



EUROPEAN RAILWAY AGENCY
Safety Unit

2013 ASSESSMENT OF ACHIEVEMENT OF COMMON SAFETY TARGETS

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References

N°	Description	Reference	Version
/1/	Directive 2004/49/EC of the European Parliament and of the Council on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (Railway Safety Directive)	Railway Safety Directive	Amended by Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community and by Directive 2008/110/EC of the European Parliament and of the Council of 23 December 2008 amending the Railway Safety Directive and by Commission Directive 2009/149/EC of 27 November 2009 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
/2/	Commission Decision on the adoption of a common safety method for assessment of achievement of safety targets, as referred to in Article 6 of Directive 2004/49/EC of the European Parliament and of the Council	2009/460/EC	OJ L 150/11, 5 June 2009
/3/	Regulation (EC) No 91/2003 of the European Parliament and of the Council on rail transport statistics	(EC) 91/2003	Amended by Commission Regulation (EC) 1192/2003
/4/	Commission implementing decision of 22.7.2011 on a mandate to the European Railway Agency on the revision of common safety targets and related common safety method for period 2011-2015	C(2011) 5158	22 July 2011
/5/	Commission Decision on the second set of common safety targets as regards the rail system	2012/226/EU	23 April 2012



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List of abbreviations:

Abbreviation	Term
Agency	European Railway Agency
CSM	Common Safety Method
CST	Common Safety Target
MWA	Moving Weighted Average
NRV	National Reference Value
OSP	Observed Safety Performance



0. Executive Summary

This report presents the second assessment of achievement of the second set of CSTs and National Reference Values (NRVs) following the method set out by Article 4 of Commission Decision 2009/460/EC /2/. The NRVs and the second set of CSTs were established using Eurostat data for the years 2004-2009. This assessment is based on Eurostat data for the years 2007-2011.

For all railway user categories, the respective NRV was lower than the corresponding CST; the NRVs represented the maximum tolerable level of the risk to which it refers for this assessment.

In general, the results of the assessment indicate that the railway safety performance remains acceptable at the EU level for all categories of railway users under consideration. The results further indicate other than acceptable safety performance in four Member States, usually for one category of railway users. Only in one case the result of the assessment is “probable deterioration of safety performance”. In some cases the negative result of the assessment is due to poor quality data in years before 2007, used to set up the second set of CSTs. Following the consolidation of data carried out by NSAs at national level, the Agency recommends to the EC to revise certain values of NRVs for Slovakia, Bulgaria and Romania.

In accordance with Article 5 of the Annex of the Commission Decision 2009/460/EC /2/, the Member State/s concerned shall send to the Commission a report explaining the likely causes of the results obtained; and if appropriate, a safety enhancement plan (in case of probable deterioration of safety performance).



1. Introduction

This report presents the results of the annual assessment of achievement of National Reference Values (NRVs) and Common Safety Targets (CSTs) in accordance with the requirements of the Commission Decision 2009/460/EC /2/, Article 3.1.3.

No later than 31 March each year the Agency shall report to the Commission on the overall results of the assessment of achievement of NRVs and CSTs.

This 2013 annual assessment concerns the assessment of the achievement of the second set of NRVs and of CSTs with reference to the data available for the period 2007-2011. The second set of NRVs/CSTs has been introduced in the Commission Decision of 23 April 2012 on the second set of CSTs as regards the rail system.

The Common Safety Method (CSM) for assessing the achievement of CSTs and of NRVs is set out in Commission Decision 2009/460/EC /2/ (hereafter also referred to as the Method).

NRVs and CSTs were calculated for each Member State and for each of the following risk categories: Passengers (1.1 and 1.2), Employees (2), Level crossing users (3.1), Others (4), Unauthorized persons on railway premises (5) and Whole society (6).

The methodology for calculating NRVs and for deriving CSTs is described under point 2 of the Annex of the Method /2/.

2. Methodology – process for assessing achievement

The values for the second set of CSTs were calculated on the basis of the data from 2004 to 2009, which have been supplied to Eurostat by Member States in accordance with Regulation (EC) No 91/2003 of the European Parliament and of the Council of 16 December 2002 on rail transport statistics /3/. They have been calculated using the methodology set out in points 2.1.1 and 2.3.1 of the Annex of the Method /2/.

2.1. Data

To assess the achievement of NRVs, the Agency has used the Eurostat data for the five most recently reported years (2007-2011), in accordance with point 3.1.4 of the Annex of the Method /2/. The data of 2011 is the latest observed safety performance (OSP), as referred to in the first step of the assessment procedure.

The data was extracted from the Eurostat database on 16 January 2013 after the consultation with the Eurostat. The data were sent by Statistical Offices of MSs within five months after the end of the reference period and for the 2011 datasets. The data in datasets “rail_ac_catvict_extr” and “rail_ac_catnubr_extr” there were last updated in November 2012 and the data in dataset “rail_tf_trainmv” was updated on 20 March 2013. All updates were taken into account for this assessment.

In some instances, data were not available in the Eurostat database; in these cases the CSI data were used instead. They were extracted on the 29 January 2013 from the Agency’s CSI database. In some instances, the Eurostat database contained mistype value, as confirmed with Eurostat after analysing CSI data. In these cases, the CSI data were used instead.



Already in 2012, some Member States have sent corrections to the data for the years 2006-2009, namely Denmark and Romania. Since these amendments had been sent after setting up the second set of CSTs, the Agency did not use the corrected data for these years as this would also have resulted in a change to the established values of NRVs and the second set of CSTs.

In cases the MSs informed about changes in 2010 and 2011 data, the Agency accepted those values only if they were changed under CSI data. In these cases, the NSAs made steps to assure correction of those data in Eurostat database.

2.2. Four-step assessment procedure

The Agency assessed the achievement of the NRVs and CSTs according to the four-step procedure for each of the six risk categories described in chapter 3 of the Annex of the Method /2/:

- passengers (1.1 and 1.2)
- employees (2)
- level crossing users (3.1)
- others (4)
- unauthorised persons on railway premises (5)
- whole society (6).

The data for carrying out the assessment for the categories level crossing users, unauthorised persons and others were inferred as described in the Annex of the report on the development of the second set of CST.

There are four steps in the procedure for assessing the achievement of NRVs; these are described in the flowchart in Figure 1. The yes-arrows correspond to a passed result and the no-arrows to a failed result at each step.

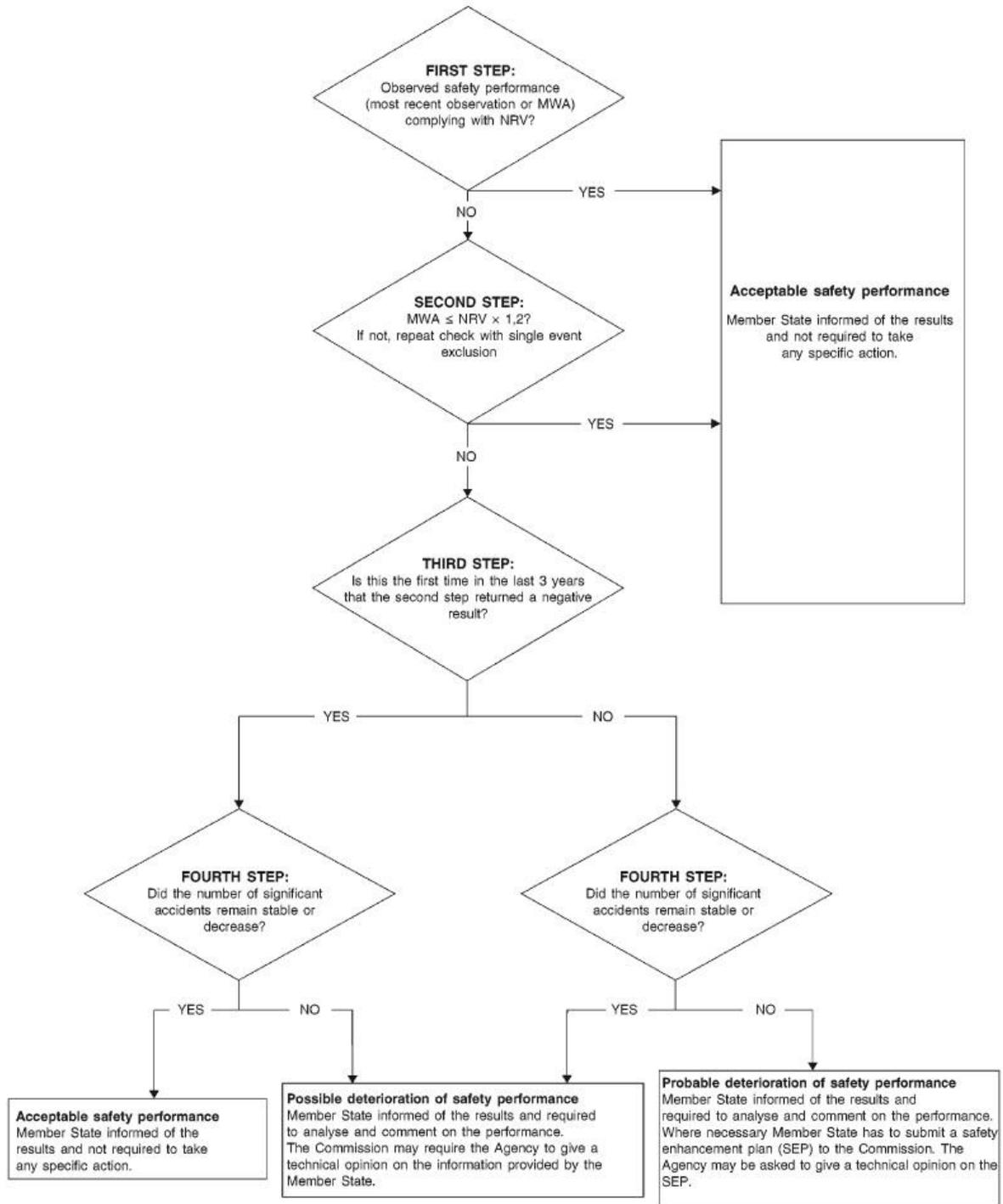


Figure 1: Decision flowchart for the assessment procedure of CSTs



3. Results of the assessment

3.1. First and second step of the assessment procedure

The majority of Member States achieved a ‘passed’ result at either first or second step of the assessment for all risk categories considered indicating acceptable safety performance (see Annex).

For ten Member States, there was a ‘failed’ result for one or more specific risk categories in the intermediate second step (see Annex and Table 1)¹.

Risk category	Passengers		Employees	Level crossing users	Others	Unauthorised persons	Whole society
	1.1 ²	1.2 ³	2	3.1	4	5	6
<i>Failing after 2nd step</i>	<i>Slovenia Slovakia</i>	<i>Slovenia Slovakia</i>	<i>Bulgaria Czech Republic Finland Romania Slovakia Sweden</i>	<i>none</i>	<i>Romania</i>	<i>Romania Slovakia Sweden</i>	<i>Belgium Romania Slovakia Norway*</i>

Table 1: Intermediate results of the 2013 assessment: Member States failing after two steps of the assessment method - after applying the 20% tolerance.

According to the Annex of the Method /2/ describing assessment method, if the tolerance of 20% is not met, the Agency shall ask the safety authority of the Member State concerned to provide the specifics of the single highest-consequence accident in the most recent years excluding the years used to set NRV, here namely in the period 2010-2011. The Agency asked Belgium, Bulgaria, Czech Republic, Finland, Romania, Slovakia, Slovenia, Sweden and Norway for this information for concerned risk categories.

The single highest-consequence accidents were identified in cooperation with Member States. Only if this single accident occurring in the period 2010-2011 was more severe, in terms of consequences, than the most severe single accident included in the data used for setting the NRV (years 2004-2009), it could have been excluded from the statistics for the revised calculation.

Such accident was identified and could have been excluded from the dataset in following countries:

Belgium: collision of trains occurring on 15 February 2010 close to Buizingen with 18 fatalities and 83 serious injuries. Its exclusion from the dataset used for the assessment led to the ‘passed’ result for Belgium in the category of whole society (6).

Bulgaria: collision of a freight train with a snow plough on a level crossing on the section Birimirtsi – Poduyane-Razpredelitelna occurring on 15 February 2010 led to one fatality and one serious injury among employees and to one level crossing fatality (road vehicle driver). Its exclusion from the dataset used for the assessment however did not led to the ‘passed’ result for Bulgaria in the category of employees (2).

¹ The NRVs and CST for the risk category 3.2 were not established in the second set due to the lack of data reliability.

² Scaling base: passenger train-km per year

³ Scaling base: passenger-km per year



Czech Republic: train derailment on 28 June 2010 close to Usti nad Labem station with one fatality and one serious injury among staff. Its exclusion from the dataset used for the assessment led to the ‘passed’ result for Czech Republic in the category of employees (2).

Norway: freight train runaway on 24 March 2010 between Anabru and Loenga marshalling yards resulting in three fatalities and four seriously injured persons. Its exclusion from the dataset used for the assessment however did not led to the ‘passed’ result for Norway in the category of whole society (6).

Slovenia: collision of trains on 26 August 2011 at Jesenice station with five seriously injured passengers and one seriously injured employee. Its exclusion from the dataset used for the assessment led to the ‘passed’ result for Slovenia in the categories of passengers (1.1+1.2).

For **Finland** it was evident from the data, that the single highest-consequence accident had one fatality (and no serious injury) and could not be excluded from the calculations.

For **Romania, Slovakia** and **Sweden** such accidents were not identified for relevant categories of users.

The final results of the second assessment step are summarised in Table 2.

Risk category	Passengers		Employees	Level crossing users	Others	Unauthorised persons	Whole society
	1.1 ⁴	1.2 ⁵	2	3.1	4	5	6
<i>Failing after 2nd step</i>	<i>Slovakia</i>	<i>Slovakia</i>	<i>Bulgaria Finland Romania Slovakia Sweden</i>	<i>None</i>	<i>Romania</i>	<i>Romania Slovakia Sweden</i>	<i>Romania Norway*</i>

Table 2: Intermediate results of the assessment: Member States failing after two steps of the assessment method (after exclusion of the single highest-consequence accident).

The values and the result of the second step are summarized in the Annex I.

⁴ Scaling base: passenger train-km per year

⁵ Scaling base: passenger-km per year



3.2. Third and fourth step of the assessment procedure

Third and fourth assessment steps were applied to the above cases, leading to a ‘passed’ result – acceptable safety performance – for all Member States except Bulgaria (Employees) and Sweden (Unauthorized persons) as shown in Table 3.

Risk category	Passengers		Employees	Level crossing users	Others	Unauthorised persons	Whole society
	1.1 ⁶	1.2 ⁷	2	3.1	4	5	6
<i>Result after 4th step: possible deterioration</i>	<i>Slovakia</i>	<i>Slovakia</i>	<i>Romania Slovakia</i>	<i>None</i>	<i>Romania</i>	<i>Romania Slovakia Sweden</i>	<i>Romania</i>
<i>Result after 4th step: probable deterioration</i>	<i>none</i>	<i>none</i>	<i>Bulgaria</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>

Table 3: Final result of the 2013 assessment after applying all four steps of the assessment method.

For **Bulgaria**, it was for the second time in the past three years that the second step returned negative result. Since the number of (all significant) accidents has not decreased, the result of the assessment process for Bulgaria is: Probable deterioration of safety performance in the category of Employees (2).

For **Romania**, it was for the second time in the past three years that the second step returned negative result in 3 categories. Since the number of accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Employees (2), Others (4), Unauthorized persons (5) and Whole society (6).

For **Slovakia**, it was for the second time in the past three years that the second step returned negative result in 4 categories. Since the number of accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Passengers (1.1+1.2), Employees (2) and Unauthorized persons on railway premises (5).

For **Sweden**, it was for the second time in the past three years that the second step returned negative result for the category of unauthorized persons. Since the number of accident has decreased, the result of the assessment process for Sweden is: Possible deterioration of safety performance in the category of Unauthorized persons on railway premises (5). For the category of employees (2), it was for the first time that the second step returned negative results, so the final result of the assessment for the category of employees is: Acceptable safety performance in the category of employees (2).

This completes the second assessment on the achievement of the second set of CSTs and NRVs.

⁶ Scaling base: passenger train-km per year

⁷ Scaling base: passenger-km per year



3.3. Analysis of the results

In accordance with the “decision flowchart for the procedure referred to in point 3.1.1(a) of the Annex “ of the Method /2/, the Agency informed Bulgaria, Romania, Slovakia and Sweden about the results of this assessment and asked them to analyse and comment on the results of this assessment.

NSA of Bulgaria suggested that the result of the assessment does not properly reflect the safety performance, since the NRV applied comes from Romania. Due to the lack of availability of data for 2004 and 2005, the NRV for Romania had to be used instead when setting up the second set of CSTs/NRVs. In consequence, the value of the NRV for the category of employees is relatively low and difficult to achieve. So the result of the assessment does not properly reflect the evolution of railway safety levels in Bulgaria in the relevant period.

NSA of Romania suggested that the result of the assessment is largely the result of the change in reporting practice that occurred in 2007. The number of all railway casualties for 2004, 2005 and 2006 reported to Eurostat by Romanian Statistical office were based on different definitions, leading to a significantly lower numbers in these years. For example, the yearly average number of FWSI in the period 2004-2006 was 30, seven times lower than the same estimate of 202 for the period 2007-2010. In consequence, this had an impact on the NRV for Romania for relevant categories of rail users estimated for the second set in 2011. The result of the assessment does not properly reflect the evolution of railway safety levels in Romania in the relevant period.

NSA of Slovakia suggested that the result of the assessment reflects the limitations of the data reporting practice in years prior to 2007. According to data submitted to Eurostat, there were no accident casualties in years 2004 and 2005 and only one fatality in 2006, figures being in discrepancy with NSA (CSI) data. On the request of the Agency, an extensive revision of data for the category of passengers was carried out in Slovakia (NSA together with the Slovakian Railways), resulting in revised (higher) number of fatalities and serious injuries among passengers, employees and unauthorised persons in years 2004-2007. The revised data have significant influence on the NRVs for Slovakia, which would lead to higher values of NRVs.

NSA of Sweden suggested that the comments provided last year on the results of the 2013 assessment on the reliability of unauthorized persons/suicide fatalities remain applicable and should be taken into consideration in the 2013 assessment. For the 2012 assessment results, the NSA provided an explanation in its 2012 Annual report that there was a one-time increase in the number of cases for which the Police did not classify whether the victim was a suicide or trespasser. In the absence of the judgment, the cases were automatically classified as “unauthorized person fatalities”. This led to their increase in the national statistics. The full explanation provided by Sweden is available in Annex II.



4. The Agency's advice to the Commission

Taking into account the similar limitations in the quality of the data available for this assessment as for the previous assessments, the Agency considers that it is still not possible to draw firm conclusions on safety performance in individual Member States. The major limitation represent the data used for the second set of CSTs/NRVs and in some cases the inconsistency of data collected by ERA (CSIs) and Eurostat (used for this assessment).

The results of the assessment showed probable deterioration of safety performance in Bulgaria (in the category of employees) and possible deterioration of safety performance in Slovakia (in the category of passengers, employees and unauthorized persons), Sweden (in the category of unauthorized persons) and Romania (in the category of employees, others, unauthorized persons and whole society).

In case of **Bulgaria**, the negative result of the assessment is, in the opinion of the Agency, the result of changing reporting practice in Romania: due to the lack of availability of data for 2004 and 2005, the NRV for Romania had to be used instead. The Agency is of the opinion that the negative result of the assessment reflects the limitations of the reporting practice before 2007, rather than the deterioration of safety performance in this category of railway users. Moreover, had the revised NRVs for Romania been used for this assessment, the result of the assessment would have been "possible deterioration of safety performance in the category of employees". The Agency therefore recommends to the EC to revise the NRVs for Romania so that they would be based on CSI data from 2006 onwards.

In case of **Romania**, the result of the assessment is largely the result of the change in reporting practice that occurred in 2007. The number of all railway casualties for 2004, 2005 and 2006 reported to Eurostat by Romanian Statistical office were based on different definitions, leading to a significantly lower numbers in these years. (For example, the yearly average number of FWSI in the period 2004-2006 was 30, seven times lower than the same estimate of 202 for the period 2007-2010.) This had large influence on the NRV for Romania for relevant categories of rail users estimated for the second set in 2011. In consequence, the result of the assessment does not properly reflect the evolution of railway safety levels in Romania in the relevant period. The Agency therefore recommends to the EC to revise the NRVs for Romania so that they would be based on CSI data from 2006 onwards (the 2006 data reported under CSIs by Romanian NSA could be used as well). The revised NRVs are available in Annex III of this report. The use of revised data (and the revised NRVs) in the 2013 assessment leads to the possible deterioration of safety performance in the category of "employees" and "others" and to the acceptable safety performance in all other categories. Given the relatively low number of employee casualties and the fact that the number of other person casualties had to be calculated, the Agency is of the opinion that the revised result may not be enough conclusive and it may be preferred to wait for 2014 assessment to confirm the previous assessment results.

In case of **Slovakia**, the result of the assessment reflects the limitations of the data reporting practice in years prior to 2007. According to data submitted to Eurostat, there were no accident casualties in years 2004 and 2005 and one fatality in 2006, figures being in discrepancy with NSA (CSI) data. On the request of ERA, an extensive revision of data for the categories of passengers, employees and unauthorised persons have been carried out in Slovakia, resulting in revised (higher) number of fatalities and serious injuries among passengers, employees and unauthorised persons in years 2004-2007. The revised data have significant influence on the NRV for Slovakia. The result of the assessment does not properly reflect the evolution of safety levels in Slovakia in the relevant



period. The Agency therefore recommends to the EC to consider revising the NRVs for Slovakia to be based on the revised data. The revised NRVs is available in Annex III of this report. The use of revised data (and the revised NRV) leads to the acceptable safety performance result in the categories of passengers, employees and unauthorised persons.

In case of **Sweden**, the Swedish NSA pointed out to possible errors in reporting in 2010 in its annual safety report to ERA. While the Agency finds the explanation provided plausible, there are some open questions. The NSA Sweden argued that many suicide cases were misclassified as “unauthorized person fatalities” in 2010, which led to a significant one-time increase in the number of unauthorized person fatalities. However the number of suicide cases remained practically stable over the past three reported years in Sweden. Moreover, the number of all suicides in Sweden did not increase between 2009 and 2010 and similarly, the total number of railway suicides in Europe did not see an increase between the two years. In consequence, the explanation provided by the Swedish NSA does not sufficiently explain the result of the 2012 and 2013 assessment and a more detailed revision of national data is needed to support the arguments provided.



5. Identifying trends in the number of significant accidents

As an exercise, the Agency used the procedure to give information to the Member States on the possible trends in the number of significant accidents. The third and fourth step of the assessment procedure was applied to examine the data for a trend in the number of significant accidents, which might suggest that safety performance should be looked at more closely in the future. The Agency applied these steps to the data for those Member States and risk categories, which had passed either the first or the second step. The results indicated a ‘passed’ outcome in all Member States for all risk categories. This is due to the general slight decrease of number of accidents in 2012, compared to the previous years.

Type of accident	All significant accidents	Level crossing accidents	Accidents caused by rolling stock in motion
<i>Test result failed</i>	<i>Bulgaria</i>		<i>Bulgaria</i>

Table 4: The hypothetical intermediate results of the assessment: Member States failing after four steps of the assessment method (trend in significant accidents).



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ANNEXES



Annex I: Intermediate results of the assessment

	Risk to passengers (1.1)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP [2011] < NRV [2004-2009] Yes/No	MWA (*10e-9) [2007-2011]	MWA ≤ NRV*1,2 Yes/No
Belgium (BE)	37.3	3.49	Yes		
Bulgaria (BG)	170.00	123.05	Yes		
Czech Republic (CZ)	46.5	51.08	No	48.05	Yes
Denmark (DK)	9.04	2.81	Yes		
Germany (DE)	8.13	15.82	No	7.01	Yes
Estonia (EE)	78.2	0.00	Yes		
Ireland (IE)	2.74	0.00	Yes		
Greece (EL)	54.7	0.00	Yes		
Spain (ES)	29.2	14.20	Yes		
France (FR)	22.5	19.74	Yes		
Italy (IT)	38.1	5.86	Yes		
Latvia (LV)	78.2	0.00	Yes		
Lithuania (LT)	97.2	0.00	Yes		
Luxembourg (LU)	23.8	0.00	Yes		
Hungary (HU)	170	71.72	Yes		
Netherlands (NL)	7.43	0.00	Yes		
Austria (AT)	26.3	4.68	Yes		
Poland (PL)	116.1	118.89	No	96.44	Yes
Portugal (PT)	41.8	6.55	Yes		
Romania (RO)	170	21.10	Yes		
Slovenia (SI)	25.3	0.00	Yes		
Slovakia (SK)	35.8	45.57	No	47.57	No
Finland (FI)	9.04	8.43	Yes		
Sweden (SE)	3.54	2.06	Yes		
United Kingdom (UK)	2.73	0.38	Yes		
Norway (NO)	2.83	2.83	Yes		



	Risk to passengers (1.2)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP [2011] < NRV [2004-2009] Yes/No	MWA (*10e-9) [2007-2011]	MWA \leq NRV*1,2 Yes/No
Belgium (BE)	0.318	0.029	Yes		
Bulgaria (BG)	1.653	1.360	Yes		
Czech Republic (CZ)	0.817	0.938	No	0.871	Yes
Denmark (DK)	0.1096	0.031	Yes		
Germany (DE)	0.08	0.147	No	0.066	Yes
Estonia (EE)	0.665	0.000	Yes		
Ireland (IE)	0.0276	0.000	Yes		
Greece (EL)	0.503	0.000	Yes		
Spain (ES)	0.270	0.111	Yes		
France (FR)	0.110	0.102	Yes		
Italy (IT)	0.257	0.040	Yes		
Latvia (LV)	0.665	0.000	Yes		
Lithuania (LT)	0.757	0.000	Yes		
Luxembourg (LU)	0.176	0.000	Yes		
Hungary (HU)	1.65	0.799	Yes		
Netherlands (NL)	0.0889	0.000	Yes		
Austria (AT)	0.292	0.046	Yes		
Poland (PL)	0.849	0.924	No	0.715	Yes
Portugal (PT)	0.309	0.048	Yes		
Romania (RO)	1.65	0.297	Yes		
Slovenia (SI)	0.362	0.000	Yes		
Slovakia (SK)	0.513	0.576	No	0.668	No
Finland (FI)	0.110	0.077	Yes		
Sweden (SE)	0.0329	0.018	Yes		
United Kingdom (UK)	0.0276	0.003	Yes		
Norway (NO)	0.033	0.034	No	0.031	Yes



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Member State	Risk to employees (2)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	NRV [2011] < NRV [2004-2009] Yes/No	MWA (*10e-9) [2007-2011]	MWA \leq NRV*1,2 Yes/No
Belgium (BE)	24.6	20.88	Yes		
Bulgaria (BG)	21.2	40.64	No	33.55	No
Czech Republic (CZ)	16.5	14.92	Yes		
Denmark (DK)	9.10	3.54	Yes		
Germany (DE)	12.6	12.60	No	12.14	Yes
Estonia (EE)	64.8	0.00	Yes		
Ireland (IE)	5.22	0.00	Yes		
Greece (EL)	77.9	0.00	Yes		
Spain (ES)	8.81	0.00	Yes		
France (FR)	6.06	4.99	Yes		
Italy (IT)	18.9	6.30	Yes		
Latvia (LV)	64.8	5.41	Yes		
Lithuania (LT)	41.0	0.00	Yes		
Luxembourg (LU)	12.0	0.00	Yes		
Hungary (HU)	9.31	0.10	Yes		
Netherlands (NL)	5.97	0.62	Yes		
Austria (AT)	20.3	18.43	Yes		
Poland (PL)	17.2	14.11	Yes		
Portugal (PT)	53.1	0.00	Yes		
Romania (RO)	21.2	27.01	No	35.89	No
Slovenia (SI)	40.9	0.00	Yes		
Slovakia (SK)	1.36	2.34	No	5.16	No
Finland (FI)	9.21	19.58	No	14.34	No
Sweden (SE)	2.86	15.68	No	6.57	No
United Kingdom (UK)	5.17	0.36	Yes		
Norway (NO)	2.82	6.93	No	2.30	Yes



Member State	Risk to level crossing users (3.1)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP [2011] < NRV [2004-2009] Yes/No	MWA (*10e-9) [2007-2011]	MWA \leq NRV*1,2 Yes/No
Belgium (BE)	138	88.5	Yes		
Bulgaria (BG)	341	189.6	Yes		
Czech Republic (CZ)	238	123.9	Yes		
Denmark (DK)	65.4	3.5	Yes		
Germany (DE)	67.8	40.6	Yes		
Estonia (EE)	400	40.7	Yes		
Ireland (IE)	23.6	0.0	Yes		
Greece (EL)	710	446.8	Yes		
Spain (ES)	109	57.4	Yes		
France (FR)	78.7	59.6	Yes		
Italy (IT)	42.9	57.0	No	34.48	Yes
Latvia (LV)	239	135.3	Yes		
Lithuania (LT)	522	404.6	Yes		
Luxembourg (LU)	95.9	0.0	Yes		
Hungary (HU)	274	2.6	Yes		
Netherlands (NL)	127	57.9	Yes		
Austria (AT)	160	156.7	Yes		
Poland (PL)	277	303.9	No	284.27	Yes
Portugal (PT)	461	115.6	Yes		
Romania (RO)	341	291.7	Yes		
Slovenia (SI)	364	78.4	Yes		
Slovakia (SK)	309	290.3	Yes		
Finland (FI)	164	45.0	Yes		
Sweden (SE)	64.0	59.1	Yes		
United Kingdom (UK)	23.5	11.1	Yes		
Norway (NO)	21.6	25.4	No	25.22	Yes



EUROPEAN RAILWAY AGENCY
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Member State	Risk to 'others' (4)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP 2011 < NRV 2004-2009 Yes/No	MWA (*10e-9) [2007-2011]	MWA ≤ NRV*1,2 Yes/No
Belgium (BE)	2.86	0.00	Yes		
Bulgaria (BG)	4.51	0.00	Yes		
Czech Republic (CZ)	2.41	0.00	Yes		
Denmark (DK)	14.2	0.00	Yes		
Germany (DE)	3.05	0.09	Yes		
Estonia (EE)	11.6	0.00	Yes		
Ireland (IE)	7.00	0.00	Yes		
Greece (EL)	4.51	0.00	Yes		
Spain (ES)	5.54	0.00	Yes		
France (FR)	7.71	3.99	Yes		
Italy (IT)	6.70	0.00	Yes		
Latvia (LV)	11.6	0.00	Yes		
Lithuania (LT)	11.6	0.00	Yes		
Luxembourg (LU)	5.46	0.00	Yes		
Hungary (HU)	4.51	2.72	Yes		
Netherlands (NL)	4.70	1.87	Yes		
Austria (AT)	11.1	1.32	Yes		
Poland (PL)	11.6	15.06	No	5.92	Yes
Portugal (PT)	5.54	0.00	Yes		
Romania (RO)	4.51	6.48	No	17.48	No
Slovenia (SI)	14.50	0.00	Yes		
Slovakia (SK)	2.41	0.00	Yes		
Finland (FI)	14.2	0.00	Yes		
Sweden (SE)	14.2	0.00	Yes		
United Kingdom (UK)	7.00	0.00	Yes		
Norway (NO)	14.15	0.00	Yes		



Member State	Risk to unauthorised persons (5)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP 2011 < NRV 2004-2009 Yes/No	MWA (*10e-9) [2007-2011]	MWA ≤ NRV*1,2 Yes/No
Belgium (BE)	72.6	178.0	No	85.46	Yes
Bulgaria (BG)	829.0	2109.8	No	828.5	Yes
Czech Republic (CZ)	301	49.3	Yes		
Denmark (DK)	116	74.3	Yes		
Germany (DE)	113	94.0	Yes		
Estonia (EE)	1550	1275.3	Yes		
Ireland (IE)	85.2	0.0	Yes		
Greece (EL)	723	710.1	Yes		
Spain (ES)	168	80.7	Yes		
France (FR)	67.2	100.7	No	73.01	Yes
Italy (IT)	119	166.7	No	138.99	Yes
Latvia (LV)	1310	676.7	Yes		
Lithuania (LT)	2050	1488.1	Yes		
Luxembourg (LU)	79.9	11.3	Yes		
Hungary (HU)	588	5.0	Yes		
Netherlands (NL)	15.9	6.2	Yes		
Austria (AT)	119	84.2	Yes		
Poland (PL)	1210	1230.3	No	1266.62	Yes
Portugal (PT)	834	282.2	Yes		
Romania (RO)	829	902.2	No	1270.00	No
Slovenia (SI)	236	161.9	Yes		
Slovakia (SK)	779	913.1	No	961.68	No
Finland (FI)	249	43.1	Yes		
Sweden (SE)	94.8	112.6	No	115.58	No
United Kingdom (UK)	84.5	84.6	No	73.18	Yes
Norway (NO)	91.8	0.0	Yes		



Member State	Societal risks (6)				
	NRV (*10e-9) [2004-2009]	OSP (*10e-9) [2011]	OSP 2011 < NRV 2004-2009 Yes/No	MWA (*10e-9) [2007-2011]	MWA \leq NRV*1,2 Yes/No
Belgium (BE)	275	300.32	No	307.36	Yes
Bulgaria (BG)	1240	2441.67	No	1216	Yes
Czech Republic (CZ)	519	236.11	Yes		
Denmark (DK)	218	83.75	Yes		
Germany (DE)	203	159.06	Yes		
Estonia (EE)	2110	1315.97	Yes		
Ireland (IE)	114	0.00	Yes		
Greece (EL)	1540	1156.85	Yes		
Spain (ES)	323	150.47	Yes		
France (FR)	180	186.04	No	176.35	Yes
Italy (IT)	231	235.03	No	232.01	Yes
Latvia (LV)	1660	817.50	Yes		
Lithuania (LT)	2590	1892.70	Yes		
Luxembourg (LU)	210	0.00	Yes		
Hungary (HU)	1020	8.33	Yes		
Netherlands (NL)	148	66.66	Yes		
Austria (AT)	329	263.94	Yes		
Poland (PL)	1590	1640.08	No	1647.78	Yes
Portugal (PT)	1360	403.13	Yes		
Romania (RO)	1240	1243.57	No	1900.00	No
Slovenia (SI)	698	240.31	Yes		
Slovakia (SK)	1130	1238.56	No	1328.72	Yes
Finland (FI)	417	113.57	Yes		
Sweden (SE)	169	188.83	No	191.71	Yes
United Kingdom (UK)	120	96.33	Yes		
Norway (NO)	51	127.04	No	78.72	No



Annex II: Explanations provided by Member States

Sweden (NSA, Annual Report 2012)

“The Transport Agency compiles annual statistics on, inter alia, the trends in the number of killed and seriously injured persons in railway operations, known as 'serious accidents involving personal injury'. The statistics for 2006-2011 are reported in the common safety indicators (CSI). The monitored categories are: passengers, employees, level crossing users, and unauthorised persons on track, or unauthorised track access. The category with the most deaths and serious injuries is consistently unauthorised track access.

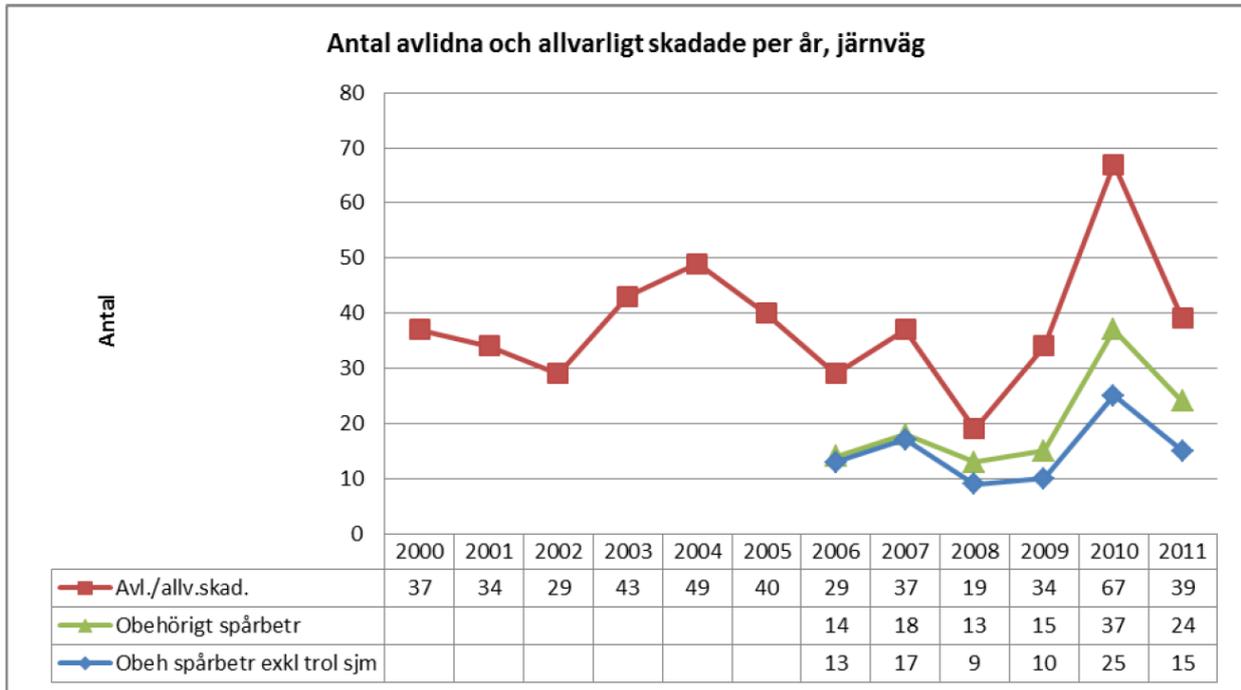
Another large group killed and seriously injured are those who commit or attempt to commit suicide by train. Suicide and suicide attempts are a separate category and are not included in the statistics of serious accidents involving personal injury. Information from police investigations determine whether a killed or seriously injured person is to be classified as suicide, attempted suicide, or a serious accident involving personal injury as a result of unauthorised track access. The unauthorised track access category includes injury accidents where the injured/killed persons are not passengers, employees, level crossing users, or people who have committed/attempted suicide. Uncertain cases, especially when it is not clear whether suicide was the case or not, are assigned to the unauthorised track access group.

If one examines the number of killed and seriously injured persons in railway operations during the period of 2000 to 2011, it is clear that 2010 was an anomalous year with 67 killed/seriously injured (see Figure 4). For the other years, including 2011, the number of killed and seriously injured persons varies between 23 and 49. The deviation in 2010 consists entirely of an increased number of unauthorised track accesses.

In 2010, the Swedish Transport Agency administrator who was checking injuries to persons reported an increasing number of cases for which the police had not taken a position as regards suicide. These events were classified as unauthorised track access in accordance with current practice.

The Transport Agency's IT system for reported railway events contains 112 events classified as unauthorised track access during the period of 2006-2011. Among these 112 events are *probable suicides/suicide attempts*, that is to say events that have not been classified as suicides/suicide attempts by the police. Suicides and suicide attempts will henceforth be referred to as suicides.

Figure below presents the official number of unauthorised track accesses per year; from 2006 as a CSI. Figure also presents unauthorised track access both before and after probable suicides have been subtracted. The probable suicides excluded from the unauthorised track access group are those where the event description clearly suggests suspected or probable suicide or where it is clear that the person lay down or sat on the tracks and did not react to the train driver's warning signal. When the unauthorised track access group is cleared of the probable suicides, the unauthorised track access excluding probable suicide group is markedly reduced in both 2010 and 2011. The difference between unauthorised track access and unauthorised track access excluding probable suicides has gradually increased since 2008. This reinforces the view that it is difficult, and has become even more difficult, to obtain data to help determine whether an event should be classified as suicide.



Number killed and seriously injured per year, railways	Antal avlidna och allvarligt skadade per år, järnväg
Killed/seriously injured	Avl./allv.skad.
Unauthorised track access	Obehörigt spårbe-tr
Unauthorised track access excluding probable suicide	Obeh spårbe-tr exkl trol s-jm

The statistics in the above figure show that 2010 was an anomalous year, whether probable suicides/attempts at suicide are taken into account or not. This impression is reinforced by the 2011 figures showing a return to a lower level, although there is still a high number of a serious accident involving personal injury due to unauthorised track access.

Swedish suicide statistics

The National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) monitors the suicide trend in Sweden. There are statistics up to the end of 2010. The statistics show that suicides in Sweden are trending downwards (Själv-mord i Sverige [Suicide in Sweden] 1987-2010, page 4). The report also shows that both definite and uncertain suicides are included in the national statistics and that suicide by 'jump/fall from height or in front of an object in motion and by motor vehicle' shows an upward trend for both men and women.

Conclusions from 2010 unauthorised track access analysis

One conclusion from the analysis is that coincidence underlies the increase in serious accidents involving personal injury resulting from unauthorised track access in 2010 and that it has become more difficult to gain access to data that confirms suicide, which has led to a further increase in the unauthorised track access group. The conclusions are based on the fact that 2011 statistics for serious accidents involving personal injury have returned to previous levels and that the proportion of probable suicides remains high. The analysis confirms the reality of the perceived difficulties in obtaining data that confirms suicide.



Annex III: Recommendation to revise NRVs

As part of the assessment, the Agency together with some Member States reviewed the past data on the number of casualties. This resulted in a new set of CSTs/NRVs for those countries, as shown below. The motivation for recommending the revision NRV values is available in Chapter 4.

Member State	NRV 1.1 ($\times E-09$) (*)	NRV 1.2 ($\times E-09$) (**)
Bulgaria (BG)	207,0	1,91
Romania (RO)	57,4	0,607
Slovakia (SK)	62,10	0,883

Table A – NRVs for risk to passengers (NRV 1.1 and NRV 1.2)

Member State	NRV 2 ($\times E-09$)
Bulgaria (BG)	20,40
Romania (RO)	22,30
Slovakia (SK)	16,50*

* in accordance with the article 2.1.1 of the Annex to the method /4/ the value of Czech Republic is used

Table B – NRVs for risk to employees (NRV 2)

Member State	NRV 3.1 ($\times E-09$)
Bulgaria (BG)	141,6
Romania (RO)	542,0

Table C – Values attributed to the NRVs for risk to level crossing users (NRV 3.1 and NRV 3.2)

Member State	NRV 4 ($\times E-09$)
Bulgaria (BG)	35,47
Romania (RO)	2,83

Table D – Values attributed to the NRV for risk to persons classified as “others” (NRV 4)

Member State	NRV 5 ($\times E-09$)
Bulgaria (BG)	900,2
Romania (RO)	1388,2
Slovakia (SK)	1758,0

Table E – NRVs for risk to unauthorised persons on railway premises (NRV 5)



Member State	NRV 6 (×E-09)
Bulgaria (BG)	1440,0
Romania (RO)	1704,4

Table F – Values attributed to the NRV for risk to “whole society” (NRV 6)



Annex IV: Assessments overview

This assessment is the fourth assessment of achievements of CSTs carried out by the Agency. The table below provide an overview of the specificities of all assessment made by the Agency so far in respect to the years considered for these assessment.

