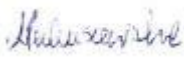

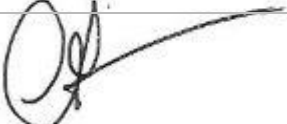


# Report

## 2016 ASSESSMENT OF ACHIEVEMENT OF SAFETY TARGETS

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1.0	18/03/2016	Final for the EC and for the publication

## References

<i>N°</i>	<i>Description</i>	<i>Reference</i>	<i>Version</i>
[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)	2004/49/EC  (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 (CSM)	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 July 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
[6]	Commission implementing decision of 11 December amending Decision 2012/226/EU on the second set of common safety targets for the rail system	2013/753/EU	11 December 2013

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## 1. Executive summary

This report presents the fifth assessment of achievement of the second set of Common Safety Targets (CSTs) and National Reference Values (NRVs) carried out in accordance with the Common Safety Method (CSM) defined in the Commission Decision 2009/460/EC [2], and in particular Article 4 of the Decision. The 2016 assessment is the seventh assessment of achievements of safety targets carried out by the Agency in accordance with the CSM. The assessment concerns 26 of 28 EU Member States that have a railway system, plus Norway.

The NRVs and the second set of CSTs were established using Eurostat (ESTAT) data for the years 2004-2009 and published as the Commission Decision 2012/226/EU [5] in 2012, which was later amended by the Commission Implementing Decision 2013/753/EU [6]. This assessment is based on Eurostat data for the years 2010-2014 that were retrieved from Eurobase<sup>1</sup> on 10 February 2016 and updated on 17 March 2016.

For all railway user categories, the respective National Reference Value (NRV) was lower than the corresponding CST; the NRVs represented the maximum tolerable level of the risk to which it refers for this assessment. As with the assessments carried out in the past, NRVs represented the safety targets that were subject to the assessment of achievements as described in the CSM.

The results of the assessment of achievements of NRVs indicate other than acceptable safety performance in seven Member States, as follows:

“possible deterioration of safety performance”:

- › Bulgaria (Level crossing users);
- › France (Unauthorized persons);
- › Hungary (Employees, Others);
- › Italy (Unauthorized persons);
- › Romania (Employees);
- › Sweden (Employees);

“probable deterioration of safety performance”:

- › Slovakia (Employees, Whole society).

At the same time, 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.

Despite the continuous limitation in data used for the assessment of safety targets (data submitted by Member States to Eurostat via their national statistical offices), the results obtained through this assessment should be considered valid and a further investigation shall be made to identify causes of the negative results obtained.

Here, notably, the Member States for which there is a possible deterioration in safety performance in any category of user, shall, in accordance with Article 5 of the Method [2], send to the Commission a report explaining the likely causes of the results obtained.

In accordance with Article 5 of the Method [2], Slovakia, where there is a probable deterioration in safety performance, shall send to the Commission a report explaining the likely causes of the results obtained and submit, if appropriate, a safety enhancement plan.

In this context, it is notable that the Agency currently conducts various assessment activities within the priority countries programme, notably in Slovakia, which may lead to a preparation of a safety enhancement plan. The advice on safety performance in Slovakia will be submitted to the Commission by ERA in 2017.

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<sup>1</sup> Statistical database of Eurostat: <http://ec.europa.eu/eurostat/data/database>

## 2. 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.*

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).

This 2016 annual assessment, seventh annual assessment carried out by the Agency so far, concerns the assessment of the achievement of the second set of NRVs and of CSTs with reference to the data available for the period 2010-2014. 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. It was amended in 2014 in the Commission Implementing Decision 2013/753/EU.

The values for the second set of CSTs were calculated on the basis of the data from 2004 to 2009, which were supplied to Eurostat by (statistical offices of) Member States (MSs) 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].

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). Similarly to the past assessments, the assessment was not done for the category of level crossing users (3.2)<sup>2</sup> due to the absence of relevant data in the Eurostat database.

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<sup>2</sup> Assessment was carried out for the category of level crossing users (3.1) that uses different measurement scale.

### 3. Method for assessing achievement of safety targets

#### 3.1. Data

To assess the achievement of NRVs, the Agency has used the Eurostat data for the five most recently reported years (2010-2014), in accordance with point 3.1.4 of the Annex of the Method /2/. The data of 2014 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 10 February 2016 after consultation with the Eurostat. The data were sent by Statistical Offices of Member States within five months after the end of the reference period and for the 2014 datasets. According to the information from Eurostat, the data in datasets “rail\_ac\_catvict” and “rail\_ac\_catnubr” were last updated on 17 December 2015 and 19 February 2016 respectively and the data in dataset “rail\_tf\_trainmv” and “rail\_pa\_quartal” were updated on 16 February 2016 and 10 March 2016 respectively. These updates were taken into account in the assessment. The consistency of data was verified by ERA for year 2014 by comparing the Eurostat data with CSI data. In case of major differences<sup>3</sup>, the NSA was requested to verify and eventually correct the data reported to Eurostat. In case of Slovakia, the data modification request was made to Eurostat by the NSA, but the update in Eurobase has not been applied by the date of finalisation of this report. However, this data update was included in the assessment.

In some instances, data were not available in the Eurostat database by 17 March 2016; in these cases the CSI data were used instead. The CSI data were extracted on the 17 March 2016 from the Agency’s ERAIL-CSI database. The Annex 2 to this report shows the overview of instances in which the CSI data had to be used in place of Eurostat values. 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, as they are not directly available in Eurobase.

#### 3.2. Four-step assessment procedure

The four-step assessment procedure described in chapter 3 of the Annex of the Method has been applied for each of the six risk categories:

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

There are four steps in the procedure for assessing the achievement of NRVs; these are described in the flowchart in Figure 1, which is taken from the Appendix 2 to the Annex to the Method. The “yes-arrows” correspond to a passed result and the no-arrows to a failed result at each step.

The first step and first part of the second step are performed autonomously by the Agency using the Eurostat data. In the second part of the second step, the Agency has to use the input of the Member States concerned for the specifics of the single highest-consequence accident in the most recent years excluding the years used to set NRV.

The third and fourth steps are carried out by the Agency autonomously with the Eurostat data.

The detailed description of the content of the each step is available in chapter 3.2 of the Annex to the Method.

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<sup>3</sup> Minor differences may exist due to the minor differences of the reporting scopes for CSI data and Eurostat data.

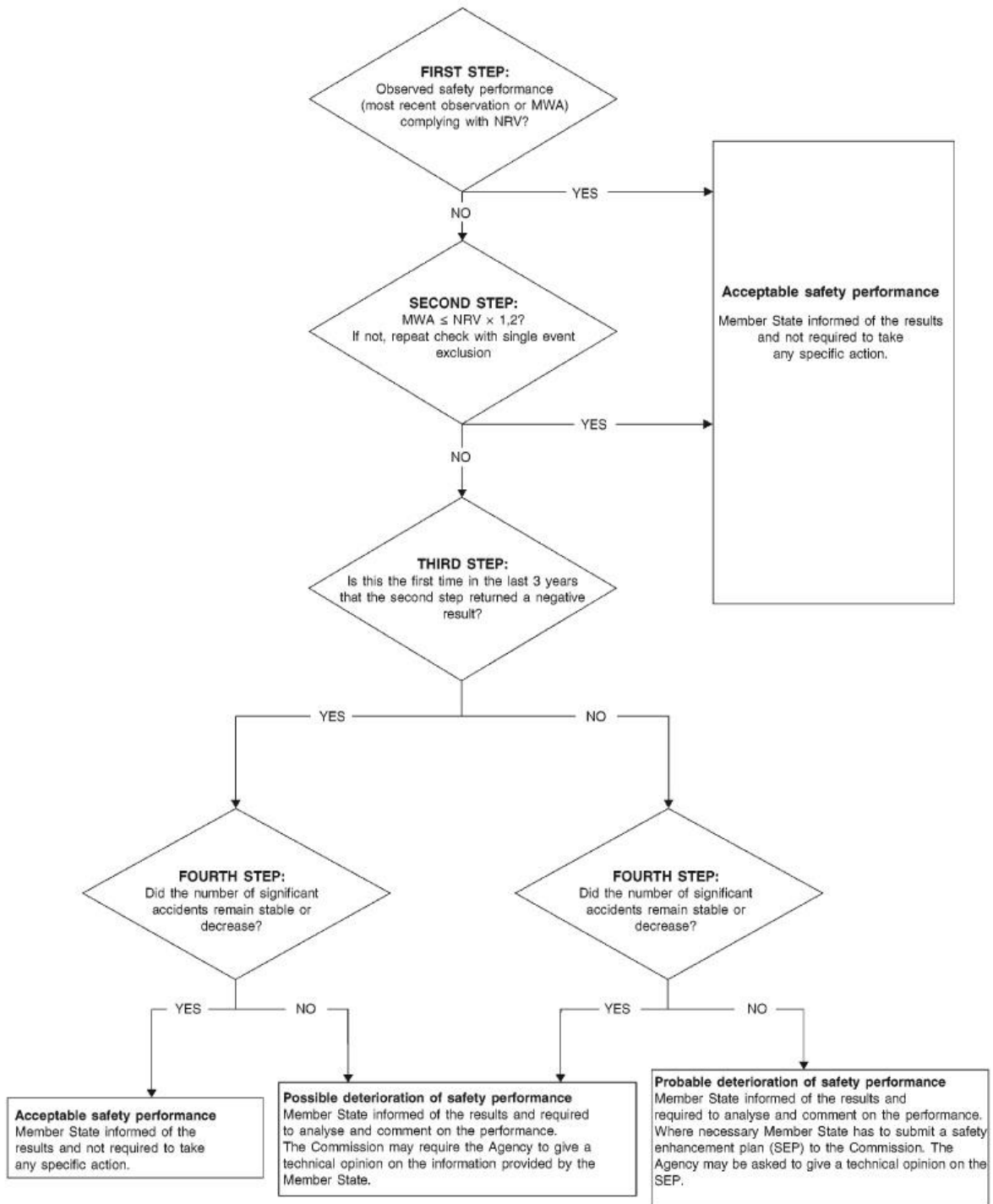


Figure 1 : Decision flowchart for the assessment procedure of CSTs

## 4. Results of the assessment

### 4.1. 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 Figure 1). For seven Member States and Norway, there was a ‘failed’ result for one or more specific risk categories in the intermediate second step (see Annex and Table 1)<sup>4</sup>.

*Table 1 : Intermediate results of the 2016 assessment: Member States failing after two steps of the assessment method - after applying the 20 % tolerance.*

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

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 2010-2014.

The single highest-consequence accidents were identified in cooperation with Member States (Table 2). Only if this single accident occurring in the period 2010-2014 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), then it will be excluded from the statistics for the revised calculation. The overview in Table 2 shows whether this was the case.

*Table 2 : Single highest-consequence accidents in the period 2010-2014 for Member States failing after two steps of the assessment*

MS	NRV	Accident specifics (relevant highest-consequence accident in 2010-2012)	Excluded
BG	2	12/07/2014 – train derailment at the station of Kaloyanovetz resulting in 1 person killed (train driver) and 4 persons seriously injured (employees).	Yes
BG	3.1	04/01/2014 – Level crossing accident at km 29+415 of the railway line Plovdiv – Karlovo between railway stations Dolna Mahala - Banja, involving a passenger car, resulting in 2 persons killed and 2 persons seriously injured (car occupants).	Yes
HU	2	20/10/2010 – Level crossing accident between Délegyháza and Kiskunlacháza stations, involving a truck, resulting in 1 person killed (train driver)	No
HU	4	13/07/2013 – Electrocution at Miskolc-rendező station resulting in 1 person killed (others)	No
FR	5	12/01/2013 – Accident to persons on the line Aix en Provence – Marseille resulting in 3 persons killed	No
IT	5	19/10/2012 – Accident to persons in Viareggio Station resulting in 3 persons killed (others)	Yes

<sup>4</sup> The NRVs and CST for the risk category 3.2 were not established in the second set due to the lack of data reliability.



RO	2	16/10/2013 – Train collision in the branch of the Regional Railway Centre of Operation, Maintenance and Repair Cluj, track section Saratel – Deda, resulting in 11 seriously injured employees	Yes
SK	2	01/04/2010 – Train collision in Spisska Nova Ves station, resulting in one killed and two seriously injured employees	Yes
SK	6	01/04/2010 – Train collision in Spisska Nova Ves station, resulting in one killed and two seriously injured employees	No
SE	2	04/06/2010 – Accident to persons in Stockholm, Tomtebodavägen, resulting in one killed one seriously injured employee	No
NO*	3.1	29/04/2010 – Level crossing accident near Skoppum resulting in one fatality and one seriously injured level crossing users 28/01/2014 – Level crossing accident near Eidsberg resulting in one fatality and one seriously injured level crossings users	Yes
NO*	5	24/02/2013 – Accident to person near Sandne resulting in one fatality (unauthorized person) 14/07/2013 - Accident to person near Vinstra resulting in one fatality (unauthorized person)	No

The MWA were recalculated for NRVs of MSs where the single highest-consequence accident could have been excluded from the dataset. The final results of the second assessment step are summarised in Table 3.

*Table 3 : Intermediate results of the assessment: Member States failing after two steps of the assessment method (after exclusion of the single highest-consequence accident).*

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

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

#### 4.2. 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 the majority of cases, except the ones summarized in Table 4. Since in some cases the number of significant accident increased, the final result of the assessment is “possible” or “probable” deterioration of safety performance.

*Table 4 : Final result of the assessment after applying all four steps of the assessment method.*

Risk category	Passengers		Employees	Level crossing users	Others	Unauthorised persons	Whole society
	1.1	1.2	2	3.1	4	5	6
Result after 4 <sup>th</sup> step: possible deterioration	none	none	Hungary Romania Sweden	Bulgaria [Norway]	Hungary	France Italy [Norway]	

Result after 4 <sup>th</sup> step: probable deterioration			Slovakia				Slovakia
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Notes: [Norway] refers to the fact that it is not a MS so the CSM does not formally apply to it.

For **Bulgaria**, it was the third time in the past three years that the second step returned negative result in the category of Level Crossing users (3.1); the result of the assessment is thus possible deterioration of safety performance in the category of Level Crossing users (3.1).

For **France**, it was the second time in the past three years that the second step returned negative result for the category of Unauthorized Persons (5). Since the number of relevant significant accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Unauthorized persons (2).

For **Hungary**, in the past three years it was the first time that the second step returned negative result in the category of Employees (2). Since the number of relevant significant accidents has increased, the result of the assessment is possible deterioration of safety performance in the category of Employees (2). It was also the first time in the past three years that the second step returned negative result in the category of Others\_4(4); the result of the assessment is thus possible deterioration of safety performance in the category of Others (4).

For **Italy**, it was the third time in the past three years that the second step returned negative result for the category of Unauthorized Persons (5). Since the number of relevant significant accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Unauthorized persons (2).

For **Romania**, it was the third time in the past three years that the second step returned negative result in the category of Employees (2). Since the number of relevant significant accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Employees (2).

For **Slovakia**, it was the third time in the past three years that the second step returned negative result in the category of Employees (2). Since the number of relevant significant accidents has increased, the result of the assessment is probable deterioration of safety performance in the category of Employees (2). It was also the third time in the past three years that the second step returned negative result in the category of Whole society (6); the result of the assessment is thus probable deterioration of safety performance in the category of Whole Society (6).

For **Sweden**, it was the second time in the past three years that the second step returned negative result in the category of Employees (2). Since the number of relevant significant accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Employees (2).

For **Norway**, it was the second time in the past three years that the second step returned negative result for the category of Level Crossing users (3.1). Since the number of relevant significant accidents has decreased, the result of the assessment is possible deterioration of safety performance in the category of Level Crossing users (3.1). It was also the second time in the past three years that the second step returned negative result in the category of Unauthorized persons (5); the result of the assessment is thus possible deterioration of safety performance in the category Unauthorized persons (5).

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

### 4.3. Analysis of the results

The seventh annual assessment of achievements of safety targets led to acceptable safety performance in the category of passengers (1) in all Member States. Possible deterioration of safety performance was

identified in the categories of employees (2), level crossing users (3), others (4) and unauthorised persons (5). For the second time in the history of annual assessments of achievements of safety targets, a probable deterioration of safety performance was identified for one Member State (Slovakia) in the category of employees (2) and whole society (6).

Employees and unauthorized persons categories are the two categories in which other than acceptable safety performance has been identified most commonly across all annual assessments (see Annex 4).

For the EU as a whole, the safety performance remains acceptable in all categories of users with decreasing trends in all accident categories.

#### 4.3.1. Trend in significant accidents

Although not required by the legislation, 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 'failed' outcome in the following Member States and risk categories (Table 5).

Table 5 : Member States in which there was statistically significant increase in accident risk in 2014

<i>Risk category</i>	<i>All significant accidents</i>	<i>Accidents involving level crossing users</i>	<i>Accidents to persons caused by rolling stock in motion</i>
<i>Trend in significant accidents neither decreasing nor stable</i>	<i>Germany France Hungary Slovakia</i>	<i>none</i>	<i>Ireland Hungary Slovakia</i>

#### 4.3.2. Data limitations

The result of the assessment in the category of others should be read with some caution, since there is a continuous discrepancy in data submitted to Eurostat and to ERA for some Member States. This is notably the case of Romania.

In the case of Croatia, a major revision of accident data took place in early 2015, after the discussions with ERA. This has resulted in an amendment of past data. This amendment has however not been effectively realized at Eurobase by 26 March 2015 and could be taken into consideration only for this year's assessment.

## 5. Conclusions

The Agency finds that it is still not always possible to draw firm conclusions on trends in safety performance in all individual Member States in the framework of safety targets. In order to provide more proactive trend analysis, the Agency is developing proposals for wider occurrence reporting.

There is currently a limitation associated with reliance on the Eurostat data used for the establishment of the second set of CSTs/NRVs and for this evaluation, as they are in some cases inconsistent with the data collected by the NSAs and reported to ERA (CSI data). In 2017, the Agency intends to revise the Method [2] for both the assessment of the CSTs and the NRVs themselves, so that the assessment relies solely on CSI data.

This 2016 assessment of achievements of safety targets identified “possible deterioration of safety performance” in four categories of railway users in six EU Member States and “probable deterioration of safety performance” in two categories of railway users in one EU Member State.

In accordance with the Article 5 of the Method [2], the Member States that achieved a negative result in this assessment, with a possible deterioration of railway safety in one or more categories, “*shall send to the Commission the likely causes of the results obtained*”; while a negative result with a probable deterioration of railway safety means that the Member State “*shall send to the Commission the likely causes of the results obtained and submit, if appropriate, a safety enhancement plan*”.

The Commission may consider specifying the deadline and format of the report, since these are not provided in the Article 5 of the Method, as well as underline the requirements on the content of the report.

## Annex 1 Intermediate results of the assessment (after second step)

	<i>Risk to passengers (1.1)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	37.30	2.39	Yes		
Bulgaria (BG)	207.00	171.12	Yes		
Czech Republic (CZ)	46.50	21.46	Yes		
Denmark (DK)	9.04	1.67	Yes		
Germany (DE)	8.13	1.68	Yes		
Estonia (EE)	78.20	0.00	Yes		
Ireland (IE)	2.74	0.00	Yes		
Greece (EL)	54.70	0.00	Yes		
Spain (ES)	29.20	18.07	Yes		
France (FR)	22.50	2.92	Yes		
Croatia (HR)	176.90	19.83	Yes		
Italy (IT)	38.10	4.73	Yes		
Latvia (LV)	78.20	0.00	Yes		
Lithuania (LT)	97.20	0.00	Yes		
Luxembourg (LU)	23.80	0.00	Yes		
Hungary (HU)	170.00	63.38	Yes		
Netherlands (NL)	7.43	3.45	Yes		
Austria (AT)	26.30	6.36	Yes		
Poland (PL)	116.00	23.94	Yes		
Portugal (PT)	41.80	30.02	Yes		
Romania (RO)	57.40	19.98	Yes		
Slovenia (SI)	25.30	9.61	Yes		
Slovakia (SK)	62.10	37.68	Yes		
Finland (FI)	9.04	2.80	Yes		
Sweden (SE)	3.54	0.00	Yes		
United Kingdom (UK)	2.73	0.20	Yes		
<i>Norway (NO)</i>	2.83	0.00	Yes		

	<i>Risk to passengers (1.2)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	0.318	0.018	Yes		
Bulgaria (BG)	1.911	2.061	Yes		
Czech Republic (CZ)	0.817	0.346	Yes		
Denmark (DK)	0.110	0.015	Yes		
Germany (DE)	0.081	0.014	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	0.136	Yes		
France (FR)	0.110	0.013	Yes		
Croatia (HR)	1.135	0.087	Yes		
Italy (IT)	0.257	0.031	Yes		
Latvia (LV)	0.665	0.000	Yes		
Lithuania (LT)	0.757	0.000	Yes		
Luxembourg (LU)	0.176	0.000	Yes		
Hungary (HU)	1.650	0.685	Yes		
Netherlands (NL)	0.089	0.025	Yes		
Austria (AT)	0.292	0.058	Yes		
Poland (PL)	0.849	0.201	Yes		
Portugal (PT)	0.309	0.234	Yes		
Romania (RO)	0.607	0.241	Yes		
Slovenia (SI)	0.362	0.162	Yes		
Slovakia (SK)	0.883	0.467	Yes		
Finland (FI)	0.110	0.026	Yes		
Sweden (SE)	0.033	0.000	Yes		
United Kingdom (UK)	0.028	0.002	Yes		
Norway (NO)	0.033	0.000	Yes		

	<i>Risk to employees (2)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	24.60	15.52	Yes		
Bulgaria (BG)	20.40	0.00	Yes		
Czech Republic (CZ)	16.50	8.37	Yes		
Denmark (DK)	9.10	0.00	Yes		
Germany (DE)	12.60	9.07	Yes		
Estonia (EE)	64.80	125.14	No	39.98	Yes
Ireland (IE)	5.22	0.00	Yes		
Greece (EL)	77.90	0.00	Yes		
Spain (ES)	8.81	6.06	Yes		
France (FR)	6.06	3.67	Yes		
Croatia (HR)	73.65	4.97	Yes		
Italy (IT)	18.90	9.20	Yes		
Latvia (LV)	64.80	113.29	No	10.68	Yes
Lithuania (LT)	41.00	7.10	Yes		
Luxembourg (LU)	12.00	0.00	Yes		
Hungary (HU)	9.31	16.91	No	12.23	No
Netherlands (NL)	5.97	0.00	Yes		
Austria (AT)	20.30	17.21	Yes		
Poland (PL)	17.20	6.09	Yes		
Portugal (PT)	53.10	0.00	Yes		
Romania (RO)	22.30	30.85	No	33.38	No
Slovenia (SI)	40.90	0.00	Yes		
Slovakia (SK)	2.71	4.64	No	24.64	No
Finland (FI)	9.21	2.01	Yes		
Sweden (SE)	2.86	7.19	No	8.80	No
United Kingdom (UK)	5.17	2.01	Yes		
<i>Norway (NO)</i>	2.82	0.06	Yes		

	<i>Risk to level crossing users (3.1)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	138	125.2	Yes		
Bulgaria (BG)	141.6	146.3	No	212.76	No
Czech Republic (CZ)	238	168.6	Yes		
Denmark (DK)	65.4	94.8	No	54.87	Yes
Germany (DE)	67.8	53.6	Yes		
Estonia (EE)	400	625.7	No	132.37	Yes
Ireland (IE)	23.6	0.0	Yes		
Greece (EL)	710	487.2	Yes		
Spain (ES)	109	38.7	Yes		
France (FR)	78.7	58.4	Yes		
Croatia (HR)	611.3	373.0	Yes		
Italy (IT)	42.9	25.1	Yes		
Latvia (LV)	239	226.6	Yes		
Lithuania (LT)	522	248.7	Yes		
Luxembourg (LU)	95.9	0.0	Yes		
Hungary (HU)	274	197.0	Yes		
Netherlands (NL)	127	61.1	Yes		
Austria (AT)	160	97.3	Yes		
Poland (PL)	277	226.2	Yes		
Portugal (PT)	461	123.1	Yes		
Romania (RO)	542	334.2	Yes		
Slovenia (SI)	364	195.5	Yes		
Slovakia (SK)	309	0.0	Yes		
Finland (FI)	164	44.3	Yes		
Sweden (SE)	64	68.0	No	63.69	Yes
United Kingdom (UK)	23	18.3	Yes		
<i>Norway (NO)</i>	21.6	26.2	No	25.97	No



	<i>Risk to others (4)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	2.86	1.03	Yes		
Bulgaria (BG)	35.47	0.00	Yes		
Czech Republic (CZ)	2.41	0.00	Yes		
Denmark (DK)	14.20	17.38	No	2.18	Yes
Germany (DE)	3.05	0.29	Yes		
Estonia (EE)	11.60	0.00	Yes		
Ireland (IE)	7.00	0.00	Yes		
Greece (EL)	4.51	0.00	Yes		
Spain (ES)	5.54	4.66	Yes		
France (FR)	7.71	4.90	Yes		
Croatia (HR)	7.28	0.00	Yes		
Italy (IT)	6.70	0.00	Yes		
Latvia (LV)	11.60	0.00	Yes		
Lithuania (LT)	11.60	0.00	Yes		
Luxembourg (LU)	5.47	0.00	Yes		
Hungary (HU)	4.51	9.95	No	13.71	No
Netherlands (NL)	4.70	0.00	Yes		
Austria (AT)	11.10	7.94	Yes		
Poland (PL)	11.60	6.59	Yes		
Portugal (PT)	5.54	0.00	Yes		
Romania (RO)	2.83	0.00	Yes		
Slovenia (SI)	14.48	0.00	Yes		
Slovakia (SK)	2.41	0.00	Yes		
Finland (FI)	14.20	0.00	Yes		
Sweden (SE)	14.20	0.00	Yes		
United Kingdom (UK)	7.00	0.00	Yes		
<i>Norway (NO)</i>	14.15	0.00	Yes		

	<i>Risk to unauthorized persons (5)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	72.6	111.8	No	80.36	Yes
Bulgaria (BG)	900.2	600.0	Yes		
Czech Republic (CZ)	301	30.9	Yes		
Denmark (DK)	116	118.5	No	84.85	Yes
Germany (DE)	113	116.1	No	97.59	Yes
Estonia (EE)	1550	963.6	Yes		
Ireland (IE)	85.2	59.5	Yes		
Greece (EL)	723	391.5	Yes		
Spain (ES)	168	67.6	Yes		
France (FR)	67.2	80.4	No	82.78	No
Croatia (HR)	676.3	626.6	No	452.96	Yes
Italy (IT)	119	130.8	No	146.52	No
Latvia (LV)	1310	549.5	Yes		
Lithuania (LT)	2050	532.9	Yes		
Luxembourg (LU)	79.9	0.0	Yes		
Hungary (HU)	588	891.3	No	580.24	Yes
Netherlands (NL)	15.9	0.0	Yes		
Austria (AT)	119	71.5	Yes		
Poland (PL)	1210	847.1	Yes		
Portugal (PT)	834	429.6	Yes		
Romania (RO)	1388.2	1019.3	Yes		
Slovenia (SI)	236	0.0	Yes		
Slovakia (SK)	1758	2.3	Yes		
Finland (FI)	249	62.4	Yes		
Sweden (SE)	94.8	95.4	No	110.51	Yes
United Kingdom (UK)	84.5	25.3	Yes		
<i>Norway (NO)</i>	91.8	341.9	No	511.22	No

	<i>Societal risk (6)</i>				
	<i>NRV (*10e-9) [2004-2009]</i>	<i>OSP (*10e-9) [2014]</i>	<i>OSP [2014] &lt; NRV [2004- 2009] Yes/No</i>	<i>MWA (*10e-9) [2010-2014]</i>	<i>MWA ≤ NRV*1.2 Yes/No</i>
Belgium (BE)	275	255.59	Yes		
Bulgaria (BG)	1440	1006.15	Yes		
Czech Republic (CZ)	591	225.24	Yes		
Denmark (DK)	218	232.32	No	146.46	Yes
Germany (DE)	203	180.34	Yes		
Estonia (EE)	2110	1714.43	Yes		
Ireland (IE)	114	59.54	Yes		
Greece (EL)	1540	878.64	Yes		
Spain (ES)	323	132.89	Yes		
France (FR)	180	149.83	Yes		
Croatia (HR)	1467	949.87	Yes		
Italy (IT)	231	169.23	Yes		
Latvia (LV)	1660	889.32	Yes		
Lithuania (LT)	2590	788.63	Yes		
Luxembourg (LU)	210	0.00	Yes		
Hungary (HU)	1020	1167.79	No	939.85	Yes
Netherlands (NL)	148	64.30	Yes		
Austria (AT)	329	198.61	Yes		
Poland (PL)	1590	1101.72	Yes		
Portugal (PT)	1360	577.31	Yes		
Romania (RO)	1704	1399.71	Yes		
Slovenia (SI)	698	200.80	Yes		
Slovakia (SK)	1130	1796.98	No	1462.77	No
Finland (FI)	417	110.73	Yes		
Sweden (SE)	169	170.61	No	185.10	Yes
United Kingdom (UK)	120	45.79	Yes		
<i>Norway (NO)</i>	51	32.99	Yes		

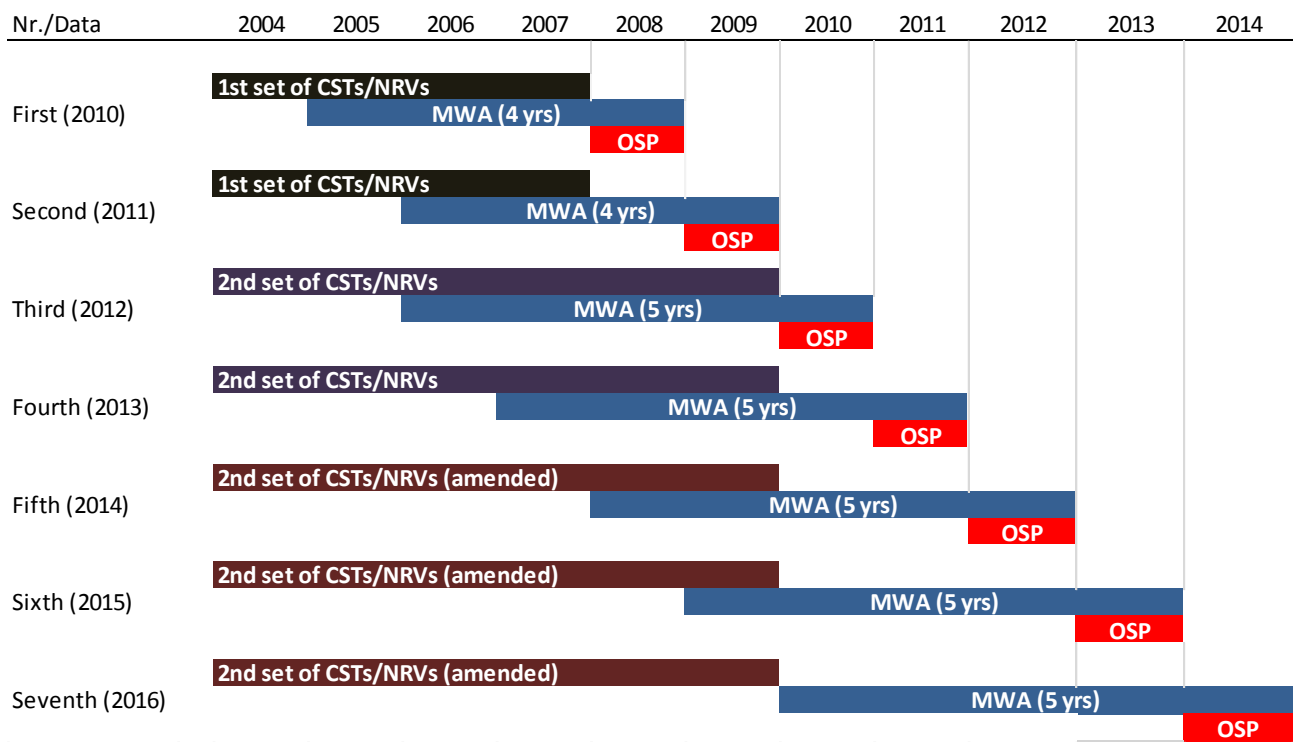
## Annex 2 Input data overview

The table below shows the instances in which the CSI data had to be used in place of Eurostat data, as they were not available in Eurobase.

<i>Data category</i>	<i>Country and year</i>	<i>Remark (Eurostat)</i>
Fatalities and serious injuries (rail_ac_catvict)	SK (2014)	
Rail accidents (rail_ac_catnubr)	none	
Train movement for all trains Train-km (rail_tf_trainmv)	BE (2010, 2012, 2013, 2014) DE (2011, 2012) DK (2014) EL (2012) FR (2010, 2011, 2013, 2014) IT (2011) LU (2013) HU (2013) NL (2008, 2009, 2013, 2014) PT (2014)	Not published due to quality issues.  Data are confidential.  Data are confidential.
Train movement for passenger trains Passenger train-km (rail_tf_trainmv)	BE (2012, 2013, 2014) DE (2011, 2012) DK (2014) EL (2012) FR (2011, 2013, 2014) IT (2011) LU (2013) HU (2013) NL (2012, 2013, 2014) PT (2014)	Not published due to quality issues.  Data are confidential.  Data are confidential.
Train movement Passenger-km (rail_pa_quartal)	BE (2013, 2014) AT (2010, 2011, 2012, 2013, 2014) FR (2010, 2011)	Data are confidential.

### Annex 3 Overview of annual assessments

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



## Annex 4 Overview of the results of all annual assessments

The results of all assessments carried out by the Agency are summarized in the table below.

Risk category	Passengers		Employees	Level crossing users	Others	Unauthorised persons	Whole society
	1.1 <sup>5</sup>	1.2 <sup>6</sup>	2	3.1	4	5	6
2010			<i>Romania</i>	<i>Romania</i>	<i>Romania</i>	<i>Romania</i>	
2011			<i>Lithuania</i>			<i>Romania</i> <i>Slovakia</i>	
2012						<i>Sweden</i>	
2013	<i>Slovakia</i>	<i>Slovakia</i>	<i>Romania</i> <i>Slovakia</i> <b>Bulgaria</b>		<i>Romania</i>	<i>Romania</i> <i>Slovakia</i> <i>Sweden</i>	<i>Romania</i>
2014			<i>Bulgaria</i> <i>Romania</i> <i>Slovakia</i> <i>Sweden</i>	<i>Bulgaria</i>	<i>(Croatia<sup>7</sup>)</i> <i>(Romania)</i>		<i>[Norway]</i>
2015			<i>Romania</i> <i>Slovakia</i>	<i>Bulgaria</i>		<i>Italy</i> <i>[Norway]</i>	<i>Slovakia</i> <i>[Norway]</i>
2016			<i>Hungary</i> <i>Romania</i> <i>Sweden</i> <b>Slovakia</b>	<i>Bulgaria</i> <i>[Norway]</i>	<i>Hungary</i>	<i>France</i> <i>Italy</i> <i>[Norway]</i>	<b>Slovakia</b>

Note: For countries in **bold**, the result of “probable deterioration”, for countries in *italic* “possible deterioration” of safety performance. In all other cases, the result was “acceptable safety performance”.

<sup>5</sup> Scaling base: passenger train-km per year.

<sup>6</sup> Scaling base: passenger-km per year.

<sup>7</sup> The assessment was carried out retrospectively for 2010 and 2011 for Croatia with the results showed here.