This is the final draft proposal prepared by the Agency on the CSM ASLP, with the contribution of the dedicated working party.

COMMISSION DELEGATED REGULATION (EU) No …./….

of …-…-…

establishing common safety methods for assessing the safety level and the safety performance of railway operators at national and Union level

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive (EU) 2016/798[1] of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), and in particular Article 6(6) thereof,

Having regard to Recommendation ERA-REC-… from the European Union Agency for Railways delivered to the Commission on … … …, on the development of common safety methods for assessing the safety level and the safety performance of railway operators at national and Union level,

Whereas:

(1) Common safety methods ('CSMs') describe how the common safety indicators and the achievement of safety targets and compliance with other safety requirements are assessed.

(2) By its Implementing Decision of 7 January 2019[2], the Commission issued a mandate to the European Union Agency for Railways (the 'Agency') in accordance with Article 6(2) of Directive (EU) 2016/798 to make recommendations for new common safety methods for assessing the safety level and the safety performance of railway operators at national and Union level (the 'railway operators' as defined in Article 3(a)).

[1] Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast) (OJ L 138 26.5.2016, p. 102). OJ L 138, 26.05.2016, p. 102.

[2] Commission Implementing Decision of 7 January 2019 on a mandate to the European Union Agency for Railways to draft common safety methods for assessing the safety level and the safety performance of railway operators at national and Union level (C(2018) 8887 final).

On [date of issue of the CSM ASLP recommendation], the Agency issued its recommendation, enclosing a report on the results of the consultation of national safety authorities, social partners and users and a report assessing the impact of the amended CSMs to be adopted, to address the mandate of the Commission. The Commission examined the recommendation issued by the Agency to verify that the mandate was fulfilled as referred to in Article 6(4) of Directive (EU) 2016/798.

(3) The overall purpose of these common safety methods is to provide assistance to the railway undertakings and infrastructure managers for improving their safety management and, in particular to ensure that they can achieve their business objectives in a continuously improved safe manner. The methods should also support decision-making of Member States regarding the achievement of common safety targets referred to in Article 7 of Directive (EU) 2016/798, by providing evidence and information on the evolution of safety performance and safety levels at national and Union level.

(4) The methods introduced in this Regulation should also enable railway operators, national safety authorities and the Agency to collectively ensure a broader visibility of the current safety level and safety performance of the railway operators for the different types of operations defined in Article 3(31) of Directive (EU) 2016/798 and should provide the necessary system-wide data and information for efficient continuous improvements, taking into account technical and scientific progress.

(5) These methods should establish a harmonised assessment of safety level, a harmonised assessment of safety performance and a well-structured process to help each railway operator, national safety authorities and the Agency to qualitatively and quantitatively learn about the causes of accident and incident occurrences and on their consequences in terms of victims and damages.

(6) The methods should be based on all potentially available safety data and information, structured in such a way that it would minimise the overall effort to assess railway operators and to implement efficient collective learning.

(7) These methods should also establish the necessary elements of a well-structured and sustainable collective learning, allowing any railway operator to identify and target their own improvement needs and allowing the national safety authorities and the Agency to collect national and Union level data with the aim to produce meaningful harmonised information that are necessary for their respective risk-based decision-making.

(8) The assessments of railway operators' safety level and safety performance in application of this Regulation should only be based on information provided by the railway operators themselves.

(9) In the context of the continuing integration and opening of the Single European Rail Area, this Regulation aims to strengthen the safety-related information management, in particular on the occurrence of accidents and incidents, their causes, their outcomes and

the management of the associated risk control measures, thereby allowing an improved risk-based decision-making approach by all railway safety actors.

(10) Collective learning should be based on the contributions from railway operators and, when necessary, from any interested parties, who should collaborate for achieving well-defined safety improvement objectives from in-depth analyses of the most relevant incident and accident occurrences.

(11) In order to improve the comparability of data and information shared by each railway operator, and thereby improve the overall implementation quality of the common safety methods, a harmonised taxonomy of safety-related events and risk control measures should be established, maintained and developed, contributing to collective learning improvements, and taking into account the technical and scientific progress of the Union railway system.

(12) Collective learning would be strengthened through the establishment of a group of analysts gathering any relevant parties, devoted to the analysis of the shared data and information related to safety and which would have the overall objective of contributing to the systemic and efficient development of the Union railway system, taking into account technical and scientific progress.

(13) A mature safety culture of the railway sector is needed to guarantee that collective learning and improvement are based on a comprehensive set of safety data and information.

(14) Positive safety culture would also imply that any natural person should be entitled, when necessary, to report an occurrence of a safety-related event. Details on the use of this reporting channel, as well as the way to proceed with the information collected, should be clearly defined and well-managed as part of the general rules for the processing of the safety information gathered under this Regulation.

(15) Various categories of staff working or otherwise engaged in the rail system may witness events which should be considered for improving accident prevention. These actors should therefore be entitled to report such events, when they consider it is necessary, and their protection should be guaranteed. In order to encourage staff to report occurrences and enable them to appreciate more fully the positive impact which reporting has on rail safety, they should be informed about actions taken following their report.

(16) To support the objectives of this Regulation, all potentially available data and collected information on safety occurrences and on safety management system should be accessible to all railway operators, authorities and to the Agency.

(17) The access to data and information by the national safety authorities should not lead to the adoption of uncoordinated national measures that would hamper railway interoperability, but rather to improve a harmonized collective learning.

(18) As several Member States have already developed occurrence reporting systems at national level, the information collected by the national reporting systems should be interfaced with a common information system managed by the Agency to avoid double-reporting by the railway operators.

(19) To ensure non-discriminatory access to data and information shared under this Regulation in all Member States and to allow an efficient management of the large amount of data and information shared by the different interested parties, the sharing of applicable data and information should be organized with common information sharing rules, where any interested parties could access data and information they are entitled to access to for exercising their safety roles and responsibilities, subject to the rules concerning the confidentiality of such information and the anonymity of the persons involved.

(20) The implementation of this Regulation would require an informatics tool for collecting and storage of the information from the railway operators, but also to support the sharing of all the relevant data and information applicable under this Regulation and to facilitate the assessment of railway operators, in all Member States, with the same level of quality, accessibility and service, taking into account pre-existing national systems.

(21) The development time required for defining this inter-connected common information sharing system with pre-existing national systems would justify a gradual introduction of different application phase of this Regulation, taking into account the development of the system, its testing and implementation.

(22) As the full application of this Regulation requires the support of a common information system, the articles of this Regulation which cannot be implemented without such a common information system should be delayed until this system would be fully operational.

(23) The objective of the sharing of data and information should be the prevention of railways accidents and incidents. It should be used strictly for the purpose of maintaining or improving safety of the railway system and should not be used to blame or hold liable the persons or organisations or authorities for the reason that they shared such data and information.

(24) In this context, sensitive safety information contained in a common information system should be protected in an appropriate way and its sharing should be ensured by guaranteeing its confidentiality, by protecting the source of the information and ensuring the confidence of staff working in railways in occurrence reporting systems. Therefore appropriate measures should be put in place to ensure that personal

information shared through reporting schemes is kept confidential when necessary and that access to it through the common information system is restricted.

(25) A 'just safety culture' should encourage individuals who are railway personnel to report safety-related information. It should not, however, absolve such individuals of their normal responsibilities. In this context, employees and contracted personnel should not be subject to any prejudice on the basis of information they have provided on their own initiative in the common information system pursuant to this Regulation. Exceptions are introduced in cases of willful misconduct or where there has been manifest, severe and serious disregard with respect to an obvious risk and profound failure of professional responsibility to take such care as is evidently required in the circumstances, causing foreseeable damage to a person or to property, or seriously compromising the level of safety.

(26) Railway staff reporting on their own initiative and not through the established channels in their organisation may be discouraged from reporting occurrences by the fear of self-incrimination and the potential consequences in terms of prosecution before judicial authorities.

(27) The rules on data processing and the protection of natural persons as laid down in Regulation (EU) 2016/679[3] of the European Parliament and of the Council (General Data Protection Regulation) and in Regulation (EU) 2018/1725[4] should be respected in the application of this Regulation.

(28) Furthermore, specific interest data and information pertaining to the activities of railway operators that have to be shared for safety purposes need also to be protected and therefore, confidentiality requirements should be identified to clarify the level of protection involved by means of specifying the interests relevant to the nature of data and limit their disclosure as appropriate.

(29) The rules on access to documents as laid down in Regulation (EC) No 1049/2001[5] of the European Parliament and of the Council shall be respected including, in regards the sharing rules established by this Regulation.

(30) This Regulation does not address exhaustively the elements requested by Commission Implementing Decision of 7 January 2019 (C(2018) 8887 final), therefore, based on the experience gained with the first implementation phases, it may be amended or supplemented within the limits of the later decision.

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[3] OJ L 119/1 4.5.2016 REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance).

[4] OJ L 295/39, 21.11.2018, REGULATION (EU) 2018/1725 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC.

[5] OJ L 145, 31.5.2001, Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents.

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter

Without prejudice to the applicable legislation on personal data and on the transparency of information, this Regulation establishes common safety methods ('CSMs'), referred to in point (d) of Article 6(1) of Directive (EU) 2016/798, for assessing the safety level and the safety performance of railway operators at national and Union level.

Article 2

Scope

1. This Regulation shall apply to any party who may contribute, as a natural person or as a legally established entity, to the sharing of data or information concerning the categories of events defined in this Regulation, their occurrence, their occurrence scenarios, their risk control measures and on safety performance management.

2. The assessment of the safety level and safety performance shall apply to any railway operator holding a valid safety certificate or safety authorisation to operate on the European Union railway system.

Article 3

Definitions

For the purposes of this Regulation, the following definitions shall apply:

(a) 'railway operator' means any infrastructure manager and any railway undertaking;

(b) 'safety level' means, in the context of this regulation, safety risk level as estimated and assessed by the method defined in Annex IV;

(c) 'safety performance' means the level of maturity of a railway operator to manage its risk control measures, as assessed by the method defined in Annex V;

(d) 'risk control measure (RCM)' is equivalent to 'safety measure' as defined in point (10) of Article 3 of Commission Implementing Regulation 402/2013[(6)];

(e) 'category A event' means any accident directly resulting in victims or damages;

(f) 'category B event' means incident with the potential to directly cause a category A event;

(g) 'category C event' means incident with the potential to directly or indirectly cause a category B event;

(h) 'event type' means a given type of event defined by an event name and an event code, including the types defined in Appendix A – Part A of this Regulation, as amended;

[(6)] Commission Implementing Regulation (EU) No 402/2013 of 30 April 2013 on the common safety method for risk evaluation and assessment and repealing Regulation (EC) No 352/2009 (OJ L 121 3.5.2013, p. 8).

(i) ‘serious consequence event’ means an event resulting in at least one killed or, five or more seriously injured persons, or damage to rolling stock, infrastructure or environment that is equivalent to EUR 2 million or more.

(j) ‘significant consequence event’ means an event resulting in at least one seriously injured person, or in damage to stock, track, other installation or environment that is equivalent to EUR 150 000 or more.

(k) ‘sharing’ means any exchange of data or information between two or more interested parties applicable in accordance with this Regulation and implemented in accordance with the process for managing data and information defined in Annex VI.

(l) ‘sharing request’ means a request to share data and information which is logged with the applicable template defined in Annex VI – Part C

(m) ‘TDG Competent Authority’ means the Transport of Dangerous Goods (TDG) competent authority responsible for collecting the reports on the occurrence and dangerous goods events in accordance with the Annex II to Directive 2008/68/EC of the European Parliament and of the Council[7];

(n) ‘ISS’ means the common Information Sharing System in accordance with Article 7(2).

(o) ‘railway operator(s) involved in an occurrence’ means railway operator(s) managing the railway infrastructure on which the considered occurrence takes place or undertaking the transport operation during which the occurrence takes place.

(p) ‘interested party’ means any entity registered in accordance with Annex VI - part B having an interest to report data or information relating to a given occurrence or a given occurrence scenario, not being a railway operator involved in the considered occurrence.

Article 4

Collection of data used for the assessments

1. For the purpose of safety level and safety performance assessment, each railway operator shall provide the following data and information:

(a) any applicable occurrence in which the railway operator is involved and the relevant volume of operations, in accordance with the applicable method and requests defined in Annex I;

(b) the self-estimation of its safety performance in accordance with the applicable method and request defined in Annex II;

(c) any applicable occurrence scenario and related risk control measures in accordance with the method and requests defined in Annex III.

2. Each national safety authority, TDG competent authority and the Agency shall be entitled to request a review of reported data and information.

3. The data and information specified in the applicable Annexes for implementing Article 4(1) shall be shared with the Agency using the facilities, communication channels and processes defined in Article 7.

[7] Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods, as amended. (Text with EEA relevance) (OJ L 260, 30.9.2008, p. 13–59).

Article 5

Assessment of safety level and safety performance

1. Before proceeding to the assessment of safety level and safety performance, the Agency shall ask in due time each concerned railway operator to confirm the data and information to be considered valid for the reporting period that shall be subject to estimation and assessment steps. For this purpose, the Agency shall provide each railway operators with access to all the information applicable to it for the considered reporting period.

2. Having received the above mentioned confirmation, the Agency shall provide each assessed railway operator with the following elements:

(a) estimation of the achieved safety level applicable to each type of operation;

(b) estimation of the achieved safety performance.

3. The Agency shall aggregate the estimations provided to railway operators into national and Union level indicators for each type of operation.

4. The Agency shall provide each railway operator with a comparison of their own safety level and safety performance estimates with the applicable national and Union indicators, including where applicable, an assessment of the observed variations of safety level and safety performance. The same information shall be shared with authorities in accordance with Annex VI.

5. For the execution of tasks described in this Article, the Agency shall follow the estimation method defined in Annex IV for assessing safety levels and in Annex V for assessing safety performance, and shall use the detailed technical support reported in Appendix C, as amended in accordance with Article 9(3)(c).

Article 6

Support to collective learning

1. For facilitating the implementation of effective collective learning, the Agency shall establish a Group of Analysts, in accordance with Article 5 of Regulation (EU) 2016/796 and shall develop and maintain the necessary working arrangements in collaboration with this group. Once a year, the Group of Analysts shall address to the Agency a report on its activities, which may include well-justified proposals for the improvement of the working arrangements.

2. The Group of Analysts shall develop and maintain its work plan to address the objectives and perform the activities described in Annex VII, taking into account the data and information shared with the Information Sharing System.

3. The members of the Group of Analysts shall collaborate to define and implement the work plan with the aim to improve and develop the safety of the Union rail system and, as result, shall address, when necessary, proposals to the Agency on harmonised solutions to safety-related issues, using the most efficient approach to residual risk reduction and taking into account the need to ensure efficient interfaces with the other modes of transport.

4. With the aim to support collective learning on safety-related matters and based on the solutions proposed by the Group of Analysts, the Agency may notify or publish non-binding safety-related data and information, or issue formal opinions in accordance with Article 10 of Regulation (EU) 2016/796, or address recommendations in accordance with Article 13 of Regulation (EU) 2016/796 to revise or supplement this Regulation.

Article 7

Information sharing system

1. For the purpose of railway safety collective learning and continuous safety improvement any entity may share applicable data and information in accordance with the applicable data sets, sharing requests and processes defined in this Regulation.

2. To allow an efficient sharing of data and information, the Agency shall establish an Information Sharing System.

3. Any entity subject to the implementation of Articles 4, 5, 6 or 7 shall be registered in accordance with Annex VI – Part B before sharing data and information with the Information Sharing System.

4. The Agency shall provide a common digital interface allowing the registered entities to establish an effective connection with the Information Sharing System in particular with both human to machine and machine to machine communications.

5. The Information Sharing System shall be the system used by the registered entities to share, on Agency request or on voluntary basis, the applicable data sets established by this Regulation.

6. The Information Sharing System shall offer the possibility to interface pre-existing digital systems, where this is technically feasible, in order to facilitate the implementation of this Regulation.

7. Where applicable, any entity registered in accordance with Article 7(3) may notify the Agency with a request to interface one or several pre-existing system(s) with the common digital interface of the Information Sharing System. Any costs related to these requests shall be borne by the requesting entity, and in particular shall cover development, update, operation and maintenance.

8. For the implementation of this Regulation, the railway operators shall notify the Agency whether they will share the applicable data and information - directly - with the Information Sharing System or – indirectly - via a pre-existing system notified by a third party.

9. Independently from the chosen communication channel – direct - or - indirect - each railway operator shall be responsible for the validity of the data and information they share with the Information Sharing System.

10. The Agency shall not be responsible for any malfunction of indirect communications and, if necessary, the data and information retained in the Information Sharing System shall be considered as the valid reference for implementing this Regulation.

11. At any time, upon a valid and justified request from a registered entity, the data and information retained in the Information Sharing System may be rectified, with the aim to take into account relevant information which was not available at the moment the concerned data items were reported and to ensure a high level quality of the data and information, in accordance with the process and the timing described in the technical support documentation reported in Appendix D, as amended in accordance with Article 9(3)(d).

12. When applicable, modifications of data and information retained in the Information Sharing System are notified to the connected systems which should be then updated accordingly to ensure full consistency with the Information Sharing System.

13. The Agency shall define the applicable level of service, quality and security required for the Information Sharing System and shall ensure the operating state of the Information Sharing System is maintained within the applicable limits.

14. The management of data and information in the Information Sharing System, including the protection of personal, commercial and specific interest data and information, shall be implemented in accordance with the Annex VI.

15. Within the limits of the sharing rules established by the Annex VI, any entity shall be entitled to use the data and information from the Information Sharing System for which they have access rights in order to fulfil the roles and responsibilities placed on them by the European Union legislation.

Article 8

Applicable fees

1. The Agency will provide the services necessary for the implementation of Articles 4, 5 and 6 free of charge.

2. For the maintenance and operation of the Information Sharing System modules dedicated to other purpose than the EU harmonised implementation of Articles 4, 5 and 6 the Agency shall be entitled to apply fees, in particular when the service delivered is specific to a given entity.

3. The conditions in which specific services may be implemented shall be described in dedicated agreements between the Agency and the involved parties.

Article 9

Technical Support

1. To allow for the necessary adaptation of this Regulation to the technical and scientific progress, up-to-date technical support documentation referred to in this Regulation shall be used to support its implementation.

2. In accordance with Article 6(3), when necessary, the Group of Analysts shall address proposals to the Agency, in particular concerning the following technical support documentation:

(a) Taxonomy of event types and types of risk control measures;

(b) Operators' self-estimation of safety performance;

(c) Assessment of railway operators' safety level and safety performance;

(d) Information Sharing System.

3. With the aim to constantly maintain up-to-date the technical support documentation, and in accordance with Article 6(4), the Agency shall issue opinions on:

(a) the Technical Support Documentation "Taxonomy of event types and types of risk control measures", reported in Appendix A of this Regulation;

(b) the Technical Support Documentation "Railway operators' self-estimation of safety performance", reported in Appendix B of this Regulation;

(c) the Technical Support Documentation "Assessment of railway operators' of safety level and safety performance", reported in Appendix C of this Regulation;

(d) the Technical Support Documentation "Information Sharing System", reported in Appendix D of this Regulation.

when necessary.

Article 10

Control mechanisms

1. Taking into account technical and scientific progress, and when necessary, the Agency shall address recommendations to the European Commission for revising or supplementing this Regulation.

2. Five years after the full application date of this Regulation, the Agency, in collaboration with the Group of Analysts, shall address a report to the European Commission on the implementation of these Common Safety Methods.

Article 11

Entry into force and application

1. This Regulation shall enter into force on the twentieth day following its publication in the *Official Journal of the European Union*.

2. The Group of Analysts referred to in Article 6(1) shall be established by the Agency and shall start its activities before [date].

3. This Regulation shall apply from [date] with the exclusion of Article 4(1)(b) and Article 5, which shall not be implemented before the date referred to in Article 11(10). During this period the implementation of this Regulation shall be performed, on behalf of the European Commission, with the help of an immediately available solution provided by the Agency, not requiring specific IT developments, and the scope of application shall be limited, for each type of operation defined by Article 3(31) of Directive (EU) 2016/798, to data and information relating to the occurrences of category A events with serious consequences.

4. Taking into account the Group of Analysts proposals referred to in Article 9(2) the Agency shall issue recommendations on the first version of the technical support documentation referred to in Article 9(3) (c) and (d) before [date].

5. The Agency shall make available on-line a test version of the Information Sharing System before [date] and an updated version, consistent with the applicable versions of the Appendices to this Regulation before [date].

6. The entities requested to share data and information in accordance with this Regulation shall be registered and connected with the Information Sharing System before [date].

7. The Regulation shall apply in its entirety from [date of full application].

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission

The President

COLLECTION OF DATA AND INFORMATION

1. Applicable request types

1.1. The collection of data and information required in accordance with Art. 4(1) shall be processed as described in this Annex.

1.2. Any sharing of data and information concerning Annex I, Annex II and Annex III shall be implemented with the support of the up-to-date versions of Appendices A and B.

1.3. Any sharing of data and information between any entities shall be processed in accordance with the Annex VI.

1.4. The applicable sharing requests are the following:

(a) 'Simple Reporting' (SR) means that the data set defined in section 3.1.2. of this Annex is systematically and mandatorily reported in accordance with the sharing request specified in section 3.2.2.;

(b) 'Simple On request Reporting' (SOR) means that a simple reporting is applicable under a specific request specified by the Group of Analysts in section 4 of this Annex;

(c) 'Detailed Reporting' (DR) means that the data set defined in section 5.1.2 of this Annex is mandatorily reported in accordance with the sharing request specified in section 5.2.2.;

(d) 'Detailed On request Reporting' (DOR) means that a detailed reporting is applicable under a specific request specified by the Group of Analysts in section 6 of this Annex;

(e) 'Reporting of Occurrence Scenario' (ROS) means that the data sets defined in sections 1.1 and 2.2 of Annex III – Part A are mandatorily reported in accordance with the sharing request specified in the corresponding Annex;

(f) 'Reporting of Risk Control Measure' (RRCM) means that the data set defined in section 1.1 of Annex III - part B is mandatorily reported in accordance with the sharing request specified in the corresponding Annex;

(g) 'Reporting of Operation Volume' (ROV) means that the data set defined in section 7.2 of this Annex is mandatorily reported in accordance with the request specified in section 7.3 of this Annex;

(h) 'Voluntary reporting' (VR) means that a sharing of data or information is voluntary implemented by one of the entities listed in Annex VI.

2. Applicable process for the management of any data and information

2.1. Any sharing of data and information shall be implemented in accordance with the sharing request types defined in the previous section and shall be managed in accordance with the rules defined in Annex VI.

3. Simple reporting (SR)

3.1. Dataset for Simple reporting

3.1.1. Any 'Simple reporting' shall contain the data items specified in this section.

3.1.2. Data set applicable for the simple reporting:

Data items	Applicable parameter/values	Comment
Reporting entity	Entity name	(specific interest data)
Reporting entity category	Entity category code	In accordance with the coding defined in Annex VI – Part B
Reporting entity identifier	Entity ID Number	(specific interest data) (when not defined yet, a unique identifier will be allocated in accordance with Annex VI – part B
Reporter contact name	Contact name	(personal data)
Reporter contact e-mail	Contact e-mail	(personal data)
Reporter contact identifier	Contact ID number	(personal data)
Reporting reason	'OPERATOR INVOLVED' Or 'INTERESTED PARTY'	(specific interest data). (personal or specific interest data, as applicable)
Type of operation(s) performed	Type of operation code(s)	Type of operation codes in accordance with Annex VI – Part B - section 1.
Occurrence identifier (if applicable)	Occurrence ID (Country code _ Reference number) or - 'NEW'	In accordance with ISS identification process
Occurrence event type	Event type code (if not yet included in the up-to-date version of Appendix A) - Event name - Event definition Is it a Dangerous Goods occurrence in accordance with applicable legislation? YES / NO	Event type coding as defined in the up-to-date version of Appendix A. (in this case the Group of Analyst is informed of the proposed new event type name and of the proposed definition) If yes, please complement your report in accordance with applicable Transport of Dangerous Goods legislation.

Occurrence location	Location name Geographical coordinates - Latitude - Longitude	
Date of occurrence	dd.mm.yyyy	
Time of occurrence	hh:mm:ss	
Deemed cause of the reported occurrence	List of event type code(s) considered as causal factor(s) (if not yet included in the up-to-date version of Appendix A) - Event name - Event definition	Event type coding as defined in the up-to-date version of Appendix A. (in this case the Group of Analyst is informed of the proposed new event type name and of the proposed definition)
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(to be used only if needed, for better understanding of the reported dataset)

3.2. Sharing request for 'Simple reporting'

3.2.1. Any occurrence of a reportable event type marked as 'SR' in the tables of Annex I – Part A, B or C shall be reported by each involved railway operators in accordance with the following request specification.

3.2.2. Request for 'Simple reporting'

Requesting entity	ERA	(specific interest data)
Requested entity	Each registered railway operator	(specific interest data)
Sharing request type	'New input of data or information to ISS'	(specific interest data)
Sharing justification	Occurrence simple reporting in accordance with Article 4(1)(a)	(specific interest data)
Targeted data set	N/A	(specific interest data)
Data set shared	Data set for simple reporting in accordance with CSM ALSP Annex I – Article 3.1.2. (mandatory template)	(Personal and specific interest data items are identified in the applicable dataset)

Start date and time of the reporting period	1st calendar day at 00:00 of each quarter	
End date and time of the reporting period	Start of reporting period + 3 months	
Sharing deadline	Category A events: - time of occurrence + 72 h Other event categories - end of reporting period + 72 h	(Category A events other than with serious or significant consequence and other event categories may be subject to grouped simple reporting at the end of the reporting period)
Validation date and time	End date and time of the reporting period + 1 month	
Closure of the sharing request	Each railway operator notified with the list of valid – simple reporting - entry for the reporting period End date and time of the reporting period + 2 months	(specific interest data) (this data set is used for the estimation of safety level for each railway operator)

The generic steps of the data and information management process are defined in Annex VI – Part D.

4. Simple On Request reporting (SOR)

(reserved)

5. Detailed reporting (DR)

5.1. Detailed reporting data set

5.1.1. Any 'Detailed reporting' shall contain the data items specified in the following sections.

5.1.2. Data set applicable for a 'Detailed reporting' (in addition to a simple reporting)

Data items	Applicable parameter/values	Comment
Reporting entity identifier	Operator ID	(specific interest data) (if not defined yet, a unique railway operator identifier will be allocated in accordance with Annex VI – Part B)

Reporting entity category	Entity category code	In accordance with the coding defined in Annex VI – Part B
Reporting person identifier	Contact ID number	(personal data)
Occurrence context	Data set as defined in Annex I – section 5.1.2.1	
Consequences	Data set as defined in Annex I – section 5.1.2.2	
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(to be used only if needed, for better understanding of the reported dataset)

5.1.2.1.Data set for reporting the context of the occurrence of an event

Data items	**Applicable parameter/values**	**Comment**
Reporting entity identifier	Operator ID	(specific interest data) (if not defined yet, a unique railway operator identifier will be allocated in accordance with Annex VI – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Annex VI – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence ID number	Occurrence number ID	The occurrence ID number is allocated by the Information Sharing System at the moment of the first reporting. It must be referred to in any further reporting concerning this occurrence
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)

Data items	**Applicable parameter/values**	**Comment**
LOCATION DETAILS	IN TUNNEL (Y/N) ON A BRIDGE (Y/N) LEVEL CROSSING (Y/N) - LEVEL CROSSING TYPE	 (type of level crossing

	OTHER	
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
Data items	**Applicable parameter/values**	**Comment**
OPERATION - TYPE OF MOVEMENT	CARRYING - MOVING - STATIONARY SHUNTING LOADING/FILLING UNLOADING/EMPTYING OTHER	Loading/filling and unloading/emptying are not considered as railway operations but if they involve dangerous goods they are specific to the TDG legislation and fall under the present regulation.
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
OPERATION - SPEED OF TRAIN / VEHICLE / CARGO (as applicable)	TRAIN_NUMBER TRAIN_SPEED (km/h) VEHICLE_NUMBER VEHICLE_SPEED (km/h) CARGO_NUMBER CARGO_SPEED (km/h) (for each involved train /vehicle /cargo at the moment of the reported impact)	(speed = 0 if stationary)
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
METEO /WEATHER - AMBIENT AIR CONDITION	AIR TEMPERATURE	(°C)
	DRY	

	CLEAR	
	FOG, MIST, SMOKE	
	RAIN	
	SNOW	
	SLEET, HAIL	
	HIGH WINDS	
	STORM	
	LIGHTNINGS	
	OTHER	
	UNKNOWN	
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
METEO /WEATHER - TRACK SURFACE CONDITION	DRY	
	SLIPPERY	
	LEAVES	
	SNOW	
	SLUSH	
	FROST	
	ICE	
	WET/DAMP	
	FLOODED	
	OTHER	
	UNKNOWN	
Free text	(optional)	(shall be used only if needed, for better

	Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	understanding of the reported dataset)
LIGHT CONDITIONS - DAYLIGHT		
- TWILIGHT	SUNRISE	
	SUNSET	
- DARKNESS	LIGHT LIT	
	LIGHT UNLIT	
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)

5.1.2.2.Data set for reporting the consequences of the occurrence of an event:

Data items	Applicable parameter/values	Comment
Reporting entity identifier	Operator ID	(specific interest data) (if not defined yet, a unique railway operator identifier will be allocated in accordance with Annex VI – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Annex VI – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence ID number	Occurrence number ID	The occurrence ID number is allocated by the Information Sharing System at the moment of the first reporting. It must be referred to in any further reporting concerning this occurrence
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
Data items	**Applicable parameter/values**	**Comment**
	DEATH	(personal data)

HUMAN CONSEQUENCES - PASSENGER		Total number of person(s)
	SERIOUS INJURY (24hrs hospitalization) (As defined in RSD, App.Annex I, 1.19)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(voluntary reporting) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(voluntary reporting) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
HUMAN CONSEQUENCES - EMPLOYEE	DEATH	(personal data) Total number of person(s)
	SERIOUS INJURY (24hrs hospitalization) (As defined in RSD, App.Annex I, 1.19)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(voluntary reporting) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(voluntary reporting) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
HUMAN CONSEQUENCES - TRESPASSER	DEATH	(personal data) Total number of person(s)
	SERIOUS INJURY (24hrs hospitalization) (As defined in RSD, App.Annex I, 1.19)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(voluntary reporting) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(voluntary reporting) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
HUMAN CONSEQUENCES - OTHER (Third party and public)	DEATH	(personal data) Total number of person(s)
	SERIOUS INJURY (24hrs hospitalization) (As defined in RSD, App.Annex I, 1.19)	(personal data)

		Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(voluntary reporting) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(voluntary reporting) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
HUMAN CONSEQUENCES - DUE TO DANGEROUS GOODS' SUBSTANCES	DEATH	(personal data) Total number of person(s) in each category - Traumatic - Intoxicated - Burned - Radiation
	SERIOUS INJURY (24hrs hospitalization) (As defined in RSD, App.Annex I, 1.19)	(personal data) Total number of person(s) in each category - Traumatic - Intoxicated - Burned - Radiation
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s) in each category - Traumatic - Intoxicated - Burned - Radiation
	(voluntary reporting) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s) in each category - Traumatic - Intoxicated - Burned - Radiation
	(voluntary reporting) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s) in each category - Traumatic - Intoxicated - Burned - Radiation

Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
DAMAGE TO THE ENVIRONMENT (natural or built)	AIR POLLUTION	(Estimated volume of pollutant released)
	WATER POLLUTION	(Estimated volume of pollutant released)
	SOIL POLLUTION	(Estimated volume of pollutant released)
	ESTIMATED COST OF DEPOLLUTION (if applicable)	Euros
	DAMAGE TO BUILT SURROUNDING	Euros
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
DAMAGE TO THE ROLLING STOCK	TOTAL NUMBER OF DAMAGED VEHICLES - COACHES - WAGONS - LOCOMOTIVE - EMU - DMU	(Number) (Number) (Number) (Number) (Number) (Number)
	TOTAL NUMBER OF OVERTURNED VEHICLES - COACHES - WAGONS - LOCOMOTIVE - EMU - DMU	(Number) (Number) (Number) (Number) (Number) (Number)
	TOTAL COST OF DAMAGE	(Euros)
	AVERAGE COST OF DAMAGE	(Euros)
	TOTAL NUMBER OF WAGONS LEAKING	Only applicable in case of TDG wagons involvement (Number)
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)

DAMAGE TO THE RAILWAY INFRASTRUCTURE	TOTAL LENGTH OF TRACK DAMAGED	(m)
	LENGTH OF TRACK (RAILS) DAMAGED	(m)
	LENGTH OF TRACK SUBSTRUCTURE DAMAGED	(m)
	LENGTH OF TRACK SUPERSTRUCTURE DAMAGED	(m)
	NUMBER OF (SWITCHES, POINTS) DAMAGED	(number)
	TOTAL COST OF DAMAGE	(Euros)
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)
DAMAGE TO OPERATING SERVICES	DELAYED PASSENGER TRAINS - Number of trains - Minutes	(Estimated)
	DELAYED FREIGHT TRAINS - Number of trains - Minutes	(Estimated)
	ESTIMATED COST OF OPERATION DISRUPTION - Passenger service - Freight service - TDG service - Terminal service	(Euros)
Free text	(optional) Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(shall be used only if needed, for better understanding of the reported dataset)

5.2. Sharing request for 'Detailed reporting'

5.2.1. If not otherwise specified in section 6, any occurrence of a reportable event type marked as 'DR' in the tables of Annex I – Part A, B or C shall be reported by the requested railway operators in accordance with the following request specification.

5.2.2. Request for 'Detailed reporting'

Requesting entity	ERA	(specific interest data)
Requested entity	Operator ID	(specific interest data)

Sharing request type	'New input of data or information to ISS'	(specific interest data)
Sharing justification	Occurrence detailed reporting in accordance with CSM ALSP article 4.1(a)	(specific interest data)
Targeted data set	Every event with serious or significant consequence of the event types marked as 'DR' in the tables of Annex I – Part A	(specific interest data)
Data set shared	Datasets for detailed reporting in accordance with CSM ALSP Annex I – Article 5.1.	Personal or specific interest data items are identified in the submitted data set in accordance with the data set template.
Start date and time of the reporting period	N/A	
End date and time of the reporting period	N/A	
Sharing deadline	time of occurrence + 2 months At this time, each involved railway operator is required to report the data and information available, knowing that further updates and complements are allowed in accordance with Article 7.11	(no grouped reporting allowed)
Validation date and time	Serious and significant consequence occurrences: - date and time of NIB report release, if applicable or - time of occurrence + 1 year Other occurrences: time of occurrence + 6 months	
Closure of the sharing request	Acknowledgement of validation receipt by ISS	

The generic steps of the data and information management process are defined in Annex VI – Part D.

6. Detailed On request Reporting (DOR)

6.1. Dataset for DOR reporting

6.1.1. Any ‘Detailed On request Reporting’ shall contain the same data items as the one required for Detailed reporting.

6.2. Sharing request for DOR reporting

6.2.1. The sharing request for DOR reporting is established by the Group of Analysts in order to target learning on specific accidents or incidents while limiting the effort to collect related data and information for railway operators.

6.2.2. ‘DOR’ request shall be justified by a cost-benefit analysis of the potential for learning and shall serve the delivery of the Group of Analysts working plan.

6.2.3. ‘DOR’ request evolving by nature and railway operator shall be specifically requested for the data and information contained in the sharing request by a specific notification from the Information Sharing System.

6.3. Sharing request applicable for DOR

6.3.1. When notified by the Information Sharing System railway operators shall implement the request defined in the following section.

6.3.2. Any ‘Detailed On request Reporting’ shall contain the data items specified in the following section.

6.3.3. Applicable ‘DOR’ request

Requesting entity	ERA	(specific interest data)
Requested entity	Operator randomly selected upon ‘simple reporting’ of the same event type	(specific interest data)
Sharing request type	‘New input of data or information to ISS’	(specific interest data)
Sharing justification	Occurrence detailed reporting in accordance with CSM ALSP article 4.1(a) and Annex I – Article 1.3(c).	(specific interest data)
Targeted data set	‘Simple reporting’ of the following event types: - A-3: Level Crossing accidents - A-4: Accidents to persons involving rolling stock in motion	(specific interest data)
Data set shared	Datasets for detailed reporting in accordance with Annex I – Article 5.1 for the following occurrences:	Personal or specific interest data items are identified in the submitted data set in accordance with the data set template.

	- Fifty (50) significant or serious consequence occurrences of A-3 event type (Level Crossing accidents) - One hundred (100) significant or serious consequence occurrences of A-4 event type (Accidents to persons involving rolling stock in motion), randomly selected by the Information Sharing System based on the simple reporting of these event types.	
Start date and time of the reporting period	N/A	
End date and time of the reporting period	N/A	
Sharing deadline	time of occurrence + 2 months	(no grouped reporting allowed)
Validation date and time	Serious and significant consequence occurrences: - date and time of NIB report release, if applicable or - time of occurrence + 1 year Other occurrences: - time of occurrence + 6 months	
Closure of the sharing request	Acknowledgement of validation receipt by ISS	

The generic steps of the data and information management process are defined in Annex VI – Part D.

7. Reporting of type of operation and associated 'Operation volumes'

7.1. Dataset for reporting of 'Operation volumes'

7.1.1. In accordance with Article 4.1(a), any assessed railway operator shall report the applicable data items specified in section 7.2.

7.1.2. For each category of railway operators (IM and RU), the reporting of the type of applicable operation(s) shall correspond to the type(s) of operation declared in the safety certificate and the safety authorization that are relevant for the considered reporting period.

7.1.3. For the operations performed during a given reporting period, railway operators shall report the type of performed operation and the volume of these operations per type of operation and per country in which operations have been actually performed (one reporting per operated country).

7.1.4. Any operation volumes reported by any railway operator is considered as commercial data to be protected in accordance with the rules set out in Annex VI.

7.2. Data set applicable for reporting 'Operation volumes':

Data items	Applicable unit	Comment
Reporting entity	Name	(specific interest data)
Reporting entity category	'RU' or 'IM'	In accordance with the coding defined in Annex VI – Part B
Reporting entity identifier	Integer	(when not defined yet, a unique identifier will be allocated in accordance with Annex VI – part B
Reporter contact name	Text	(personal data)
Reporter contact e-mail	Text	(personal data)
Reporter contact identifier	Integer	(personal data)
Country of operation	Country code	(specific interest data)
Operation of railway lines (including sidings and stations operations)	Reporting by IMs only, if applicable: - Number of Passenger train-kilometers - Number of Freight train-kilometers - Number of Freight ton-kilometers - Number of track-kilometers operated	(specific interest data)
Operation of terminals	Reporting by IMs only, if applicable: - Number of operated terminals - Number of railway vehicle processed in terminals - Number of operating hours in terminals - Number of track-kilometers operated in terminals	(specific interest data)
Operation of passenger trains	Reporting by RU only, if applicable:	(specific interest data)

(one report per operated country)	- Number of Passenger train-kilometers	
Operation of high speed passenger trains (one report per operated country)	Reporting by RU only, if applicable: - Number of high speed Passenger train-kilometers	(specific interest data)
Operation of freight trains (one report per operated country)	Reporting by RU only, if applicable: - Number of Freight train-kilometers - Number of Freight ton-kilometers	(specific interest data)
Operation of dangerous goods freight trains (one report per operated country)	Reporting by RU only, if applicable: - Number of Dangerous goods freight train kilometers - Number of Dangerous goods freight ton kilometers	(specific interest data)
Operation of freight terminals	Reporting by RU only, if applicable: - Number of railway vehicle processed in freight terminals	(specific interest data)

7.3. Request for reporting the 'Operation volumes'

7.3.1. The request below for the reporting of operation volumes is applicable to each railway operator, including those who have not performed any operations. In the latter case, the railway operator will not be further assessed.

Requesting entity	ERA	
start of the reporting period	dd/mm/yyyy – hh:mm	(date and time notified by the information sharing system)
end of the reporting period	Start of reporting period + 3 months	
deadline for reporting the operation volumes	End of reporting period + 1 month	
data items to be reported	data items defined in data set of section 7.2 (one report per actually operated country)	(if no operation was performed during the reporting period, the railway operator shall report '0' (zero) to the applicable type of operation)
end of validation period	End of reporting period +2 months	
notification	End of reporting period +2 months	

	- Operation volumes validated by the railway operator	

The generic steps of the data and information management process are defined in Annex VI – Part D.

8. Reporting of Occurrence Scenarios (ROS)

8.1. Operators shall report occurrence scenarios in accordance with Article 4.1(c).

8.2. The applicable data sets for reporting occurrence scenarios are defined in Annex III -Part A

8.3. The applicable sharing request for reporting occurrence scenarios is defined in Annex III – Part A

9. Reporting of Risk Control Measures (RRCM)

9.1. Operators shall report risk control measures in accordance with Article 4.1(c).

9.2. The applicable data sets for reporting risk control measures are defined in Annex III – Part B.

9.3. The applicable sharing request for reporting risk control measures is defined in Annex III – Part B

ANNEX I – Part A

List of events type and reporting modes applicable to category A events

(see detailed taxonomy in the up-to-date version of Appendix A)								
		Concerned types of operations (see Annex VI - Part B for definitions)						
		IM-1	IM-2	RU-1	RU-2	RU-3	RU-4	RU-5
Event code	Name of the reportable event type	Applicable sharing requests (see Annex I – General part for details)						
A-1	Collisions	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM
A-2	Derailments	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM
A-3	Level Crossing Accidents	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM
A-4	Accidents to persons involving rolling stock in motion	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM	SR, DOR, ROS and RRCM
A-5	Fires or Explosions – not involving - dangerous goods cargo	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM
A-6	Other accidents	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM	SR, DR, ROS and RRCM
A-7	Suicides and attempted suicides	VR	VR	VR	VR	VR	VR	VR
	(reserved)	SOR	SOR	SOR	SOR	SOR	SOR	SOR
(Event code)	(Name of the reported event type)	VR	VR	VR	VR	VR	VR	VR

ANNEX I – Part B

List of events type and reporting modes applicable to Category B events

(see detailed taxonomy in the up-to-date version of Appendix A)								
		Concerned types of operation (see Annex VI - Part B for definitions)						
		IM-1	IM-2	RU-1	RU-2	RU-3	RU-4	RU-5
Event code	Name of the reportable event type	Applicable sharing requests (see Annex I – General part for details)						
B-1.1	Operation failures of trains or vehicles	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS
B-1.2	Operation failures of the infrastructure	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS
B-2	Technical failure of the vehicles	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS
B-3	Technical failure of the infrastructure	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS
B-4	Other	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS	SR and ROS
	(reserved)	SOR / DOR	SOR / DOR	SOR / DOR	SOR / DOR	SOR / DOR	SOR / DOR	SOR / DOR
(Event code)	(Name of the reported event type)	VR	VR	VR	VR	VR	VR	VR

ANNEX I – Part C

List of events type and reporting modes applicable to Category C events

(see detailed taxonomy in the up-to-date version of Appendix A)								
		Concerned types of operation (see Annex VI - Part B for definitions)						
		IM-1	IM-2	RU-1	RU-2	RU-3	RU-4	RU-5
Event code	Name of the reportable event type	Applicable sharing requests (see Annex I – General part for details)						
	(reserved)	SR	SR	SR	SR	SR	SR	SR
C-1	Human performance	ROS	ROS	ROS	ROS	ROS	ROS	ROS
C-2	Other	ROS	ROS	ROS	ROS	ROS	ROS	ROS
	(reserved)	DR	DR	DR	DR	DR	DR	DR
	(reserved)	DOR	DOR	DOR	DOR	DOR	DOR	DOR
(Event code)	(Name of the reported event type)	VR	VR	VR	VR	VR	VR	VR

ANNEX II

COLLECTION OF DATA AND INFORMATION ON SAFETY PERFORMANCE

1. Applicable scope

1.1. This annex shall be applied to share data and information required for the implementation of Article 4.1(b).

1.2. Each railway operator shall self-estimate its safety performance in accordance with the technical support documentation in Appendix B, as amended in accordance with Article 9(3)(b).

1.3. The self-estimation is shared by the railway operator without prejudice to its current certification/authorisation.

1.4. The data and information collected for assessing the safety performance of railway operators are limited to the domain of the management of risk control measures and aim to encourage the development of maturity levels higher than the maturity level corresponding to the minimum necessary to obtain a certificate/authorisation.

1.5. The railway operators may use their self-estimation to better identify possible improvements of their current management of risk control measure towards higher maturity levels.

2. Applicable process

2.1. The railway operator shall report its self-estimation to the Information Sharing System in accordance with the sharing request defined in section 4.

2.2. Self-estimations shall cover the scope of operations declared in the railway operator's registration made in accordance with the Annex VI – Part B.

2.3. The railway operator shall self-estimate its maturity level in using the self-estimation tables provided in section 5 for each following risk management area:

(a) Planning of risk control measures;

(b) Setting up and operating of risk control measures;

(c) Monitoring of risk control measures;

(d) Reviewing and adjusting of risk control measures.

2.4. The railway operator shall report the self-estimation maturity level it considers to achieve, as well as the references of the supporting evidence with the sharing data set of section 3.

2.5. For each area, the level self-estimated by the railway operator shall be the one fulfilling the following criteria:

(a) The railway operator is able to provide, immediately on request, the supporting evidence corresponding to all the elements of proof required by the table corresponding to this level;

And,

(b) The railway operator is able to provide, immediately on request, the supporting evidence corresponding to all the elements of proof required by lower level(s) self-estimation tables of the same area.

2.6. For a given area, if only one supporting evidence required for this level is missing it shall be interpreted that neither the level corresponding to this self-estimation table is reached nor higher level(s).

3. Applicable sharing data set

3.1. Self-estimations shall cover the scope of operations declared in the railway operator's registration made in accordance with the Annex VI – Part B.

3.2. Only one data set is required to cover all the applicable railway operations of a railway operator.

3.3. The self-estimation shall be shared by applying the data set defined in this section. For the reporting of risk control measures in application of the self-estimation requirements the template of Annex III – Part B shall be used as evidence.

3.4. Data set applicable for reporting a SP self-estimation:

<table>
<tr><th>Data items</th><th>Applicable parameter/values</th><th>Comment</th></tr>
<tr><td>Reporting entity identifier</td><td>Entity ID Number</td><td>(specific interest data – dis-identified)
(when not defined yet, an identifier will be allocated in accordance with Annex VI – part B</td></tr>
<tr><td>Reporter contact name</td><td>Contact name</td><td>(personal data)</td></tr>
<tr><td>Reporter contact e-mail</td><td>Contact e-mail</td><td>(personal data)</td></tr>
<tr><td>Reporter contact identifier</td><td>Contact ID number</td><td>(personal data)</td></tr>
<tr><td>Self-estimation</td><td>Self-estimated level for area P: # (1..5)
All evidence for area P
<table>
<tr><th>Element #</th><th>Evidence Ref.</th><th>Version</th><th>Date</th></tr>
<tr><td>1</td><td></td><td></td><td></td></tr>
<tr><td>..</td><td></td><td></td><td></td></tr>
<tr><td>21</td><td></td><td></td><td></td></tr>
</table>
Self-estimated level for area D: # (1..5)
All evidence for area D</td><td>(specific interest data)
(In case no element of proof can be shared for a given situational aspect the minimum maturity score (1) will be allocated for the considered area)</td></tr>
</table>

Element #	Evidence Ref.	Version	Date
22			
..			
33			

Self-estimated level for area C: # (1..5)

All evidence for area C

Element #	Evidence Ref.	Version	Date
34			
..			
45			

Self-estimated level for area A: # (1..5)

All evidence for area A

Element #	Evidence Ref.	Version	Date
46			
..			
56			

4. Sharing request for reporting 'SP self-estimation'

4.1. The railway operator shall report its self-estimation to the Information Sharing System in accordance with the sharing request defined in this section.

Requesting entity	ERA	
Requested entity	Operator ID	(specific interest data) (the sharing request will be notified in due time by the Information Sharing System to each railway operator)
Sharing request type	'New input of data or information to ISS'	
Sharing justification	Request in accordance with Article 4.1(b) of this Regulation	

Targeted data set	n/a	(specific interest data)
Data set shared	Data set in accordance with section 3.4 of this Annex.	
Start date and time of the reporting period	n/a	
End date and time of the reporting period	n/a	
Sharing deadline	+7 months after the date of the first issue of certification/authorisation, and then every twelve months.	(If no (or incomplete) reporting is received at this date the railway operator will be notified with a reminder)
Validation date and time	Sharing deadline + 1 month At this stage the National supervisory authority is entitled to request a review of the self-estimation by the concerned railway operator, in accordance with the implementation of the CSM on Supervision and with Article 4.2 of this Regulation.	(If no (or incomplete) reporting is received at this date the railway operator will be notified with a second reminder)
Closure of the sharing request	Sharing deadline + 2 months	(If no (or incomplete) reporting is received at this date the railway operator will be allocated the minimum score (1) for each missing self-estimation area)

The 'start', 'end' and 'validation' are generic parts of the data and information management process defined in Annex VI – Part C.

COLLECTION OF DATA AND INFORMATION ON OCCURRENCE SCENARIOS AND RISK CONTROL MEASURES

1. Applicable scope

1.1. This annex shall be applied to share data and information required for the implementation of Article 4.1(c).

2. Applicable process

2.1. The railway operator shall report the occurrence scenarios and the related risk control measures in accordance with the applicable data sets and in accordance with the sharing requests defined in this Annex.

2.2. When implementing this annex, railway operators shall use, when applicable, the coding of events type established by the technical support documentation in Appendix A, as amended in accordance with Article 9(3)(a).

2.3. The data and information reported by the railway operator in application of this annex are shared between interested parties in accordance with the Annex VI.

2.4. The data and information received by interested parties in application of the sharing process are used in accordance with Article 7.14.

3. Practical implementation

3.1. Practical meaning of the term 'risk control measure'

3.1.1. In the context of this Regulation, the type of risk control measures that are considered are those put in place with the specific purpose of either preventing a loss of control or mitigating (or to regain control) on possible outcomes of a loss of control.

3.1.2. In other terms, it means controlling the combination of causal factors of category B and C events in order to avoid the occurrence of one or several consecutive category A events.

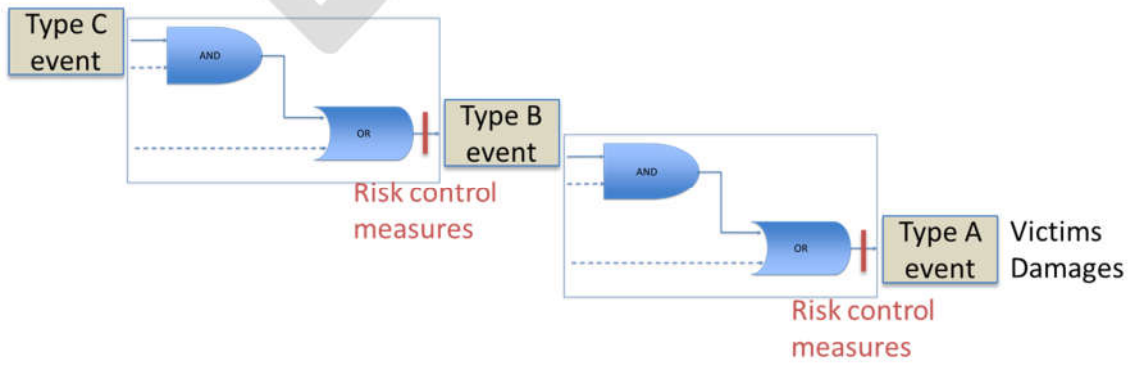


Figure: Example of a scenario description using building blocks.

3.1.3. It is understood that a category A event can be caused by one or multiple direct causes and one or multiple indirect causes and that an occurrence scenario may involve only one risk control measure, several risk control measures or no risk control measures.

3.2. 'Risk control measure' versus 'Management of a Risk control measure'

3.2.1. In the context of this Regulation a distinction is made between the 'risk control measures' functions and performance and the management of the risk control measures established to set-up, operate and maintain the designed functions and the expected performance limits.

3.2.2. All the Safety Management System requirements that are part of Annex I and Annex II of Regulation (EU) 2018/762[8] are in the context of this Regulation to be considered provisions for the management of the risk control measures.

In this context, the management of the risk control measures includes:

(a) Risk analysis, for instance gathering up-to-date information regarding the risk scenario(s) on which the risk control measure acts;

(b) Integration, for instance clear definition and allocation of roles and responsibilities of internal and external stakeholders linked to the management of risk control measures;

(c) Measuring/Monitoring activities, for instance activities that aim to monitor that the actual functioning and the expected performance of risk control measures is achieved:

(d) Resource management, for instance activities to guarantee the availability of resources needed to maintain the risk control measures;

(e) Competence management, for instance ensuring staff involved in the operation and maintenance of the risk control measures demonstrate competence following assessment and training;

3.3. Practical aspects for the reporting an occurrence scenario

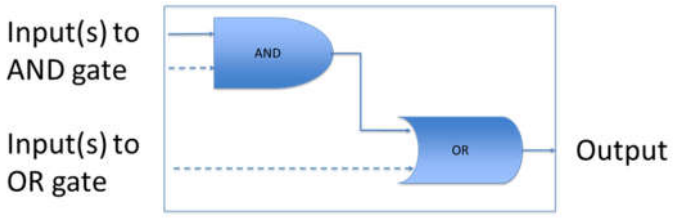
3.3.1. At the time an occurrence scenario is reported doubts may remain on the occurred scenario including on the causal and contributing factors. The OR gate shall only be used when there is an uncertainty on the involvement of a causal factor in a reported scenario.

3.3.2. The OR gate shall not be used if all the event types that are causal factors have been identified with a sufficient level of certainty. In this case, only a succession of AND gates shall be used to describe the scenario.

3.3.3. When reporting an occurrence scenario the following rules shall be applied at any phase of an occurrence reporting:

[8] Commission Delegated Regulation (EU) 2018/762 of 8 March 2018 establishing common safety methods on safety management system requirements pursuant to Directive (EU) 2016/798 of the European Parliament and of the Council and repealing Commission Regulations (EU) No 1158/2010 and (EU) No 1169/2010 (OJ, L 129, 25.5.2018, p. 26).

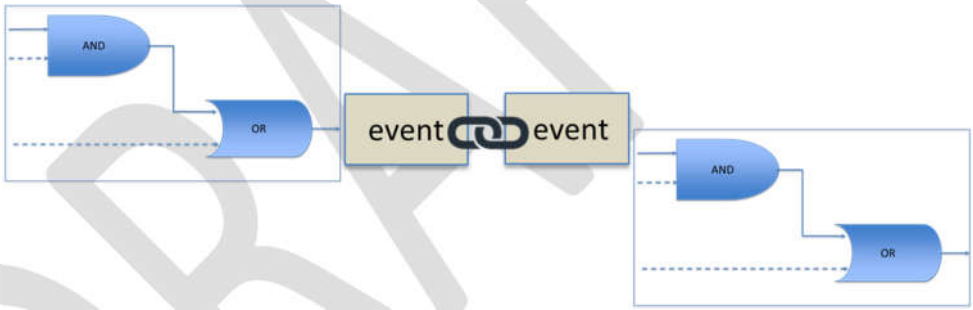
(a) An occurrence scenario shall be described with of one or more "building block(s)" as defined in Annex III – Part A.;



(b) Any combination of event types described in the taxonomy is allowed to describe the scenario which actually occurred. When uncertainties on causal factor(s) exist and the railway operator chooses not to use the OR gate (see sections 3.3.1 and 3.3.2 of Annex III – general part), the event type 'undeveloped' shall be used as input event. In such case, free text should clarify the reason why the event type 'undeveloped' is used.

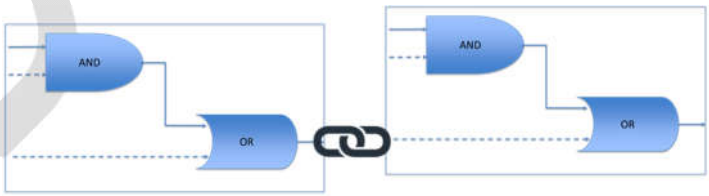
(c) The links between each 'building blocks' composing the reported occurrence scenario shall be clearly identified and shall either correspond to:

i) a matching event type;



or

ii) a neutral functional link (not using a linking event type);



(d) Applicable sharing data sets defined in Annex III – part A are used to clearly identify the relevant event types and links composing the reported occurrence scenario;

(e) A given event type can be used in one or several 'building blocks';

(f) A given link (same link ID) can be used in one or several 'building blocks'.

3.4. Practical aspects for the reporting of risk control measures

3.4.1. At the planning phase some risk control measures are reported independently of any specific actual occurrence scenario reporting as part of the elements of proof required for the safety performance self-estimation.

3.4.2. When applicable for a reported occurrence scenario, any risk control measure(s) that has (have) failed shall be shared using the data set defined in Annex III – Part B.

3.4.3. When the risk control measure(s) concerned by the reported scenario have already been shared in the Information Sharing System the reporting in accordance with Annex III – Part B shall only be referred to, unless it is necessary to update the already shared information.

4. Reporting of Occurrence Scenarios (ROS)

4.1. Dataset for reporting 'Occurrence Scenarios'

4.1.1. Any Reporting of Occurrence Scenario shall contain the data items specific in the following section.

4.1.2. Applicable data set for Reporting of Occurrence Scenarios:

Data items	Applicable unit	Comment
Reporting entity identifier	Operator ID	(specific interest data) (if not defined yet, a unique railway operator identifier will be allocated in accordance with Annex VI – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Annex VI – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence concerned	Occurrence ID	
Occurrence scenario	Building Block(s) composing the scenario reported in accordance with Annex III – Part A – Section 1.1., including all category A events involved and all other event types needed to fully describe the scenario.	
RCMs relevant for the reported scenario	Relevant RCM(s) for the scenario reported in accordance with Annex III – Part A – Section 2.2.	
	Description of relevant RCM(s) for the scenario reported in accordance with Annex III – Part B – section 1.1	

	- (mandatory) the 'general information' part of the template. - (voluntary) any part (2, 3 or 4 parts) of the template.	

4.2. Request for Reporting Occurrence Scenarios

4.2.1. The reporting of occurrence scenarios shall be applied for any occurrence applicable as described in the request defined in the following section.

4.2.2. Applicable sharing request for reporting occurrence scenarios:

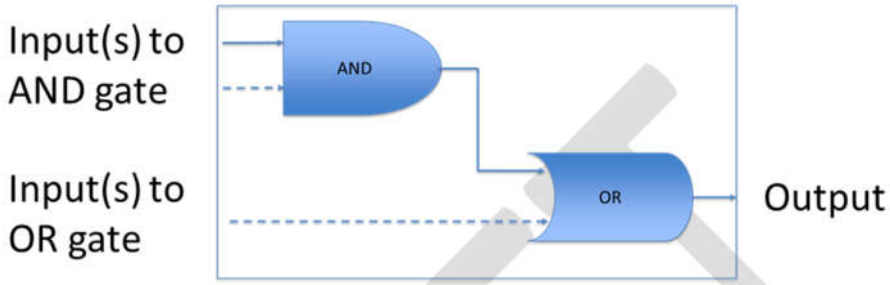
Requesting entity	ERA	(specific interest data)
Requested entity	Operator ID	(specific interest data)
Sharing request type	'New input of data or information to ISS'	(specific interest data)
Sharing justification	Reporting of occurrence scenario in accordance with CSM ALSP article 4.1(c).	(specific interest data)
Targeted data set	Occurrence ID of the 'Simple Reporting' concerning the serious or significant consequence event of Category A subject to the reporting of the scenario	(specific interest data)
Data set shared	Data set defined in Annex III – section 4	Personal or specific interest data items are identified in the submitted data set in accordance with the data set template.
Start date and time of the reporting period	N/A	
End date and time of the reporting period	N/A	
Sharing deadline	time of occurrence + 2 months	(no grouped reporting allowed)
Validation date and time	Serious and significant accidents: - date and time of NIB report release, if applicable or - time of occurrence + 1 year	

Closure of the sharing request	Acknowledgement of validation receipt by ISS	

The generic steps of the data and information management process are defined in Annex VI – Part D.

DATA SETS FOR REPORTING A "BUILDING BLOCK"
(PART OF AN OCCURRENCE SCENARIO)

1. Applicable 'Building Block'



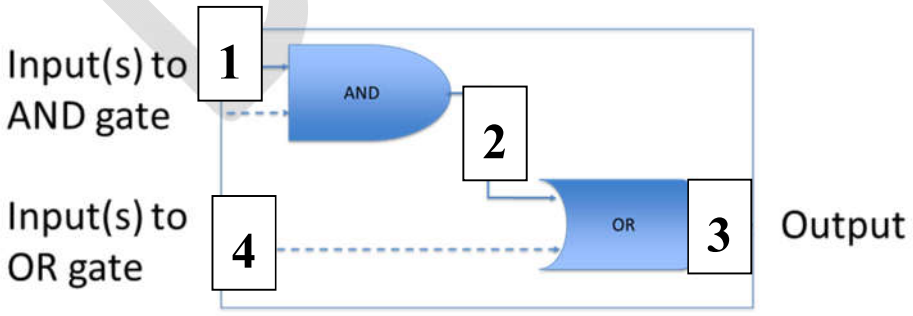
1.1. Dataset for reporting a "building block":

Building block reference ID:			
Causal factors			
Applicable Event type ID (causal factors, or 'Undeveloped')	If 'Other' event type is used (please specify name and simple definition) If, 'Undeveloped' event type is used (please clarify with a free text)	Linked Building blocks (where applicable)	
Inputs to the 'AND' gate			
		☐ Link (if applicable)	ID of the linked Building Block
[Add rows if necessary]		☐ Link (if applicable)	ID of the linked Building Block
Inputs to the 'OR' gate (if needed, see sections 3.3.1 and 3.3.2 of Annex III – General part)			

		☐ Link (if applicable)	ID of the linked Building Block
[Add rows if necessary]		☐ Link (if applicable)	ID of the linked Building Block
Output event (of the building block)			
[only one row]		☐ Link (if applicable)	ID of the linked Building Block
Contributing factors to the resulting Output event			
List of contributing factors:			
Applicable contributing factor(s) ID in accordance with the technical support documentation in Appendix A, as amended in accordance with Article 9(3)(a)		(free text) Note: Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	
[Add rows if necessary]			

2. Applicable positions of failed 'Risk Control Measures' in a 'Building Block'

2.1. The following positions 1, 2 ,3 or 4 are applicable for reporting the location of a Risk Control Measure action within a given building block:



2.2. Dataset for reporting failed Risk Control Measure in a given occurrence scenario:

Building block reference ID: (in which a failed RCM is to be reported)					
RCM Name	RCM ID	Position in the Building Block	RCM failure mode	RCM analysis	Systemic factor
(name as specified in the related RCM reporting data set, in accordance with Annex III – Part B - section 1.1)	(ID as specified in the related RCM reporting data set, in accordance with Annex III – Part B - section 1.1)	(1,2,3 or 4)	(free text how the RCM failed) Note: Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(free text on why the barrier failed) Note: Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.	(Applicable systemic factors in accordance with the technical support documentation in Appendix A, as amended in accordance with Article 9(3)a)
[Add a row for each reported RCM, as necessary]					

DATA SET FOR REPORTING A RISK CONTROL MEASURE

1. Applicable template to report Risk Control Measures

1.1. Dataset for reporting a Risk Control Measure in a given occurrence scenario:

<table>
<tr><td colspan="3">1. General information</td></tr>
<tr><td>Reporting Entity</td><td colspan="2">Operator ID</td></tr>
<tr><td>Risk Control Measure</td><td colspan="2">RCM ID:
RCM Name:</td></tr>
<tr><td>General description of risk control measure aim and expected functioning of the RCM:</td><td colspan="2">Type of RCM:
(in accordance with the technical support documentation of Appendix A, as amended in accordance with Article 9(3)a)

Aim of the RCM:
(free text)

Summary description of the functioning:
(free text)

Other technical documentation reference (if applicable, optional):
(free text)

Note: Content of reported free text shall be in accordance with Annex VI – General Part, section 3.2.</td></tr>
<tr><td colspan="3">2. Description of resulting events linked to an RCM
(in case multiple events, please provide this information for each event)</td></tr>
<tr><td></td><td colspan="2">Resulting event(s)</td></tr>
<tr><td>Normal RCM functioning, as planned
(prevented or mitigated resulting events)</td><td>Reference(s) of <u>each possible</u> resulting Event type</td><td>(if not referenced yet)
Name of the event
Definition of the event</td></tr>
</table>

<table>
<tr><td></td><td>(according to coding defined in Annex I)</td><td>Category of the event</td></tr>
<tr><td>In case of RCM failure
(used only in case of failure reporting)</td><td>Reference(s) of <u>each possible</u> resulting Event type
(according to coding defined in Annex I)</td><td>(if not referenced yet)
Name of the event
Definition of the event
Category of the event</td></tr>
<tr><td colspan="3">3. Expected effectiveness</td></tr>
<tr><td>Expected effectiveness ratio</td><td>Ratio of expected number of RCM failure per number of triggering events</td><td>(in %)</td></tr>
<tr><td colspan="3">4. Management of Risk Control Measures</td></tr>
<tr><td>Provision type:</td><td colspan="2">Description how provision is realized</td></tr>
<tr><td>Risk analysis (see 3.2.2.a)</td><td colspan="2">(References of relevant Risk assessments in SMS)</td></tr>
<tr><td>Measuring/Monitoring (see 3.2.2.c)</td><td colspan="2">(Leading indicators, and/or lagging indicators)</td></tr>
<tr><td>Resource Management (see 3.2.2.d) Expected - Life cycle costs</td><td colspan="2">Setting/Operation/Maintenance
<table>
<tr><td>Setting-up</td><td>Operation</td><td>Maintenance</td></tr>
<tr><td>€ …</td><td>€ … per year</td><td>€ … per year</td></tr>
</table></td></tr>
</table>

ANNEX IV

ASSESSMENT OF SAFETY LEVELS

1. Assessment of railway operators

1.1. The method described in this annex shall apply for the assessment of each railway operator in accordance with Article 5(5) of this Regulation.

2. Objective of the safety level assessments

2.1. The general objectives are to assess (a) the extent to which a railway operator is reducing safety risks to fulfil the requirement of maintaining and continuously improving railway safety and (b) to identify railway operators with significantly higher or lower risks with the aim to support the definition of possible action plans, where needed.

2.2. The assessment of safety levels refers to the method for comparing the safety levels of a given railway operator, estimated in accordance with section 3, with an applicable reference value.

2.3. The safety level assessments shall establish whether a safety level estimated for a railway operator:

(A) has not started to deteriorate, has improved or has deteriorated;

In this case the test consists of evaluating the variations of the safety level estimator of the assessed railway operator over short and long reference periods.

(B) is higher or lower than the level of similar railway operators.

In this case the test consists in comparing the safety level of the assessed railway operator with the reference safety level established for a group of railway operators, operating the same type(s) of operation in accordance with Annex VI – part B, over the same reference period of time.

2.4. Statistical inference shall be used to provide harmonised assessments to each railway operator.

3. Applicable reference values and periods of time

3.1. The assessment of the fulfilment of the safety level (SL) objectives defined in section 2 shall be based on the reference values, periods of time as well as the applicable test of the applied statistical methods defined in the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c).

3.2. Safety level assessment results

For each assessed objective and assessment period referred to in section 3.1 the Agency shall determine the achievement of the criteria described in the in the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c), which shall describe the following possible situations:

(a) Strong evidence for deterioration

(b) Moderate evidence for deterioration

(c) No evidence for improvement or deterioration

(d) Moderate evidence for improvement

(e) Strong evidence for improvement

Each assessment shall be accompanied by the consideration of statistical uncertainties in accordance with section 6.

4. Estimation of the safety levels

4.1. Safety level estimations shall be based on the 'simple reporting' of occurrences collected in accordance with Annex I, and validated by the railway operators in accordance with the sharing request applicable to 'Simple reporting'.

4.2. From the data and information contained in the Information Sharing System, the Agency shall provide safety level estimations to each railway operator in the Union and shall provide applicable reference values aggregated in each Member State and in the Union as a whole.

4.3. The Agency shall estimate the safety level for each applicable type of operation and each category of events of a given scope in strict implementation of the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c) and in accordance with the generic formula of Article 5.2.2 of this Annex.

5. Generic formula applied for individual railway operator's safety level estimation

5.1. Allocation of occurrences to involved railway operators

5.1.1. In order to reflect correctly the safety responsibilities of railway operators, the safety level estimations uses a system of allocation of each occurred event taking into account the part of the railway system which is reported as cause(s) of the reported category A occurrence. As established by this Regulation, the direct causes of the accidents are, by definition, Cat. B event types.

5.1.2. The following methods apply to the allocation of the counting of an occurrence to the category of railway operators responsible for the prevention or mitigation of the deemed cause of the accident occurrence.

5.1.3. The following counting rules apply:

(a) Only one deemed cause – Cat. B event type – is identified.
In this case the counting of the occurrence for the safety level estimation is allocated to the railway operator involved in the occurrence that is responsible for the part of the system which is deemed to have caused the occurrence.

(b) Several combined causes – several Cat. B event types – are identified.
In this case the counting of the occurrence for the safety level estimation is allocated in the applicable proportion(s) to the railway operator(s) involved in the occurrence that are responsible for the part(s) of the system which are deemed to have caused the occurrence.

(c) The cause(s) – Cat. B event type(s) – are not identified.
In this case the counting of the occurrence for the safety level estimation is equally shared between the involved railway operator(s).

5.1.4. The implementation of the above counting rules shall provide:

(a) an estimation of the set of numbers of occurrences for each type of category A events allocated to each railway operator;

(b) an estimation of the set of numbers of occurrences for each type of category B events allocated to each railway operator.

5.2. Safety level estimation formula

5.2.1. This section provides a generic formula to be applied for the calculation of the safety estimator (SL estimator).

5.2.2. The following generic formula shall apply separately to each category of occurred events, for each railway operator:

$$SL\ estimator\ {}^{Type\ of\ operation}_{Scope\ of\ event}(Operator\_ID) = \quad F\ (N_{OCC}; V; P)$$

Where

- N_{OCC} is set of numbers of occurrences for a given type of event of given event category, for given type of operation and for a given operator.
- V is operation volume per type of operation of the given operator used for the normalization
- P is a set of parameters assumed in the mathematical model, related to the severity of the events given by victims or damage and to the degree of reducibility of the related risk by the operator

6. Technical support documentation

6.1. In accordance with Article 9(2)(c) and as a contribution to the development of the technical support documentation of Appendix C, the Group of Analysts shall provide the description of the detailed implementing calculations of the generic formulas defined in section 5 and the limit conditions to be applied for their use.

6.2. All the details necessary to ensure fair, transparent, reproducible and effective implementation of the estimation formulas shall be described in the applicable technical support documentation which shall cover all the possible railway operators' situations, including the different categories of railway operators, type of operation(s) and categories of victims and damages, the expected number of occurrences, including the case of no occurrence.

6.3. The proper definition of the set of parameters P shall also be detailed in the technical support documentation referred to in the second previous paragraph. When describing the details relating to these parameters, the Group of Analysts shall also define the applicable categories of victims and damage to be used, taking into account the victims and damage categories defined in Annex I.

6.4. In application of Article 6(3), the Group of Analysts shall, when needed, make justified proposals to review or update this method.

7. Aggregation of railway operators' safety levels at national and Union levels

7.1. Based on the actual volumes of operation performed by each railway operator in each Member States and for each type of operation, the safety level aggregated at national and Union levels shall be estimated with averages of individual railway operators safety levels weighted by their respective volume of operation.

7.2. The Group of Analysts shall define the detailed implementing formulas and their limits for use in their proposals referred to in Article 6(2)(c).

8. Consideration of statistical uncertainties

8.1. Appropriate usage of statistical inferences and tests shall be specified by the Group of Analysts setting out detailed implementing formulas and shall be reported in the technical support documentation of Appendix C and used consistently in Appendix D.

9. Information to railway operators

9.1. The reference manual of the Information Sharing System will be made publically available by the Agency.

9.2. Any modification concerning the practical implementation of the method defined in this annex will be notified by the Information Sharing System to the registered railway operators.

9.3. Each railway operator will be notified by the Agency with their assessment results in accordance with the sharing request defined in the following section.

9.4. Sharing request for the notification of safety level assessment:

Requesting entity	N/A	The assessment results will be systematically notified to each railway operator after each individual assessment has been performed
Requested entity	ERA	
Sharing request type	'Extraction of data or information from ISS'	
Sharing justification	Article 5.2.(a), 5.3. and 5.4.	
Targeted data set	Set of reported occurrences declared as valid by railway operators in accordance with CSM ASLP Annex I – section 3.2.2.	(specific interest data)
Data set shared	Safety level estimations, applicable reference values and safety level assessment in accordance with Appendix C.	(specific interest data).
Start date and time of the assessed period	As specified in Annex IV – section 3.	
End date and time of the assessed period	As specified in Annex IV – section 3.	
Sharing deadline	+1 month after the end of the applicable assessment period the assessed railway operator is notified of the assessment results	
Validation date and time	The assessed railway operator or a relevant authority may request a checking within 2 weeks after the notification of the assessments	
Closure of the sharing request	Notification of confirmed or updated assessment results	(if updated results, the process is restarted at the sharing step)

10. Publication of safety level indicators at national and Union levels

10.1. The national and Union safety level indicators (reference values) shall be published, when available, in the Information Sharing System. These indicators shall be visible to any entity.

ANNEX V

SAFETY PERFORMANCE ASSESSMENT

1. Assessment of railway operators

1.2. The method described in this annex shall apply for the assessment of each railway operator in accordance with Article 5(5) of this Regulation.

2. Objective of the safety performance assessments

2.1. The general objective is to assess, based on the self-estimations provided by each railway operator, the extent in which a railway operator fulfils the requirement of maintaining and continuously improve railways safety in the domain of risk control measures.

2.2. The assessment of performance levels refers to the method for comparing the performance levels of a given railway operator, with an applicable reference value allowing to pose a judgment on the achievement of harmonised assessment criteria.

2.3. The safety performance assessments shall establish whether a performance level estimated for a railway operator:

(A) is stable.

In this case the test consists in evaluating the variation of the performance level of the assessed railway operator between two consecutive reference periods of time.

(B) is better than the level of similar railway operators.

In this case the test consists in comparing the performance level of the assessed railway operator with the reference performance level established for railway operators performing the same type(s) of operation in accordance with Annex VI – part B, over the same reference period of time.

(C) is improved compared to the past.

In this case the test consists in comparing the performance level of the assessed railway operator in a given period with the reference value provided by the average performance level of the same railway operator over a past period of time.

2.4. Statistical inference and tests shall be used to provide harmonised assessments to each railway operator. The applicable periods of time and reference values are defined in section 3.1 and the assessment criteria are defined in section 3.2.

3. Applicable reference values and periods of time

3.1. The assessment of the fulfilment of the objectives defined in section 2 shall be based on the reference values and periods of time defined in this section.

Objective assessed	(A)	(B)	(C)
Assessed period	Year n	Year n	5 years period after last date of certification or authorization
Assessed values	SP indicators reported by the assessed railway operator over year n	SP indicators reported by the assessed railway operator over year n	SP indicators reported by the assessed railway operator over the assessed period
Reference period	Year n-1	Year n	Previous 5 years period of certification or authorization
Reference value	SP indicators of the assessed railway operator over year n-1	SP indicators of similar group of railway operators over year n	SP indicators of the assessed railway operator over the previous assessed period
Detailed implementation	See details in the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c).		

3.2. For each assessed objective and assessment period referred to in section 3.1 the Agency shall determine the achievement of the criteria by implementing the detailed technical reference manual referred to in section 6 which shall describe the following possible situations:

(a) Stable performance

(b) Potential performance improvement or deterioration

(c) Probable performance improvement or deterioration

4. Estimation of the safety performance indicators

4.1. Safety performance indicators of a single railway operator are corresponding to the self-estimations reported by the concerned railway operator, possibly after a request for review by a national supervisory authority, in accordance with Article 4(2).

4.2. From the data and information contained in the Information Sharing System, the Agency shall establish the applicable safety performance reference values, aggregated in each Member State and in the Union as a whole, in strict application of the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c).

5. Aggregation of Operators' safety performance at national and Union levels

5.1. The Group of Analysts shall define the detailed implementing formulas and the limits for use of the indicators, aggregated as National and Union reference values, in the technical support documentation of Appendix C, as amended in accordance with Article 9(3)(c).

6. Information of railway operators

6.1. Each railway operator will be notified by the Agency with their assessment results in accordance with the sharing request defined in the following section.

6.2. Sharing request for the notification of SP assessment

Requesting entity	N/A	The assessment results will be systematically notified to each railway operator after each individual assessment performed
Requested entity	ERA	
Sharing request type	'Extraction of data or information from ISS'	
Sharing justification	Article 5(2)(a), 5.3. and 5.4.	
Targeted data set	Set of reported self-estimations declared as valid by railway operators in accordance with Annex II – section 4.	(specific interest data)
Data set shared	SP self-estimations (reminder), applicable SP reference values and SP assessment in accordance with the method defined in Appendix C.	(specific interest data). Systematic implementation of the pre-defined method in accordance reference manual.
Start date and time of the assessed period	As specified in Annex V – section 3.	

End date and time of the assessed period	As specified in Annex V – section 3.	
Sharing deadline	+1 month after the end of the applicable assessment period, and every year, the assessed railway operator is notified the assessment results	
Validation date and time	The supervision authority may request a review in accordance with Article 4.2 after the notification of the assessment	
Closure of the sharing request	Notification of confirmed or updated assessment results	(if updated results, the process is restarted at the sharing step)

7. Publication of safety performance reference values at national and Union levels

7.1. The national and Union safety performance reference values shall be published, when available, in the Information Sharing System. These indicators shall be visible to any entity.

MANAGEMENT OF DATA AND INFORMATION

1. Confidentiality and appropriate use of information

1.1. Member States authorities and other entities, in accordance with their national law, and the Agency shall take the necessary measures to ensure the appropriate confidentiality of the information and data received by them pursuant to Article 4, 5, 6 and 7 of this Regulation.

1.2. Each Member State authority, each entity established in a Member State shall process personal data only to the extent necessary for the purposes of this Regulation and without prejudice to Regulation (EU) 2016/679[9](GDPR).

1.3 This Regulation shall apply to the Agency without prejudice to Regulation (EU) 2018/1725[10] and Regulation (EC) No 1049/2001[11].

2. Principle of information source protection

2.1. For the purposes of sharing occurrences to the Information Sharing System referred to in Article 7, the protection of the information source is related to personal identification and contact data of railway operators' and authorities' staff who are reporting as natural persons, outside the established channels. The Agency shall ensure that such personal data are shared subject to consent of the persons concerned or in line with the rules set in this Annex.

2.2. Each railway operator established in a Member State shall ensure that personal data shared in the Information Sharing System referred to in Article 7 are not made available to staff of that organisation other than the persons designated to receive the data and only where absolutely necessary in order to investigate the correctness of data sets reported.

2.3. The Agency and each Member State authority concerned shall ensure that personal data shared in the Information Sharing System referred to in Article 7, are not made available to staff of that authority other than persons designated to receive the data on a 'need to know' basis and these data are managed and disclosed further to other authorities in order to perform duties in the context of their established competencies.

[9] OJ L 119/1 4.5.2016 REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)
(Text with EEA relevance).

[10] OJ L 295/39, 21.11.2018, REGULATION (EU) 2018/1725 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC.

3. **Measures ensuring information source protection**

3.1. Member States authorities and other entities shall not make available or use the personal data of persons:

a) in order to attribute blame or liability;

or

b) for any purpose other than the maintenance or improvement of the rail system safety.

3.2. Employees and contracted railway personnel who report in accordance with Article 4 in the Information Sharing System referred to in Article 7 shall not be subject to any prejudice by their employer or by the organisation for which the services are provided If disciplinary or administrative proceedings are instituted under national law, information contained in occurrence reporting shall not be used against them except in cases referred to in paragraph 3.5.

3.3. Member States may retain or adopt measures to strengthen the protection of reporters. Member States may in particular apply this rule without the exceptions referred to in paragraph 3.5.

3.4. Member States authorities may adopt or maintain in force legislative provisions ensuring a higher level of protection than those established in this Regulation.

3.5 The protection referred to in paragraph 2 of this Article shall not apply to any of the following situations:

a) in cases of wilful misconduct;

b) where there has been a manifest, severe and serious disregard of an obvious risk and profound failure of professional responsibility to take such care as is evidently required in the circumstances, causing foreseeable damage to a person or property, or which seriously compromises the level of safety.

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RULES FOR SHARING SPECIFIC INTEREST AND OTHER DATA AND INFORMATION

1. Definitions

For the purpose of this Regulation 'specific interest data' may include:

(a) The identification data of a single railway operator,

(b) Volumes of operation reported by a single railway operator in accordance with Annex I;

(c) Risk Control Measures reported by a single railway operator in accordance with Annex III as they may reflect the risk management strategy applied to the concerned railway business operations, extent of the resource allocated to the management of RCMs or the effectiveness of the RCMs/strategy.

2. Confidentiality arrangements and access to specific interest data in the ISS

2.1. Specific interest data and information to be shared in application of this Regulation concerning:

(a) a single railway operator,

shall only be shared with this single railway operator, the Member State authorities where the concerned operations are performed, without prejudice to national legislation on transparency, and the Agency.

(b) one Member State and which may consist in any national indicators, national averages or national patterns,

may be shared with any registered entity in accordance with Annex VI – Part B section 3, including, Members State authorities the Group of Analysts and the Agency;

may be made publicly available directly or upon request.

(c) the Single European Rail Area and which may consist in any Union level indicators, Union level averages or Union level patterns,

may be shared with the any registered entity in accordance with Annex VI – Part B section 3, including Member State authorities, Group of analysts and the Agency;

may be made publicly available directly or upon request.

3. Confidentiality arrangements and access to other data in the ISS

3.1. Any data and information mandatorily shared in application of this Regulation through the Information Sharing System established by Article 7, other than those identified as personal or specific interest data and information to be protected, shall be shared in accordance with the table hereinafter.

<table>
<tr><td></td><td colspan="3">Applicable rules
for data and information
<u>specified as mandatory</u>
by the CSM ASLP</td><td>Applicable rules
for data and information
<u>not specified as mandatory</u>
by the CSM ASLP.</td></tr>
<tr><td></td><td>Concerning one given railway operator</td><td>Concerning one EU Member State</td><td>Concerning the SERA</td><td>Any other data or information</td></tr>
<tr><td>May be shared with</td><td colspan="4"></td></tr>
<tr><td>the same given (single) railway operator</td><td>Any data and information to be shared in application of the CSM concerning the targeted railway operator</td><td rowspan="4">Any national averages or national patterns to be shared in application of the CSM</td><td rowspan="4">Any EU averages or EU patterns to be shared in application of the CSM</td><td rowspan="4">Sharing of information based on applicable EU legislation, and where necessary, completed by a confidentiality agreement signed between the concerned parties.

In such a case, the sharing of data and information will be managed under a specific fee-based regime, defined in agreement with the concerned entity(ies) and the Agency in order to cover the expenditures incurred by the Agency related to the design, setting, operation, and maintenance of the shared data and information.</td></tr>
<tr><td>the authority(ies) from the EU MS where the targeted railway operator operates (NSA, NIB, TDG CA)</td><td>Any data and information to be shared in application of the CSM in accordance with the scope of operations of the targeted railway operator in the concerned EU MS</td></tr>
<tr><td>European Union Agency for Railways</td><td>Any data and information to be managed in application of the CSM</td></tr>
<tr><td>Group of analysts (GoA)</td><td>Any data and information to be shared in accordance with the Working Arrangements referred to in Article 6(1) and in accordance with the applicable EU legislation.</td></tr>
<tr><td>Other entities and General public</td><td colspan="4">Any data and information foreseen to be made public in application of the CSM ASLP, or on request in accordance with the applicable EU legislation.</td></tr>
</table>

3.2. Data and information that are reported in 'free text' fields applicable in accordance with this Regulation shall be shared in line with applicable EU legislation on the protection of personal and specific interest data and information, including this Annex.

3.3. Data and information that are reported on a voluntary basis in application of this Regulation and based on any other specific data or information request shall be shared in line with applicable EU legislation, and where necessary, completed by a confidentiality agreement signed between the concerned parties. The Agency shall apply Regulation (EC) No 1049/2001[12] on access to documents.

3.4. Voluntary reporting shall be subject to an agreement between the concerned entity or entities and the Agency and may be subject to a specific fee-based regime in order to cover, when necessary, the expenditures incurred by the Agency related to the design, setting, operation, and maintenance of the shared data and information.

Such agreements shall also include provisions on the applicable confidentiality rules on data and information sharing.

[12] *OJ L 145, 31.5.2001,* Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents.

ENTITIES SHARING DATA AND INFORMATION

1. Categories of entities

1.1. Any legal entity or physical entity (natural person) sharing data and information with the Information Sharing System shall be registered and shall be allocated a category in order to strictly implement appropriate sharing rules, as defined in this Annex.

1.2. The following categories and coding shall apply when sharing data and information:

Entity categories	**Entity coding**	**Entity definition**
Infrastructure Managers	IM	
	Applicable type(s) of operation	
	IM-1	Operating railway lines (including sidings and stations operations)
	IM-2	Operating terminals (including sidings and stations operations)
Railway Undertakings	RU	
	Applicable type(s) of operation	
	RU-1	Operating passenger trains
	RU-2	Operating high speed passenger trains
	RU-3	Operating freight trains
	RU-4	Operating dangerous goods freight trains
	RU-5	Operating terminals
Entity in charge of Maintenance	ECM	(in accordance with Regulation 2019/779[13])
	Applicable type(s) of operation	
	ECM-b	ECM implementing the function defined in article 14(3) b of Regulation 2019/779

[13] Commission Implementing Regulation (EU) 2019/779 of 16 May 2019 laying down detailed provisions on a system of certification of entities in charge of maintenance of vehicles pursuant to Directive (EU) 2016/798 of the European Parliament and of the Council and repealing Commission Regulation (EU) No 445/2011 (OJ, L 139I, 27.5.2019, p. 360).

	ECM-c	ECM implementing the function defined in article 14(3) c of Regulation 2019/779
	ECM-d	ECM implementing the function defined in article 14(3) d of Regulation 2019/779
National entities	NAT	
	Applicable type(s)	
	NSA	National Safety Authority
	TDGCA	Transport of Dangerous Goods Competent Authority
	NIB	National Investigation Body
Other entities	OENT	Any entity not categorized above
	Applicable type(s)	
	EU	European Union
	EC	European Commission
	ERA	European Union Agency for Railways
	RB	Representative Body
	SORG	Sector Organisation
	NPER	Natural person (Physical entity)

2. Registration of parties sharing data and information

2.1. Any entity which is sharing data and information in application of this Regulation shall be registered and shall be identifiable.

2.2. Before sharing information any entity shall be registered with a duly-filled application form sent to the Agency, as defined in the following section.

3 Application form for the registration of an entity

Entity Name	(mandatory field)	(specific interest data)
Entity / ID number (ID number allocated by the Information Sharing System at the time of the first registration)	(mandatory field)	(specific interest data)

Entity Category(ies) (Applicable code(s) as defined in Annex VI – Part B – section 1.2.)	(mandatory field)	(specific interest data)
Entity / Area of operation (list of operated countries in accordance with valid certificate/authorisation)	(mandatory field)	(specific interest data)
Entity Contact functional e-mail address	(optional)	(specific interest data)
Entity Contact person name	(mandatory field)	(personal data)
Entity Contact person e-mail address	(mandatory field)	(personal data)
Entity Contact person identification	(mandatory field)	(personal data)
Entity / IT system reference (reference or name of the IT system used for sharing information with the 'Information Sharing System' in application of Article 7(7))	(if applicable) (in case no system is registered by the 'Entity' the data and information shall be manually shared using the 'Information Sharing System' interface provided by the Agency)	(specific interest data)
Is a third party system (Y/N) ?	(if applicable) Yes, third party system to be used on behalf the registered entity in accordance with Article 7(9). No, own registered entity's system	(specific interest data)
IT system Contact functional e-mail address	(if applicable)	(specific interest data)
IT system Contact person name	(if applicable)	(personal data)
IT system Contact person e-mail address	(if applicable)	(personal data)
IT system Contact person identification	(if applicable)	(personal data)

APPLICATION FORM
FOR REQUESTING A SHARING OF DATA AND INFORMATION

1. Sharing request application scope

1.1. Any entity which is sharing any data and information in application of the present Regulation shall be registered in accordance with Annex VI – Part B and shall use the sharing request application form defined in section 3.

2. Sharing request content

2.1 The sharing request application form is composed of the following fields:

(a) The requesting entity (mandatory): the entity which shall receive the requested data set, when applicable;

(b) The requested entity (mandatory): the entity which shall send the requested data set, when applicable;

(c) The data set to be shared (mandatory): one of the structured set of data and information defined by this Regulation;

(d) The sharing type (mandatory): the type classify the type of action performed on the targeted data and information set:

i) New input;

ii) Correction;

iii) Update;

iv) Extraction;

v) Validation;

(e) The targeted data set (mandatory in case of Correction/ Update/ Extraction/ Validation): the target data set is identified;

(f) The sharing justification (mandatory): the justification provides the legal basis under which data and information shall be processed by the Information Sharing System;

(g) The start date and time of the reporting period (if applicable): the starting time of the period after when the data and information requested shall be collected for further pre-defined sharing of data and information;

(h) The end date and time of the reporting period (if applicable): the end time of the period before when the data and information requested shall be collected for further pre-defined sharing of data and information;

(i) the sharing deadline (mandatory): the time before when the requested data set(s) shall be shared with the requesting entity;

(j) the validation end date and time (if applicable): the time after when the reported data and information shall be notified as valid input from which data analyses

and information analyses can be performed in accordance with the usage foreseen by this Regulation;

(k) the closure of the sharing request (mandatory): the requested entity is informed by the requesting entity that the request is closed or that a follow-up request will be logged.

3. Sharing request application form

3.1. The sharing of any data and information shall be based on a duly-filled sharing request.

3.2. The application form below shall apply to any sharing of data and information.

Requesting entity	(mandatory field)	(specific interest data)
Requested entity	(mandatory field)	(specific interest data)
Sharing request type	(mandatory field) 'New input' or 'Correction' or 'Update' or 'Extraction' or 'Validation' of data and information in/from ISS	(specific interest data)
Sharing justification	(mandatory field) Reference to a specific Article of this regulation justifying the right to share the concerned data set between the requesting and the requested entities	(specific interest data)
Targeted data set	Data set ID (applicable if correction, update or extraction)	(specific interest data)
Data set shared	(mandatory data sets structure in accordance with this Regulation) Note: Personal or specific interest data items are identified in the applicable data sets.	
Start date and time of the reporting period	(if applicable)	
End date and time of the reporting period	(if applicable)	
Sharing deadline	(mandatory field)	
Validation date and time	(if applicable)	
Closure of the sharing request	(mandatory field)	

GENERIC PROCESS FOR SHARING DATA AND INFORMATION

1. Generic process application scope

1.1. The practical management of data and information shared in application of this Regulation shall be implemented in accordance with the generic process described in sections 2 and 3.

2. Main elements of the generic process

2.1 The steps of the generic process are taking into account the generic content of the sharing requests defined in Annex VI – Part C.

2.2 The columns are representing the parties that are concerned by the process elements.

2.3. The arrows indicate which entities are concerned by a sharing of data and information.

2.4 The element  represents one or several data sets that are shared in application of this Regulation. These data sets may be new inputs, corrections, updates, extraction or validations. At any time, the data sets that prevail are the one retained in the ISS (tube-like symbol indicating the ISS data base), represented in 'dark blue' in the generic process of section 3.2.

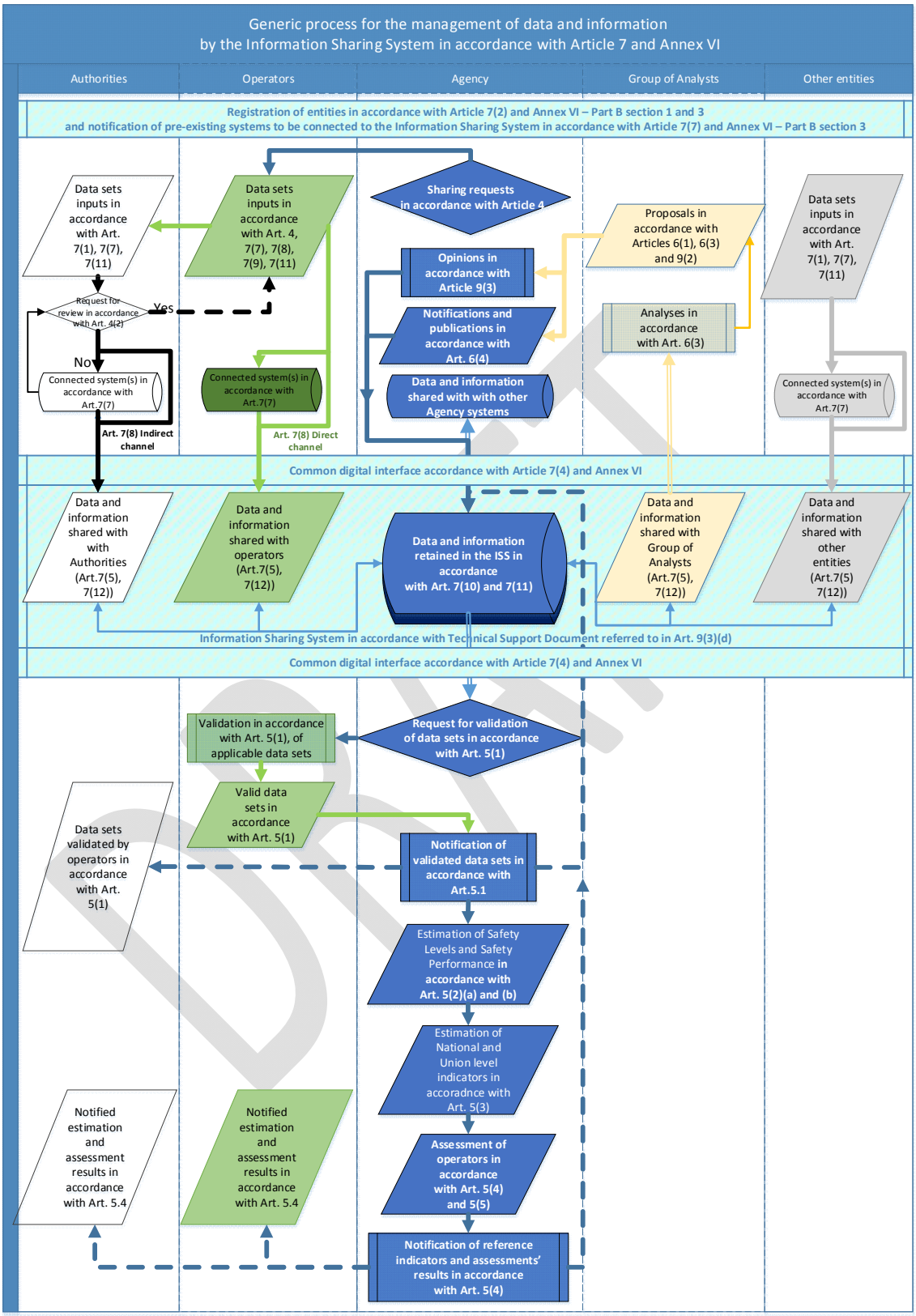
2.5 Sub-processes are represented by this element and  its title indicates on which article of this Regulation the sub-process is implementing.

2.6 The element  is indicating a decision to implement a sharing request or a starting point implementing an article of this Regulation.

3. Reference technical implementing documents of the Information Sharing System

3.1 In addition to Annex VI – Part D, the technical support documentation of Appendix D, as amended in accordance with Article 9(3)(d) shall describe the detailed functioning of the Information Sharing System.

3.2 Appendix D shall be developed in collaboration with the Group of Analysts, in accordance with Article 9(2)(d).


Generic process for the management of data and information
by the Information Sharing System in accordance with Article 7 and Annex VI
Authorities
Operators
Agency
Group of Analysts
Other entities
Registration of entities in accordance with Article 7(2) and Annex VI – Part B section 1 and 3
and notification of pre-existing systems to be connected to the Information Sharing System in accordance with Article 7(7) and Annex VI – Part B section 3
Data sets inputs in accordance with Art. 7(1), 7(7), 7(11)
Data sets inputs in accordance with Art. 4, 7(7), 7(8), 7(9), 7(11)
Sharing requests in accordance with Article 4
Proposals in accordance with Articles 6(1), 6(3) and 9(2)
Data sets inputs in accordance with Art. 7(1), 7(7), 7(11)
Request for review in accordance with Art. 4(2)
Yes
No
Opinions in accordance with Article 9(3)
Notifications and publications in accordance with Art. 6(4)
Analyses in accordance with Art. 6(3)
Connected system(s) in accordance with Art.7(7)
Connected system(s) in accordance with Art.7(7)
Data and information shared with with other Agency systems
Connected system(s) in accordance with Art.7(7)
Art. 7(8) Indirect channel
Art. 7(8) Direct channel
Common digital interface accordance with Article 7(4) and Annex VI
Data and information shared with with Authorities (Art.7(5), 7(12))
Data and information shared with operators (Art.7(5), 7(12))
Data and information retained in the ISS in accordance with Art. 7(10) and 7(11)
Data and information shared with Group of Analysts (Art.7(5), 7(12))
Data and information shared with other entities (Art.7(5) 7(12))
Information Sharing System in accordance with Technical Support Document referred to in Art. 9(3)(d)
Common digital interface accordance with Article 7(4) and Annex VI
Validation in accordance with Art. 5(1), of applicable data sets
Request for validation of data sets in accordance with Art. 5(1)
Valid data sets in accordance with Art. 5(1)
Data sets validated by operators in accordance with Art. 5(1)
Notification of validated data sets in accordance with Art.5.1
Estimation of Safety Levels and Safety Performance in accordance with Art. 5(2)(a) and (b)
Estimation of National and Union level indicators in accoradnce with Art. 5(3)
Notified estimation and assessment results in accordance with Art. 5.4
Notified estimation and assessment results in accordance with Art. 5.4
Assessment of operators in accordance with Art. 5(4) and 5(5)
Notification of reference indicators and assessments' results in accordance with Art. 5(4)

4. Inputs/Outputs to the generic process

Any input to or output from the generic process shall be composed, at least, with a data and information sharing request and the corresponding data set(s) to be shared, both structured in accordance with the applicable formats established by this Regulation.

5. Correction of errors and update of data and information

Correction of errors and updates can be submitted to the Information Sharing System at any time, if justified, with the applicable request and structured data set established by this Regulation.

6. Digitalisation

6.1. The Information Sharing System and the system(s) notified to be connected with it shall use the data structures defined in this Regulation in order to allow efficient sharing of data and information.

6.2. When an entity does not use a digital system to share its data and information, this entity shall use the manual common interface provided by the Information Sharing System.

7. Retention periods

7.1. Any sharing request and related data and information disclosure processed by the Information Sharing System is retained until this system remains operational.

7.2. Personal data are kept the time necessary for processing the related sharing requests, after data and information will be kept in a dis-identified form for statistical and analysis purposes.

ANNEX VII

GROUP OF ANALYSTS

1. Functioning and activity report

In accordance Article 6(1), the Group of Analysts shall implement the following actions:

- Contribute to the preparation of the Group of Analysts working arrangements

- Address, yearly, to the Agency, the Group of Analyst activity report. including, when necessary, well-justified proposals concerning the improvement of the working arrangements

2. Analysis function and work plan

In accordance with Article 6(2), the Group of Analysts shall elaborate and maintain its work plan, including:

- The definition of an harmonised risk classification and decision-making method (analysis function) allowing the Group of Analyst to:
    - Prioritise risk-based railway safety improvements,
    - Allocate any event type to the categories of events defined by this Regulation in a well-controlled manner;

- The development of proposals in accordance with Article 9(2);

- The planning of focussed safety-risk analyses contributing to the elaboration of proposals.

3. Analysing, maintaining and developing railway safety

In accordance with Article 6(3), and using the harmonised analysis function mentioned in the first indent of the previous section, the Group of Analysts shall elaborate proposals concerning the maintenance and development of the Union railway safety, taking into account the following elements:

- Analyses of data and information stemming from the implementation of this Regulation, including;
    - Statistical inferences;
    - Relevant safety occurrences;

- Based on these analyses, and as necessary:
    - Identify safety-related improvement needs;
    - Define practicable solutions for the Union railway safety improvements;

These proposals shall be addressed to the Agency.

4. Sharing the results of relevant safety analyses

In accordance Articles 6(4), the Group of Analysts shall implement the following actions:

- Propose to the Agency safety-related information which may be relevant to share with all or a targeted part of railway stakeholders within the Union, including informal guidance or alerts as necessary;

- Propose to the Agency well-justified formal change requests for maintaining and improving the Annexes of this Regulation and its Appendices;

- Contribute to the preparation of Agency's opinions and recommendations concerning amendments for improving the Annexes of this Regulation and its Appendices.

APPENDIX A

Technical Support Documentation

on the Taxonomy of event types and types of risk control measures

Article 1

Implementation

1. This taxonomy shall be used as a reference, without modification and in its entirety, by any actor applying this Regulation.

Article 2

Applicable taxonomy

1. Part A of this Appendix defines the initial version of the applicable taxonomy of event types.

2. Part B of this Appendix defines the initial version of the applicable taxonomy of risk control measures.

Article 3

Updates

1. Any actors referred to in Article 4 of this Regulation and the members of the Group of Analysts shall be entitled to submit observations concerning the suitability of this taxonomy or the need to update or improve it, using the dedicated communication channel of the Information Sharing System.

2. Submission of observations, update and improvement requests

2.1 Concerning the taxonomy of event types

   a. The concerned actor shall submit the following elements:
      i. A new event name,
      ii. A corresponding definition,
      iii. The category/sub-category of event types it would belong too, or if it would belong to a new category;

   b. There is no pre-existing event type/sub-type with a similar name, category or definition.

2.2 Concerning the taxonomy of risk control measures

   a. The concerned actor shall submit the following elements:

i. The name of the proposed reference risk control measure
ii. A corresponding definition,
iii. The category/sub-category of risk control measure it would belong to, or if it would be a new category;

b. There is no pre-existing reference risk control measure with a similar name, category or definition.

Article 4

Implementation of amendments and consistency of the Information Sharing System

1. This taxonomy is updated when necessary in accordance with Article 9 of this Regulation.

2. The Group of Analysts shall decide if an amendment proposal in accordance with Article 3 of this Appendix shall be addressed to the Agency, and if it is the case, the Group of Analysts shall address to the Agency the detailed description and the justification of the proposed amendments taking into account its harmonised risk classification and decision-making scheme.

3. At any time, the content of the Information Sharing System referred to in this Regulation shall be fully consistent with this taxonomy, as updated in accordance with Article 9(3)(a). However, the human interface of the Information Sharing System may adapt the way the information is presented to facilitate further its usage.

APPENDIX A – PART A

Taxonomy of event types

Category A events - Accidents with a potential to directly result in victims or damages			
Code of event type	Name of the event type	Definitions	By default allocation of related occurrences (see Annex IV for details)
A1	**Collisions**		
A1.1	**Collision of a train with rail vehicle**	RSD AppAnnexI	RU / RU+IM
A1.2	**Collision of a train with obstacle within the clearance gauge**	RSD AppAnnexI	RU / RU+IM
A1.3	**Collision of one or more rail vehicle with another rail vehicle**	Same as A1.1 but concerning one or more rail vehicle not forming a train.	RU / RU+IM
A1.4	**Collision of one or more rail vehicle with obstacle within the clearance gauge**	Same as A1.2 but concerning one or more rail vehicle not forming a train.	RU / RU+IM
A1.5	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A2	**Derailments**		
A2.1	**Derailment of a train**	RSD AppAnnexI	

A2.2	**Derailment of one or more rail vehicle**	Same as A2.1 but concerning one or more rail vehicle not forming a train.	
A2.3	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A3	**Level Crossing Accidents**		
A3.1	**Level Crossing Accident involving a train**	RSD AppAnnexI	
A3.2	**Level Crossing Accident involving one or more rail vehicles**	Same as A3.1 but concerning one or more rail vehicle not forming a train.	
A3.3	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A4	**Accidents to persons**		
A4.1	**Accidents to persons involving a train**	RSD AppAnnexI	
A4.2	**Accidents to persons involving a rail vehicle**	RSD AppAnnexI	
A4.3	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A5	**Fire or Explosion NOT involving dangerous goods cargo**		
A5.1	**Fire (or explosion) in Rolling Stock**	RSD AppAnnexI	RU
A5.2	**Fire (or explosion) in/of infrastructure installations**		IM
A5.3	**Others**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A6	**Other accident**		
A6.1	**Electrocution**	RSD AppAnnexI	IM / IM+RU
A6.2	**Cargo falling form a height**	(reserved)	RU

		Note: here it is referred to cargo(es) falling from a height during the process of applicable types of railway operations	
A6.3	**Dangerous goods occurrence not related to another type A event**	A reporting of information in accordance with TDG legislation Directive 2008/68/EC (RID annex) shall apply.	IM or RU
A6.4	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
A7	**Suicides and attempted suicides**		
A7.1	**Suicide**	RSD AppAnnexI	IM
A7.2	**Attempted suicide**		IM
	(reserved)		

Category B events
-
Incidents with the potential to directly cause a category A event

Code of event type	Name of the event type	Definitions	By default allocation of related occurrences (see Annex IV for details)
B.1	**Operation failures**		
B.1.1	**Failure to operate the infrastructure**		
B.1.1.1	Improper routing	Any occasion when a train/vehicle is directed on an inappropriate track.	IM
B.1.1.2	On track plant incorrectly outside possession	Note: on track plant refers to on track machine(s) or other object(s) used during infrastructure works.	IM
B.1.1.3	Pushed switch	Any occasion when a switch is run over in a wrong setting.	RU or IM
B.1.1.4	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	RU or IM
B.1.2	**Failure to operate a train or rail vehicle(s)**		
B.1.2.1	Signal passed at danger when passing a danger point	RSD AppAnnexI	RU
B.1.2.2	Signal passed at danger without passing a danger point	RSD AppAnnexI	RU
B.1.2.3	Runaway	Any uncontrolled movement of a rail vehicle over a distance of at least one meter.	RU

B.1.2.4	Over-speeding	Any occasion when a train runs with a speed higher than the maximum authorized speed or design speed.	RU
B.1.2.5	Loading irregularity	Any situation in which an improperly loaded goods creates an imminent risk of an accident.	RU
B.1.2.6	Train composition Failure		RU
B.1.2.7	Train available for boarding or alignment outside platform		RU
B.1.2.8	Passenger entrapment in door		RU
B.1.2.9	Train departure with open door		RU
B.1.2.10	Long stop in tunnel	Any occasion when a passenger train is stopped in a tunnel for more than 10 minutes.	RU
B.1.2.11	Severe brake/snatch		RU
B.1.2.12	Brake not correctly set for load		RU
B.1.2.13	Brake not checked		RU
B.1.2.14	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.1.3.	**Other un-coded operation failure**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	RU
B.2	**Technical Failure of the vehicles**		**RU**
B.2.1	**Failure of the wheelset**		RU
B.2.1.1	Broken wheel on rolling stock in service	RSD AppAnnexI	RU
B.2.1.2	Broken axle on rolling stock in service	RSD AppAnnexI ; note: this category excludes broken axles resulting from hot axles boxes.	RU

B.2.1.3	Hot axle box	Any situation in which the axle suffers structural failure due to friction-induced overheat.	RU
B.2.1.4	Suspension system failure		RU
B.2.1.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.2.2	**Failure of the braking system**	A failure in breaking system significantly reducing the braking capacity.	RU
B.2.2.1	Brake not operating with the expected performance		RU
B.2.2.2	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	RU
B.2.3	**Other failures of the vehicle**		RU
B.2.3.1	Wrong side signaling (vehicle) failure	RSD AppAnnexI	RU
B.2.3.2	Losing of vehicle parts	Any situation when a part of a rail vehicle detach and falls on ground.	RU
B.2.3.3	Traction motor failure (electrical)		RU
B.2.3.4	Diesel engine failure		RU
B.2.3.5	Coupling failure	Any situation in which the railway vehicles detach as a result of a structural component failure.	RU
B.2.3.6	Doors failure		RU
B.2.3.7	Loss of ventilation	Note: for example, a loss of ventilation in railway vehicle compromising fire management plan, leading to victims or damage	RU
B.2.3.8	ERTMS/ATP/APC odometry error		RU
B.2.3.9	Twisted underframe		RU
B.2.3.10	Train detection equipment failure		RU

B.2.3.11	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.2.4	**Other <u>un-coded technical failure</u> of the vehicle**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	RU
<u>B.3</u>	**<u>Technical Failure of the infrastructure</u>**		**IM**
B.3.1	**Failure of the track**		IM
B.3.1.1	Broken rail	RSD AppAnnexI	IM
B.3.1.2	Track buckle and other track misalignment	RSD AppAnnexI	IM
B.3.1.3	Gauge spread		IM
B.3.1.4	Track twist		IM
B.3.1.5	Improper rail fastening and joints		
B.3.1.6	Wrong side signaling (infrastructure) failure	RSD AppAnnexI	IM
B.3.1.7	Switch and crossing failure		IM
B.3.1.8	Failure of the level crossing equipment	Any occasion when a train passes over a level crossing with lower protection level than required.	IM
B.3.1.9	Disorder of earthworks/embankment failure		
B.3.1.10	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.3.2	**Structures failure**	Any collapse, including partial, distortion or break affecting the clearance gauge and stability of the superstructure.	IM
B.3.2.1	Tunnel failure		IM
B.3.2.2	Viaduct failure		IM

B.3.2.3	Culvert failures		IM
B.3.2.4	Rail bridge structural failure		IM
B.3.2.5	Over line bridge (e.g. pedestrian) failure		IM
B.3.2.6	Station Structure failure		IM
B.3.2.7	Platform failure		IM
B.3.2.8	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.3.3	**Other failures of the infrastructure**		IM
B.3.3.1	Power supply equipment failure		IM
B.3.3.2	Train detection equipment failure		IM
B.3.3.3	Overhead contact line failure		IM
B.3.3.4	Loss of ventilation	Note: for example, a loss of tunnel ventilation compromising fire management plan, leading to victims or damage	IM
B.3.3.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
B.3.4	**Other <u>un-coded technical failure</u> of the infrastructure**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	IM

Category C events

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Incidents, formulated as variations while performing a railway function, with the potential to directly or indirectly cause a category B event

Code of event type	Name of the event type	Definitions	By default allocation of related occurrences (see Annex IV for details)
C.1	**Human Performance**		
C.1.1	**To provide power for train (or vehicle) operations in normal operations, or situations where there are disruptions or engineering work**		
C.1.1.1	Variation in function 'Take up power control duties'		
C.1.1.2	Variation in function 'Monitor power'		
C.1.1.3	Variation in function 'Provision of traction supply'		
C.1.1.4	Variation in function 'Detect irregularity'		
C.1.1.5	Variation in function 'Agreement of isolation'		
C.1.1.6	Variation in function 'Formal agreement for control of the line'		
C.1.1.7	Variation in function 'Apply isolation'		

C.1.1.8	Variation in function 'Return of power / remove isolation'		
C.1.1.9	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.2	**To respond to incidents and occurrences, including arrangements for safety and initiation of remedial actions**		
C.1.2.1	Variation in function 'Detect irregularity'		
C.1.2.2	Variation in function 'Conduct immediate mitigation, containment'		
C.1.2.3	Variation in function 'Gather and communicate incident information'		
C.1.2.4	Variation in function 'Protect work area'		
C.1.2.5	Variation in function 'Verify work arrangements'		
C.1.2.6	Variation in function 'Ensure status of infrastructure'		
C.1.2.7	Variation in function 'Formal agreement for control of the line'		
C.1.2.8	Variation in function 'Coordinating failure and incident response'		
C.1.2.9	Variation in function 'Anticipate delay'		
C.1.2.10	Variation in function 'Re-planning train service'		
C.1.2.11	Variation in function 'Ensure passenger and personnel safety'		
C.1.2.12	Variation in function 'Rectifying the incident'		

C.1.2.13	Variation in function 'Protect evidence'		
C.1.2.14	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.3	**To maintain, repair and extend the infrastructure**		IM
C.1.3.1	Variation in function 'Identify engineering work requirements'		IM
C.1.3.2	Variation in function 'Establish network access'		IM
C.1.3.3	Variation in function 'Formulate work plans'		IM
C.1.3.4	Variation in function 'Allocate resources'		IM
C.1.3.5	Variation in function 'Formal agreement for control of the line'		IM
C.1.3.6	Variation in function 'Verify work arrangements'		IM
C.1.3.7	Variation in function 'Protect work area'		IM
C.1.3.8	Variation in function 'Supply of resources to site work'		IM
C.1.3.9	Variation in function 'Establish safe working environment'		IM
C.1.3.10	Variation in function 'Using trains, plant and machinery for engineering work'		IM
C.1.3.11	Variation in function 'Close down site on completion of work'		IM
C.1.3.12	Variation in function 'Supervision of teams and individuals'		IM
C.1.3.13	Variation in function 'Carrying out trackside work'		IM

C.1.3.14	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.4	**To operate a train in normal operational situations and situations where disruption or problems occur**		RU
C.1.4.1	Variation in function 'Ensure authority'		RU
C.1.4.2	Variation in function 'Maintain appropriate speed'		RU
C.1.4.3	Variation in function 'Ensure train integrity and load integrity on journey'		RU
C.1.4.4	Variation in function 'Stopping train'		RU
C.1.4.5	Variation in function 'Management of train control systems'		RU
C.1.4.6	Variation in function 'Ensure status of infrastructure'		RU
C.1.4.7	Variation in function 'Operate level crossing'		RU
C.1.4.8	Variation in function 'Warnings to other rail users'		RU
C.1.4.9	Variation in function 'Stabling of vehicles'		RU
C.1.4.10	Variation in function 'Provide information and support to passengers'		RU
C.1.4.11	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.5	**To control train movements in all operational circumstances**		IM
C.1.5.1	Variation in function 'Take up control of train movement duties'		IM
C.1.5.2	Variation in function 'Handover of responsibility'		IM

C.1.5.3	Variation in function 'Monitor rail network'		IM
C.1.5.4	Variation in function 'Authorise train movements'		IM
C.1.5.5	Variation in function 'Route / re-route passenger or freight service'		IM
C.1.5.6	Variation in function 'Record train movements'		IM
C.1.5.7	Variation in function 'Anticipate delays or poor traffic flow'		IM
C.1.5.8	Variation in function 'Deal with irregular train movements'		IM
C.1.5.9	Variation in function 'Provide train identification'		IM
C.1.5.10	Variation in function 'Manage implementation of emergency / temporary speed restrictions'		IM
C.1.5.11	Variation in function 'Gather and communicate information'		IM
C.1.5.12	Variation in function 'Control level crossing'		IM
C.1.5.13	Variation in function 'Dispatch train'		IM
C.1.5.14	Variation in function 'Supervision of teams and individuals'		IM
C.1.5.15	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.6	**To prepare trains for service**		RU
C.1.6.1	Variation in function 'Assembling vehicle formation'		RU
C.1.6.2	Variation in function 'Preparation of vehicles'		RU

C.1.6.3	Variation in function 'Take up driving duties'		RU
C.1.6.4	Variation in function 'Loading of freight'		RU
C.1.6.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.7	**Support passenger movements and well-being at stations**		RU
C.1.7.1	Variation in function 'Preparing stations for use by passengers'		RU
C.1.7.2	Variation in function 'Assisting passengers'		RU
C.1.7.3	Variation in function 'Control of crowds'		RU
C.1.7.4	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.8	**To check, inspect maintain and repair rolling stock for service**		
C.1.8.1	Variation in function 'Identify rolling stock maintenance requirements'		
C.1.8.2	Variation in function 'Allocate resources'		
C.1.8.3	Variation in function 'Prepare rolling stock for inspection'		
C.1.8.4	Variation in function 'Inspect rolling stock'		
C.1.8.5	Variation in function 'Handover of responsibility'		
C.1.8.6	Variation in function 'Installation of components onto vehicles normally in service'		

C.1.8.7	Variation in function 'Maintenance of components on vehicles normally in service'		
C.1.8.8	Variation in function 'Servicing of rolling stock'		
C.1.8.9	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.9	**To design a structural subsystem**		
C.1.9.1	Variation in function 'Define scope and purpose'		
C.1.9.2	Variation in function 'Establish system definition and application conditions '		
C.1.9.3	Variation in function 'Identify risks'		
C.1.9.4	Variation in function 'Specify system requirements'		
C.1.9.5	Variation in function 'Apportion system requirements (sub-system and compoment level)'		
C.1.9.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.10	**To Install a structural subsystem**		
C.1.10.1	Variation in function 'Manufacture'		
C.1.10.2	Variation in function 'Assemble and install'		
C.1.10.3	Variation in function 'Validate (incl. safety acceptance and commissioning)'		
C.1.10.4	Variation in function 'Accept system (incl. entry in service)'		
C.1.10.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	

C.1.11	**To Maintain a structural subsystem**		
C.1.11.1	Variation in function 'Coordinating/managing of maintenance (of below 3 activities) '		
C.1.11.2	Variation in function 'Identifying of maintenance needs '		
C.1.11.3	Variation in function 'Organizing maintenance activities '		
C.1.11.4	Variation in function 'Executing maintenance '		
C.1.11.5	Variation in function 'To Decommission a structural subsystem'		
C.1.11.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.12	**External events - Environmental**	Note: This category of event and its subtypes are allowed to be used as Category B events in the case there is no other possibility to describe properly the scenario which took place.	
C.1.12.1	Earthquake		
C.1.12.2	Flooding		
C.1.12.3	Landslide		
C.1.12.4	Vegetation		
C.1.12.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.1.13	**External events - Security**	Note: This category of event and its subtypes are allowed to be used as Category B events in the case there is no other possibility to describe properly the scenario which took place.	
C.1.13.1	Terrorism		
C.1.13.2	Assault		

C.1.13.3	Theft		
C.1.13.4	Arson		
C.1.13.5	Vandalism		
C.1.13.6	Cyber attack		
C.1.13.7	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
C.2	**Other**	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	

Contributing factors - Actions, omissions, events or conditions that affect an occurrence by increasing its likelihood, accelerating the effect in time or increasing the severity of the consequences, but the elimination of which would not have prevented the occurrence			
Code of event type	Name of the event type	Definitions	By default allocation of related occurrences (see Annex IV for details)
F.2	**Performance relevant factor**		
F.2.1	**Dynamic staff factors**		
F.2.1.1	Expectation / Intention while acting / Decision model / Error type		
F.2.1.2	Vigilance/ concentration		
F.2.1.3	Fatigue		
F.2.1.4	Stress (incl. emotions & psychosocial factors)		
F.2.1.5	Situational awareness (incl. self-awareness - situational self-knowledge)		
F.2.1.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
F.2.2	**Dynamic tasks factors**		

F.2.2.1	Uncertainty-Volatility / Time pressure / Time to respond		
F.2.2.2	Complexity-Ambiguity / Autonomy		
F.2.2.3	Monotony / Routine; habits		
F.2.2.4	Shift pattern (working hours, breaks, manning)		
F.2.2.5	Working environment (visibility, noise, vibrations, weather,…)		
F.2.2.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
F.2.3	**Static Staff Factors**		
F.2.3.1	Familiarity / Individual experiences - job history		
F.2.3.2	Individual characteristics (incl. self-trust, openness (and others aspects of personality,...))		
F.2.3.3	Motivation / Commitment (to goal (priorities, risks), to organisation, to rules)		
F.2.3.4	Fit to work (matching to the requirements of the tasks/activities, health)		
F.2.3.5	Decision making skills		
F.2.3.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
F.2.4	**Static Task Factors**		
F.2.4.1	Technical Communication Means		
F.2.4.2	Task instructions - Quality of procedures and rules		

F.2.4.3	User-centered design / Human Machine Interfaces / Levels of automation		
F.2.4.4	Preventive dispositions and devices		
F.2.4.5	Societal & Institutional context (regulation, economy, politics, medias, trespassing, sabotage, terrorism…)		
F.2.4.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
F.2.5	**Interactional Factors**		
F.2.5.1	Communication (between employees, within organisation)		
F.2.5.2	Relations (within team, with team-leader, within organisation) - power issues		
F.2.5.3	Trust in information - in others (management, colleagues, technical means,…)		
F.2.5.4	Positive - negative reinforcement		
F.2.5.5	Involvement in decision making		
F.2.5.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	

SMS factors - Factors that play a role in the management of risk control measures			
Code of event type	Name of the event type	Definitions	By default allocation of related occurrences (see Annex IV for details)
S.1	**Leadership**		
S.1.1	Leadership and commitment		
S.1.2	Safety Policy		
S.1.3	Organizational roles, responsibilities, accountabilities and authorities		
S.1.4	Consultation of staff and other parties		
S.1.5	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
S.2	**Planning**		
S.2.1	Actions to address risks		
S.2.2	Safety objectives and planning		
S.2.3	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
S.3	**Support**		
S.3.1	Resources		

S.3.2	Competence		
S.3.3	Awareness		
S.3.4	Information and communication		
S.3.5	Documented information		
S.3.6	Integration of human and organizational factors		
S.3.7	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
S.4	**Operation**		
S.4.1	Operational planning and control		
S.4.2	Asset Management		
S.4.3	Contractors, partners and suppliers		
S.4.4	Management of change		
S.4.5	Emergency management		
S.4.6	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	
S.5	**Performance evaluation**		
S.5.1	Monitoring		
S.5.2	Internal auditing		
S.5.3	Management review		
S.5.4	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	

S.6	**Improvement**		
S.6.1	Learning from accidents and incidents		
S.6.2	Continual improvement		
S.6.3	Other	A reporting of information in accordance with Article 3.2.1. of this Appendix shall apply.	

APPENDIX A – PART B

Taxonomy of types of risk control measures

(reserved)

APPENDIX B

Technical Support Documentation

on the Railway operators' self-estimation of safety performance

Article 1

Implementation

1. This technical support documentation shall be used as a reference, without modification and in its entirety, by any actor applying this Regulation.

Article 2

Submission of observations

1. Any actors referred to in Article 4 of this Regulation and the members of the Group of Analysts shall be entitled to submit observations concerning the suitability of this appendix or the need to update or improve it, using the dedicated communication channel of the Information Sharing System.

Article 3

Amendments and consistency of the Information Sharing System

1. This Appendix is updated and revised, when necessary, in accordance with Articles 9 and 10 of this Regulation.

2. The Group of Analysts shall decide if observations in accordance with Article 2 of this Appendix shall be converted into amendment proposals to be addressed to the Agency, and if it is the case, the Group of Analysts shall address to the Agency the detailed description and the justification of the proposed amendments taking into account its harmonised risk classification and decision-making scheme.

3. At any time, the content of the Information Sharing System referred to in this Regulation shall be fully consistent with this appendix, as updated. However, the human interface of the Information Sharing System may adapt the way the information is presented to facilitate further its usage.

Article 4

Safety performance maturity levels

1. The maturity of a railway operator in the different stages of managing risk control measures are expressed in levels. The maturity levels for each of these stages are expressed on a scale ranging from maturity level 1 to maturity level 5.

2. The performance expected for each maturity level contains a description of the expected performance and the required elements of proof a railway operator needs to provide to demonstrate achieving the corresponding level of maturity.

3. The railway operators shall use the tables described in Article 5 to self-estimate its maturity level.

Article 5

Self-estimation

1. Self-estimation of the 'Planning of risk control measures'

The purpose of 'Planning of risk control measures' is to identify the RCM that will allow to control the serious risks for safety posed by an organisation's railway operations whether they are carried out by the organisation itself, or by contractors, partners or suppliers under its control.

The main outcomes expected from this activity are that:

- potential safety risks and requirements for RCM are identified
- a safe working environment which conforms to applicable legislation, in particular Directive 89/391/EEC[14] is provided and sustained
- safety is considered when identifying and managing the organisation's business risks and it is explained how conflict between safety and other business goals will be recognised and resolved
- collaboration with other interested parties (such as railway undertakings, infrastructure managers, manufacturer, maintenance supplier, entity in charge of maintenance, railway vehicle keeper, service provider and procurement entity) on shared risks and the putting in place of adequate RCM is established

1.1. Requirements for Maturity level 1

No requirements are established for this level. It is the level allocated in case the railway operator is not able to provide the required evidences for demonstrating the achievement of level 2.

[14] Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (OJ L 183, 29.6.1989, p. 1).

1.2. Requirements for Maturity level 2:

Description of expected performance for maturity level 2 in 'Planning of risk control measures' area
➢ Objectives/priorities/needs for the performance of the RCM are identified, taking into account information from areas that give rise to the most important risks - this shall lead to the identification of requirements for RCM. ➢ Assumptions and constraints (including HOF) are considered when identifying the risk scenarios. ➢ Interfaces between the involved parties are identified to ensure both effective communication and exchange of expertise for the identification of risk scenarios ➢ Staff are trained in the identification of risks
Required elements of proof for level 2
1. The hazard record includes all hazards, together with all related RCM and system assumptions identified during the risk assessment process. It contains a clear reference to the origin of the hazards and to the selected risk acceptance principles. 2. Process for risk assessment documented 3. Overview of training of staff members with regard to risk assessment 4. Process for change management documented 5. Overview of assessed risk scenarios (serious risks for safety) 6. Staff with knowledge of operational processes have risk assessment activities mentioned in their job description. 7. Someone in the company is aware/has knowledge of HOF concepts and is mandated to organise necessary resources when needed 8. Evidence that the change management process systematically involves a risk management process 9. The 10 most important risk control measures described in accordance with the parts 1 and 2 of the applicable data set in Annex III – Part B

1.3. Requirements for Maturity level 3

Description of expected performance for maturity level 3 in 'Planning of risk control measures' area
➢ A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into the planning of all relevant RCM; this contains: (a) a system definition (b) the identification and analysis of operational, organisational and technical risks relevant to the type, extent and area of operations carried out by the organisation (c) the identification of appropriate RCM that make the risk(s) of the system acceptable ➢ Required competencies and roles for performing the 'planning of RCM' activity are identified as part of the standard process ➢ Required means (facilities, tools, methods, etc.) for performing the 'planning of RCM' activity are identified as part of the standard process ➢ The sequence and interaction between the 'planning of RCM' activity and the other RCM processes in this CSM (resp. 'setting up and operating of RCM', 'monitoring of RCM', 'reviewing and adjusting of RCM') is determined. ➢ RCM are planned based upon the standard process; ensuring that: (a) personnel planning RCM are competent on the basis of appropriate education, training, and experience (b) required resources, means and information necessary for planning RCM are made available, allocated and used
Required elements of proof for level 3
10. Operator uses acceptance criteria in risk-based decision-making. 11. Process for the identification of risks associated with human and organisational factors during the risk assessment process. 12. Elements exist that human and organisational factors are taken into consideration in the risk assessment process and the change management process (evidence of application of process – see 11.) 13. Overview of assessed risk scenario's concerning all the risks for safety that are identified the railway operator. 14. The 10 most important risk control measures described in accordance with the parts 1, 2 and 3 of the applicable data set in Annex III – Part B

1.4. Requirements for Maturity level 4

Description of expected performance for maturity level 4 in 'Planning of risk control measures' area
➢ Information needs/ indicators to support the measurement of the correct planning of RCM ➢ Measurement objectives for the established information needs/indicators are derived ➢ Measurement techniques and frequency of measurement, in line with measurement objectives and quantitative objectives for performance of the RCM, are identified and ➢ Control limits are re-established (as necessary) following corrective action
Required elements of proof for level 4
15. Performance indicators are measured with regard to the risk assessment process. 16. Periodic review meetings with regard to the risk assessment process take place 17. Reviews are undertaken of the expertise present during risk analyses with respect to the topics under analysis 18. The 10 most important risk control measures described in accordance with the parts 1, 2, 3 and 4 of the applicable data set in Annex III – Part B

1.5. Requirements for Maturity level 5

Description of expected performance for maturity level 5 in 'Planning of risk control measures' area
➢ New business visions and goals are analysed to give guidance for new RCM objectives and potential areas of change. ➢ Emergent risks are considered when identifying RCM improvement opportunities.
Required elements of proof for level 5
19. The railway operator regularly conducts in-depth reviews of its risk assessment methods and adapts them in function of these findings 20. Human and organisational factors issues are fully integrated in the risk assessment process and the change management process and are continuously reviewed 21. The 20 most important risk control measures described in accordance with the parts 1, 2, 3 and 4 of the applicable data set in Annex III – Part B

2. Self-estimation of the 'Setting up and operating of risk control measures'

The purpose of 'Setting up and operating of risk control measures' is to implement the RCM, with demonstration that it fulfils the specified requirements, and to operate and maintain the RCM during its entire life cycle.

The main outcomes expected from this activity are that:

- RCM are designed, manufactured and set up according to specified requirements
- the safe integration of the RCM in the wider railway system is tested and validated
- throughout their entire lifecycle, RCM are operated and maintained according to specifications

2.1. Requirements for Maturity level 1

No requirements are established for this level. It is the level allocated in case the railway operator is not able to provide the required evidences for demonstrating the achievement of level 2.

2.2. Requirements for Maturity level 2

Description of expected performance for maturity level 2 in 'Setting up and operating of risk control measures' area
➢ Responsibilities and authorities for setting up and operating the RCM are assigned and communicated ➢ The human and technological means necessary for setting up and operating the RCM are made available, allocated and used; this covers: - the design, manufacturing and set up of RCM - the safe integration of the RCM - the operation and maintenance of the RCM, throughout their lifecycle ➢ Information necessary for setting up and operating the RCM are made available, allocated and used ➢ Communication between the involved parties is assured and is effective ➢ Requirements for the documentation of the work products (i.e. supporting tools/techniques, intermediate actions, etc. that must be used and/or produced to set up and operate an RCM) are defined. Such requirements may include requirements for (1) distribution, (2) identification of work products and their components (3) traceability ➢ The work products are made available through appropriate access mechanisms and documented ➢ The performance of the RCM to fulfil the identified objectives is planned (activities, tasks and work products are defined, required resources and information are identified). ➢ Responsibilities and authorities for operating the RCM are defined
Required elements of proof for level 2
22. The railway operator informs its staff (and external staff concerned) of the risks and RCM relevant for their activities. 23. The overview of risk control measures shows for each risk control measure an assigned responsible(s) in charge of operating and maintaining the risk control measure. 24. The competence management system ensures staff has the competences needed to implement, operate and maintain risk control measures. 25. The overview of risk control measures includes the system assumptions identified during the risk assessment process and contains a clear reference to the origin of the hazards and to the selected risk acceptance principles. 26. Records of decisions taken by the railway operator show that safety was taken into consideration.

2.3. Requirements for Maturity level 3

Description of expected performance for maturity level 3 in 'Setting up and operating of risk control measures' area
➢ A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into the setting up and operating of all relevant RCM; this contains: - the design of RCM and their technical, operational and organisational components according to the allocated requirements - the manufacturing and preparation of RCM subsystems and components - the assembling and installation of subsystems and components to integrate the RCM in the wider railway system - validation of the RCM, confirming that it is suitable for the intended specific use - acceptance of the RCM before entry in service - the operation, maintenance and supporting of the RCM such that compliance with requirements is maintained ➢ Required competencies and roles for 'setting up and operating of RCM' are identified as part of the standard process ➢ Required means (facilities, tools, methods, etc.) for 'setting up and operating of RCM' are identified as part of the standard process ➢ RCM are set up and operated based upon the standard process; ensuring that: - personnel setting up and operating RCM are competent on the basis of appropriate education, training, and experience - required resources, means and information necessary for setting up and operating RCM are made available, allocated and used ➢ Appropriate data for understanding the behaviour of, and to demonstrate the suitability and effectiveness of the RCM is collected ➢ Appropriate data and suitable methods for understanding the behaviour of, and to demonstrate the suitability and effectiveness of the RCM is identified
Required elements of proof for level 3
27. Arrangements exist on managing shared risks and responsibilities 28. A distinction is made between the type of risk control measure: RCMs that prevent occurrences, RCMs that reduce the severity of consequences 29. A method exists that takes into account both the effort as well as the benefits of the risk control measures in order to be able to prioritize measures based on resource-effectiveness.(Goal: Resources for risk reduction are allocated in order to maximize the resulting risk reduction)

2.4. Requirements for Maturity level 4

Description of expected performance for maturity level 4 in 'Setting up and operating of risk control measures' area
➢ Measurement results of RCM performance are reported to those responsible for monitoring the extent to which qualitative objectives are met defined ➢ Analysis and control techniques, appropriate to control the RCM performance, are defined and validated against process control objectives. ➢ Control limits for selected base and derived RCM performance are defined
Required elements of proof for level 4
30. There is evidence to estimate the effects of risk control measures across multiple risks (e.g. risks identified in multiple risk assessments) 31. The method for assessing the resource effectiveness of RCM is systematically applied 32. Management systems for different topics (such as safety) are integrated.

2.5. Requirements for Maturity level 5:

Description of expected performance for maturity level 5 in 'Setting up and operating of risk control measures' area
➢ Quantitative and qualitative process improvement objectives are documented ➢ A mechanism is established for implementing accepted RCM changes effectively and completely. ➢ The factors that impact the effectiveness and full deployment of the RCM change are identified and managed. ➢ RCM changes are effectively communicated and training is provided to all affected parties. ➢ Records of the change implementation are maintained.
Required elements of proof for level 5
33. Description of the decision making process at strategic level that includes a risk-based approach

3. Self-estimation of the 'Monitoring of risk control measures'

The purpose of 'Monitoring of risk control measures' is to collect and analyse data relating to the functioning of individual RCM in order to make sure they are in place, working correctly and achieving the organisation's objectives and to objectively demonstrate their effectiveness.

The main outcomes expected from this activity are that:

- the correct application and the effectiveness of technical, operational and organisational risk control measures is checked
- the performance of safety-related tasks is regularly monitored at all levels within the organisation
- a strategy, priorities and plan(s) for monitoring RCM is identified
- information on the functioning of RCM is collected and analysed, according to the strategy

3.1. Requirements for Maturity level 1

No requirements are established for this level. It is the level allocated in case the railway operator is not able to provide the required evidences for demonstrating the achievement of level 2.

3.2. Requirements for Maturity level 2:

Description of expected performance for maturity level 2 in 'Monitoring of risk control measures' area
➢ Objectives/priorities/needs for the monitoring of RCM are identified, taking into account information from areas that give rise to the greatest risks ➢ RCM performance is monitored to ensure planned results are achieved ➢ Work products are reviewed against the defined requirements in accordance with planned arrangements and issues arising from work product reviews are resolved.
Required elements of proof for level 2
34. The monitoring plan takes into account the risk control measures in areas that give rise to serious risks and if these measures are not monitored effectively, this could lead to adverse consequences for safety

3.3. Requirements for Maturity level 3:

Description of expected performance for maturity level 3 in 'Monitoring of risk control measures' area
➢ A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into the monitoring of all relevant RCM; this contains: - the collection and analysis of measurement data - an evaluation as to whether RCM are correctly implemented ➢ Required competencies and roles for 'monitoring of RCM' are identified as part of the standard process ➢ Required means (facilities, tools, methods, etc.) for 'monitoring of RCM' are identified as part of the standard process ➢ RCM are monitored based upon the standard process; ensuring that: - personnel monitoring RCM are competent on the basis of appropriate education, training, and experience - required resources, means and information necessary for monitoring RCM are made available, allocated and used ➢ Conformance of the RCM operation with standard requirements is verified. ➢ Collected data are analysed to understand the behaviour, suitability and effectiveness of the defined RCM.
Required elements of proof for level 3
35. The monitoring plan takes into account all monitorable and necessary risk control measures. The monitoring plan yields robust and reproducible results. 36. The performance of each RCMs is monitored using pre-defined indicators that give information regarding its effectiveness.

3.4. Requirements for Maturity level 4

Description of expected performance for maturity level 4 in 'Monitoring of risk control measures' area
➢ Required data is collected in an effective and reliable manner. ➢ Measurement results are created from the collected data within defined frequency ➢ Analysis of measurement results is performed within defined frequency ➢ Statistical or similar techniques are used to quantitatively understand RCM performance and capability within defined control limits and trends of RCM behaviour are identified. ➢ All situations are recorded when defined control limits are exceeded and each out-of-control case is analysed to identify potential cause(s) of variation. ➢ Monitoring results are provided to those responsible for taking action.
Required elements of proof for level 4
37. The railway operator systematically monitors the risk control measures and identifies their weaknesses.

38. The management supports a culture in which both positive and negative experiences on the perception of risk levels are openly shared and discussed for learning.
39. The majority of important risks are monitored using leading indicators.
40. Reporting is available on the coherent and correct application of the risk assessment process and the change management process
41. Best practices stemming from other industries are sought after and incorporated, if relevant.

3.5. Requirements for Maturity level 5

Description of expected performance for maturity level 5 in 'Monitoring of risk control measures' area
➢ Measurement data are analysed and made available. ➢ Causes of variation in RCM performance are identified and classified. ➢ Measurement data are analysed to determine whether results are due to common or special causes. ➢ Common causes of variation are analysed to get quantitative understanding of their impact. ➢ Other feedback is recorded, such as opportunities for further improvement of the standard RCM. ➢ Performance of changed RCM are measured and compared with historical data. ➢ A mechanism is available for documenting and reporting analysis results to management and RCM owners
Required elements of proof for level 5
42. Where possible, the railway operator has put in place a system for real-time automated data collection and monitoring with regard to monitoring of RCM's. 43. The system ensures that the data is available when needed 44. The railway operator proactively organizes the sharing of lessons learned on the efficiency or effectiveness of risk control measures with external stakeholders (such as peers). 45. Reporting is available on the coherent and systematic application of risk based decision making criteria and decision making process.

4. Self-estimation of the 'Reviewing and adjusting of risk control measures'

The purpose of 'Reviewing and adjusting of risk control measures' is to continually improve the effectiveness and efficiency of the technical, operational and organisational RCM and maintaining them aligned with the business need.

The main outcomes expected from this activity are that:

- the continuing adequacy and effectiveness of the RCM is systematically reviewed, considering at least:
  - (a) results from the RCM monitoring process
  - (b) the achievement of safety objectives
  - (c) changing internal and external circumstances
- improvement goals are identified and prioritized, and consequent changes to the RCM are defined and implemented
- before the implementation of a change in accordance with the risk management process set out in the Regulation (EU) No 402/2013, including consideration of the safety risks from the change process itself.

4.1. Requirements for Maturity level 1

No requirements are established for this level. It is the level allocated in case the railway operator is not able to provide the required evidences for demonstrating the achievement of level 2.

4.2. Requirements for Maturity level 2

Description of expected performance for maturity level 2 in 'Reviewing and adjusting of risk control measures' area
➢ Objectives/priorities/needs for the adjusting of RCM are identified, taking into account information from areas that give rise to the greatest risks - this shall lead to: - the enforcement of correctly implemented RCM; or - the improvement of existing RCM; or - the identification and implementation of additional RCM ➢ RCM performance issues are identified ➢ Appropriate areas of improvement are identified when planned results and objectives of RCM are not achieved ➢ Plan(s) are adjusted and rescheduling is performed as necessary ➢ The effectiveness of RCM adjusting is evaluated, considering whether: - the adjustment is correctly implemented and completed according to schedule; - the expected outcome is achieved; - in the meantime the initial conditions have changed and the RCM adjustments are still appropriate for the given circumstances
Required elements of proof for level 2
46. Reports of ad-hoc reviews of risk assessments following the results of the monitoring activities 47. Reports showing that relevant incidents and accidents are taken into account in the review (of risk assessment). 48. The interface between the process(es) for risk assessment and the process(es) decision-making is documented.

4.3. Requirements for Maturity level 3

Description of expected performance for maturity level 3 in 'Reviewing and adjusting of risk control measures' area
➢ A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into the adjusting of all relevant RCM; this contains: - the drawing up of an action plan - the implementation of the action plan - the evaluation of the effectiveness of the action plan measures ➢ Required competencies and roles for 'reviewing and adjusting of RCM' are identified as part of the standard process ➢ Required means (facilities, tools, methods, etc.) for 'reviewing and adjusting of RCM' are identified as part of the standard process ➢ RCM are reviewed and adjusted based upon the standard process; ensuring that: - personnel reviewing and adjusting RCM are competent on the basis of appropriate education, training, and experience - required resources, means and information necessary for reviewing and adjusting RCM are made available, allocated and used ➢ Results of the analysis are used to identify where continual improvement of the RCM can be made
Required elements of proof for level 3
49. Planning of review of risk assessments. 50. Records of top level management decisions clearly show the risks involved and the decision whether to accept/mitigate them. 51. Learnings from monitoring process are used in the risk analyses. Risk analyses (risk calculations and/or risk identification) are updated in function of the learnings from monitoring.

4.4. Requirements for Maturity level 4

Description of expected performance for maturity level 4 in 'Reviewing and adjusting of risk control measures' area
➢ Results of corrective actions are monitored and evaluated to determine their effectiveness
Required elements of proof for level 4
52. Planning of reviews of risk assessments is risk-based and takes into account reported accident and incident occurrences rates 53. The interface between the monitoring processes and the risk assessment processes guarantees a quick adjustment in the operational processes in case of predictive trends pointing towards a decline in safety performance.

4.5. Requirements for Maturity level 5

Description of expected performance for maturity level 5 in 'Reviewing and adjusting of risk control measures' area
➢ Industry best practices are identified and evaluated. ➢ Feedback on opportunities for improvement is actively sought and improvement opportunities are identified. ➢ Impact of new RCM concepts are identified and evaluated and emergent risks are considered in identifying improvement opportunities. ➢ Proposed changes to RCM are evaluated and prioritised to determine their benefits and expected impact on defined business objectives. ➢ The factors that impact the effectiveness and full deployment of the RCM change are identified and managed ➢ Measures that validate the results of RCM changes are defined to determine expected effectiveness of the change ➢ The implementation plan of RCM changes and impact on business goals are discussed and reviewed by the management.
Required elements of proof for level 5
54. The organisation tracks continuously the evolution of its risk profile, which shows continuous improvement 55. The top management takes a proactive role in developing, maintaining and improving the Safety Management System through regular review of internal measures, including staff communication as well as horizon scanning to identify new improvement opportunities 56. The way risks are managed is constantly challenged. The interface between the monitoring processes and the risk assessment processes ensures an improvement initiative in the applied risk management methods (continuous improvement of risk management activities)

APPENDIX C

Technical Support Documentation

on the Assessment of railway operators' safety level and safety performance

(reserved)

APPENDIX D

Technical Support Documentation

on the Information Sharing System

(reserved)