the medium term:

(a)   IP-based communications such as GPRS – see section on future of GSM-R-will be introduced into the specifications provided that trains not equipped with this additional functionality can circulate without constraints. These Change Requests will be processed and should be introduced in a subsequent version of Baseline 3 provided the above mentioned overarching principle of backward and forward compatibility is maintained.

(b)   Automatic Train Operation (ATO) is also expected to be included in the ERTMS specifications.

(c)   Other developments might be necessary with a view to including additional functions, typically new interfaces (Train Interface) or new technologies like positioning by satellite application and train integrity devices.

(38)   Such improvements in the specifications do not imply the upgrade/replacement of existing 2.3.0d and Baseline 3 equipment.

6.   TENDERING-RELATED ISSUES

(39)   The TSI contain the legal requirements in force. The parties note that the Baseline 2 version 2.3.0d and the future Baseline 3 constitute the only legal reference. In this context, it is important to stress that lines must be equipped under the assumption that all TSI CCS compliant trains can operate without specific tests being necessary. The suppliers are committed to putting only fully compliant equipment on the market. Infrastructure Managers and Railway Undertakings are committed to ordering fully compliant subsystems and avoiding national add-ons that would jeopardise interoperability. The European Rail sector Associations are committed to call upon their members not to publish tenders nor to introduce authorisation prerequisites that include requirements that may not be compatible with the TSI. Whenever this is compatible with their mission to defend their member interests, the European Rail sector Associations are committed to swiftly inform the European Commission and the European Railway Agency of such situations.

(40)   The Parties recognise that software upgrade clauses may considerably improve the business case for railway undertakings and infrastructure managers alike, while ensuring that such upgrades are performed in a predictable and transparent manner. They recommend making use of the software upgraded clauses unanimously agreed by the European Rail sector Associations in this respect.

7.   IMPROVING TESTING AND AUTHORISATION PROCEDURES

(41)   Testing and authorisation procedures are a fundamental factor in the successful implementation of ERTMS, as these procedures play a key role in ensuring the interoperability of equipment. Authorisation procedures are however an important cost driver and efficiency gains are possible.

(42) Efforts should be made to bridge the gap between the current situation, too often characterised by extensive tests between each line and each on-board equipment, and the target situation prescribed in European legislation.

(43) The target is to ensure the 'free circulation of ERTMS equipped vehicles' i.e. a vehicle equipped with ERTMS and authorised in one country must be able to run on all other ERTMS-equipped lines in Europe without the need for further checks. To reach this target rapidly, the Parties note that efforts shall be made in three main directions:

(a) upgrading existing equipment to an interoperable Baseline, as addressed in section 2 of the present MoU.

(b) ensuring that new equipment fully complies with an interoperable Baseline, and

(c) improving the efficiency of testing procedures to convince all stakeholders that, once a supplier declares that on-board equipment is compliant with the TSI that equipment is in practice interoperable with all ERTMS lines.

(44) The Parties note that opportunities for making the best use of laboratories, test centres, trial sites and tests on site should be better explored in order to avoid or minimise on-site tests, make testing procedures more efficient and ensure that new equipment is compatible.

(45) The Parties acknowledge and welcome the efforts made by suppliers and others in the field of interoperability testing between different suppliers in-lab, on site or in dedicated test facilities and welcome the adoption of the merged TSI on 25 January 2012 that requires Notified Bodies to check that a specimen of the on-board interoperability constituent has passed the full set of mandatory ETCS test sequences (subset-076) and that these tests were carried out in an accredited laboratory in accordance with Regulation (EC) No 765/2008.

(46) The Parties are committed to following the recommendations laid down in the TSI for tests of on-board interoperability constituent with the operational scenarios database. These operational scenarios are not part of the mandatory test specifications but they do play an important role in increasing confidence that the on-board ERTMS/ETCS can be correctly operated with different track-side applications.

(47) The Parties take note of the recent establishment of an international not-for-profit association – the ERTMS Reference Laboratories- by several ETCS test laboratories.

(48) Pooling the efforts of laboratories to ensure that a network of accredited laboratories according to ISO 17025 is made available to all users is an important way of ensuring that ETCS equipment complies with the specifications.

(49) Accredited test laboratories will help ensure that it is possible to test an on-board ETCS against all test sequences included in the TSI and against operational scenarios drawn up at national level corresponding to specific lines.

(50)   The Parties welcome on-going initiatives by suppliers to step-up their testing capacities and the interconnection of suppliers' laboratories, among themselves and with other accredited laboratories.

(51)   ERA, with the support of the ERTMS Users Group, has initiated the collection of existing operational scenarios in a database. This database is essential to minimise the definition of new operational scenarios and to make ERTMS testing more efficient. ERA, with the support of the other Parties, will assess the best way to use these scenarios.

(52)   The Parties fully support the European Commission's commitment to follow up concrete cases of "authorisation to place in service" and address Member States when Notified bodies and National Safety Authorities ask for repeat tests to be carried out in one of the above-mentioned laboratories or when they ask for additional tests without this being duly justified and, as necessary, notified.

(53)   In order to encourage full implementation of the legal framework, the European Rail sector Associations will urge their members to communicate any specific process for testing, acceptance or any kind of requirements, tests or rules imposed at national or project level that would go against the general principle of "free circulation of ERTMS vehicles" as described above. They may communicate directly with the European Commission or via the European Rail sector Associations.

(54)   In order to reduce the differences between scenarios drawn up at national level, ERA has started to harmonise engineering rules and collect national scenarios, in particular with respect to entrance in ETCS areas. The Parties reiterate their full support for the conclusion of this process.

8.   SPEEDING UP ERTMS DEPLOYMENT

(55)   The Parties recognise that for ERTMS to be successful it is crucial to reduce migration periods.

(56)   The Parties note that 'gaps' in the ERTMS network weaken the business case for operators and infrastructure managers alike. Along a given corridor, most of the benefits linked to the deployment of ERTMS arise only when the whole corridor is equipped.

(57)   The Parties therefore support the swift implementation of the European ERTMS Deployment Plan adopted by the European Commission in July 2009.

(58)   In order to increase the standardisation of vehicles and further reduce the costs related to ERTMS equipment, the design of all new models of freight and passenger rolling stock must include ERTMS as standard equipment under the conditions foreseen in the TSI CCS.

(59)   The Parties welcome the work undertaken by the ERTMS Coordinator and the European Rail sector Associations to facilitate ERTMS implementation.

(60)   To this end, the European Rail sector Associations reiterate their support for the following measures:

(a) continuation of the work started by ERA on engineering rules and the proper application of its results;

(b) further work to reduce the number of specific operational requirements on corridors;

(c) standardisation of interfaces, such as the TI (train interface) and DMI (driver machine interface), preferably in the form of FFFIS (form fit functional interface);

(d) support for the discussions between the Member States and the European Commission on the setting-up of a global framework for the de-commissioning of Class B systems;

(e) any other measure that may further facilitate ERTMS deployment through the harmonisation of customer requirements, such as a common format for tenders.

(61) The European Rail sector Associations, with the exception of EIM, support the proposal for the introduction of reduced track access fees for ERTMS-equipped vehicles;

(62) The Parties note that early implementers (Infrastructure Managers and Railway Undertakings) may be faced with additional costs to upgrade their equipment. Therefore, such upgrade -when needed to ensure interoperability of equipment-should remain a priority under the ERTMS calls.

9. **GSM-R**

(63) Today, GSM-R is subject to interferences mainly from public mobile operators. All Parties agree that GSM-R interferences may have a negative effect on the availability of ETCS and affect the performances of railway lines.

(64) The European Rail sector Associations support the European Commission's initiative to improve the coexistence of public mobile networks operating in the 900 MHz band with GSM-R networks. They note that the Member States and relevant stakeholders were invited to take ECC Report 162 duly into account. They note that ECC Report 162 provides guidance and describes potential mitigation techniques. For this reason, ECC Report 162 may be considered by national administrations and/or operators to address interference cases between GSM-R and public mobile networks on a local, regional or national basis.

(65) The European Rail sector Associations ask the Commission to monitor closely the issue of GSM-R interferences and to consider the advisability of making the relevant ECC Report 162 principles (or any updated version) legally binding.

(66) The European Commission points out that the Member States unanimously agreed to use this report and the processes existing at national level to solve interference problems. The European Commission further notes that because of the nature of the report it cannot be incorporated as such into the legislation. The European Commission asks the European Railway Associations to report and provide

information on the measures – or absence of measures – taken by national administrations in cases where GSM-R is affected by harmful interferences.

(67) The European Rail sector Associations take note of the fact that discussions are being held between the European Commission and the Member States to give instructions to the sector with respect to the future of GSM-R; technical level studies have already been initiated by the international union of railways (UIC).

(68) The Parties note the commitment of the GSM-R Industry Group members to the long-term support of GSM-R technology, at least until 2025. Nevertheless telecommunications systems usually have a much shorter life cycle than signalling systems. For this reason, it should be possible to replace the 'telecommunications part' of on-board equipment without this having an impact on the 'safety critical signalling part'.

(69) For this reason, the ETCS specifications will be made totally independent of the transmission media, including aspects such as performance requirements and testing.

(70) Today ETCS applications work with GSM-R circuit-switched services. It does seem possible, however, to use packet-switch systems (e.g. GPRS) and, in the longer term, other IP-based standards, without impacting on the ETCS specifications.

(71) It is understood that trackside networks can support both circuit-switched services and packet services. Therefore, the introduction of GPRS/IP-based communications will not require any upgrading of existing on-board ETCS data-only radios (EDORs). GPRS/IP-based equipment could be introduced as part of the natural renewal of the on-board data cab radio.

(72) In this context, the European Rail sector Associations support the following general principles for activities until 2015

(a) The GSM R test specifications for conformity assessment of GSM R on-board radios and networks will be validated and included in the TSI CCS.

(b) Whatever improvements to the standard are suggested they should not have any impact on already equipped trains.

(c) In order to facilitate future upgrades of the on-board radio component, an internal interface, between the so-called Euroradio Safety Layer and the Euroradio Communication Layer, will be defined. This interface should take an "FFFIS form" to ensure that adaptations of the EDOR can be carried out independently of the ETCS supplier.

(d) A new Euroradio Communication Layer will be defined, able to handle both circuit-switched and packet-switched communication.

(e) The adequacy of GPRS/IP-based communications as an ETCS communications bearer will be tested.
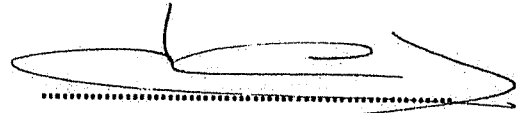
(f) Enhancement of the radio emergency call (eREC)

(73)   Harmonised radio implementation rules and parameter settings will be defined in order to minimise radio connection losses between the on-board data cab radio and the radio network.

(74)   Longer-term activities should be based on the following two main principles:

(a)   Compatibility – both backward and, wherever technically possible, forward – and coexistence with already existing equipment, involving viable migration scenarios.

(b)   No deviation from the global telecommunications standard will be introduced for mobile equipment. If additional functions are needed for EDOR, they will be implemented exclusively within the network, taking due account of aspects related to cross-border areas and reasonable fulfilment of railways operational needs as well as quality of service requirements. The same principles should apply to voice radio. However, as stated in (69) above, to benefit from the new functions, it may be necessary to replace or upgrade the telecommunications part of the on-board equipment – one example for this is the introduction of packet switching for ETCS where the EDOR on corresponding trains must be of a new kind supporting packet switching in addition to circuit switching. However, such improvements in the specifications will not imply the upgrade/replacement of existing equipment that will still be able to operate with circuit switch data.

10.   WORKING PRINCIPLES AND ARRANGEMENTS

(75)   The parties to this MOU will appoint a Steering Committee for the follow-up of the activities foreseen within the MOU. The Steering Committee is chaired by the European Coordinator or, in his/her absence, by the European Commission

(76)   The activities foreseen by this MoU are without prejudice to legal rights and obligations, including the right of initiative of the Commission.

(77)   The Steering Committee is chaired by the European Coordinator or, in his/her absence, by the European Commission. The Steering Committee will, in general, ensure that the objectives of this MoU are fulfilled. More particularly, it will:

(a)   review the progress of ERTMS deployment;

(b)   monitor the progress made towards the definition, testing, maintenance and validation of Baseline 2 and Baseline 3;

(c)   be a forum for discussion for any matter related to the deployment of ERTMS;

(d)   ensure that all Parties fulfil all their obligations under the MoU.
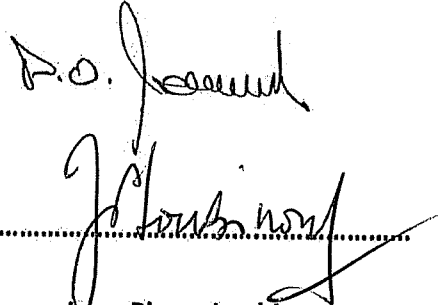
Siim Kallas
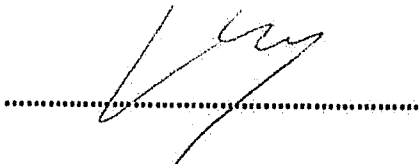Vice-President of the
European Commission

Marcel Verslype
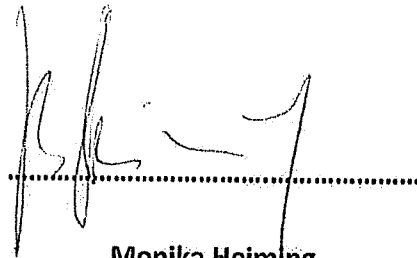Executive Director
European Railway Agency (ERA)

Libor Lochman
Executive Director
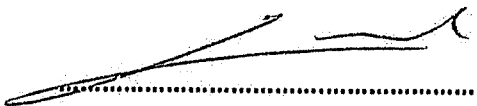Community of European Railways
(CER)

Jean-Pierre Loubinoux
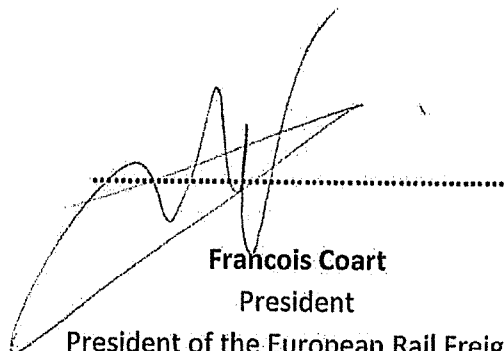Director General
International Union of Railways (UIC)

Poupart Lafarge
Chairman
Association of the European Rail
Industry (UNIFE)

Monika Heiming
Executive Director
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