

Progress with Railway Interoperability in the European Union



2013
Biennial Report: Executive Summary

Foreword

Having taken over the role of Head of the Interoperability Unit of the European Railway Agency back in September 2012, I have the honour and the pleasure of introducing the reader to this third biennial report on the progress of railway interoperability in the European Union.

Rail is a fascinating mode of transport, praised for its outstanding safety levels and its environmental friendliness. Railway is also a world of passion, which makes it unlike any other mode of transport in the heart of many citizens. I believe that all stakeholders in the railway world, as well as all those who take an interest in it, will find in this report an objective analysis of several indicators giving a picture of recent developments in interoperability.

Thanks to the efforts made by all actors in the sector who take part in the activities of the Agency and, before its creation, those of no less motivated organisations, we are at the dawn of interoperability on the EU railway network. The tools for managing the railway system as a shared system, like roads and aviation, have reached the final phase of the development process. They include a harmonised set of regulatory documents upon which all components of the railway system will be authorised for placing in service only once for the entire European Union network.

The Agency plays a prominent role in drafting and revising the technical specifications for interoperability (TSIs) with the active and much appreciated contribution of sector organisations and national safety authorities. The introduction of TSIs applicable on the entire European railway network is a major milestone in this process.

In parallel, the implementation of the registers is progressing, giving access to a wide range of information related to interoperability from the Agency's website.

The development and implementation of the European Rail Traffic Management System is one of the measures to create a Trans-European Railway Network and to ensure interoperability. The EU institutions provide support for its deployment not only by establishing the harmonised technical solutions and specifications but also by co-financing ERTMS projects through the TEN-T programme and the Connecting Europe Facility. As a result, despite the economic crisis, the length of the lines equipped with the European Train Control System shows a constant increase. The introduction of the Global System for Mobile Communications Railway is also progressing; 45% of the planned network had it in operation in June 2013.

Looking forward, the applicability of specific national rules will reduce drastically over the coming years. As a matter of fact, these national rules are recognised as the major hurdle for the development of interoperability. This will be reflected accurately in the indicators of this report.

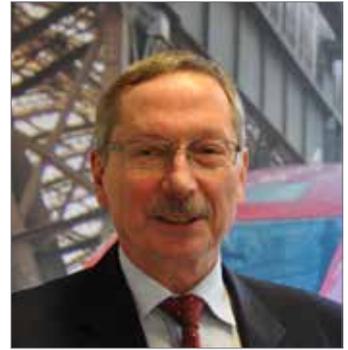
In the meantime, the huge task undertaken by the national safety authorities supported by the Agency, in identifying and classifying their applicable national rules for mutual recognition, continues to bridge the gap until all parts of the rail system achieve full conformity with European regulation. Any interested party may consult on the Agency's website the repository of all rules applicable for each parameter.

Over the coming years, the Agency will continue to improve the report on progress of railway interoperability in the European Union by including more relevant data (as soon as they become available) and refining criteria from a general perspective. In this respect, any researchers' analysis, contributions or suggestions from interested parties would be welcomed.

We will all endeavour to further remove technical barriers to the safe and uninterrupted movement of trains on the network of the European Union and beyond by actively working together with 'external' international organisations with the aim of harmonising rules.

In this way, ERA is pursuing its main objective: *making the railway system work better for society.*

Denis BIASIN
Head of Interoperability Unit





Introduction

This is the third Agency report on progress with railway interoperability in the European Union. It covers data for 2011 and 2012 and, wherever possible, 2013. This report examines overall progress with railway interoperability in the EU Member States and Norway and compares trends over the period from 2007 to 2010 covered in the previous two reports.

Developments in the legal framework

Interoperability Directive

Since the publication of the 2011 report on progress with railway interoperability, work on several acts in respect of the legal framework put in place by the Interoperability Directive has taken place.

⇒ **Amendment to Annex III to Directive 2008/57/EC**

In 2013, Annex III to the Interoperability Directive was amended by Commission Directive 2013/9/EU to include a new essential requirement: 'accessibility'. The purpose of the amendment is to ensure that persons with disabilities and persons with reduced mobility have access on an equal basis with all others.

⇒ **Update of Commission Recommendation 2011/217/EU**

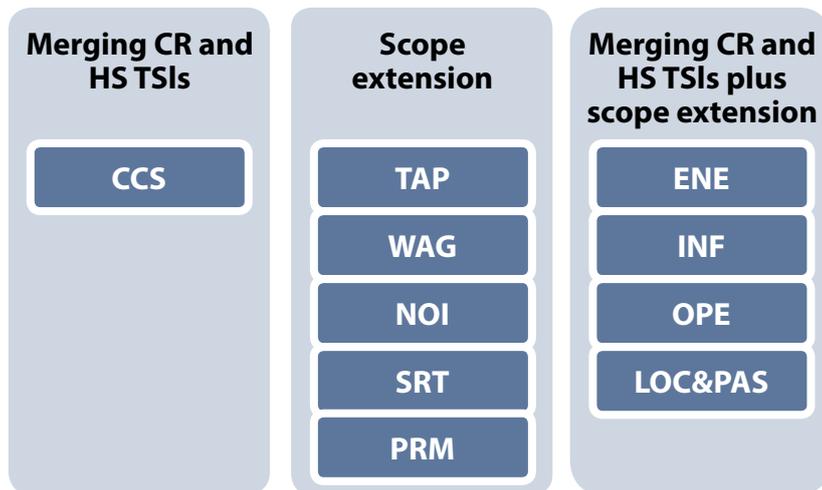
Commission Recommendation 2011/217/EU put in place a common understanding of the authorisation process for subsystems and vehicles, which was well appreciated by both the industry and government authorities. As a result of this positive experience, strong demand followed for further clarification of specific provisions of the Interoperability and Safety Directives and the way they should be implemented in the Member States. ERA analysed these aspects from both legal and practical perspectives and held meetings and workshops with the stakeholders. Following this preparatory work carried out by ERA, the European Commission intended to update Commission Recommendation 2011/217/EU. The draft version of this update is referred to as DV29bis.

Registers

In 2011, the specifications for two new registers were adopted: Register of Infrastructure (RINF) and European Register of Authorised Types of Railway Vehicles (ERATV). RINF is still under development. ERATV has been in operation since the beginning of 2013.

TSI development and revision

Since the publication of the 2011 report on progress with railway interoperability, work on amendment or revision of all TSIs has taken place. By the end of October 2013, this work was complete for some TSIs and relevant legislative acts were published; for others, the work is ongoing. Besides solving technical issues, the revisions concerned merging high-speed (HS) and conventional railway (CR) Technical Specification for Interoperability (TSIs) and extending their geographical scope.



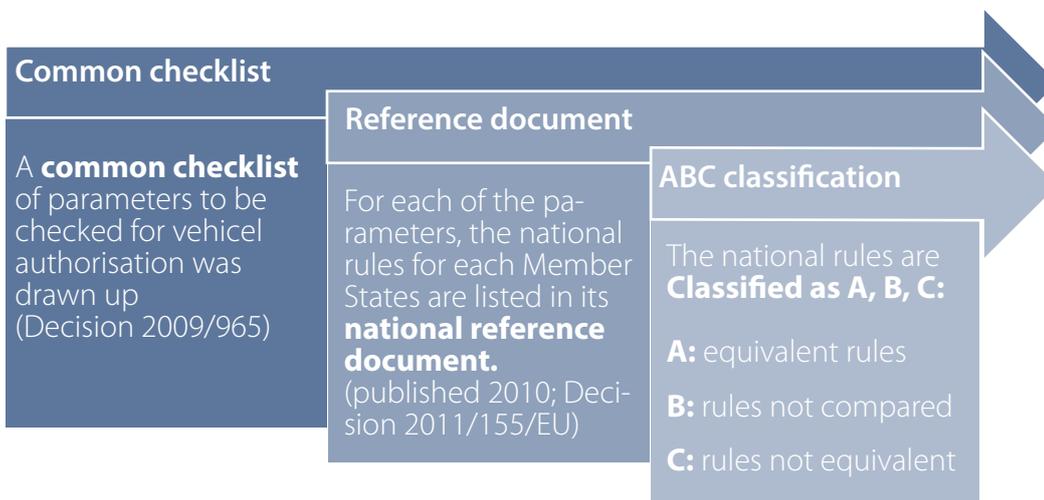
National Legal Framework (NLF)

The NLF is part of the Reference Document and documents using a common template flow chart the national legal framework applicable to the authorisation of placing in service of vehicles. By June 2013, the NLFs of 21 Member States had been published on the Agency's website. The NLFs for Germany, France, Italy, the Netherlands, Poland and the United Kingdom had been collected but not yet published. That for Croatia was under development.

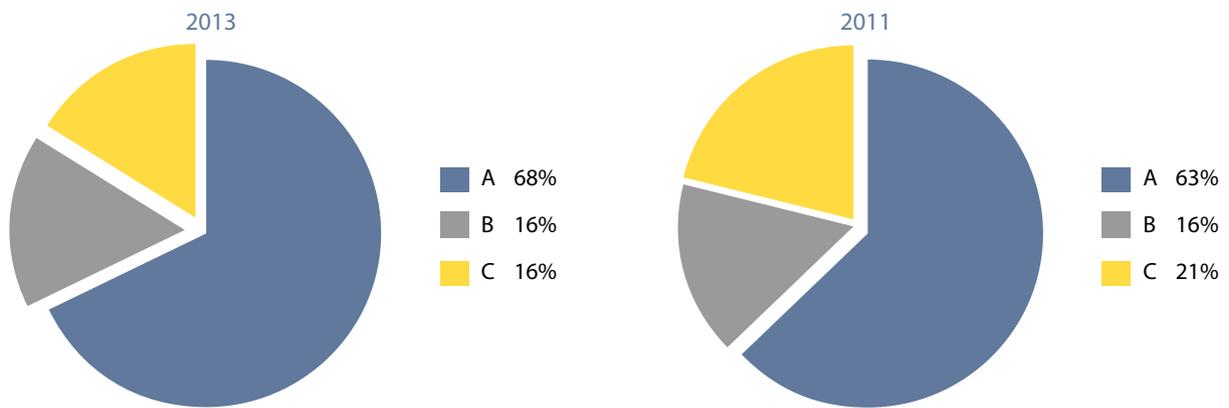
Equivalence of rules between Member States

A key change brought in by the recast Interoperability Directive in 2007 was the principle of mutual recognition under the concept of cross acceptance. This can be understood as a 'bridge' between the current regime, whereby national technical rules still apply for certain aspects of vehicle design, and the future harmonised and interoperable target European Railway System defined by TSIs.

The work on equivalence of rules between Member States comprises a three-stage process. This process eliminates duplicate or unnecessary checks by ensuring that for additional authorisations in a second or subsequent Member State only the parameters specifically related to compatibility with the second or subsequent network are checked.



Classified national rules	2013		2011	
	Number	Percentage	Number	Percentage
Total number	16 381	100%	7 883	100%
A	11 204	68%	4 979	63%
B	2 618	16%	1 254	16%
C	2 559	16%	1 650	21%



To facilitate the comparison and evaluation of equivalence of national rules, from 2009 onwards the Agency encouraged and supported NSAs in the organisation of geographic interest groups (GIGs). In 2013, there were six GIGs and 22 NSAs participated. In addition, different Member States started bilateral discussions and agreements regarding cross-acceptance of one another's rules.

By the end of 2012, the Agency, supported by the NSAs of the European Rail Area (European Union plus Switzerland and Norway), managed to publish on its website a first set of 27 signed national reference documents for all Member States of the European Rail Area as PDF documents.

The transfer of the information from the published PDF into the Reference Document Database, including updates to information and, as far as accessible, the publication of the text of the rule (if not copyright protected), is currently in progress.

In order to document and monitor the development between the GIGs, the Agency has collated the classifications carried out against the parameters carried out by the 22 NSAs involved in GIGs. While the total number of rules compared and classified has significantly increased (up to 16 000 evaluated by 2013), the relative proportion of rules classified as 'A' has slightly increased between 2011 and 2013.



Developments in the institutional framework

Three important initiatives were taken to further harmonise authorisation procedures and share knowledge between the NSAs.

⇒ Peer reviews of authorisation for placing in service

During the period June 2010 to December 2011, peer reviews of the authorisations for placing in service of six NSAs were conducted. The NSAs of France, Italy, Austria, Poland, Sweden and the United Kingdom reviewed one another's authorisation process and exchanged best practices.

⇒ Cross-audit of NSAs

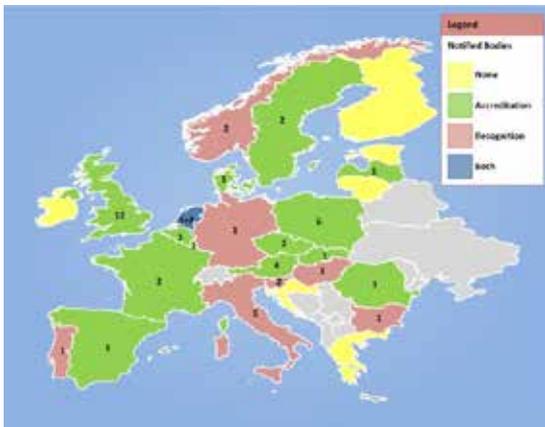
Following the peer review exercise on authorisation for placing in service and on safety certificates/safety authorisations, the Agency has developed the NSA Cross-Audit Programme in cooperation with the NSA Network. A pilot phase was scheduled for 2011–2013, when six volunteer NSAs were audited: Estonia, Ireland, Hungary, the Netherlands, Finland and the United Kingdom.

⇒ Joint Network Secretariat

In 2010, a Network of Representative Bodies (NRB) was established with the participation of the representative bodies and the Agency. It provides a forum for dialogue, consultation and exchange of information between the Agency and the bodies representing the railway sector to improve collaboration, coordination and communication.

The Joint Network Secretariat exists to support the Agency to identify issues and organise the exchange of opinions and solutions, within and between the NSA Network and Network of Representative Bodies. The project is currently in a two-year pilot phase, with a decision on its future planned for September 2014.

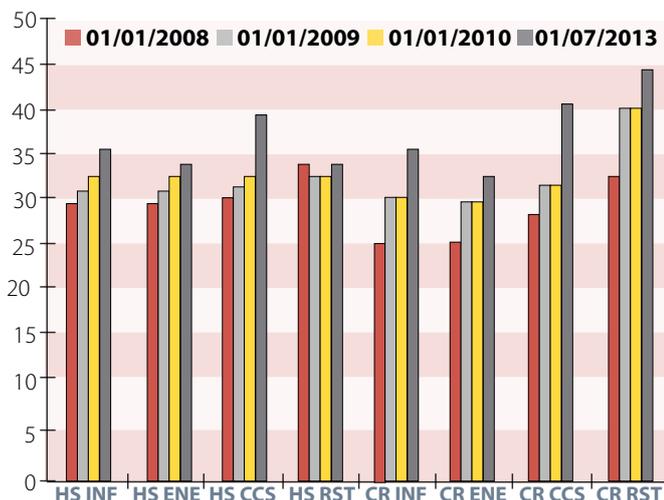
Notified Bodies



Source: NANDO.

Since 2010, the notified bodies have been re-notified according to the recast Interoperability Directive 2008/57/EC, which repealed the CR and HS Interoperability Directives (96/48/EC and 2001/16/EC).

In July 2013 in the EU and Norway, 38 notified bodies were accredited and 16 recognised by the competent national authorities. Seven Member States opted for recognition and 13 for accreditation of their notified bodies. The Netherlands opted to use both possibilities. In six EU Member States including Croatia, there were no notified bodies.



For all of the subsystems – both CR and HS INF, ENE and CCS as well as CR and HS Rolling Stock – there is a trend of increase of the number of notified bodies in comparison with the situation on 1 January 2010. All of the 44 notified bodies for CR RST are competent to assess conformity with TSI WAG. Half of them are also competent for TSI LOC&PAS.

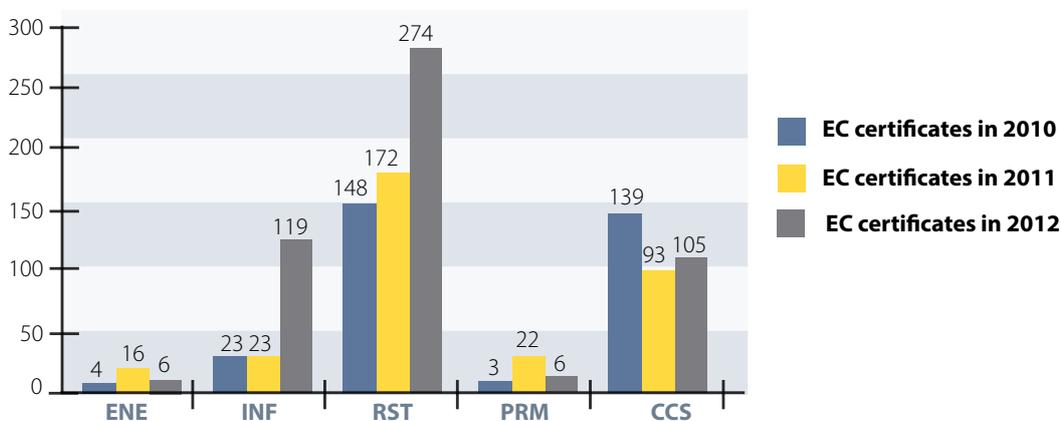
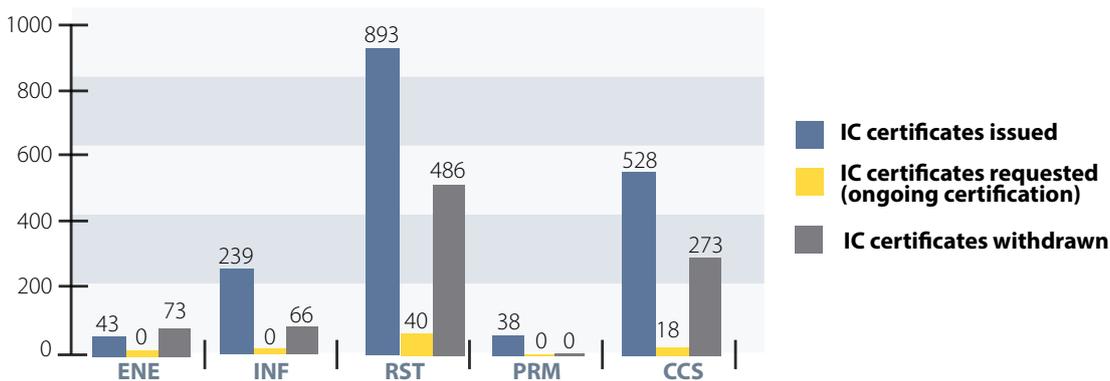
Interoperability constituents (ICs)

RST ICs

The data for IC certification highlight a trend of increase of the EC certificates for RST interoperability constituents. These include the ICs defined in three TSIs: HS TSI RST and CR TSIs WAG and LOC&PAS. The data provided by the 20 notified bodies show that, by the end of October 2013, about 900 certificates for RST ICs were still valid and the certification of another 40 RST ICs was still ongoing. Approximately 500 certificates expired or were withdrawn. This number is significant not only because RST TSIs have more ICs than TSIs for fixed installations but also because some of the certificates, issued soon after the entry into force of the first version of TSI WAG, expired.

CCS ICs

The other big market is that of CCS ICs such as Eurobalise, ERTMS/ETCS on board, odometry and GSM R on board. It is important to note that the figure for CCS certificates shows both on-board and track-side ICs. In 2012, the network of the notified bodies notified under Directive 2008/57/EC ('NB Rail') recommended indicating whether IC are for track-side or on-board CCS, following the split of CCS subsystems in Annex II to Directive 2008/57/EC. Some but not all of the notified bodies analysed here started to keep track of their CCS certificates following the recommendation.



Source: NB Rail database, data for 20 notified bodies, 31/10/2013.

Fixed installations ICs

CR and HS TSIs ENE have only one IC: overhead contact line (OCL). At the end of October 2013, the number of OCLs with valid certificates (issued and renewed) was more than 40 while the number of those with withdrawn or expired certificates was more than 70. A reason for the significant number of withdrawn and expired certificates is that the first version of HS TSI ENE entered into force in 2003. Some of the certificates issued soon after it became applicable have expired.

CR TSI INF has three ICs subject to conformity assessment: rail, rail fastening systems, and track sleepers and bearers. HS TSI INF has in addition another IC: switches and crossings. At the end of October 2013, the number of INF ICs with valid certificates (issued and renewed) was about 240 while the number of those

with withdrawn or expired certificates was close to 70. Similarly to HS TSI ENE, the first version of HS TSI INF entered into force in 2003. Consequently, some of the certificates issued in the first years of its application have already expired. In 2012, the number of certified IC increased dramatically, by a factor of five, compared with 2010.

Although it is not a separate subsystem, the NB Rail database provides information about EC certificates issued for the ICs defined in TSI PRM. These include passenger information equipment, passenger alarm devices, boarding aids, toilets, etc. By the end of October 2013, the number of EC certificates issued for PRM ICs by the 20 notified bodies amounted to 38. Of these certificates, 60% were issued in 2011.

Fixed installations

Authorisations for HS lines

In 2011-2012 all newly built HS TSI-compliant single-track lines are located in Germany (13 km). The double-track lines are located in France (140 km of the Dijon to Belfort section of the Rhine–Rhône line), Germany (76 km) and Belgium (18 km of the Schaarbeek–Mechelen line, L25N).

Of the 22 km of partially TSI-compliant line, 20 km are located in Italy (quadrupling of Torino Porta Susa–Stura Linea Storica [historical line] for 4 km and HS Bologna rail link for 17 km) and 2 km in France (Chavanne tunnel, 115 km of the Rhine–Rhône line).

All single-track lines (6 km) authorised after upgrade or renewal are located in Germany, as well as 42 km of the TSI-compliant double-track lines. The remaining 20 km of TSI-compliant double-track lines are located in Belgium on the Brussels–Liège line (line L36N).

Authorisations for CR lines

The single kilometre of single-track TSI-compliant line was built in Finland, and the 5 km of double-track line in Belgium at the Zaventem–Brussels Airport line (L36C). The 2 km of single-track partially TSI compliant line were built in Belgium on the L202A line.

Concerning the authorisations granted in full conformity with TSI after upgrade or renewal, the 19 km of single track are located in Italy (the Bovino–Cervaro section of the Caserta–Foggia line), and the 13 km of double tracks are divided between Italy (5 km of the Torino Porta Susa–Stura Linea Storica) and Slovakia (8 km).

The 262 km of partially TSI-compliant single-track lines authorised in 2011–2012 are divided between:

- Portugal (137 km: 66 km between Bombel and Évora stations on the Alentejo, Vendas Novas and Évora lines; 71 km between Castelo Branco and Covilhã stations on the Beira–Baixa line);
- Hungary (53 km); and
- Slovenia (72 km, including the following stretches longer than 8 km: upgrade of Ptuj–Moškanjci and Moškanjci–Ormož, the Pragersko–Ormož sections of the Pragersko–Ormož line for a total of 27 km; upgrade of the Ormož–Pavlovci and Pavlovci–Ivanjковci sections of the Ormož–Hodoš–State border line for a total of 8.6 km; upgrade of the link to Hodoš station on the Ormož–Hodoš–State border line for 8.8 km; Ljubljana–Sežana–State border and upgrade of level crossing of Notranje–Gorice for a total of 12.7 km).

The 365 km of double-track lines are 287 km in the Czech Republic and 78 km in Hungary.

Tunnels placed in service in conformity with SRT TSI in 2011 and 2012, first authorisation and upgrade/renewal		
MS	Name of tunnel	Length [km]
BE	Diabolo (Brussels Airport)	5
DE	Tunnel BER	3
DE	Buschtunnel	1
DE	Katzenberg-tunnel	10
FR	Saverne*	5
IT	Passante AV Bologna	11
IT	Quadruplicamento Torino Porta Susa–Stura	4

*The Saverne tunnel (SRT TSI compliant) is partially still under construction and it will be fully operational in 2016.

Source: 2013 European Railway Agency questionnaire to NSAs (22 NSAs responded).

		Full compliance with TSIs: ENE, INF, CCS 'train detection', SRT		Partial compliance with TSI (derogation)	
		Single track	Double track	Single track	Double track
HS lines Authorised 2011–2012	New	13	234	0	22
	Upgraded/ renewed	6	62	0	1
	Total	19	296	0	23
CR lines Authorised 2011–2012	New	1	5	2	0
	Upgraded/ renewed	19	13	262	365
	Total	20	18	264	365

Source: 2013 European Railway Agency questionnaire to NSAs (22 NSAs responded).

ERTMS Track-side

ETCS deployment

Currently, ETCS deployment is not homogeneous across the EU and different countries are at different stages of deployment. By October 2013, more than 4 500 km of ETCS equivalent double track lines ⁽¹⁾ were in service. At the same time, around 5 190 km of lines were in production (in testing or at an advanced stage of construction). Six Member States – Denmark, Estonia, Ireland, Lithuania, Latvia and Portugal – have not started the ETCS trackside deployment.

GSM R deployment

According to data provided by the International Union of Railways (UIC) to the EC ⁽²⁾, GSM R deployment in Europe is as follows:

Of the 154 300 km of track planned to be equipped with GSM R in Europe:

- 85 300 km of track are equipped with GSM R (55% of the planned network),
- 70 200 km of track have GSM R in operation (45% of the planned network).

The deployment of GSM R is much wider than the deployment of ETCS. GSM R is used for both voice and ETCS data transmission, and it can be installed independently of ETCS signalling.

In the Member States where ETCS Level 2 is in service, GSM R deployment is at least the same as ETCS Level 2 deployment (see, for example, the case of Italy, where around 700 km of ETCS Level 2 are in service). In addition, there are several Member States where there is no ETCS Level 2 in service, or it is present only in very limited areas, but an extensive GSM R network is deployed (see, for example, the case of Germany, the biggest GSM R network in service in the EU at over 27 000 km).

MS	2008	2011	2013	
	ETCS in service	ETCS in service	ETCS in service	In service and under construction
AT	0	67	67*	496
BE	70	70	158	446
BG	250	450	190	387
CZ	0	0	0	22
DE	164	164	164	823
EL	150	150	150	691
ES	1 074	1 434	1 786	2 112
FI	0	0	0	50
FR	0	25	25	405
HU	100	275	280	280
HR	0	0	0	1
IT	534	711	711	947
LU	0	0	0	275
NL	280	280	285*	365
NO	235	285	285*	285
PL	0	0	0	310
RO	50	50	0	311
SE	0	190	190*	480
SI	0	0	0	635
SK	0	0	0	158
UK	0	218	218	218
Total	2 907	4 369	4 509	9 697

* Data from 2010 questionnaire; no information received in 2013. Source: 2008, 2010 and 2013 European Railway Agency questionnaires to NSAs.



⁽¹⁾ The lengths of lines in ETCS are usually counted in 'equivalent double track'.

⁽²⁾ Information provided in the framework of the communication of the development of GSM R in the world.

Vehicles

Trends in first authorisation of vehicles

- Authorisations for freight wagons had the highest relative share (65–80%) of vehicle authorisations in the period 2009–2012.
- Year 2012 marked a reversal of the decreasing numbers of wagons receiving first authorisation.
- Authorisations for locomotives and special vehicles show a downward trend.
- Authorisations for fixed formations and passenger coaches fluctuated throughout the period.
- A significant percentage of the vehicles (about 80%) is either fully or partially TSI compliant.
- The most numerous TSI compliant vehicles are in the wagon category.
- Most non-wagon vehicles authorised are not TSI compliant.
- The largest number of types authorised is in the 'special vehicles' category, because the number of vehicles per type is extremely limited.

Vehicles	First authorisation				Additional authorisation			
	2009	2010	2011	2012	2009	2010	2011	2012
Locomotives	400	273	218	220	348	256	1074	552
Fixed formation	809	595	624	530	46	128	105	228
Passenger coaches	357	415	649	300	58	129	25	115
Special vehicles	322	316	283	247	100	40	128	89
Wagons	5 648	4 000	3 301	4 857	1 502	1 080	2 419	2 118
Total	7 536	5 599	5 075	6 154	2 054	1 633	3 751	3 102

Vehicle	First authorisation							
	2009		2010		2011		2012	
	Nber	%	Nber	%	Nber	%	Nber	%
Total	7 536	100%	5 599	100%	5 075	100%	6 154	100%
TSI compliant	4 967	66%	3 809	68%	2 977	59%	4 014	65%
Partially TSI compliant	909	12%	593	11%	1 103	22%	798	13%
Total TSI	5 876	78%	4 402	79%	4 080	80%	4 812	78%
Non TSI compliant	1 660	22%	1 197	21%	996	20%	1 342	22%

Trends in additional authorisations

- In the period 2009–2012 the numbers of additional authorisations for the five vehicle categories fluctuated.
- Most additional authorisations (60–75%) were granted for freight wagons, followed by the locomotive category (15–30%).
- Vehicle type authorisations increased from 23 to 94 types in the period 2009–2012.
- Freight wagons have the highest average number of vehicles per type but it decreased by a factor of 3.5 over three years.
- Locomotives, fixed formation and passenger coaches show a varying number of vehicles per type in the period 2009–2012.
- Unlike first authorisation, for additional authorisations the number of vehicle types for special vehicles is comparable to the numbers for locomotives, fixed formations and wagons.

Type	First authorisation				Additional authorisation			
	2009	2010	2011	2012	2009	2010	2011	2012
Locomotives	13	14	18	20	9	17	16	28
Fixed formation	23	20	25	27	2	14	1	17
Passenger coaches	9	6	14	13	2	-	2	2
Special vehicles	41	43	31	70	5	5	16	22
Wagons	25	19	19	43	5	10	24	25
Total	111	102	107	173	23	46	59	94

Vehicles per type	First authorisation				Additional authorisation			
	2009	2010	2011	2012	2009	2010	2011	2012
Locomotives	31	20	12	11	39	15	67	20
Fixed formation	35	30	25	20	23	9	105	13
Passenger coaches	40	69	46	23	29	n.a.	13	58
Special vehicles	8	7	9	4	20	8	8	4
Wagons	226	211	174	113	300	108	101	85

Source: 2013 European Railway Agency questionnaire to NSAs (22 NSAs responded).



Train drivers

Train Drivers' Directive 2007/59/EC provides that all train drivers shall have the necessary fitness and qualifications to drive trains. The driver should hold the following documents:

- ⇒ a licence demonstrating that the driver satisfies minimum conditions as regards medical requirements, basic education and general professional skills; and
- ⇒ one or more certificates indicating the infrastructures on which the holder is authorised to drive and indicating the rolling stock which the holder is authorised to drive.

A licence is valid throughout the whole territory of the European Union, whereas the certificate is valid only on those infrastructures and rolling stock identified on it.

The train drivers' licences are issued by the NSA, whereas the certificates are issued by the railway undertakings and infrastructure managers as set out in their safety management systems.

The same directive states that the NSA shall keep a register of all the licences provided and the railway undertakings and infrastructure managers shall keep a register of their certificates granted.

Most of the NSAs provided rounded figures; therefore, the sum of all the EU train drivers is also rounded. The total number of train drivers in the EU is 180 000; of them, by 31 March 2013, 13 000 had been certified according to Directive 2007/59/EC .

Specimen of EU train driver's licence



Registers

European Centralised Virtual Vehicle Register (ECVVR)

As of November 2013, 15 EU Member States and Norway, Serbia and Switzerland⁽³⁾ have their national vehicle registers (NVRs) connected to the Virtual Vehicle Register (VVR). These EU Member States are Belgium, the Czech Republic, Denmark, Estonia, France, Italy, Lithuania, Luxembourg, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia and Slovakia. Estonia is connected to the VVR but the data available cover only the total number of registered vehicles. The total number of registered vehicles for the 17 countries⁽⁴⁾ was about 656 000, of which approximately 620 000 were registered in the EU.

A quarter of the vehicles were registered in France, followed by Poland with 20%, the Czech Republic with 10% and Italy with about 9% of vehicles. The NVRs whose total number of vehicles falls within the range from 25 000 to 40 000 are those of Belgium, Estonia, Lithuania, the Netherlands, Austria, Romania, Slovakia and Switzerland. The remaining countries have fewer than 6 000 registered vehicles each.

Some 80%, or approximately 490 000, of all registered vehicles in the EU had valid registrations, whereas the registrations of 20% of the vehicles were withdrawn. According to the data in the NVRs, only 3%, or about 13 000, of the vehicles with valid registration in the 15 EU Member States have an EC declaration of verification (see the table below). This means that only 3% of the vehicles were assessed for compliance with the relevant TSIs. One of the reasons for the low number is that the TSIs are not applicable for existing vehicles until their upgrade or renewal.

According to the data registered in the NVRs, some 96% of the vehicles with valid registration in the European Union have an entity in charge of maintenance (ECM) assigned to them.

Member State	Total number of registered vehicles	Of which		Valid registrations			
		Valid registration	Withdrawn registration	Authorised in more than 1 MS	in %	With EC declaration	in %
BE	40 689	19 825	20 864	no data		827	4%
CZ	64 635	53 139	11 496	31 707	60%	2 177	4%
DK	2 059	1 991	68	176	9%	0	0%
EE**	22 116	no data	no data	no data			
FR	158 601	119 794	38 807	31 857	27%	3 273	3%
IT	57 648	49 557	8 091	31 384	63%	108	0%
LT	16 412	16 397	15	0	0%	0	0%
LU	5 139	4 246	893	3 722	88%	50	1%
NL	19 717	19 145	572	1 748	9%	2 207	12%
AT	43 569	35 307	8 262	3 502	10%	1 936	5%
PL	126 691	110 185	16 506	64 291	58%	1 229	1%
PT	5 703	5 335	368	992	19%	421	8%
RO	19 123	19 123	0	48	0%	0	0%
SI	4 869	3 656	1 213	2 839	78%	64	2%
SK	33 848	32 022	1 826	23 528	73%	515	2%
Total	620 819	489 722	108 981	195 794	40%	12 807	3%

Some figures (%) are rounded.

*EE - Since there are no data for the valid registrations in Estonia, it is not possible to calculate the vehicles with valid registrations and with ECM/keeper/owner.

⁽³⁾ The connection of the NVRs of Serbia and Switzerland to the VVR is in accordance with the agreement between the Agency and OTIF.

⁽⁴⁾ The NVR of Serbia is connected to the VVR but contains no data.

European Register of Authorised Types of Vehicles (ERATV)

ERATV has been in operation since the beginning of 2013. At the end of October 2013, five Member States – the Czech Republic, France, Italy, Latvia and Luxembourg – had registered a total of 49 authorised vehicle types, of which two had the status 'expired'. Status 'expired' means the authorisation is not valid because it had a temporary validity. Of the authorised vehicles types, 65% were registered in France and more than 20% in Lat-

via, Italy, the Czech Republic and Luxembourg each have five or fewer registered authorised types of vehicles.

Almost half the registered authorised types of vehicles belong to the freight wagon category. The remaining 27 authorised vehicle types are divided between passenger trainsets and locomotives. Two types of passenger coaches were registered, but their authorisation had expired by the end of 2012

Member State	Number of authorised vehicle types	
	Active	Expired
CZ	2	0
FR	29	0
IT	5	2
LV	10	0
LU	1	0
Total	47	2

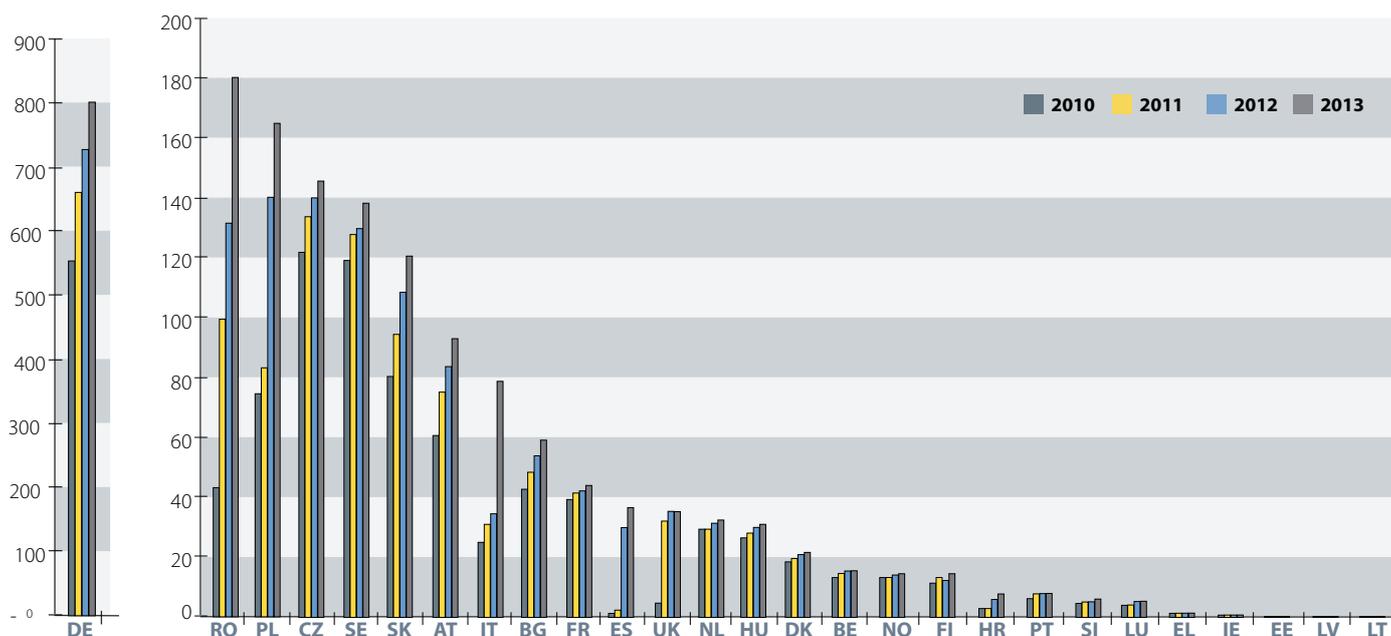
Vehicle category	Number of authorised vehicle types	
	Active	Expired
Locomotives	12	0
Passenger trainsets	15	0
Passenger coaches	0	2
Freight wagons	20	0
Total	47	2

Source: ERATV.

Vehicle Keeper Marking Register (VKMR)

In the period 2010–2013 most Member States had an upward trend in the number of keepers. In several Member States – Belgium, Greece, Ireland, Luxembourg, Portugal and the UK – the number of vehicle keeper markings (VKMs) did not change in 2013. The Baltic states had not registered any VKM by 2013. The total number of VKMs in the EU increased by 20% in 2011, 15% in 2012 and 13% in 2013. Such a development suggests that market opening provides incentives for new keepers to start railway businesses.

Germany has the highest number of VKMs: about 800, which is 38% of the total number of VKMs in use. It is followed by Romania, Poland, the Czech Republic, Sweden and Slovakia, all of which have between 100 and 200 VKMs. The rest of the Member States have fewer than 100 VKMs each.



Source: VKMR.

The complete 2013 Report on Progress with Railway Interoperability in the EU is available at the ERA website: <http://www.era.europa.eu/Core-Activities/Interoperability/Pages/INT-report.aspx>

Country abbreviations

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
NL	Netherlands
NO	Norway
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

Acronyms and abbreviations

CCS	Control–command and signalling
CR	Conventional rail
ECM	Entity in charge of maintenance
ECVVR	European Centralised Virtual Vehicle Register
ENE	Energy
ERA	European Railway Agency
ERADIS	European Railway Agency Database of Interoperability and Safety
ERATV	European Register of Authorised Types of Vehicles
ERTMS	European Rail Traffic Management System
ETCS	European Train Control System
EU	European Union
GIG	Geographic interest group
GSM-R	Global System for Mobile Communications Railway
HS	High-speed
IC	Interoperability constituent
INF	Infrastructure
LOC&PAS	Locomotive and passenger carriages
MS	Member State
NANDO	New Approach Notified and Designated Organisations Information System
NB Rail	Coordination group of notified bodies for railway products and systems
NLF	National Legal Framework
NOI	Noise
NSA	National Safety Authority
NVR	National Vehicle Register
OCL	Overhead contact line
OPE	Operation
OTIF	Intergovernmental Organisation for International Carriage by Rail
PRM	Persons with reduced mobility
RINF	Register of Infrastructure
RST	Rolling stock
SRT	Safety in railway tunnels
TAF	Telematic applications for freight
TAP	Telematic applications for passengers
TSI(s)	Technical specification(s) for interoperability
VKM	Vehicle keeper marking
VKMR	Vehicle Keeper Marking Register
VR	Virtual Vehicle Register
WAG	Freight wagons



European Railway Agency

Headquarters in Valenciennes:

120, Rue Marc Lefrancq
59300 Valenciennes
France

Tel. +33 327096-500

Conference centre in Lille:

Espace International
299, Boulevard de Leeds
59777 Lille
FRANCE

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