

# Annual Report of the Federal Railway Authority

on the activities of the safety authority pursuant to Article 18 of the Directive on the safety of the Community's railways (Directive 2004/49/EC, 'Railway Safety Directive')



**Annual Report 2012** 

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### A.1. Scope of the report

The Federal Railway Authority [Eisenbahn-Bundesamt] (EBA) is the German national railway safety authority. As such, it is responsible for carrying out all the tasks assigned to it by the Fifth Law Amending the Statutory Provisions Governing Railways [Fünftes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften] of 16 April 2007, which transposed the Directive on safety on the Community's railways (Directive 2004/49/EC, the Railway Safety Directive) into national law. These tasks are specified in Article 16 of the Railway Safety Directive. In detail they are:

- issuing authorisations to place structural subsystems into service in accordance with the directives on the interoperability of the rail system within the Community (in accordance with Directive 2008/57/EC);
- supervising that the subsystems of the railway system comply with the essential requirements for operation and maintenance and likewise for the interoperability constituents;
- issuing authorisations to place rolling stock that is not yet covered by a technical specification for interoperability (TSI) into service;
- issuing safety certificates for railway undertakings and safety authorisations for infrastructure managers;
- monitoring and developing the safety regulatory framework including the system of national safety rules;
- registering vehicles in the national vehicle register.

In addition, the EBA performs other tasks, such as, for example, planning the federal railways' operating facilities, helping to finance construction work under the Federal Railway Development Act [Bundesschienenwegeausbaugesetz] (BSWAG), work in the field of dangerous goods, activities involved with the enforcement of Regulation (EC) No 1371/2007 on the rights and obligations of railway passengers (the EBA is also responsible for passengers' rights for ship and bus traffic), and planning, approving and acting as the supervisory authority for magnetic levitation railways.

In accordance with Article 18 of the Railway Safety Directive, this report is restricted to the EBA's activities as a safety authority, in particular the development of:

- railway safety, including the common safety indicators (CSI);
- the legislative and regulatory framework supporting railway safety;
- safety certification and safety authorisation as well as
- the body of knowledge obtained from the supervision of railway undertakings.

The structure of this report follows the template recommended by the European Railway Agency (ERA).



### A.2. Summary in English

The overall purpose of this report is to provide information about the activities of the Federal Railway Authority [Eisenbahn-Bundesamt] (EBA) acting as the National Safety Authority in accordance with Directive 2004/49/EC on safety on the Community's railways. This report is aimed at stakeholders in the German and European railway industry and interested members of the general public.

The EBA was founded in 1994 as one element in the process of German railway reform. Sovereign tasks such as, for example, technical approval of vehicles and track and public financing of investments were allocated to the EBA when the former state railways, Deutsche Bundesbahn and Deutsche Reichsbahn, were merged into Deutsche Bahn AG, a private company. The EBA has acted as an independent authority within the German Federal Ministry of Transport, Building and Urban Affairs [Bundesministeriums für Verkehr, Bau und Stadtentwicklung] (BMVBS) since 1994. Its headquarters is located in Bonn, while most of the some 1 250 employees work in twelve branch offices at fifteen locations throughout Germany.

Given the EBA's experience since 1994, it was logical to allocate the tasks of the National Safety Authority (defined in Article 16 of the Railway Safety Directive) formally to the EBA as well. This step was taken in April 2007 when the Fifth Law Amending the Statutory Provisions Governing Railways came into force and that completed the task of transposing the provisions of the Railway Safety Directive into German law.

Parts A, B and C of this report, together with the annexes to which they refer, contain comprehensive information on the railway system in Germany as well as details concerning the statutory background, tasks and organisation of the EBA. Parts D to H focus on safety-related issues:

- Part D lists important safety measures taken in 2012. These are broken down into measures resulting from events such as accidents, from safety recommendations or from other prompts such as findings during supervisory activities. It also contains a trend analysis of common safety indicators (CSIs). Annex C shows a table of CSIs for 2012.
- Part F deals with safety certification and authorisation; Annex E contains figures related to this topic.
- Part G outlines how the EBA supervised railway undertakings and infrastructure managers in 2012.
- The application of common safety methods (CSM) to risk evaluation and assessment is described in Part H. Application of CSMs has been mandatory for significant changes to certain parts of the railway system since July 2010; it became applicable to all significant changes in July 2012.



### **B.** Introductory section

### 1. General

This annual report provides information on the activities carried out by the EBA as the German railway safety authority in accordance with the Railway Safety Directive. It is primarily aimed at the railway community in Germany and Europe, but its target audience extends beyond that to representatives from politics, business, the press and interested members of the general public.

The EBA was set up as an independent, unitary higher federal authority within the Federal Ministry of Transport, Building and Urban Development when the railway system in Germany was restructured in 1994. It is the supervisory and licensing authority for the federal railways [Eisenbahnen des Bundes] (EdB), magnetic levitation railways and railway undertakings based in other states for the territory of the Federal Republic of Germany. In addition to network-based supervision in accordance with Section 5(1c) of the General Railways Act [Allgemeines Eisenbahngesetz] (AEG), the EBA is also responsible for supervising non-federally owned railways which require a safety certificate or safety authorisation.

### 2. Railway structure information

On 31 December 2012, the public railway network in Germany consisted of approximately 38 000 route km of which about 20 500 km were electrified at 15 kV, 16<sup>3</sup>/<sub>3</sub> Hz, the standard system in Germany. This network is operated by a total of around 180 licensed public railway infrastructure managers. Over 32 000 km of track alone is operated by DB Netz AG, the largest infrastructure manager in Germany.

At the end of 2012, some 400 public railway undertakings were licensed under Section 6 of the General Railways Act to provide transport services by rail on Germany's public railway network. This is equivalent to a licence under Directive 2012/34/EU (formerly 95/18/EC) establishing a single European railway area. In addition, railway undertakings from other states operate in Germany on the basis of a licence issued in other Member States of the European Union in accordance with Directive 2012/34/EU (95/18/EC).

The positive trend recovering from the economic slowdown in Europe noted in 2010 and 2011 did not continue into 2012. Although the German economy grew by 0.7%, transport performance fell by 2.9%. Both road and rail lost traffic, although inland shipping grew significantly. In the modal split between the surface modes (road, rail and inland waterways), the share of the railways year on year fell from 18.0% to  $17.7\%^{1}$ .

In 2012, public railways carried some 366.1 million tonnes of freight (-2.3% compared to the previous year). Tonne kilometres likewise fell by 2.9% to

<sup>&</sup>lt;sup>1</sup> Source: Federal Office for Freight Traffic, Market Research in Freight Traffic [Bundesamt für Güterverkehr, Marktbeobachtung Güterverkehr] – Annual Report 2012





110.1 billion tonne km. Contrary to that trend, tonne kilometres for combined traffic rose slightly. Overall levels of traffic carried in 2013 are expected to show a slight improvement. Amongst other trends, an increasing demand for environmentally-friendly transport should be recorded; rail is profiting from that<sup>2</sup>.

Passenger traffic by rail continued to grow. The number of passengers carried rose 2.2% within the year to 2.57 billion passengers; passenger kilometres increased likewise from 85.0 to 88.4 billion  $(+3.9\%)^3$ .

### 3. General trend analysis

In 2012, a total of 289 significant railway accidents<sup>4</sup> occurred on that part of the German rail network covered by the Railway Safety Directive. The number of significant accidents was therefore similar to the level in the previous year (2011: 285 significant accidents). By comparison with the previous year, an increase in accidents at level crossings has to be recorded, but on the other hand, significantly fewer accidents in the 'accident resulting in death or injury' category occurred. In the other categories of accidents, there were slight variations in the absolute number of accidents.

The total number of fatalities caused by railway accidents likewise fell slightly (2010: 146 fatalities; 2011: 140 fatalities; 2012: 138 fatalities). The number of people seriously injured also fell to 115 people. Accordingly, compared with 2011 (in which the serious accident in Hordorf occurred), a marked reduction can be recorded; the number of those seriously injured is about the same as in 2009 and 2010 (in each of which 118 people were severely injured).

### Annexes

A map of the railway network in Germany is attached to this report as an annex (<u>Annex A.1</u>). Likewise, links to the lists of licensed railway undertakings and infrastructure managers are to be found in (<u>Annex A.2</u>).

<sup>&</sup>lt;sup>2</sup> Source: Federal Office for Freight Traffic, Market Research in Freight Traffic [Bundesamt für Güterverkehr, Marktbeobachtung Güterverkehr] – Annual Report 2012

<sup>&</sup>lt;sup>3</sup> Source: Federal Statistical Office [Statistisches Bundesamt], Technical series 8, Number 1.1, 07/2013, Table 2.1.1

<sup>&</sup>lt;sup>4</sup> Pursuant to Directive 2004/49/EC (as amended) 'significant accident' means any accident resulting in at least one killed or seriously injured person or damage equivalent to EUR 150,000 or more or suspension of services for six hours or more.



In accordance with Section 2(1) of the statute governing the administration of the federal railways, the Federal Rail Traffic Management Act [Bundeseisenbahn-verkehrsverwaltungsgesetz] (BEVVG), the EBA is an independent, unitary, higher federal authority within the Federal Ministry of Transport, Building and Urban Development (BMVBS).

Section 3 of the BEVVG defines the specific tasks of the EBA in detail. Accordingly, the EBA is responsible for the following tasks:

- 1. approving plans for operational facilities for the federal railways;
- 2. acting as the supervisory authority;
- 3. supervising construction of operational facilities for the federal railways;
- 4. issuing and revoking [operating] licences;
- 5. exercising sovereign powers as well as supervisory and participation rights in accordance with other laws and regulations;
- preparing and implementing agreements in accordance with Section 9 of the Federal Railway Development Act [Bundesschienenwegausbaugesetz (BSchwAG)];
- technical investigation of dangerous incidents in railway operations in accordance with Section 5(1g) of the General Railways Act;
- 8. allocating federal funds to promote rail transport and to promote multimodality, combining rail transport with other means of transport.

To carry out its tasks, the EBA has a head office in Bonn and twelve outstations in fifteen locations throughout Germany. The EBA's Head Office has four departments (Head Office Services, Infrastructure, Rolling Stock and Operations, and the Finance Department). There are eighteen subordinate units. The local tasks are carried out by five technical departments in the twelve outstations. They are coordinated by the respective specialist units in the head office. An organisation chart of the EBA and an overview of the outstation locations are given in <u>Annex B</u>.

The EBA has been set up as a higher federal authority under auspices of the Federal Ministry for Transport, Building and Urban Development. It is therefore answerable to that ministry. In addition to the EBA, three other bodies have responsibilities for railway activities in Germany:

The **Federal Railway Accident Investigation Office (EUB)** [Eisenbahn-Unfalluntersuchungsstelle des Bundes] is the investigating body for the purposes of the Railway Safety Directive 2004/49/EC. The EUB manages and is responsible for the investigation of accidents on infrastructure which the Federal Republic supervises in accordance with Chapter V of the Railway Safety Directive. The



BMVBS provides the management of the EUB but its activities are carried out by an investigation centre within the EBA which reports functionally to the BMVBS.

The **Federal Network Agency (BNetzA)** [Bundesnetzagentur] is the regulatory body in accordance with Directive 2012/34/EU (formerly 2001/14/EC) and as such it monitors non-discriminatory network access in Germany. The Federal Network Agency also regulates the electricity, gas, postal and telecommunications markets and is therefore organisationally answerable to the Federal Ministry for the Economy and Technology [Bundesministerium für Wirtschaft und Technologie]. However, specialist regulation of railway activities is the responsibility of the Federal Ministry for Transport, Building and Urban Development.

**Eisenbahn-Cert (EBC)** is the notified body for interoperability in accordance with Directive 2008/57/EC on the interoperability of the rail system within the Community and as such it checks and certifies compliance with the European rules for interoperability components and subsystems of the rail system.

A schematic representation of the situation as at 31 December 2012 is attached to this annual report as <u>Annex B.2</u>. An overview of the working relationship between notified bodies and the EBA for authorisation to place structural subsystems into service is given in <u>Annex B.3</u>.



### Initiatives to maintain and improve the level of safety

This section contains a list of the measures decided on and taken by the EBA or transposed in Germany in 2012 to maintain or improve safety on the railways. EBA measures based on specific events, such as accidents, are shown in Table D.1.1; whilst EBA measures triggered by other factors (such as findings during inspections) are shown in Table D.1.2.

Accidents/precursors which triggered the measure			Safety measure decided		
Date	Place	Description of the event			
		Sand impairing the effectiveness of tra	ack circuits		
Several individual cases, also in previous years	Various, right across the Federal Republic	In 2012, there was a spate of incidents in which the effectiveness of track circuits was impaired by sand from locomotives and multiple units. In Frankfurt-Niederrad and Neckarelz that led to vehicles not being detected and the tracks being shown as not occupied. It emerged that particular vehicles dropped too much sand when moving at low speeds before stopping and that had the effect of isolating the track circuit.	<ul> <li>A number of measures were adopted, in detail:</li> <li>issue of special operating rules for particular configurations of traction units and supplementary recommendations for vehicle design;</li> <li>investigation of DB Netz' network access conditions in which reflect the complete requirements of the TSI;</li> <li>railway undertakings were made aware of the need for compliance.</li> <li>Regulations in the TSI need to be improved and that is now being debated in a working group.</li> </ul>		
	1	Doors of coaches			
29 Aug. 2012	Mannheim	A passenger fell from a moving train in Mannheim station whilst trying to alight; the accident occurred because it was technically possible to open doors from within the train whilst it was moving, The passenger was killed in the accident.	The operator in question has taken action to ensure that in future under normal circumstances it will not be possible to open doors in its coaches from inside whilst the vehicle is moving.		

Table D.1.1. Safety measures triggered by accidents and precursors to accidents



	Premature release of a route in an all-relay signal box						
September 2011	Nürnberg	The emergency release of a route in an all-relay signal box in Nürnberg led to the premature release of a parallel route. The incoming train was successfully stopped by means of an emergency stop order.	The infrastructure manager was required to check latching relays right across the Federal Republic. In doing so, he found further cases of latching relays with defective or missing securing discs.				
		The cause was a loose securing disc on a latching relay in a switch group. The fact that the mechanical support was missing led to contacts which should not have closed in fact to close. The consequence of this was premature release of the route.	<ul> <li>After investigation of the manufacturing process, it seems impossible that relays without securing discs could be brought into use, or could have been brought into use. In consequence, inadequate maintenance must be assumed. The infrastructure manager has taken the following steps: <ul> <li>instruction in technical notices not to undertake any work on relays;</li> <li>amendment to the regulations with a special instruction 'no maintenance work of any type on latching relays'.</li> </ul> </li> <li>Monitoring of the action taken with a requirement to report to the EBA.</li> </ul>				
		Movement with doors open (class	s 442)				
31 May 2012	Nürnberg – Feucht line	Doors on a vehicle of class 442 (Talent 2) were open whilst the vehicle was moving.	The operator took the vehicle out of service for a short time. The door control software and the door operation instructions for train drivers were amended.				
		Door opened during movement (cla	iss 411)				
13 Jan 2012	Kinding	A door on the vehicle of class 411 (ICE-T) opened whilst the vehicle was moving.	The operator modified the door locks on all vehicles of the class in question.				



	Movement over	unsecured level crossing because the rela	y contacts were contaminated
19 Feb. 2012	Köln-Kalk	In February 2012, a freight train crossed the Leuchterstrasse level crossing in Köln Kalk with ineffective safeguards (barriers up) although the crossing is interlocked with signals and the signal covering the crossing showed clear. Because the loco. driver was able to warn passers-by and they reacted quickly there	To establish whether it was an individual case or a systematic problem, the complete warehouse stock of relays from that manufacturer were checked. There were a number of cases of contamination and hence it cannot be assumed that this was an isolated case.
		were no personal injuries. The cause was established as contamination of a dependent contact set	The first step was to audit the manufacture of the relays at several stages externally and internally. As a result a number of initiatives in manufacture and testing were introduced.
		in the all-relay signal box by solder. The short-circuit which then took place led to a premature emergency release message for the level crossing. That message led to a signalled movement over the open level crossing.	As a further step and to cover the relays that have already been delivered (some 300,000), several batches were investigated by the manufacturer and the infrastructure manager so that problematic years could be identified. A restriction to particular manufacturing dates is not possible with existing information.
			To support these initiatives, the infrastructure manager in question undertook immediate operating and technical maintenance action with the objective of identifying unusual behaviour by signalling installations.
			A joint working group composed of the manufacturer, the infrastructure manager and the EBA has drawn up a hazard analysis. One result is that replacement programme could contribute to hazard; the order of magnitude of the contribution to hazard corresponds to human error. This contribution to hazard is to be taken into account in any further action.







### Table D.1.2. Safety measures with other triggers

Description of the area of	tion of Description of the trigger Safety mea						
concern							
	Deficiencies in switch hand clamping equipment						
Control-command and signalling subsystem: switches	During the railway supervision work, significant defects were discovered in hand clamps and hand clamping equipment. Hand clamps and hand clamping equipment are used to force locally-operated switches, crossings (Article 14(9) Railway Construction and Operation Order [Eisenbahn-Bau- und Betriebsordnung] (EBO)) and lines locked out of use (flank protection Article 14(11) EBO) to comply with signals by using route-related release keys. In addition to not maintaining the documentation, inadequate maintenance or omissions when revising [the layout], one cause was that the regulations had not been amended to take account of centralised signal box technology. Further development of signal box technology (electronic signal boxes) and the centralised control that comes with it passes responsibility for the application of hand clamps into areas that are no longer staffed locally.	The EBA required the infrastructure manager in question to draw up and introduce regulations. On 15 October 2012, a working paper 'Observations on the Use of Hand Clamps' was handed over. This was revised several times and should now be implemented by the infrastructure manager. The process has not yet been completed.					
	Split pins and rivets						
Control-command and signalling subsystem: rivets in mechanical signal boxes	In a special investigation in 2011 a very high proportion of defective rivets with a safety function were found in mechanical signal boxes and linked installations. The cause was said to be that the rivets could not be replaced properly because of a shortage of space or that there was a fear that the force required to replace the rivets would damage the equipment.	The infrastructure manager introduced a simplified procedure in October 2011 to replace rivets by steel/aluminium rivets (pop rivets). A final report in December 2012 confirmed the completion of this process at all sites. Random tests showed that there were still deficiencies. The replacement procedure had not been completed and the application of the procedure was very frequently faulty. The procedure was apparently not applied as generally as the infrastructure manager originally assumed. The infrastructure manager is continuing to work to resolve the issue thoroughly and the EBA is monitoring the situation.					



	Calculation of interference for signal boxes of	n electrified lines				
Control-command and signalling subsystem: signal boxes on electrified lines	In the event of new construction and rebuilding of control and safety technology installations or when a change is made to circuits which may cause electrical interference, a check on interference by the electromagnetic environment must be made. This has been laid down in the regulations applicable since 20 December 1996 as a must since both the ability of the installation to function and also human safety staff can be compromised. When, in the course of railway supervision, the EBA established that these calculations were frequently not available, it made a request for information. The outcome was that of the 1 970 signal boxes across the Federal Republic no calculation or no up-to-date calculation was available for some 75%. Hence it could not be guaranteed that any necessary protective measures had been taken.	Since the procedures can no more ensure compliance than can the obligation set down in the regulations applicable since 1996, implementation is to be monitored more strictly internally. The infrastructure manager in question was instructed to present a schedule showing signal boxes to be investigated prioritised as a function of danger, to monitor its implementation internally from the centre and to report to the EBA monthly. Agreed date for the termination of the calculations is the end of 2013 (March 2014 in the case of some installations with a low level of risk).				
Lumine	osity of switch position indicators for switches o	perated electrically locally				
Control-command and signalling subsystem: indicator lights	In the course of railway supervision, the EBA noted that even whilst actually illuminated, LEDs in switch position indicators gave off a reduced luminosity. In consequence the indications could hardly be seen. The LEDs in question were originally pure white and had a service life of seven years.	The infrastructure manager in question provided a list installation by installation for exchanging the above signalling equipment. It provided replacement dates for the 482 installations involved. The order of replacement will be oldest to newest. In future, SAP programs will be used to ensure accurate periodic monitoring.				
	<ul> <li>Checks were imposed right across the Federal Republic as a result and the following points were noted:</li> <li>exceeding the <u>maximum</u> service life as a consequence of loss of luminosity, colour distortion and spotted lights;</li> <li>on occasion, loss of luminosity when within the maximum service life;</li> <li>monitoring of the maintenance periodicity in SAP programs not possible since the component types are not completely covered.</li> </ul>					



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Distance	Distance between the inner faces of wheels $-$ locomotive classes 112, 114, 143, 155				
Subsystem rolling stock: wheelset	Operators noticed an increase in the distance between the inner faces of wheels (AR dimension).	The operator made a reduction in the examination intervals and the operating limit dimensions for the distance between the inner faces in close cooperation with the EBA. This issue arose in the period covered by the preceding report but was not resolved. In the meantime, all the operators concerned have agreed a standardised procedure and hence have taken further steps towards discovering the origin of the problem.			
	Design of the axles for TRAXX locomotive	s (classes 145, 146)			
Subsystem rolling stock: wheelset	Test running with class 146 locomotives sho that for several locomotives, the twisting moment on the axles in service exceeds tha calculated in the design	W Recalculation of the axles, replacement where appropriate, risk based restrictions regarding maintenance and further use of the locomotives (existing and new locomotives). This issue arose in the period covered by the preceding report. In the period covered by the current report successive modifications of some of the classes involved reduced their susceptibility to this problem and produced a standardised view on the requirement for particular maintenance activities.			
	Distortion of the wheel desks (class 401	and 402 [ICE sets])			
Subsystem rolling stock: wheelset	Operators noted distortion in the wheel discs of the classes 401 and 402.	<ul> <li>The following action was taken by the operator:</li> <li>a reduction in the examination intervals;</li> <li>replacement of the wheelsets in question;</li> <li>reduction in tractive forces.</li> <li>The operator is taking further steps to discover the causes.</li> </ul>			
All vehicles					
Subsystem rolling stock: rolling stock in general	In contravention of the provisions of Articles 32 and 33 Railway Construction and Operation Order and the Trans- European Railway Interoperability Regulation vehicles are repeatedly being operated under the cover of certification of suitability to run.	The EBA clarified the circumstances in which certificate of suitability to run can make compliar with particular requirements of the regulation question unnecessary.			



### Detailed data trend analysis

Annex 1 of the Railway Safety Directive specifies the common safety indicators (CSIs) on which the safety authorities are to report in their annual reports. The various categories of CSIs include:

- number of significant accidents;
- number of fatalities;
- number of persons injured;
- number of accidents related to dangerous goods;
- number of suicides;
- number of precursors to accidents;
- consequences of accidents (costs and delays);
- technical safety of the infrastructure and its implementation together with safety management.

Since 2007, the data on which the common safety indicators are based has been taken from the safety reports made to the EBA by the railways. The data source for 2006 was the database of dangerous incidents reported to the EBA. The threshold for recording accidents is based on Directive 2009/149/EC amending Directive 2004/49/EC of the European Parliament and of the Council as regards Common Safety Indicators and common methods to calculate accident costs. Accordingly, only significant accidents are included: those are accidents in which at least one moving railway vehicle is involved and in which

- at least one person was killed or seriously injured; or
- significant damage was caused to rolling stock, track, other installations or the environment (damage that is equivalent to EUR 150 000 or more); or
- there was extensive disruption to traffic (suspension of services on a main line for six or more hours).

As a result, the accident figures reported for 2007 et seq. have fallen sharply by comparison with those for 2006; they cannot be compared in any way with the 2006 values. That becomes very clear in the collisions, derailments and rolling stock fires categories. It is therefore only possible to use the CSIs to analyse trends since 2007. The definition to be used for broken rails also changed in 2007. From that date broken rails which did not pose an actual danger have also had to be included and that has led to an increase in the number of broken rails in 2007 and subsequently. In accordance with the definition used for the purposes of the CSI, with effect from 2009 signals passed at danger only include events linked to train running. Hence the number of cases of signals passed at danger has fallen sharply compared with the previous years.

The CSIs for accidents, fatalities and people seriously injured were coordinated with figures from Federal Statistical Office sources. The scope of the data cannot be



aligned precisely since the Federal Statistical Office considers all the public railways in Germany, whilst the common safety indicators specified in Directive 2004/49/EC for reporting purposes only include those from undertakings which require a safety certificate or safety authorisation. For that reason the number of accidents reported by the Federal Statistical Office is higher than the CSI values given in this report.

In 2012, there were a total of 289 significant railway accidents on that part of the railway network in Germany which is subject to the Railway Safety Directive. Accordingly, after three years of falling numbers, the number of significant accidents has risen again although the slight rise keeps it at the level of the previous year (2011: 285 significant accidents).

The number of people seriously injured in railway accidents in 2012, 115, was well below the figure for the previous year (147 seriously injured, -22%). The very high figure for the previous year was largely attributable to the serious railway accident in Hordorf. This year's figure of 115 seriously injured brings us back to about or slightly below the level of previous years (2010 and 2011 both 118 seriously injured). The number of seriously injured passengers has likewise fallen significantly year on year from 33 to 9. A reduction was also noted in seriously injured employees and unauthorised persons. By contrast the number of seriously injured in the 'level crossings users' category and in the 'other' category increased. Over 60% of all seriously injured people are level crossings users or unauthorised persons on railway premises.

The total number of the people who died in railway accidents fell once again from 140 in 2011 to 138 in 2012 (-1.4%). Approximately 85% of the fatalities are in the 'level crossing users' and 'unauthorised persons on railway premises' categories. Detailed consideration shows that despite an increase in fatalities among level crossing users the decrease in the number of people killed in railway accidents comes from reduction in fatalities in all other categories. Again, more than half the total number of people killed were unauthorised persons on railway premises.

Details of the economic consequences of accidents have also been included since 2010. Thus, in accordance with Directive 2009/149/EC, details of the damage to property and environmental damage as well as a calculation of the costs resulting from delays and the costs and societal losses of victims of accidents are given. The values used in the calculations were derived from the results of the 'HEATCO' Project. (This project was commissioned by the EU to work out a basis for the economic assessment of infrastructure projects and was recommended by the European Railway Agency; for further details, see <a href="http://heatco.ier.uni-stuttgart.de">http://heatco.ier.uni-stuttgart.de</a>).

The data for the individual CSIs for 2012 and the definitions used for calculating the CSIs are given in <u>Annex C</u> of this report.

### **Results of safety recommendations**

The following section contains the results of and measures proposed in the safety recommendations of the Federal Railway Accident Investigation Office.

The following safety recommendations were made in 2012 as the result of a derailment on 1 September 2010 in Bacharach:

- 1. As part of his operating responsibilities, an operator is to ensure that the load limits on wagons are not exceeded. In addition, he must ensure that the braking requirements for a train are observed. The actual weight of the load is to be supplied and then used in the brake calculation.
- 2. The provisions in DB Guideline 408.0581 3 (5) should be amended to take account of the consequences of the derailment and the potential dangers to other trains.

Recommendation No 1 was only addressed to the railway undertaking in question because it relates to the individual event that lay behind it; it therefore required no particular action on the part of the EBA. The regulation to which recommendation No 2 refers is a harmonised rule from the operation and traffic management TSI; a potential amendment was discussed in the relevant European Railway Agency group of experts but finally was rejected.

Further information on safety recommendations shown in annual reports from previous years which had not been completely discharged at the time of publication:

After the collision of an ICE and the derailment which followed in Landrücken Tunnel the following recommendations were made in 2010:

- consider whether it is possible to continue to do without fencing of the line or parts of the line, or whether similar events can in future be prevented by other methods so as to improve the margin of safety against derailment for high speed trains;
- revise module 123.150 'Rescue by Third Parties' of DB Group Guideline (Ril) 123. In particular, there should be a clear separation of the responsibilities of the Emergency Manager/Emergency Management Office/Incident Officer;
- refresh induction training and provide regular instruction of the staff responsible for rescue on local features and safety equipment; in addition, plan and carry out tunnel rescue practice.

Based on this safety recommendation, right up to the end of the period covered by this report, the EBA has been pressing the infrastructure manager to implement the safety measures described below:

• investigate the effectiveness of the arrangements for giving the alarm by the emergency management offices as part of an exercise. The findings from the exercise were as follows: supplement the emergency folder with a cover sheet

from which all the necessary information can be derived in a simple form (insofar as it is not already available);

- increase training on the alarm process; and
- carry out special inspections of the tunnel safety installations on various tunnels on the high-speed lines (v > 200 km/h).

In addition, the infrastructure manager has made a fundamental analysis of the need for fencing high-speed lines. This led to a more comprehensive initial analysis of the need for fencing of sections of line on high-speed lines which lie between two tunnel portals, only consist of open sections and on which the distance between the portals is not greater than 1 500 m (similar to the situation at the Landrückentunnel).

The final assessment of the need for targeted fencing measures together with (as appropriate) its implementation has not yet been completed.

In the report of the investigation of a derailment on 7 August 2009 on the line from Nürnberg-Stein to the Nürnberg marshalling yard (Nürnberg Rbf) it was recommended that permanent way regulations for the inspection of track and switch installations of type K-54-B58 are updated and supplemented in the short term:

- 1. Lay down a graduated inspection frequency for testing the tension of securing fittings on track and switches. In deciding the categories, line speed, traffic density and sensitive locations (for example, such as tight curves, track on timber sleepers that have been there a long time, permanent way with 'indirect fastenings' and other constraints) should be taken into consideration.
- 2. Establish a method of testing to check the tension of securing fittings and appropriate test values. The measurement of design tension by means of a torque wrench, for example, would be considered as a suitable test.

The EBA and the infrastructure manager in question discussed the issue. A change to the regulations was decided as an action point and that should be effective in 2013 in the form of a technical construction provision. The process was therefore not fully complete at the end of the period covered by this report (31 December 2012). The change to the regulations which has been decided on but not yet implemented is therefore a subject for the report for the period 1 January to 31 December 2013. It will therefore be shown in the next annual report (for 2013).

The following safety recommendation was made back in 2011 as the result of a collision between trains on 29 January 2011 in Hordorf:

- 1. Upgrade all lines with automatic train control by means of which a train which passes a signal at danger without authorisation can be brought to a halt automatically. Additionally, on main lines an approach to a signal at danger without authority can be prevented automatically.
- 2. Until sections of line are upgraded with automatic train control in accordance with recommendation No 1, additional measures should be taken to reduce the probability of occurrence and/or extent of the consequences of passing a signal at danger without authorisation. These measures should be suited to individual circumstances.

The regulator has enacted an amendment to the Railway Construction and Operation Order (EBO) with further obligations to equip lines. The federal railways had already



begun to upgrade their lines in anticipation of the change to the EBO. The upgrading, which is comprehensive, will reduce risks.

Until the up-grading is completed, the EBA has required infrastructure managers to investigate and introduce suitable risk and operations-specific interim measures. Currently, the EBA monitors infrastructure managers' risk-based treatment of those lines for which there will be no mandatory requirements even after amendment of the statutory requirements. In addition, the coherence of operating procedures conforming to the amended statutory requirements under fall-back conditions will be studied (unsignalled wrong-line movements, for example).



### E. Important changes in legislation and regulations

The following changes made to the statutory framework for railways in Germany in the course of 2012 had an impact on railway safety:

## Seventh Law Amending the Statutory Provisions Governing Railways [Siebtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften]

This umbrella law of 27 June 2012 amended the General Railways Act (AEG) and the Federal Pollution Control Act [Bundes-Immissionsschutzgesetz].

The amendment of Section 4 AEG is particularly relevant to railway safety. Here the order of the safety obligations was changed. In addition, the emphasis of railway supervision in Section 5(1) AEG was changed (monitor instead of ensure) and the list of those affected by railway supervision was generalised by the amendment of Section 5a(2) AEG. Furthermore, the BMVBS is now empowered to transfer the authority to legislate by means of statutory regulations on technical details for planning, design and construction of operational facilities for the federal railways to the EBA.

## Eighth Law Amending the Statutory Provisions Governing Railways [Achtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften]

This umbrella law of 12 September 2012 contained a change to the AEG and the BEVVG. Its objective was to transpose Directives 2008/57/EC and 2008/110/EC into national law.

The change to Section 4 AEG realigns the safety responsibilities for rolling stock construction as part of the process of rearranging safety obligations in the railway sector. The inclusion of Section 4a AEG introduces the entity in charge of maintenance (ECM) from Directive 2008/110/EC as the body responsible for maintenance and sets down responsibilities for maintenance. The need for certification of maintenance bodies acting as entities in charge of the maintenance of wagons was standardised in Section 7g AEG. Further regulations relate to the tasks of the EBA in the supervision of ECM and keepers of railway vehicles and the costs for general monitoring and administrative assistance. Henceforward, the AEG will also cover the competence of the Federal Republic for approving exemptions from the application of technical specifications for interoperability (TSI). In addition, powers to make regulations for various aspects were attributed or changed.

The inclusion of Section 3(1a) in the BEVVG clarifies the EBA's role in the exercise of the functions of the safety authority in Germany in accordance with Directive 2004/49/EC.



## Sixth Regulation Amending the Statutory Provisions Governing Railways [Sechste Verordnung zur Änderung eisenbahnrechtlicher Vorschriften]

The purpose of this umbrella regulation dated 25 July 2012 was to amend the Railway Construction and Operation Order (EBO), together with the Railway Construction and Operation Order for narrow gauge railways [Eisenbahn-Bau- und Betriebsordnung für Schmalspurbahnen] (ESBO).

The majority of these amendments are regulations for train control: the provisions for equipping lines with train control equipment were strengthened and the provisions for equipping vehicles aligned correspondingly. The speed permitted if the train control equipment was not functioning was reduced in consequence.

Independently of the regulations on train control, a general special regulation for the operation of lines crossing frontiers was introduced. The new regulation permits the application of the provisions of the relevant neighbouring state.

# Seventh Regulation Amending the Statutory Provisions Governing Railways [Siebte Verordnung zur Änderung eisenbahnrechtlicher Vorschriften]

The purpose of this legislation was to transpose Directives 2008/57/EC and 2008/110/EC into national regulations. The changes made referred to the Trans-European Railway Interoperability Regulation [Transeuropäische-Eisenbahn-Interoperabilitätsverordnung] (TEIV) and the Regulation on Fees and Charges of the Federal Railway Administrations [Bundeseisenbahngebührenverordnung] (BEGebV).

In principle, all references to Directive 2008/57/EC in the Trans-European Railway Interoperability Regulation were updated. Changes of substance to the Trans-European Railway Interoperability Regulation related to the following items in particular:

- fixing the period during which [the same] regulations are applied when authorising vehicles to be put into service as seven years from the time of application;
- introduction of series approval for series of vehicles to be built, to be upgraded or to be rebuilt to replace the previous type approval;
- introduction of vehicle-variant approval, i.e. vehicles which in part correspond to a series already approved.

In Section 6 of the BEGebV (Official Processes under TEIV) the appropriate charge codes were changed.

The tables in **Annex D** include an overview in tabular form of the changes made in 2012.

### F. The development of safety certification and authorisation

### 1. National legislation – starting dates – availability

The Railway Safety Directive was transposed into national law back in 2007 by the Fifth Law Amending the Statutory Provisions Governing Railways and the Second Regulation Enacting and Amending the Statutory Provisions Governing Railways. The start date for issuing safety certificates and safety authorisations in accordance with the Railway Safety Directive was the date that the Fifth Law Amending the Statutory Provisions Governing Railways came into force, i.e. 21 April 2007. Up to that point, safety certificates had been issued by the Federal Railway Authority in accordance with Directive 2001/14/EC.

As national safety regulations, the provisions are applicable in accordance with the Communication of 25 January 2008 in which the Government of the Federal Republic of Germany notified the European Commission of the relevant national safety rules for the rail system in Germany as required by Article 8(2) of Directive 2004/49/EC. This communication is available on the EBA website. The annexes to the communication classify the rules in accordance with Annex II of Directive 2004/49/EC, and provide further details in accordance with the form drawn up by the ERA, including links to the individual rules. Arrangements for public access to national laws and regulations in various media ensure that they are accessible. The infrastructure managers' sets of regulations which serve as national safety regulations for access to the network are available on their websites or can be requested as a hard copy document by e-mail/web request. Access to the regulations has been simplified to make it more customer-friendly and since then has been problem-free.

### 2. Numerical data

<u>Annex E</u> contains a summary of various numerical data on safety certificates and safety authorisations.

### 3. Procedural aspects

General

The EBA charges fees for the work it does to issue safety certificates parts A and B and safety authorisations. These fees are determined by the length of time required to handle the application. In accordance with Article 2(2) of the Federal Railway Fees Regulation (BEGebV) the rate per hour is EUR 100.



#### 3.1. Safety certificates – part A

In 2012, no amendments or revisions were made to safety certificates part A. The processing of the applications for safety certificates part A was delayed mainly because of the need to make changes when collecting information from the applicant or due to implausibilities which were found when assessing the applications.

Within the period covered by the report there were no enquiries by safety authorities from other countries in connection with safety certificates part A which had been issued in Germany. No problems arose from the use of harmonised formats for safety certificates part A or the mutual recognition of safety certificates part A.

Formal feedback procedures for railway undertakings to comment on the process for issuing safety certificates are not required under either the Railway Safety Directive or its transposition into national legislation. However, undertakings are free to submit their views on the procedures informally. The following problems were mentioned by undertakings:

- understanding the distinction between safety-oriented objectives of a safety management system compared with a quality management system;
- responsibility for, and control of, the risks arising from services and resources provided by suppliers, service providers and contractual partners.

#### 3.2. Safety certificates – part B

In 2012, no revisions were made to safety certificates part B. The processing of applications for safety certificates part B was delayed (as for part A) mainly because of the need to make changes when collecting information from the applicant or due to implausibilities which were found when assessing the applications.

No problems arose in the use of harmonised formats for safety certificates part B. The EBA does not consider there have been any particular difficulties with the application process.

There is no provision for a formal feedback procedure for part B safety certificates either, although undertakings can submit their views informally at any time.

#### 3.3. Safety authorisations

No new applications for the issue of safety authorisations were received in 2012. At the end of 2012 however, seven applications were still being considered from those that had been made earlier. Processing of those seven applications could not be completed in particular because of missing or incomplete documentation. The infrastructure managers in question continue to benefit from a temporary safety authorisation in accordance with Section 38(5c) AEG.





Furthermore, at the end of 2012, one infrastructure manager held a safety authorisation which had been issued in 2011 in accordance with Section 7c AEG. In 2012, one infrastructure manager withdrew his application for the issue of a safety authorisation. In addition, in 2012, the issue of a safety authorisation to an infrastructure manager was refused. The infrastructure manager in question, however, is taking legal action against that decision; a final judgment has not yet been reached. In the case of one infrastructure manager, it was officially established that there was no longer the need for a safety authorisation to be issued. That decision was agreed with the Dutch safety authority.

There was no feedback from infrastructure managers in the past year within the framework of a formalised feedback procedure.

### G. Supervision of railway undertakings and infrastructure

### managers

The following section explains how railway undertakings and infrastructure managers in Germany were supervised by the Federal Railway Authority in 2012. In 2012, there were about 170 staff within the Federal Railway Authority available to supervise in the areas described below.

### Supervision of permanent way and structural installations (Unit 21)

Monitoring of infrastructure managers to ensure that installations meet prescribed standards and that infrastructure managers comply with the regulations for the inspection and servicing of installations is carried out by Unit 21 and Section 2 of the EBA outstations as part of the process of supervision of permanent way and structural installations. The railway supervisory process makes use of sampling techniques to establish whether the General Railways Act, the statutory regulations associated with it and recognised engineering rules are complied with when approved equipment is being used. Checking that the railways exercise the safety obligations laid down in Section 4(3) of the General Railways Act is a key task in railway supervision. General monitoring during the railway supervisory process is basically limited to sampling checks. In this process, the Federal Railway Authority distinguishes between three kinds of monitoring in accordance with the Administrative Regulation on the inspection of structural installations of the Federal Railways [Verwaltungsvorschrift zur Eisenbahnaufsicht über die baulichen Anlagen der Eisenbahnen des Bundes]:

- a) monitoring of undertakings [unternehmenbezogene Überwachung (ubÜ)];
- b) monitoring of installations [objektbezogene Überwachung (obÜ)];
- c) special monitoring [Sonderüberwachungen].

The Administrative Regulation on Railway Supervision [Verwaltungsvorschrift zur Eisenbahnaufsicht (VV EA)] may be viewed on and downloaded from the following website:

http://www.eba.bund.de/SharedDocs/Publikationen/DE/Infrastruktur/AllgemeineVorsc hriften/VVEA/21\_VV\_EA.pdf;jsessionid=618689CD1551BEDE69B4D7AD49771EA9. live2053?\_\_blob=publicationFile&v=1\_

These types of checks are supplemented as appropriate by audits of key areas.

The approach adopted when shaping the process of supervising permanent way and structural installations facilitates the systematic evaluation of the infrastructure manager's maintenance organisation and processes geared to specific types of installation.



The division into three described above represents an approach to evaluating the maintenance activities of the infrastructure manager which is as flexible and reliable as possible.

As far as the individual types of monitoring are concerned:

- a) Monitoring of undertakings is to see to what extent existing regulations some of them internal to the undertaking – for maintenance within the meaning of DIN 30541 (servicing, inspection, maintenance, upgrade) have been implemented and observed. As a consequence, it assesses the operator's maintenance organisation by evaluating the organisations responsible for the installations and essentially represents an audit of the maintenance organisation. This type of monitoring is carried out at regular intervals (about every two years).
- b) Monitoring of installations is carried out by sampling. It enables an assessment of the condition of the installation to be made on site as well as the monitoring of the staff involved in maintenance. It is carried out by observing the inspections of the installation carried out by the operator. This monitoring is also carried out regularly for the various different types of maintenance work.
- c) The EBA reserves the right to mount special inspections in those cases where the organisational and/or object-related monitoring do not permit an unambiguous assessment of an installation. Special inspections may also be carried out, inter alia, after accidents or exceptional events.

No significant deficiencies in the maintenance system of the federal railways were found in the course of monitoring permanent way and structural installations in 2012. Only for a small proportion of the individual installations monitored was it necessary to give instructions to the infrastructure managers.

When making an in-depth audit, the information in the asset register of an infrastructure manager was checked. The objective was to check that the information was complete and up-to-date. In addition, some of the bridge structures selected were checked in terms of condition and operating and traffic safety defects. The defects identified were used to make the infrastructure manager more aware of the need to keep his asset register up-to-date. An order to remedy the structural defects was made.

# Supervision of signalling, telecommunication and electrical installations (Unit 22)

The new procedure for supervising signalling, telecommunications and electrical equipment (STE installations) is set down in the 'VV EA-STE' administrative instructions. It uses a risk and fault-based approach for the inspection of installations which takes their importance in safety terms and the frequency of faults into account. The administrative instructions are available on the following link:

http://www.eba.bund.de/SharedDocs/Publikationen/DE/Infrastruktur/AllgemeineVorsc hriften/VVEASte/22 VV EA STE.pdf? blob=publicationFile&v=4



The procedure uses dependable statistical methodology. It achieves a very high 'hit rate' with representative samples to assess the quality of maintenance achieved by the operator of the installation. This allows deficiencies to be recognised with certainty, followed up and evaluated. In addition to the systematic sampling test of all installations, a regional and nationwide programme of organisational and object-related inspections is carried out. This programme is flexible in terms of the topics to be concentrated on.

The combination of the statistically based mandatory programme and the themed special focus allows the EBA to make efficient use of its resources to fulfil its remit to protect society from danger. Thus, particularly hazardous areas can be targeted, critical areas such as infrastructure managers' maintenance management systems can be investigated effectively and those faults and deficiencies which are found can be dealt with quickly throughout the country.

A uniform national administrative approach is guaranteed by defining the content and extent of tests in test guidelines for each technology (checklists for each technology). All the data captured from the statistical tests are fed into a newly designed database and evaluated. This latter allows rapid identification of new areas requiring action.

At least just as important are the verifiable and statistically defensible findings on the defects in the maintenance organisation that arise from this work, i.e. processes which are lacking or not carried out. In discussions that take place annually the findings which are summarised in the annual reports are discussed with infrastructure managers' staff both at headquarters level and with the technical managers on site. The objectives and commitments decided at that time can then be verified in a comprehensible way so that a process of continuous improvement is created.

### Normal monitoring (mandatory programme) safety register

Annually updated mandatory sampling figures for Section 3 in the safety register form a key part of the normal monitoring in accordance with Article 6a VV EA-STE. There are some fifty significant types of installation evaluated in terms of the following safety criteria:

- consequences of failure;
- age of type of installation;
- wear;
- servicing cost and probability of making errors in maintenance;
- failure mode and fault rate;
- obvious failure.

Following this categorisation of safety assessments into high, middle or slight the reliability desired for the sampling is decided as 99%, 95% or 90%. The number of samples by technology and year is derived from the total number of types of installation and the reliability of the results desired. Hence, the supervisory actions of the EBA are focused on those technologies from which the most serious risks arise



or where the hazards are least well-controlled (within the meaning of Annex III point 4 Regulation (EU) No 1169/2010).

On the basis of these principles in 2012, 1884 installations together with their documentation were to be checked; of which 801 for control and safety technology, 606 for telecommunications and 477 electrical installations.

### Changes to the procedures in 2012

The checklists were fundamentally revised in 2011. In the main, that involved deleting some technologies because they had no safety relevance. Others were summarised, questions were made more comprehensible and more explicit and new options for answers were added. These checklists have proved their worth and were further improved in 2012. On the basis of experience in 2010 and 2011, some further technologies were taken out of the supervisory process.

#### **General results:**

Evaluation of the audit work shows a fundamentally given quality of maintenance of the organisations being supervised. Quantitatively, the main problem in the audit of infrastructure managers may be seen as asset records; they are sometimes not available, not up-to-date or not complete and therefore provide a starting point for not doing maintenance work. That goes for all the infrastructure managers.

As has been evident for some years already, one infrastructure manager showed a significant requirement for improvement by comparison with the others. The proportion of defects related to all the points tested is significantly higher than for other infrastructure managers being monitored. After that infrastructure manager introduced his new safety management system in February 2010 and it showed results, the subject was made a topic in the ongoing checking for the issue of a safety authorisation. Discussions were held at central level on this topic with a range of measures announced by the infrastructure manager. Implementation of these measures is still awaited.

### Inspection of railway vehicles (Unit 32)

Unit 32 of the Federal Railway Authority carries out inspection of rolling stock. The frequency and scope of the inspections depend on the quality and the extent of undertakings' compliance with all their technical and statutory obligations. At the end of the period covered by the report, federal responsibility for inspection of the railways was extended by means of Section 5(1e), point 4a of the General Railways Act. The EBA uses a system-based approach to determine the extent to which railway undertakings meet their statutory obligations under Section 4(1) of the General Railways Act in relation to the safe construction and safe condition of rolling stock. Based on that approach, the EBA:

- checks organisation and undertaking related systems;
- checks systems for vehicle types and design series; and
- checks specific installations.



When checking organisation-related systems used by railways supervised by the Federal Railway Authority, the procedures, responsibilities and structures those railways specify and use to ensure rolling stock is safe to operate are checked to ensure their effectiveness is plausible. When carrying out system audits of vehicle types and series, examinations are adapted to suit the vehicle type and design series.

The aim of substantive testing during physical checks is to compare the actual and desired condition of vehicles in accordance with the relevant legal provisions and recognised rules of engineering (depending on the vehicle) and the examination of process-related factors like the existence of certificates or the implementation of safety management systems in relation to the vehicle. In addition to preventative vehicle inspection, inspection 'for cause' as a reactive inspection process forms a further part of vehicle inspection. The aim of inspection 'for cause' is to protect against dangers in individual cases should this prove necessary after an investigation into the facts of a case.

In 2012, in addition to issues carried over from previous years, wheelsets and doors on various types of vehicle became a key area for inspection 'for cause'. In many cases, the intensive dialogue with those involved made it possible to dispense with issuing administrative instructions. The technical discussions on how to take forces on axles arising from operations activities into account were lifted to European level with the significant involvement of the Federal Railway Authority.

### Operational railway supervision (Unit 34)

Operational railway supervision is organised by Unit 34 within the Federal Railway Authority. Fundamentally it involves making checks on undertaking-related systems with process and physical inspections, together with special inspections. These process and product audits are intended to monitor organisation and documentation together with the functioning of the undertakings' safety management systems and to check that the operators exercise their safety responsibilities.

In doing so, an assessment is also made of whether railway undertakings continue to develop their SMS to make them ever more effective and whether they react appropriately, on their own initiative, to lessons learned from dangerous incidents.

The procedures which railway undertakings use to evaluate and control the risks of railway operation represent a further core issue. In this area, railway undertakings must demonstrate that they are able to evaluate the effects of changes in their operations on levels of safety and as necessary to introduce appropriate compensatory action. Where undertakings note non-conformities with the requirements of their safety management systems they are to manage them through their continuous improvement processes.



The physical checking of installations extends, among other things, to the following areas:

- infrastructure managers' and railway undertakings' organisational units with planning, controlling and monitoring tasks which have implications for operational safety;
- 2. infrastructure managers' and railway undertakings' organisational units with staff and traffic management tasks which have implications for operational safety;
- 3. infrastructure managers' and railway undertakings' organisational units with local operations managers;
- 4. organisational units with the task of investigating incidents during rail operations;
- 5. staffed locations for the operation of signalling equipment and safety installations on site (for example, signal boxes and barrier boxes);
- 6. locations with the task of train formation, handling or preparation;
- 7. visiting sites and travelling along sections of line on inspection journeys;
- 8. visual inspections of standard rolling stock and track plant and their loads;
- 9. accompanying the driver in the cab of rail vehicles;
- 10. travelling in passenger trains to investigate safety devices, external doors of passenger coaches and the departure procedure;
- 11. areas of work within the hazardous area on and around the track and ensuring railway operations are protected from danger.

To eliminate safety-related deficiencies, instructions were issued to railway undertakings and infrastructure managers to restore levels of safety and order in railway operations. These instructions mostly related to eliminating practices that contravened the regulations, or insisting on compliance with existing safety rules. In this connection it became evident that the railway undertakings had difficulties in some cases in ensuring that all the staff complied with the regulations in all situations.



# H. Reporting on the application of the common safety methods (CSM) on risk evaluation and assessment

Commission Regulation (EC) No 352/2009 of 24 April 2009 on the adoption of a common safety method on risk evaluation and assessment, as referred to in Article 6(3)(a) of Directive 2004/49/EC of the European Parliament and of the Council has been mandatory since 1 July 2012. However, it has already been in use from 19 July 2010 for significant modifications to vehicles or significant modifications to structural subsystems as required by Article 15(1) of Directive 2008/57/EC or a TSI. The transitional provision defined in Article 2(4) of Regulation (EC) No 352/2009 for projects which are at an advanced stage of development continues to apply to projects being developed in 2012. Representative experience of dealing with safety evaluation reports from an independent evaluation body is therefore not yet available.

The application of Regulation (EC) No 352/2009 was discussed in workshops with representatives from the stakeholders and trade associations in the German railway community. As a result of this work, the EBA drew up a manual. The manual was published at the beginning of July 2010. The document is available on the internet under the following link:

http://www.eba.bund.de/SharedDocs/Publikationen/DE/Infrastruktur/AllgemeineVorsc hriften/CSM\_Risiko/Leitfaden\_CSM\_Risiko.pdf?\_\_blob=publicationFile&v=2

For the federal railways, 2012 was characterised by the development and further development of their processes for common safety method risk evaluation and assessment. Pilot projects were set up and the EBA was involved. There was uncertainty and a need for clarification of the interpretation of 'substantial change', of the criteria for evaluating tests of significance, of the criteria for the need for an explicit reference to hazards recognised in the simplified procedure (as necessary), of the criteria for the structuring of assessment bodies and of the criteria for the subjects for assessment and the extent of the assessment by the assessment bodies.

As regards rolling stock, the procedures defined in the 'Administrative Regulation on Authorisation for Placing Railway Rolling Stock into Service' [Verwaltungsvorschrift für die Inbetriebnahmegenehmigung von Eisenbahnfahrzeugen (VV IBG)] and the 'Manual on CSM Risk Evaluation and Assessment' [Leitfaden zur CSM Risiko-evaluierung und –bewertung] were brought together in 2011 to form the 'Rolling Stock Safety Regulations' [Sicherheits-Regelwerk Fahrzeuge (SIRF)]. It was updated in 2012. In addition, annexes to the VV IBG were drawn up; these annexes can serve as a template for the safety assessment report required for the CSM. The procedure which it outlines is used for the authorisation to place new vehicles into service notification and authorisation of modifications to existing vehicles.

### I. Conclusions – Priorities

The supervisory work carried out by the Federal Railway Authority in 2012 against a background of a stable level of safety again showed no serious safety deficiencies on the part of railway undertakings and infrastructure managers. Taken over several years, the frequency with which such deficiencies are found has remained fairly constant; in consequence they do not allow us to draw any crucial conclusions on the level of safety. Considering the actual trend in accidents in recent years together with the increasing traffic flows on the German rail network, once again the level of safety in railway operations can be said to be stable.

Where deficiencies that had safety implications were discovered, the Federal Railway Authority issued instructions for the proper maintenance of railway installations and rolling stock and for operations to be run safely in accordance with Article 2(4) of the Railway Construction and Operation Order. The main initiatives and measures taken by the Federal Railway Authority to maintain and improve safety are summarised in Section D, Part 1. On the basis of the findings from 2012, no further targeted inspections were ordered for 2012 [2013??] over and above the routine monitoring with the same emphasis as hitherto.

The results of the re-organisation of the railway supervision process by category of installation (civil engineering, track and superstructures) introduced at the beginning of 2010 allows a better judgement of the condition of the infrastructure manager's maintenance organisation and is proving to be a key factor in the evaluation of the effectiveness and the operation of the safety management system. Further development of the techniques for processing the results in order to evaluate the continuous improvement process, evaluation of the effectiveness of the safety management systems and supervision of compliance with guidelines and ancillary provisions which arise from the safety approvals issued is still being worked on. The standard evaluation of the results of railway supervision and their presentation to the infrastructure managers being supervised is a further key issue in developing process oriented railway supervision. The findings to date have not yet allowed any significant deficiencies in the maintenance processes to become evident.

### J. Annexes

- ANNEX A: Railway structure information
- ANNEX B: Organisation charts of the national safety authority
- ANNEX C: Definitions used for the CSI data
- ANNEX D: Important changes in legislation and regulation
- ANNEX E: Development of safety certification and authorisation numerical data

ANNEX F: List of abbreviations

### **ANNEX A: Railway structure information**

### A.1. Network map



### A.2. Lists of railway undertakings and infrastructure managers

Up-to-date lists of public railway undertakings and infrastructure managers – as well as much other information – may be found on the Federal Railway Authority website.

A.2.1. List of public rail infrastructure managers in Germany

http://www.eba.bund.de/cln\_007/nn\_204046/DE/Infothek/Eisenbahnunternehmen/El U/eiu\_\_node.html

A.2.2. List of public railway undertakings in Germany

http://www.eba.bund.de/cln\_007/nn\_202596/DE/Infothek/Eisenbahnunternehmen/EV U/evu\_\_node.html



### **ANNEX B: Organisation chart**

B.1.1. Figure: Internal organisation (as at August 2013)





Central staff 5 National enforcement body Passengers' rights, tariff supervision Pre		Hörster Central staff 91 dent Press Office, publicity work			al staff 91 e, publicity work		
	Ralf Schw Vice-Pre		veinsberg Reco		Central staff 92 ognition of interoperability, International affairs		
			Federal Acci Investigat (EUB) investigat		ederal Rai Acciden /estigation (EUB) cen /estigation	Jeral Railway     Notified be       Accident     Notified be       stigation Office     interoperal       EUB) central     (EBC)       stigation office     interoperal	
					Special	ist inspe	ction by BMVBS
N.N. <b>Department 1</b> Central Department	Dr. I <b>D</b> Ii	ng Jens Böhlke epartment 2 nfrastructure	Dr. Ing. Andre Departi Rolling stock	as Th <b>ment</b> a, ope	nomasch 3 rations	J	ürgen Leinweber Department 4 Finance
<b>Unit 11</b> Legal	Building ar Infr installat	Unit 21 ding inspection, approval and monitoring Infrastructure data tallations, 'Land' railway		Unit 31 Approval of rolling stock, experts, testing facilities		Unit 41 Application for and appropriation of funds 1 (North)	
Unit 12 Staff	Buildiı signal, t and ele	Unit 22 ng inspection and monitoring elecommunications ectrical equipment	Unit 32 Monitoring of rolling sto approval of workshop keeper certification market monitoring		g stock, shops, ation ring	stock, lops, on ng budget, recovery	
Unit 13 IT systems, network, databases	Plai	<b>Unit 23</b> nning approval, exemption	23 Unit 3 29 Approval of tar poproval, goods movement tion material, ('Lar supervision) (n		/agons, gerous nuclear railway ГAS-US	Unit 43 Application for and appropriation of funds 2 (Central)	
Unit 14 Budget, internal services, accounts office			Unit : Monitoring of (staff, equipr vehicles), 'Lar supervisio		rations t and ailway nt)	A app	Unit 44 pplication for and ropriation of funds 3 (South)
Unit 15 Organisation, audit, library, succession planning						Er	Unit 45 Ivironmental noise mapping
Unit 17 Awarding office	Outs		Outsta	Outstations			
	Plai	Section 1 nning approval, exemption	Section 4 Monitoring of opera dangerous goods r		tions and ovement		Section 5 Finance
	Buildir Infr installat	Section 2 ng inspection and monitoring astructure data ions, 'Land' railway supervision					
Central services Staff	Buildin signal, t and ele	Section 3 ng inspection and monitoring elecommunications ectrical equipment					

### B.1.2. Internal organisation – locations of EBA offices



### B.2. Figure: Relationship with other national authorities as at 12/2012



### B.3. Figure: Working relationship with notified bodies





### ANNEX C: CSI data and definitions applied

### C.1. CSI Data

#### 1. Indicators relating to accidents

1.1. Total number of significant accidents and relative (to million train-kilometres) number of significant accidents, broken down into the following types of accident

	All types of accidents	Collisions of trains including collisions with obstacles within the clearance gauge	Derailments of trains	Level crossings accidents including accidents involving pedestrians at level crossings	Accidents to persons injury caused by rolling stock in motion, with the exception of suicides	Fires in rolling stock	Others
Total	289	23	11	79	150	2	24
Relative number	0.278	0.022	0.011	0.076	0.144	0.002	0.023

1.2. Total number and relative(to million train kilometres) number of serious injuries and fatalities by type of accident, broken down into the following categories

#### 1.2.1. Serious injuries

	All types of accidents	Collisions of trains including collisions with obstacles within the clearance gauge	Derailments of trains	Level crossings accidents including accidents involving pedestrians at level crossings	Accidents to persons injury caused by rolling stock in motion, with the exception of suicides	Fires in rolling stock	Others
Total number of seriously injured	115	6	0	36	69	0	4
Relative number of seriously injured	0.111	0.006	0.000	0.035	0.066	0.000	0.004
Of whom:							
Passengers	9	0	0	0	9	0	0
Relative number of seriously injured passengers	0.009	0.000	0.000	0.000	0.009	0.000	0.000
Relative number of seriously injured passengers per billion passenger/km	0.106	0.000	0.000	0.000	0.106	0.000	0.000
Relative number of seriously injured passengers per million passenger train/km	0.011	0.000	0.000	0.000	0.011	0.000	0.000
Employees, including the staff of contractors	10	1	0	0	8	0	1
Relative number of seriously injured employees including staff of contractors	0.010	0.001	0.000	0.000	0.008	0.000	0.001
Level crossing users	36	0	0	36	0	0	0
Relative number of seriously injured level crossing users	0.035	0.000	0.000	0.035	0.000	0.000	0.000
Unauthorised persons on railway premises	35	0	0	0	34	0	1
Relative number of seriously injured unauthorised persons on railway premises	0.034	0.000	0.000	0.000	0.033	0.000	0.001
Others	25	5	0	0	18	0	2
Relative number of seriously injured others	0.024	0.005	0.000	0.000	0.017	0.000	0.002

#### 1.2.2. Fatalities

	All types of accidents	Collisions of trains including collisions with obstacles within the clearance gauge	Derailments of trains	Level crossings accidents including accidents involving pedestrians at level crossings	Accidents to persons injury caused by rolling stock in motion, with the exception of suicides	Fires in rolling stock	Others
Total number of fatalities	138	8	0	45	84	0	1
Relative number of fatalities	0.133	0.008	0.000	0.043	0.081	0.000	0.001
Of whom:	•		•		•		
Passengers	3	1	0	0	2	0	0
Relative number of fatalities passengers	0.003	0.001	0.000	0.000	0.002	0.000	0.000
Relative number of fatalities passengers per billion passenger/km	0.035	0.012	0.000	0.000	0.024	0.000	0.000
Relative number of fatalities passengers per million passenger train/km	0.004	0.001	0.000	0.000	0.003	0.000	0.000
Employees, including the staff of contractors	9	4	0	0	5	0	0
Relative number of fatalities employees including the staff of contractors	0.009	0.004	0.000	0.000	0.005	0.000	0.000
Level crossing users	45	0	0	45	0	0	0
Relative number of fatalities level crossing users	0.043	0.000	0.000	0.043	0.000	0.000	0.000
Unauthorised persons on railway premises	74	1	0	0	72	0	1
Relative number of fatalities unauthorised persons on railway premises	0.071	0.001	0.000	0.000	0.069	0.000	0.001
Others	7	2	0	0	5	0	0
Relative number of fatalities others	0.007	0.002	0.000	0.000	0.005	0.000	0.000

#### 2. Indicators relating to dangerous goods

Total number and relative (based on million train kilometres) number of accidents in connection with the carriage of dangerous goods, broken down into the following categories

	Accidents in which at least one rail vehicle carrying dangerous goods was involved	Accidents in which dangerous goods were released
Total	4	4
Relative number	0.004	0.004

#### 3. Indicators relating to suicides

Total number and relative number (based on million train kilometres) of suicides

	Suicides
Total	872
Relative number	0.840



Total number and relative number (based on million train kilometres) of serious and incidents and near misses, broken down into the following categories

	All accidents and near misses	Broken rails (only IMs)	'Track buckles' (only IMs)	Wrong side signal failures (only IMs)	Signals passed at danger	Broken wheels	Broken axles
Total	1076	644	29	0	400	0	3
Relative number	1.037	0.620	0.028	0.000	0.385	0.000	0.003
				Resulting in	an accident	0	3
				Found in	n service	0	3
				Found dur mainte	ing regular enance	0	0

#### 5. Indicators relating to the consequences of significant accidents

Total amount in euro and relative values (based on million train kilometres) for

	Number of deaths and serious injuries multiplied by the value of avoiding accident victims	Costs of damage to rolling stock and infrastructure	Costs of environmental damage*	Costs of delay caused by accidents
Total costs	325 403 231	31 862 137	Not recorded separately	31 740 079
Relative costs	313 458	30 693	Not recorded separately	30 575

#### 6. Indicators relating to technical safety of infrastructure and its implementation

#### 6.1 Automatic train protection

Percentage of tracks with automatic train protection (only IMs)	94.5%
Percentage of tracks using operational train protection systems per train kilometre run	98.7%

6.2 Number of level crossings (in total, per line kilometre and track kilometre), broken down into the following eight types: \*\*

	With user-side automatic warning	With user-side automatic protection	With user-side automatic protection and automatic warning	With user-side automatic protection and automatic warning and with rail-side protection	With user-side manual warning	With user-side manual protection	With user-side manual protection and manual warning
Actively protected level crossings	726	693	6.547	544	97	324	134
Number per line kilometre	0.022	0.021	0.196	0.016	0.003	0.010	0.004
Number per track kilometre	0.012	0.011	0.107	0.009	0.002	0.005	0.002

	Total
Passively protected level crossings	5.210
Number per line kilometre	0.156
Number per track kilometre	0.085

### 7. Indicators relating to the management of safety

Total number of internal checks carried out (audits)	Not available
Percentage of internal checks (audits) carried out in relation to the number of audits stipulated or planned	Not available

\* The costs of environmental damage are included in the total costs of damage to property shown.

\*\* In some cases level crossings could only be categorised in terms of the new categories introduced in 2010 approximately.

### C.2. Definitions used in the annual report

C.2.1. Definitions applicable in accordance with Regulation (EC) No 91/2003:

### Person killed

means any person killed immediately or dying within 30 days as a result of an accident, excluding suicides.

### Person seriously injured

means any person injured who was hospitalised for more than 24 hours as a result of an accident, excluding attempted suicides.

#### Passenger-km

means the unit of measure representing the transport of one passenger by rail over a distance of one kilometre. Only the distance on the national territory of the reporting country shall be taken into account.

#### **Rail passenger**

means any person, excluding members of the train crew, who makes a trip by rail. For accident statistics, passengers trying to embark/disembark onto/ from a moving train are included.

### Suicide

means an act to deliberately injure oneself resulting in death, as recorded and classified by the competent national authority.

### Significant accident

means any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic. Accidents in workshops, warehouses and depots are excluded.

### Train

means one or more railway vehicles hauled by one or more locomotives or railcars, or one railcar travelling alone, running under a given number or specific designation from an initial fixed point to a terminal fixed point. A light engine, i.e. a locomotive travelling on its own, is not considered to be a train.

### Train-km

means the unit of measure representing the movement of a train over one kilometre. The distance used is the distance actually run, if available, otherwise the standard network distance between the origin and destination shall be used. Only the distance on the national territory of the reporting country shall be taken into account.



### C.2.2 National definitions

In addition to the definitions in Regulation (EC) No 91/2003, the definitions of Annex 1 to Directive 2004/49/EC as amended by Directive 2009/149/EC amending Directive 2004/49/EC of the European Parliament and of the Council as regards common safety indicators and common methods to calculate accident costs were used for accident-related CSIs and CSIs relating to incidents and near misses. These definitions were published in the EBA's guidance note on the drafting of safety reports. The guidance note is available online under the link <u>http://www.eba.bund.de/cln\_016/nn\_201964/DE/Infothek/Bahnbetrieb/Sicherheitsberi</u> cht/sicherheitsbericht\_inhalt.html

If an accident leads to other types of accident (for example, a derailment leads to a fire), the accident is categorised as the type of accident that triggered the chain. This applies regardless of the severity of the consequences of the accident.

The definition used for a train is different from the definitions given in Annex C.2.1 from Regulation (EC) No 91/2003 in that account is taken of light engines:

### Train

means one or more railway vehicles hauled by one or more locomotives or railcars, or one railcar travelling alone, running under a given number or specific designation from an initial fixed point to a terminal fixed point. A light engine, i.e. a locomotive travelling on its own, is likewise considered to be a train.

### C.3. Abbreviations

common safety indicator
European Railway Agency
level crossing [Bahnübergang]
10 <sup>6</sup>
10 <sup>9</sup>

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### ANNEX D: Important changes in legislation and regulation

	Legislation	Date legislation came into force	Reason for introduction (details of the new law or amendment to existing legislation)	Description
General national railway safety	legislation			
Legislation concerning the national safety authority	Seventh Law Amending the Statutory Provisions Governing Railways [Siebtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 1421)	30 June 2012	Alignment of safety obligations to market conditions	Most important changes to the AEG Section 4: change of safety responsibilities for the construction of railway rolling stock Section 5(1) No 1: emphasis of railway supervision Section 5a(2): generalisation of the list of those affected by railway supervision
	Eighth Law Amending the Statutory Provisions Governing Railways [Achtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 1884)	18 Sept 2012	Transposition of Directive 2008/110/EC	Main content of changes to the AEG: new orientation of safety responsibilities for vehicle construction, introduction of the entity in charge of maintenance (ECM), regulating responsibilities for maintenance, obligation to obtain maintenance entity certificates for entities in charge of the maintenance of wagons, regulating the supervision of entities in charge of maintenance and keepers by the EBA, powers for authorising exemptions from the application of the TSIs on behalf of the Federal Republic. Changes to the BEVVG: clarification of the safety authority.
Legislation concerning notified bodies, assessors, third party bodies for registration, examination, etc.				



National rules concerning railwa	ay safety			
Rules concerning national safety targets and methods				
Rules concerning requirements for safety management systems and safety certification of railway undertakings				
Rules concerning requirements for safety management systems and safety authorisation of infrastructure managers				
Rules concerning requirements for wagon keepers	Eighth Law Amending the Statutory Provisions Governing Railways [Achtes Gesetz zur Änderung ei- senbahnrechtlicher Vor- schriften] (BGBI. I 2012, 1884)	18 Sept 2012	Transposition of Directive 2008/110/EC	Main content: new orientation of safety responsibilities for vehicle construction, introduction of the entity in charge of maintenance (ECM), regulating responsibilities for maintenance, obligation to obtain maintenance entity certificates for entities in charge of the maintenance of wagons, regulating the supervision of entities in charge of maintenance and keepers by the EBA.
Rules concerning requirements for maintenance workshops				
Rules concerning requirements for the authorisation of placing in service and maintenance of new and substantially altered rolling stock, including rules for	Eighth Law Amending the Statutory Provisions Governing Railways [Achtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 1884)	18 Sept 2012	Transposition of Directive 2008/57/EC	Powers for authorising exemptions from the application of the TSIs on behalf of the Federal Republic.
exchange of rolling stock between railway undertakings, registration systems and requirements on testing procedures	Seventh Regulation Amending the Statutory Provisions Governing Railways [Siebte Verordnung zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 2632)	20 Dec 2012	Transposition of Directive 2008/57/EC	Main content: keeping the regulations for vehicle approval for seven years, introduction of series approval and approval of vehicle variants.
Common operating rules for the railway network, including rules relating to signalling and traffic procedures				
Rules laying down requirements for additional internal operating rules that must be established by the infrastructure managers and railway undertakings				



Rules concerning requirements for staff executing safety critical tasks, including selection criteria, medical fitness and vocational training and certification				
Rules concerning the investigation of accidents and incidents including recommendations				
Rules concerning requirements for national safety indicators including how to collect and analyse the indicators				
Rules concerning requirements for authorisation for placing infrastructure in service (tracks, bridges, tunnels, energy, ATC, radio, signalling, interlocking, level crossings, platforms, etc.)	Eighth Law Amending the Statutory Provisions Governing Railways [Achtes Gesetz zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 1884)	18 Sept 2012	Transposition of Directive 2008/57/EC	Powers for authorising exemptions from the application of the TSIs on behalf of the Federal Republic.
	Sixth Regulation Amending the Statutory Provisions Governing Railways [Sechste Verordnung zur Änderung eisenbahnrechtlicher Vorschriften] (BGBI. I 2012, 1703)	1 Dec 2012	Changes to the EBO and ESBO	Inclusion of special regulations for frontier lines, strengthening of the provisions on equipment of lines with automatic train control

# ANNEX E: The development of safety certification and authorisation – numerical data

### E.1 Safety certificates in accordance with Directive 2004/49/EC

	Total number of certificates part A	Number of certificates part A in ERADIS
E.1.1. Number of safety certificates part A issued in the reporting year and previous years that remain valid at the end of 2012	22	22

		Total number of certificates part B	Number of certificates part B in ERADIS
E.1.2. Number of safety certificates part B issued in Germany in the reporting	Number of certificates part B for which the part A has been issued in Germany	22	22
that remain valid at the end of 2012	Number of certificates part B for which the part A has been issued in another Member State	14	14

		А	R	Р
E.1.3. Number of new applications for	New certificates	1	1	0
railway undertakings in 2012	Updated/amended certificates	0	0	0
	Renewed certificates	0	0	0



A = *accepted*: application accepted, certificate has already been issued

R = rejected: application rejected, no certificate has been issued

P = *pending*: case is still pending, no certificate has been issued so far

	Total number of revoked certificates in 2012	Number of certificates revoked in 2012 in ERADIS
E.1.5. Number of certificates part A revoked in the current reporting year	0	0
E.1.6. Number of certificates part B revoked in the current reporting year	0	0

E.1.7. List of states from which railway undertakings applying for a safety certificate part B in Germany have obtained their safety certificate part A.

Name of the railway undertaking	Member State in which the safety certificate part A was issued
Kombi Rail Europe BV	Netherlands
Rotterdam Rail Feeding BV	Netherlands
SNCB Logistics N.A.	Belgium
Crossrail Benelux N.V.	Belgium
Railion Scandinavia A/S	Denmark
PKP Cargo S.A.	Poland

Hector Rail AB	Sweden
RTS Rail Transport Service GmbH	Austria
Salzburg AG	Austria
Wiener Lokalbahnen Cargo GmbH	Austria
Rail Cargo Austria AG	Austria
ÖBB Personenverkehr AG	Austria
Rhomberg Bahntechnik GmbH	Austria

### E.2. Safety authorisations in accordance with Directive 2004/49/EC

	New	Updated/ amended	Renewed
E.2.1. Number of valid safety authorisations issued to infrastructure managers in the reporting year that remain valid at the end of 2012	0	0	0

		А	R	Р
E.2.2. Number of applications for safety	New authorisations	0	0	0
managers in 2012	Updated/amended authorisations	0	0	0
	Renewed authorisations	0	0	0

A = accepted: application accepted, authorisation has already been issued

R = *rejected*: application rejected, no authorisation has been issued

P = *pending*: case is still pending, no authorisation has been issued so far



\* In 2012, three safety authorisations which had been issued temporarily in accordance with Section 38(5c) of the General Railways Act (see above) were withdrawn. One infrastructure manager withdrew his application, an application by an infrastructure manager was refused and for a further infrastructure manager, there was no the need for a safety authorisation.

### E.3. Procedural aspects – Safety Certificates (part A)

Eisenbahn-Bundesamt

	New	Updated/amended	Renewed
The average time between receiving an application with the information required and the final delivery of a safety certificate <b>part A</b> in 2012 for railway undertakings	18 months*	/	/

\* These figures include the total time from receipt of application to the issuing of the certificate, including waiting time for the delivery of documents and certificates. This should not be seen as just processing time.

### E.4. Procedural aspects – Safety Certificates (part B)

		New	Updated/amended	Renewed
The average time between receiving an application with the information	Where the part A has been issued in your Member State	18 months*	1	/
required and the final delivery of a safety certificate <b>part B</b> in 2012 for railway undertakings	Where the part A has been issued in another Member State	10 months*	1	1

\* These figures include the total time from receipt of application to the issuing of the certificate, including waiting time for the delivery of documents and certificates. This should not just be seen as processing time. For German undertakings the processing of the applications for part A and part B is done together and so the times given in E.3 and E.4 are identical.



	New	Updated/amended	Renewed
The average time between receiving an application with the information required and the final delivery of a safety authorisation in year 2012 for	About two years*	1	/
infrastructure managers.	1	/	/

\* Time period for the actual processing of the authorisation: time from the first deposit of documents for assessment /first statement of the legal position until the formal issue or decision (for example, refusal) on the issue of the safety authorisation by means of a formal decision or administrative letter. The timespan of an average of about two years shown here refers to the three cases described in E.2.3 above.

### **ANNEX F: List of abbreviations**

AEG	General Railways Act [Allgemeines Eisenbahngesetz]
BEGebV	Regulation on Fees and Charges of the Federal Railway Administrations (Federal Railway Fees Regulation)
	[Verordnung über die Gebühren und Auslagen der Eisenbahnverkehrsverwaltungen des Bundes (Bunde-
	seisenbahngebührenverordnung)]
BEVVG	Federal Rail Traffic Management Act [Gesetz über die Eisenbahnverkehrsverwaltung des Bundes]
	(Bundeseisenbahnverkehrsverwaltungsgesetz)
BGBI.	Official Journal reference [Bundesgesetzblatt]
BMVBS	Federal Ministry of Transport, Building and Urban Development [Bundesministerium für Verkehr, Bau und
	Stadtentwicklung]
BNetzA	Federal Network Agency [Bundesnetzagentur]
BSWAG	Federal Railway Development Act [Gesetz über den Ausbau der Schienenwege des Bundes
	(Bundesschienenwegeausbaugesetz)]
COTIF	Convention concerning International Carriage by Rail [Convention relative aux transports internationaux
	Ferroviaires]
CSI	Common Safety Indicator
EBA	Federal Railway Authority [Eisenbahn-Bundesamt]
EBC	Eisenbahn-Cert [notified body for interoperability for the trans-European conventional and high-speed rail
	systems
EBO	Railway Construction and Operation Order [Eisenbahn-Bau- und Betriebsordnung]
ESBO	Railway Construction and Operation Order for Narrow Gauge Railways [Eisenbahn-Bau- und Betriebsordnung
	für Schmalspurbahnen]
ERA	European Railway Agency
ESiV	Railway Safety Regulation [Verordnung über die Sicherheit des Eisenbahnwesens (Eisenbahn-
	Sicherheitsverordnung)]
EUB	Federal Railway Accident Investigation Office [Eisenbahn-Unfalluntersuchungsstelle des Bundes]
GSM-R	Global System for Mobile Communications – Rail
HOA	Hot box detector [Heißläuferortungsanlage]
IOH	Permanent way and structural equipment [Ingenieur-, Ober- und Hochbau]
LST	Control and Safety Equipment [Leit- und Sicherungstechnik]
ObÜ	Monitoring of installations [Objektbezogene Überwachung]
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail (Appendix C to COTIF)
	[Règlement concernant le transport international ferroviaire de marchandises Dangereuses]
SMS	Safety management system
STE	Signalling, telecommunication and electrical equipment [Signaltechnik, Telekommunikation und
	Elektrotechnik]
TEIV	Trans-European Railway Interoperability Regulation [Verordnung über die Interoperabilität des
	transeuropäischen Eisenbahnsystems (Transeuropäische-Eisenbahn-Interoperabilitätsverordnung)]
TSI	Technical specification for interoperability
UbÜ	Monitoring of undertakings [Unternehmensbezogene Überwachung]
VV EA	Administrative Regulation on the Supervision of Railway Structures [Verwaltungsvorschrift zur
	Eisenbahnaufsicht über bauliche Anlagen]

### Eisenbahn-Bundesamt



- VV EA-STE Administrative Regulation on the Supervision of Signalling, Telecommunication and Electrical Installations [Verwaltungsvorschrift für die Eisenbahnaufsicht über Signal-, Telekommunikations- und Elektrotechnische Anlagen]
   VV IBG Administrative Regulation on Authorisation for Placing Rolling Stock into Service [Verwaltungsvorschrift über
  - V IBG Administrative Regulation on Authorisation for Placing Rolling Stock into Service [Verwaltungsvorschrift über die Inbetriebnahmegenehmigung von Eisenbahnfahrzeugen]