Assessment of achievement of safety targets – 2024

Main figures based on CSI data (up to 2022)

March 2024

EUROPEAN
UNION
AGENCY
FOR RAILWAYS

1.   Contents

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex

Tel. +33 (0)327 09 65 00 | era.europa.eu

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

2 / 26

2. Reference documents

N°	Description	Reference
[1]	Commission Decision of 5 June 2009 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 CST)
[2]	Commission Decision of 23 April 2012 on the second set of common safety targets as regards the rail system	2012/226/EU
[3]	Commission implementing decision of 11 December 2013 amending Decision 2012/226/EU on the second set of common safety targets for the rail system	2013/753/EU
[4]	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). (In force until 31 October 2020)	2004/49/EC
[5]	Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast of the Railway Safety Directive)	(EU) 2016/798

3. List of terms and abbreviations

Term / Abbreviation	Definition
Agency	European Union Agency for Railways (formerly European Railway Agency, ERA)
CSI	Common Safety Indicator
CSM	Common Safety Method
CST	Common Safety Target
EC	European Commission
ERAIL	European Railway Accident Information Links (Agency safety database)
Eurobase	Eurostat dissemination database
EU	European Union
MS	Member State
MWA	Moving Weighted Average
Method	CSM defined in Decision 2009/460/EC
NSA	National Safety Authority
NRV	National Reference Value
OBS	Annual observation

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

4 / 26

4. Executive summary

This report presents the fifteenth assessment of Achievement of Safety Targets carried out by the Agency in accordance with the Common Safety Method (CSM) as defined in Commission Decision 2009/460/EC [1]. It is the thirteenth assessment using the second set of Common Safety Targets (CSTs) and National Reference Values (NRVs). The assessment uses CSI data for the years 2018-2022 for the 25 EU Member States that have a railway system plus Norway.

The results of the assessment indicate a possible deterioration of safety performance in the following Member States (by risk category):

› Germany (Others);
› Spain (Others);
› Sweden (Employees);
› Slovakia (Employees).

The assessment shows that railway safety performance remains acceptable at the EU level for all categories of railway users.

In accordance with Article 5 of Decision 2009/460/EC which sets out the Method [1], the Member States for which there is a 'possible deterioration in safety performance' in any category of railway user, shall send to the Commission a report explaining the likely causes of the results obtained.

The Agency refers the readers of this report to the ex-post evaluation[1] of the CSM CST [1, 2, 3] to better interpret the results and to find several recommendations to improve the Method. Notably, the NRVs were set using Eurostat data while the current calculations are performed using CSI Data only, which implies some differences in measurement that influence the results. Combined with the fact that the NRVs have not been revised since 2012, an update of the NRVs is recommended.

---

[1] *The report is available at: report_ex-post_csm_cst_final_public_en.pdf (europa.eu).*

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

5 / 26

5.   Introduction

CSTs and CSMs have been gradually introduced to ensure that safety is maintained at a high level and, when and where necessary and reasonably practicable, improved. They should provide tools for the assessment of the safety and performance of operators at Union level as well as in the Member States. Common safety indicators ('CSIs') have been established in order to assess whether systems comply with the CSTs and to facilitate the monitoring of railway safety performance.[2]

This report presents the results of the annual assessment of achievement of NRVs and CSTs as set out in Article 7 of the Railway Safety Directive (EU) 2016/798 [5] and in accordance with the Method.

The current assessment is the thirteenth carried out by the Agency using the second set of NRVs/CSTs published as Commission Decision 2012/226/EU [2].

6.   Method for assessing achievement of safety targets

6.1.   Data

According to point 3.1.4 of the Annex to Decision 2009/460/EC which sets out the Method [1], the assessment shall be carried out annually by the Agency taking into consideration the five most recent reported years. Therefore, the current assessment uses Eurostat and CSI data for the years 2018-2022.

Until 2015, the CSI data was compared to the Eurostat data derived from Eurostat's Common Questionnaire, and the latter would have precedence. Annex 3 highlights the instances where 2015 data was not available in Eurobase and CSI traffic data had to be used instead. As from 2016, Eurostat extracts rail safety data directly from the CSI dataset, meaning that there is one single data source.

Concerning the Eurostat data it is noted that the numbers for the categories 'level crossing users', 'unauthorised persons' and 'others' were inferred[3], as they were not directly available in Eurobase[4]. The NRVs were set using this data. The ex-post evaluation of the CSM CST that can be found on the ERA website, reflects on how the results of this assessment should be interpreted in light of such data limitations.

6.2.   Definitions

The following definitions are used in the assessment:

›   ***'fatalities and weighted serious injuries (FWSIs)'*** means a measurement of the consequences of significant accidents combining fatalities and serious injuries, where 1 serious injury is considered statistically equivalent to 0.1 fatalities;

›   ***'passengers'*** means all persons, excluding members of the train crew, who make a trip by rail, including passengers trying to embark onto or disembark from a moving train for accident statistics only;

›   ***'staff including employees or contractors'*** means any persons whose employment is in connection with a railway and is at work at the moment of the accident; it includes the crew of the train and persons handling rolling stock and infrastructure installations;

›   ***'level crossing users'*** means all persons using a level crossing to cross the railway line by any means of transportation or by foot;

›   **'others'** means all persons not defined as 'passengers', 'staff including employees or contractors', 'level crossing users' or 'trespassers';

---

[2] *(EU) 2016/798 Recital 11 [5].*

[3] *As described in the Annex of the "Report on the development of the second set of CSTs".*

[4] *In Eurobase only the following 3 categories of victims were available: passengers, employees and others.*

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

› **'trespassers'** means any persons present on railway premises where such presence is forbidden, with the exception of level crossing users, and
› **'societal risks'** means the collective risk to all categories of persons listed in Article 7(4)(a) of Directive 2004/49/EC [4] and Article 7 (1)(b) of Directive (EU) 2016/798 [5].

6.3. Four-step assessment procedure

The four-step assessment procedure described in chapter 3 of the Annex to Decision 2009/460/EC which sets out the Method [1] was applied to each of the six risk categories[5]:

› Passengers (1.1 and 1.2);
› Staff including employees or contractors (2);
› Level crossing users (3.1)[6];
› Others (4)[7];
› Trespassers (5);
› Societal risk (6).

The four steps of the assessment procedure are described in the flowchart in Figure 1, adapted from Appendix 2 to the Annex to Decision 2009/460/EC which sets out Method [1]. The positive decisional arrows correspond to a passed result and the negative decisional arrows correspond to a failed result of the different assessment steps.

The first step and first part of the second step are performed autonomously by the Agency using the Eurostat/CSI data. In the second part of the second step, the Agency contacts the national safety authority of the concerned Member States to retrieve information on the single highest-consequence accident in the five most recently reported years, and asks whether that accident was more severe than the most severe single accident included in the data used for setting the NRVs/CSTs (period 2004-2009).

The third and fourth steps are carried out autonomously by the Agency with Eurostat/CSI data and the outcomes of previous assessments. A detailed description of the content of each step is available in point 3.2 of the Annex to Decision 2009/460/EC which sets out the Method [1].

---

[5] This report uses the risk categories' names defined in (EU) 2016/798. Annex 2 provides the correspondence of risk categories' names across the applicable legislation.

[6] The NRVs and CSTs for the risk category 3.2 [1] were not established in the second set of NRVs/CSTs due to the lack of reliable data.

[7] This includes the CSIs 'other person at a platform' and 'other person not at a platform'.

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.
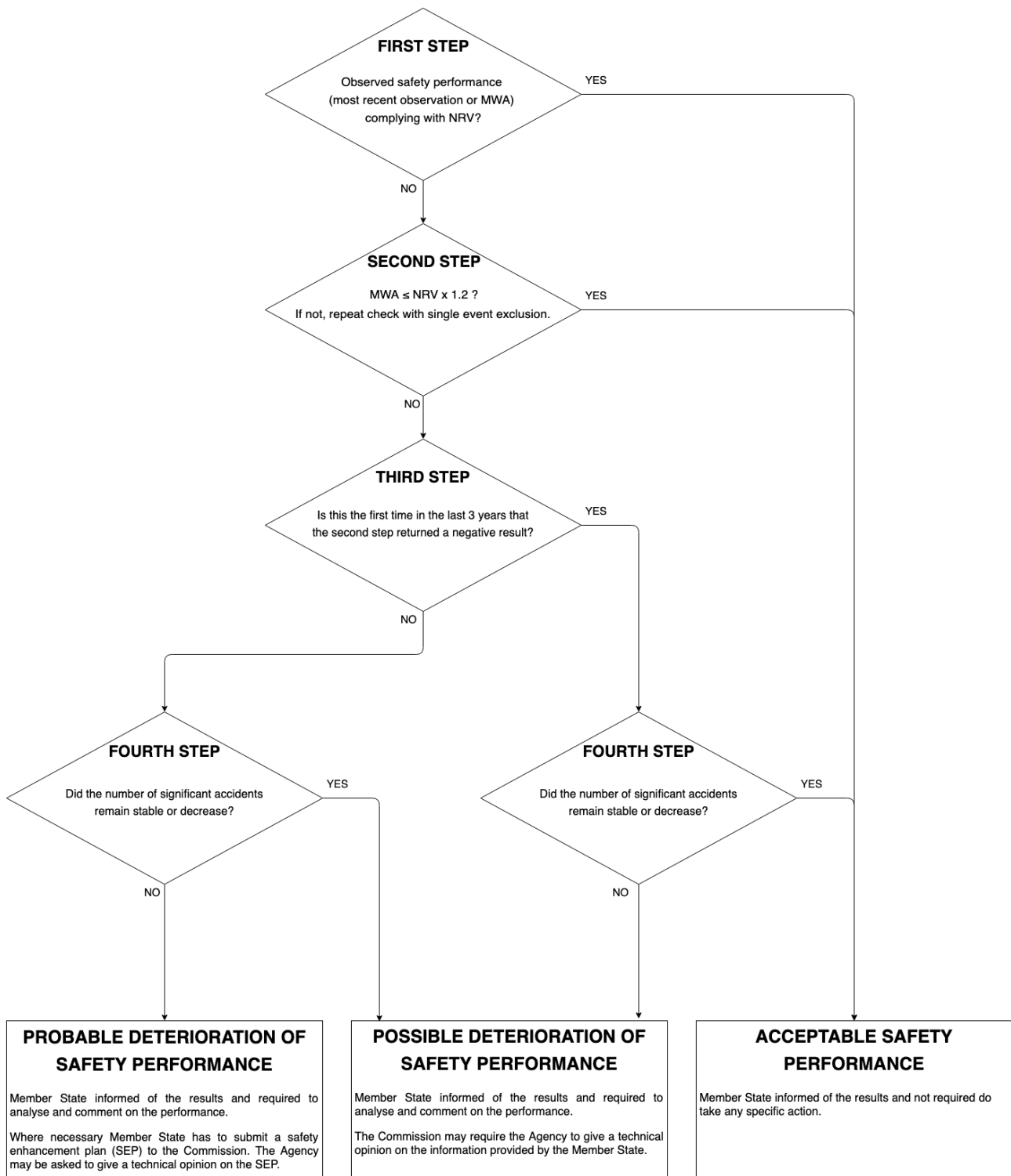
7 / 26

Figure 1 : Decision flowchart for assessing achievement of NRVs and CSTs [1]. (adapted from Appendix 2 of the Annex to Decision 2009/460/EC which sets out the Method [1])

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

8 / 26

7. Results of the assessment

7.1. First and second steps of the assessment procedure

The majority of Member States achieved a 'passed' result at either the first or second steps of the assessment for all risk categories considered, indicating acceptable safety performance. For seven Member States there was a 'failed' result in one specific risk category in the first part of the second step, as shown in Table 1.

Table 1 : Intermediate results of the assessment: Member States failing after the first part of the second step (i.e. after applying the 20% tolerance)

Risk category						
Passengers		Staff including employees or contractors	Level crossing users	Others	Trespassers	Societal risk
1.1	1.2	2	3.1	4	5	6
-	-	Bulgaria Sweden Slovakia	-	Belgium Germany Spain Luxemburg	-	-

According to the Annex to Decision 2009/460/EC which sets out the Method [1], if the 20 % tolerance is not met, the Agency shall ask the national safety authority (NSA) of the Member State concerned to provide the specifics of the single highest-consequence accident (in terms of FWSIs) in the five most recent years of observation, here the period 2018-2022. This accident shall be excluded if it is more severe, in terms of consequences, than the most severe single accident included in the data used for setting the NRVs/CSTs (period 2004-2009).

The concerned NSAs were contacted to identify the single highest-consequence accident. None of the contacted NSAs indicated that any of the relevant accidents in the 2018-2022 period were more severe than the ones that occurred between 2004 and 2009. As such, there were no intermediate changes because of the exclusion of an accident.

The detailed results of the second step of the assessment are summarized in the Annex 3. Annex 4 provides an overview of the Member States that had a negative result after the second step in the past years.

7.2. Third and fourth steps of the assessment procedure

The application of the third step identified that in the case of Germany, Spain, Sweden and Slovakia it was the second time in the last three years that the second step returned a negative result.

The fourth step of the assessment procedure was applied to examine the data on the number of significant accidents. Results show no negative assessment for Germany, Spain, Sweden and Slovakia, while it was found an increase of accidents in particular for Austria and Luxemburg for several accidents categories.

The final results of the assessment are summarised in Table .

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

9 / 26

Table 2: Result of the assessment after applying all four steps of the assessment method – 'Possible deterioration of safety performance'

Risk category						
Passengers		*Staff including employees or contractors*	*Level crossing users*	*Others*	*Trespassers*	*Societal risk*
1.1	*1.2*	*2*	*3.1*	*4*	*5*	*6*
-	-	Sweden Slovakia	-	Germany Spain	-	-

This completes the assessment of achievement of safety targets using the second set of NRVs/CSTs.

7.3. Analysis of the results

The fifteenth annual assessment of achievements of safety targets identified the acceptable safety performance in the categories of passengers (both 1.1 and 1.2), level crossing users, trespassers, and societal risks in all Member States.

The assessment also shows that railway safety performance remains acceptable at the EU level for all categories of railway users.

The "possible deterioration of safety performance" was identified in two Member States for the category of staff including employees or contractors and two Member States for the category others.

7.3.1. Data limitations

The second set of NRVs was established using 2004-2009 safety data. The accuracy of the data from that period is lower than that of more recent years. Notably, the safety data for certain categories reported for years 2004 and 2005 were not fully harmonised and there have been cases of underreporting in the category 'others'.

It is also noted that railway safety data available in Eurobase was used in the assessments for the years until 2015. The CSI data excel-file[8] is used for the years as of 2016. Whilst the differences in data from these sources are generally small, an effect on the results has been observed in some instances, notably on the number of deteriorations that are noted under the category 'others'.

The ex-post evaluation on the CSM CST[9], which can be found on the ERA website, explains these limitations in greater detail and provides recommendations to address them.

7.3.2. Method limitations

The 2024 assessment confirms that negative results are more likely to be obtained when the FWSI is small (e.g. in the category of staff or others). This points to a particular limitation of the Method, which would become more pertinent if a new set of NRVs (using more recent and generally lower FWSI values) were to be

---

[8] *It is available at: ERA Knowledge Hub | European Union Agency for Railways (europa.eu); Monitoring and evaluation section.*
[9] *The ex-post evaluation report is available at: report_ex-post_csm_cst_final_public_en.pdf (europa.eu).*

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

10 / 26

used. The aforementioned ex-post evaluation on the Method expands on such methodological limitations as well.

8. Conclusions

This assessment of the Achievement of Safety Targets identified a "possible deterioration of safety performance" in four EU Member States for two categories of railway users. In not a single EU Member State a "probable deterioration of safety performance" was observed.

It was found that railway safety in the EU remains acceptable for all categories of users. The Agency emphasises nevertheless the enduring need to improve safety performance across the EU.

In accordance with Article 5 of the Decision 2009/460/EC which sets out the Method [1], the Member States with a possible deterioration in safety performance shall send to the Commission a report explaining the likely causes of the results obtained.

The Agency refers the readers of this report to the recent ex-post evaluation of the CSM CST to better interpret the results and to find several recommendations to improve the Method. In order to resolve issues related to outdated NRVs (particularly concerning the category 'Others') the Agency recommends a revision of the NRVs.

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

11 / 26

Annex 1   Overview of annual assessments

This is the fifteenth assessment of achievement of CSTs carried out by the Agency. The table below provides an overview of the specificities of all previous assessments made by the Agency.

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Annex 2 Names of risk categories across the relevant legislation

Risk Category	2004/49/EC	2009/460/EC		2012/226/EU	2013/753/EU	(EU)2016/798
	Art.7	Art. 3	Appendix 1 to the Annex	Annex	Annex	Art. 7
1.1	Passengers					
1.2						
2	Staff including the staff of contractors	'Staff' or 'employees including the staff of contractors'	Employees			Staff including employees or contractors
3	Level crossing users					
4	Others	Others (third parties)	Others	Persons classified as "others"	Persons classified as "others"	Others
5	Unauthorised persons on railway premises					Trespassers
6	Societal risks	Risk to society as a whole	Whole society	Societal risk		

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu

13 / 26

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Annex 3   Results after the 2nd step of the assessment.

Country	Risk category 1.1 – 'Passengers'				
	NRV (*10e-9) [2004-2009]	OBS (*10e-9) [2022]	OBS ≤ NRV Yes/No	MWA (*10e-9) [2018-2022]	MWA ≦ NRV*1,2 Yes/No
Belgium (BE)	37.26	0.00	Yes	0.00	Yes
Bulgaria (BG)	207.00	55.05	Yes	24.30	Yes
Czechia (CZ)	46.49	0.71	Yes	10.46	Yes
Denmark (DK)	9.03	0.00	Yes	8.35	Yes
Germany (DE)	8.13	13.77	No	2.67	Yes
Estonia (EE)	78.18	140.35	No	39.77	Yes
Ireland (IE)	2.74	0.00	Yes	0.00	Yes
Greece (EL)	54.67	0.00	Yes	5.85	Yes
Spain (ES)	29.19	7.73	Yes	8.15	Yes
France (FR)	22.53	11.27	Yes	6.18	Yes
Croatia (HR)	176.90	96.30	Yes	9.53	Yes
Italy (IT)	38.10	3.06	Yes	5.16	Yes
Latvia (LV)	78.18	0.00	Yes	15.00	Yes
Lithuania (LT)	97.16	0.00	Yes	0.00	Yes
Luxembourg (LU)	23.81	0.00	Yes	0.80	Yes
Hungary (HU)	170.18	6.00	Yes	26.00	Yes
Netherlands (NL)	7.43	0.00	Yes	0.04	Yes
Austria (AT)	26.25	12.90	Yes	6.32	Yes
Poland (PL)	116.13	16.26	Yes	7.37	Yes
Portugal (PT)	41.82	44.65	No	7.88	Yes
Romania (RO)	57.40	0.00	Yes	7.15	Yes
Slovenia (SI)	25.27	8.38	Yes	26.54	Yes
Slovakia (SK)	62.05	53.97	Yes	34.62	Yes
Finland (FI)	9.03	5.75	Yes	2.95	Yes
Sweden (SE)	3.54	1.55	Yes	0.37	Yes
Norway (NO)	2.83	0.00	Yes	1.47	Yes
Scaling basis - Passenger train-km per year					

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

14 / 26

Country	Risk category 1.2 – 'Passengers'				
	NRV (*10^{-9}) [2004-2009]	OBS (*10^{-9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10^{-9}) [2018-2022]	MWA $\leqq$ NRV*1.2 (Yes/No)
Belgium (BE)	0.32	0.00	Yes	0.00	Yes
Bulgaria (BG)	1.91	0.75	Yes	0.36	Yes
Czechia (CZ)	0.82	0.01	Yes	0.18	Yes
Denmark (DK)	0.11	0.00	Yes	0.10	Yes
Germany (DE)	0.08	0.12	No	0.03	Yes
Estonia (EE)	0.67	2.09	No	0.54	Yes
Ireland (IE)	0.03	0.00	Yes	0.00	Yes
Greece (EL)	0.50	0.00	Yes	0.04	Yes
Spain (ES)	0.27	0.05	Yes	0.06	Yes
France (FR)	0.11	0.04	Yes	0.03	Yes
Croatia (HR)	1.14	1.60	No	0.00	Yes
Italy (IT)	0.26	0.02	Yes	0.05	Yes
Latvia (LV)	0.67	0.00	Yes	0.14	Yes
Lithuania (LT)	0.76	0.00	Yes	0.00	Yes
Luxembourg (LU)	0.18	0.00	Yes	0.02	Yes
Hungary (HU)	1.65	0.06	Yes	0.31	Yes
Netherlands (NL)	0.09	0.00	Yes	0.00	Yes
Austria (AT)	0.29	0.14	Yes	0.07	Yes
Poland (PL)	0.85	0.13	Yes	0.07	Yes
Portugal (PT)	0.31	0.29	Yes	0.07	Yes
Romania (RO)	0.61	0.00	Yes	0.09	Yes
Slovenia (SI)	0.36	0.12	Yes	0.39	Yes
Slovakia (SK)	0.88	0.63	Yes	0.35	Yes
Finland (FI)	0.11	0.04	Yes	0.03	Yes
Sweden (SE)	0.03	0.02	Yes	0.00	Yes
Norway (NO)	0.03	0.00	Yes	0.02	Yes
Scaling basis - Passenger train-km per year					

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu

15 / 26

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Country	Risk category 2 - 'Staff including employees or contractors'				
	NRV (*10^{-9}) [2004-2009]	OBS (*10e-^{9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10e-9) [2018-2022]	MWA $\leqq$ NRV*1.2 (Yes/No)
Belgium (BE)	24.63	12.10	Yes	3.91	Yes
Bulgaria (BG)	20.40	70.34	No	31.90	No
Czechia (CZ)	16.45	13.47	Yes	13.40	Yes
Denmark (DK)	9.10	17.97	No	5.69	Yes
Germany (DE)	12.56	7.06	Yes	6.32	Yes
Estonia (EE)	64.83	0.00	Yes	2.45	Yes
Ireland (IE)	5.22	0.00	Yes	2.67	Yes
Greece (EL)	77.87	9.26	Yes	9.35	Yes
Spain (ES)	8.81	1.08	Yes	2.81	Yes
France (FR)	6.06	0.00	Yes	3.13	Yes
Croatia (HR)	73.65	142.86	No	32.86	Yes
Italy (IT)	18.85	5.64	Yes	6.94	Yes
Latvia (LV)	64.83	0.00	Yes	3.84	Yes
Lithuania (LT)	41.01	0.00	Yes	9.39	Yes
Luxembourg (LU)	11.99	0.00	Yes	0.72	Yes
Hungary (HU)	9.31	20.37	No	9.95	Yes
Netherlands (NL)	5.97	0.00	Yes	0.58	Yes
Austria (AT)	20.29	0.55	Yes	1.55	Yes
Poland (PL)	17.18	1.82	Yes	10.89	Yes
Portugal (PT)	53.09	0.00	Yes	29.53	Yes
Romania (RO)	22.30	2.47	Yes	16.68	Yes
Slovenia (SI)	40.88	0.00	Yes	12.85	Yes
Slovakia (SK)	2.71	45.44	No	22.54	No
Finland (FI)	9.21	20.49	No	1.21	Yes
Sweden (SE)	2.86	6.63	No	10.03	No
Norway (NO)	2.82	0.00	Yes	1.27	Yes
Scaling basis - Train-km per year					

Country	Risk category 3.1 - 'Level crossing users'				
	NRV (*10^{-9}) [2004-2009]	OBS (*10e-^{9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10e-^{9}) [2018-2022]	MWA $\leqq$ NRV*1.2 (Yes/No)
Belgium (BE)	138.00	112.91	Yes	95.21	Yes
Bulgaria (BG)	141.60	171.25	No	160.86	Yes
Czechia (CZ)	237.76	107.21	Yes	131.79	Yes
Denmark (DK)	65.43	1.63	Yes	12.47	Yes
Germany (DE)	67.76	37.07	Yes	32.18	Yes
Estonia (EE)	399.88	220.59	Yes	211.64	Yes
Ireland (IE)	23.57	0.00	Yes	0.00E+00	Yes
Greece (EL)	710.26	212.96	Yes	386.95	Yes
Spain (ES)	108.72	39.00	Yes	26.78	Yes
France (FR)	78.72	32.89	Yes	43.66	Yes
Croatia (HR)	611.30	485.71	Yes	331.49	Yes
Italy (IT)	42.87	28.99	Yes	13.16	Yes
Latvia (LV)	239.16	276.79	No	229.46	Yes
Lithuania (LT)	521.65	8.40	Yes	48.94	Yes
Luxembourg (LU)	95.90	0.00	Yes	55.77	Yes
Hungary (HU)	274.20	285.22	No	220.13	Yes
Netherlands (NL)	126.54	14.61	Yes	51.12	Yes
Austria (AT)	160.16	93.82	Yes	70.21	Yes
Poland (PL)	277.30	152.13	Yes	199.61	Yes
Portugal (PT)	460.58	64.61	Yes	198.80	Yes
Romania (RO)	542.00	182.72	Yes	239.48	Yes
Slovenia (SI)	364.15	159.82	Yes	130.41	Yes
Slovakia (SK)	309.00	54.91	Yes	193.83	Yes
Finland (FI)	163.75	26.64	Yes	74.07	Yes
Sweden (SE)	63.98	13.87	Yes	23.75	Yes
Norway (NO)	21.61	19.78	Yes	13.54	Yes
Scaling basis - Train-km per year					

Country	Risk category 4 - 'Others'				
	NRV (*10^{-9}) [2004-2009]	OBS (*10e-^{9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10^{-9}) [2018-2022]	MWA $\leqq$ NRV*1.2 (Yes/No)
Belgium (BE)	2.86	10.08	No	7.36	No
Bulgaria (BG)	35.47	0.00	Yes	23.45	Yes
Czechia (CZ)	2.41	0.56	Yes	8.23	No
Denmark (DK)	14.15	1.63	Yes	1.89	Yes
Germany (DE)	3.05	6.63	No	6.55	No
Estonia (EE)	11.64	0.00	Yes	0.00	Yes
Ireland (IE)	7.00	0.00	Yes	0.00	Yes
Greece (EL)	4.51	0.00	Yes	0.00	Yes
Spain (ES)	5.54	13.00	No	13.24	No
France (FR)	7.71	6.75	Yes	6.75	Yes
Croatia (HR)	7.28	4.76	Yes	0.28	Yes
Italy (IT)	6.70	0.00	Yes	0.08	Yes
Latvia (LV)	11.64	89.29	No	5.25	Yes
Lithuania (LT)	11.64	0.00	Yes	0.00	Yes
Luxembourg (LU)	5.46	125.61	No	7.39	No
Hungary (HU)	4.51	0.00	Yes	0.98	Yes
Netherlands (NL)	4.70	0.00	Yes	5.66	No
Austria (AT)	11.09	1.10	Yes	0.27	Yes
Poland (PL)	11.64	3.63	Yes	1.38	Yes
Portugal (PT)	5.54	2.81	Yes	28.18	No
Romania (RO)	2.83	0.00	Yes	0.00	Yes
Slovenia (SI)	14.48	0.00	Yes	0.00	Yes
Slovakia (SK)	2.41	1.89	Yes	10.15	No
Finland (FI)	14.15	2.05	Yes	0.12	Yes
Sweden (SE)	14.15	0.00	Yes	0.20	Yes
Norway (NO)	14.15	0.00	Yes	0.00	Yes
Scaling basis - Train-km per year					

Country	Risk category 5 - 'Trespassers'				
	NRV (*10^{-9}) [2004-2009]	OBS (*10e^{-9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10e^{-9}) [2018-2022]	MWA $\leqq$ NRV*1.2 (Yes/No)
Belgium (BE)	72.64	61.50	Yes	46.98	Yes
Bulgaria (BG)	900.20	235.47	Yes	380.37	Yes
Czechia (CZ)	301.26	37.61	Yes	42.04	Yes
Denmark (DK)	116.24	101.31	Yes	71.99	Yes
Germany (DE)	113.08	82.59	Yes	82.45	Yes
Estonia (EE)	1547.95	29.41	Yes	145.99	Yes
Ireland (IE)	85.23	54.95	Yes	56.12	Yes
Greece (EL)	722.94	787.04	No	539.61	Yes
Spain (ES)	167.83	68.79	Yes	60.63	Yes
France (FR)	67.16	92.35	No	72.00	Yes
Croatia (HR)	676.30	209.52	Yes	302.04	Yes
Italy (IT)	119.25	146.23	No	125.37	Yes
Latvia (LV)	1314.28	812.50	Yes	527.88	Yes
Lithuania (LT)	2045.34	344.54	Yes	380.70	Yes
Luxembourg (LU)	79.92	0.00	Yes	11.39	Yes
Hungary (HU)	588.06	420.42	Yes	413.62	Yes
Netherlands (NL)	15.93	13.34	Yes	11.31	Yes
Austria (AT)	119.03	14.81	Yes	36.68	Yes
Poland (PL)	1213.09	448.75	Yes	434.37	Yes
Portugal (PT)	834.33	269.68	Yes	360.90	Yes
Romania (RO)	1388.20	875.31	Yes	745.48	Yes
Slovenia (SI)	236.44	0.00	Yes	6.18	Yes
Slovakia (SK)	1758.00	284.02	Yes	329.44	Yes
Finland (FI)	248.74	43.03	Yes	36.21	Yes
Sweden (SE)	94.83	31.36	Yes	30.38	Yes
Norway (NO)	91.81	118.69	No	34.32	Yes
Scaling basis - Train-km per year					

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

19 / 26

Country	Societal risk (6)				
	NRV (*10e-9) [2004-2009]	OBS (*10e^{-9}) [2022]	OBS $\leqq$ NRV (Yes/No)	MWA (*10^{-9}) [2018-2022]	MWA $\leqq$ NRV*1,2 (Yes/No)
Belgium (BE)	275.05	196.59	Yes	155.34	Yes
Bulgaria (BG)	1440.00	513.76	Yes	615.66	Yes
Czechia (CZ)	591.22	159.41	Yes	202.80	Yes
Denmark (DK)	217.92	106.21	Yes	108.88	Yes
Germany (DE)	203.16	143.56	Yes	130.47	Yes
Estonia (EE)	2107.86	367.65	Yes	355.50	Yes
Ireland (IE)	114.43	54.95	Yes	61.04	Yes
Greece (EL)	1535.77	1009.26	Yes	996.97	Yes
Spain (ES)	322.57	128.38	Yes	106.07	Yes
France (FR)	179.94	141.26	Yes	131.96	Yes
Croatia (HR)	1467.00	904.76	Yes	665.81	Yes
Italy (IT)	230.95	183.43	Yes	154.39	Yes
Latvia (LV)	1658.79	1178.57	Yes	771.77	Yes
Lithuania (LT)	2587.94	352.94	Yes	454.83	Yes
Luxembourg (LU)	209.70	125.61	Yes	125.72	Yes
Hungary (HU)	1020.00	730.64	Yes	689.41	Yes
Netherlands (NL)	148.17	27.95	Yes	67.43	Yes
Austria (AT)	329.01	119.06	Yes	116.17	Yes
Poland (PL)	1590.22	617.22	Yes	643.69	Yes
Portugal (PT)	1361.81	373.62	Yes	605.32	Yes
Romania (RO)	1704.36	1060.49	Yes	1015.12	Yes
Slovenia (SI)	697.89	164.52	Yes	165.83	Yes
Slovakia (SK)	1131.08	424.13	Yes	605.94	Yes
Finland (FI)	416.98	96.31	Yes	106.47	Yes
Sweden (SE)	169.19	53.08	Yes	63.22	Yes
Norway (NO)	50.87	138.48	No	52.85	Yes
Scaling basis - Train-km per year					

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu
Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

20 / 26

Annex 4   Overview of 'fail' results after the 2nd step of the assessment (2010 – 2023).

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1[10]	1.2[11]	2	3.1	4	5	6
2010 Assessment 2008 Data	Greece Slovakia	Greece Slovakia	Lithuania Romania	Romania	n.a.	Romania Slovakia	Romania Slovakia
2011 Assessment 2009 Data	Slovakia Slovenia	Slovakia Slovenia	Belgium Finland Lithuania Romania	Estonia Romania Slovenia	n.a.	Romania Slovakia	Romania Slovakia
2012 Assessment 2010 Data	Belgium Greece Spain Slovakia	Belgium Greece Slovakia	Bulgaria Estonia Romania Slovakia	Ireland Romania	n.a.	Romania Slovakia Sweden	Ireland Romania Slovakia
2013 Assessment 2011 Data	Slovakia	Slovakia	Bulgaria Finland Romania Slovakia		Romania	Romania Slovakia Sweden	[Norway] Romania
2014 Assessment 2012 Data			Bulgaria Lithuania Romania Slovakia Slovenia Sweden	Bulgaria	Croatia Netherlands Romenia	Italy	[Norway] Slovakia

---

[10] Scaling base: passenger train-km per year.

[11] Scaling base: passenger-km per year.

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1[12]	1.2[13]	2	3.1	4	5	6
2015 Assessment 2013 Data	Spain	Spain	Romania Slovakia	Bulgaria [Norway]	Belgium	Croatia France Italy [Norway]	[Norway] Slovakia
2016 Assessment 2014 Data			Hungary Romania Slovakia Sweden	[Norway] Bulgaria	Hungary	France Italy [Norway]	Slovakia
2017 Assessment 2015 Data			Austria Bulgaria Slovakia Sweden	[Norway]		Italy [Norway]	[Norway] Slovakia
2018 Assessment 2016 Data			Bulgaria Hungary Slovakia	Bulgaria	Hungary	Italy	
2019 Assessment 2017 Data			Slovakia	[Norway]	Czechia Latvia Portugal	France	

---

[12] Scaling base: passenger train-km per year.
[13] Scaling base: passenger-km per year.

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1[14]	1.2[15]	2	3.1	4	5	6
2020 Assessment 2018 Data			Bulgaria Slovakia Sweden		Belgium Czechia Germany Latvia - Hungary Netherlands Portugal	France	
2021 Assessment 2019 Data			Sweden	Latvia	Belgium Czechia Germany Spain Netherlands Portugal	France	
2022 Assessment 2020 CSI Data			Sweden Slovakia	Bulgaria	Czechia Germany - Spain Netherlands Portugal Slovakia	France	
2023 Assessment 2021 CSI Data			Slovakia		Czechia Germany Portugal Slovakia		

Notes: [ ] refer to the fact that Norway is not a MS.

---

[14] Scaling base: passenger train-km per year.

[15] Scaling base: passenger-km per year.

Annex 5   Overview of the final results of all annual assessments (2010 – 2023).

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1[16]	1.2[17]	2	3.1	4	5	6
2010 Assessment 2008 CSI Data			(Romania)	(Romania)	n.a.	(Romania)	(Romania)
2011 Assessment 2009 CSI Data	Slovakia	Slovakia	Lithuania **Romania**	Romania	n.a.	Romania Slovakia	**Romania** Slovakia
2012 Assessment 2010 CSI Data					n.a.	Sweden	
2013 Assessment 2011 CSI Data	Slovakia	Slovakia	**Bulgaria** Romania Slovakia		Romania	Romania Slovakia Sweden	Romania
2014 Assessment 2012 CSI Data			Bulgaria Romania Slovakia Sweden	Bulgaria	(Croatia[18]) (Romania)		[Norway]
2015 Assessment 2013 CSI Data			Romania Slovakia	Bulgaria		Italy [Norway]	Slovakia [Norway]

---

[16] *Scaling base: passenger train-km per year.*

[17] *Scaling base: passenger-km per year.*

[18] *Assessment carried out retrospectively for 2010 and 2011.*

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1	1.2	2	3.1	4	5	6
2016 Assessment 2014 CSI Data			Hungary Romania **Slovakia** Sweden	Bulgaria [Norway]	Hungary	France Italy [Norway]	**Slovakia**
2017 Assessment 2015 CSI Data			Bulgaria Slovakia Sweden	[Norway]		Italy [Norway]	Slovakia [Norway]
2018 Assessment 2016 CSI Data			Bulgaria Hungary Slovakia	Bulgaria	Hungary	Italy	
2019 Assessment 2017 CSI Data			Slovakia	[Norway]		France	
2020 Assessment 2018 CSI Data			Bulgaria Slovakia		Czechia Latvia Hungary Portugal	France	

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.

Risk category	Passengers		Staff including employees or contractors	Level crossing Users	Others	Trespassers	Societal risks
	1.1	1.2	2	3.1	4	5	6
2021 Assessment 2019 CSI Data			Sweden		Belgium Czechia Germany Netherlands **Portugal**	France	
2022 Assessment 2020 CSI Data			Sweden Slovakia		Czechia Germany Spain Netherlands Portugal	France	
2023 Assessment 2021 CSI Data			Slovakia		Czechia Germany Portugal Slovakia		

Notes: *[ ] refer to the fact that Norway is not a MS. () mean that the result cannot be fully relied upon due to data quality issues.* For countries in **bold** "probable deterioration of safety performance" and for the other cases "possible deterioration of safety performance". The assessment result for countries excluded from the table was "acceptable safety performance".

120 Rue Marc Lefrancq | BP 20392 | FR-59307 Valenciennes Cedex
Tel. +33 (0)327 09 65 00 | era.europa.eu

26 / 26

Any printed copy is uncontrolled. The version in force is available on Agency's intranet/extranet.