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)). On [date of issue of the CSM ASLP recommendation], the Agency issued its

[(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).

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) These common safety methods are consistent with the legislative texts cited in the section 2.2 of the Annex to the Mandate, does not duplicate those texts but complement them and those texts remain fully applicable in combination with these common safety methods.

(4) These common safety methods integrate a controlled revision process. This process could be used to implement further modification of the legislative texts cited in the section 2.2 of the Annex to the Mandate. For example, after sufficient experience is gained with the implementation of these methods it might be beneficial to review the current regime of Common Safety Indicators and Common Safety Targets and to integrate it as part of a future version of these methods if it is demonstrated that it could lead to efficiency gains.

(5) 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.

(6) 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.

(7) 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.

(8) 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.

(9) These methods should also establish the necessary elements of a well-structured and continuous 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.

(10) 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.

(11) 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.

(12) 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.

(13) 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.

(14) 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.

(15) 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.

(16) 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.

(17) Various categories of staff working or otherwise engaged in the rail system may witness safety-related 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.

(18) 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.

(19) 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 harmonised collective learning.

(20) 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.

(21) 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.

(22) The implementation of this Regulation would require an informatics tool for collecting and storing 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.

(23) 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.

(24) 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.

(25) 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.

(26) 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 while 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.

(27) 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.

(28) 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, therefore provisions have been introduced providing that the source of information should be protected.

(29) 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.

(30) 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.

[(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.

(31) 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.

(32) 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 latter decision.

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 for assessing the safety level and the safety performance of any railway operator holding a valid safety certificate or safety authorisation to operate on the European Union railway system.

2. Those railway operators shall report the data and information necessary for their assessment.

3. This Regulation shall also apply to railway operators and to any other entity who may contribute to collective learning, as a legally established entity or as natural person, through sharing 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.

The sharing of those data and information shall be used with the aim of continuously improving and developing Union railway safety in a practicable manner.

Article 3

Definitions

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

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

[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.

(b) ‘safety level’ means a level of safety risks as estimated and assessed by the methods defined in Appendix C;

(c) ‘safety performance’ means the level of maturity of a railway operator to manage its risk control measures, as assessed by the methods defined in Appendix C;

(d) ‘risk control measure’ or ‘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 fatality, injury or damage;

(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 of this Regulation, as amended;

(i) ‘serious consequence event’ means an event resulting in the death of at least one person or serious injuries of five or more 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 damage to rolling stock, infrastructure or environment that is higher than EUR 150 000 but less than EUR 2 million.

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

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

(m) ‘TDG Competent Authority’ means the Transport of Dangerous Goods (TDG) competent authority responsible for collecting the reports on the occurrence and

[(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).

dangerous goods events as referred to in section 1.8.5.1 of the 'RID' as referred to in Annex II.1 to Directive 2008/68/EC of the European Parliament and of the Council[7];

(n) 'ISS' means the common Information Sharing System referred to in Article 7(1).

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

(p) 'interested party' means any entity registered in accordance with Article 7(2) having an interest in reporting data or information relating to a given occurrence or a given occurrence scenario, not being a railway operator involved in the considered occurrence, or having an interest in receiving data and information in accordance with the rules established by this Regulation.

Article 4

Collection of data and information

1. The following requirements shall apply for each type of operation defined by Article 3(31) of Directive (EU) 2016/798.

2. Each railway operator involved in an occurrence shall report in accordance with Appendix A:

(a) a 'Simple Reporting'

i. of any accidents with a serious or significant consequence, within 72h,

ii. of any accidents with a consequence above 5000 euros and of any category B event types, at the latest 72h after the end of the applicable reporting period;

(b) a 'Detailed Reporting' and a 'Reporting of the Occurrence Scenario' of any accidents with serious or significant consequence, within 2 months.

Reports in accordance with Article 4(2)(b) concerning level crossing accidents and accidents to persons involving rolling stock in motion shall only be applied on request from the Agency, according to the process described in Appendix A – Part A, section 4.

3. Any accident or incident that is not mandatorily reportable in accordance with Article 4(2) may be shared voluntarily by the railway operator, using the reporting datasets defined in Appendix A.

[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).

4. Each railway operator shall report every year in accordance with Appendix B:

(a) a ‘Self-Estimation of Safety Performance’ of the railway operator including the references to its supporting evidences,

(b) the ‘Risk Control Measures’ planned by the railway operator for controlling the most relevant risks for its railway operations in accordance with previous point (a),

within the deadline notified by the Agency, which is determined in coordination with the supervising National Safety Authority(ies), taking into account the starting date of validity of the operator safety certificate or safety authorisation.

5. Each railway operator shall report, at the latest 1 month after the end of each assessed period in accordance with Article 5, and in accordance with Appendix C – Part D, the ‘Volumes of Operation Performed’ during each period.

6. After the reporting deadlines indicated in Article 4(2) to 4(5), each involved railway operator is entitled to provide further reporting updates, complements and corrections in accordance with Article 7.10.

7. The reporting of data and information specified in this Article shall be shared in accordance with Article 7 and Appendix D, and using the facilities, communication channels and processes established by this Regulation.

Each national safety authority, TDG competent authority and the Agency shall be entitled, in duly justified cases, to request the reporting operators to perform a review of reported data and information, provided that the requested operator and the concerned data and information falls within the competence of the requesting entity.

Article 5

Assessment of safety level and safety performance

1. Before proceeding to the assessment of safety level and safety performance over the periods defined in Article 5(2), the Agency shall provide each railway operator with access to all the data and information applicable for those assessments and shall request each assessed railway operator to confirm, within one month, the data and information to be considered valid for its assessment.

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

(a) Estimation and assessment of the achieved safety level applicable to each type of operation, for each three months calendar period and each complete year;

(b) Estimation and assessment of the achieved safety performance, on each complete year.

3. The Agency shall aggregate the results obtained in accordance with Article 5(2) into national and Union level indicators.

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 Appendix D.

5. For estimating and assessing safety levels and safety performance as described in this Article the Agency shall apply the methods defined in Appendix C.

Article 6

Group of Analysts

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 the Annex to this Regulation, 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, in accordance with the working arrangements referred to in Article 6(1) and with the aim to improve and develop the safety of the Union rail system. As a result, they 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. To allow an efficient sharing of data and information in accordance with the obligations established by this Regulation, the Agency shall establish an Information Sharing System. In particular, this system shall provide, free of charge, each category of entities with the necessary services for sharing the data and information those entities are requested to share in accordance with this Regulation and the data and information those entities are entitled to retrieve in accordance with the Appendix D.

2. Any entity subject to the implementation of this regulation shall be registered in accordance with Appendix D – Part B before sharing data and information with the Information Sharing System.

3. 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.

4. The Information Sharing System shall be the system used by the registered entities to share the datasets required, voluntary shared, or requested by the Agency in accordance with this Regulation.

5. 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 and to allow the possibility for the operators to report only once the required datasets.

6. Where applicable, any entity registered in accordance with Article 7(2) 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 referred to in Article 7(3). Any costs due to specific features or modifications of existing systems which cannot be directly covered by the Common Digital Interface shall be borne by the requesting entity, and in particular the costs to cover development, update, operation and maintenance.

7. For the implementation of this Regulation, each railway operator shall notify the Agency whether it 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 on their behalf.

8. 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.

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

10. 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 in a traceable manner, 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.

11. Any 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.

12. 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.

13. 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 Appendix D.

14. Within the limits of the sharing rules established by the Appendix D, any registered 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. For the maintenance and operation of the Information Sharing System modules dedicated to other purpose than the EU harmonised implementation of this Regulation the Agency shall be entitled to apply fees, in particular when the service delivered is a specific treatment of data and information for a given entity.

2. 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 and for an appropriate level of technical support, up-to-date Appendices shall be used at each implementation phase established in accordance with Article 11.

2. In accordance with Article 6(3), taking into account the return of experience following the implementation of applicable versions of the Appendices of this Regulation, the Group of Analysts shall address revision proposals to the Agency, in particular on the technical content of the Appendices to this Regulation.

3. With the aim to constantly maintain up-to-date those Appendices, taking into account the proposals received from the Group of Analysts, and, when necessary, the Agency shall issue opinions in accordance with Article 10 of Regulation (EU) 2016/796.

Article 10

Control mechanisms

1. When necessary, taking into account technical and scientific progress and the proposals received from the Group of Analysts in accordance with Article 6(3) and Article 9(2) as well as the opinions issued in accordance with Article 6(4) and Article 9(3), the Agency shall address recommendations to the European Commission for revising or supplementing this Regulation.

In particular, the Agency shall issue recommendations supplementing the Appendices C and D in order to ensure the full applicability of each implementation phase established by Article 11.

2. Five years after the full application date of this Regulation in accordance with the Article 11(4), 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. Before the full application of this Regulation is implemented in accordance with Article 11(4), the implementation shall be performed with a phased introduction of the Information Sharing System and of the implementation scope, as following:

(a) Phase 1 shall apply from [date] and shall be implemented with the help of an immediately available ICT solution provided by the Agency, not requiring specific developments and entities requested to share data and information in accordance with this Regulation shall register and connect with the provided solution.

(b) Phase 2 shall apply after the Agency has addressed a recommendation in accordance with Article 10(1) to the European Commission and after the Agency has made available a first version of the Information Sharing System.

The entities requested to share data and information in accordance with this Regulation shall register and connect with the Information Sharing System not later than six months after this phase has started.

During the above mentioned phases 1 and 2 the collection of data and information shall be limited to Articles 4(2)(a)(i) and 4(2)(b) and limited to accidents with serious consequences.

(c) Phase 3 shall apply after the Agency has addressed a recommendation in accordance with Article 10(1) to the European Commission and after an updated version of the Information Sharing System ensuring the full applicability of this Regulation has been made available.

Phase 3 shall implement the full scope of data and information collection defined in Article 4.

4. The Regulation shall apply in its entirety six months after the starting date of phase 3 referred to in Article 11(3)(c).

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

Done at Brussels,

For the Commission

The President

ANNEX

GROUP OF ANALYSTS

1. Functioning and activity report

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

(a) Contribute to the preparation of the Group of Analysts working arrangements;

(b) Address each year to the Agency a report on the Group of Analyst activity, 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:

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

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

(c) 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:

(a) Analyses of data and information stemming from the implementation of this Regulation, including:
   i. Statistical inferences,
   ii. Relevant safety occurrences;

(b) Based on these analyses, and as necessary:
   i. Identify safety-related improvement needs and opportunities,
   ii. 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 with Article 6(4), the Group of Analysts shall implement the following actions:

(a) 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;

(b) Propose to the Agency to implement well-justified formal change requests for maintaining and improving the Appendices of this Regulation;

(c) Contribute to the preparation of Agency's opinions and recommendations concerning amendments for improving the Appendices of this Regulation.

APPENDIX A – PART A

REPORTING OF AN OCCURRENCE

1. Simple reporting

1.1. Any *Simple reporting* shall be implemented using the following dataset.

Dataset for '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 Appendix D – Part B
Reporting entity identifier	Entity ID Number	(specific interest data) (when not defined yet, a unique identifier will be allocated in accordance with Appendix D – 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	Operation code	Operation code in accordance with Appendix D – Part B - section 1.
Occurrence identifier	Occurrence ID or 'NEW'	In accordance with ISS identification process (Country code _ Reference number)
Occurrence event type	Event type code (if not yet included in the up-to-date version of Appendix A, the reporting of a new event types shall be provided in accordance with Appendix A – Part C section 3.3 - new event type name, - corresponding definition,	(Code as per Appendix A) (in this case the Group of Analyst is informed of the proposed new event type name and of the proposed definition)

	- category/sub-category of event types it would belong too, or proposed new category) Is it a Dangerous Goods occurrence in accordance with applicable legislation? Yes / No	 If Yes, please complement your report in accordance with applicable Transport of Dangerous Goods legislation.
Occurrence location	Country Location name Location code Geographical coordinates - Latitude - Longitude (optional): Other location reference	 (Station name or Line name) (RINF location code) (Norm EPSG:3857) (free text)
Date of occurrence	dd.mm.yyyy	
Time of occurrence	hh:mm:ss	
Estimation of fatalities, injuries and damages (Not applicable to simple reporting of category B events)	Fatalities: Total number of persons for the occurrence Serious injuries: Total number of persons for the occurrence Light injuries: Total number of persons for the occurrence Damages: Estimated total in euros for the reported occurrence Damages: Total in euros for the reporting entity	(In the context of the Simple Reporting those elements shall be considered as first estimations)
Deemed cause of the reported occurrence (Optional for the simple reporting of category B events)	List of event type code(s) considered as causal factor(s) (if not yet included in the up-to-date version of Appendix A, the reporting of applicable event types shall be provided in accordance with Appendix A – Part C section 3.3. - new event type name, - corresponding definition, - category/sub-category of event types it would belong too, or proposed new category)	(Coding as per Appendix A) (in this case the Group of Analyst is informed of the proposed new event type name and of the proposed definition in accordance with Appendix A – Part C section 4)
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)

2. Simple reporting on request

(reserved)

3. Detailed reporting

Any ‘Detailed reporting’ shall be implemented using the following dataset.

Dataset for ‘Detailed 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 Appendix D – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Appendix D – Part B
Reporting person identifier	Contact ID number	(personal data)
Occurrence context	Dataset as defined in Appendix A – Part A section 3.1	
Occurrence consequences	Dataset as defined in Appendix A – Part A section 3.2	
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(to be used only if needed, for better understanding of the reported dataset)

3.1. Dataset for reporting the context of an occurrence

Any reporting of the context of an occurrence shall be implemented using the following dataset.

Dataset for reporting the ‘Context of an occurrence’		
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 Appendix D – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Appendix D – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence concerned	Occurrence ID	In accordance with ISS identification process

Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used 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) AT A LEVEL CROSSING (Y/N) - LEVEL CROSSING TYPE OTHER	(type of level crossing
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – 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 OTHER (Optional) LOADING/FILLING (Optional) UNLOADING/EMPTYING	(Optional reporting in the context of this Regulation may be subject to other legislative requirements)
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used 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 Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)
METEO /WEATHER	AIR TEMPERATURE AMBIENT CONDITION - DRY - CLEAR - FOG, MIST, SMOG - RAIN - SNOW - SLEET, HAIL	(°C)

	- HIGH WINDS - STORM - LIGHTNINGS - OTHER - UNKNOWN	
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used 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)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)
LIGHT CONDITIONS	- DAYLIGHT - TWILIGHT o SUNRISE o SUNSET - DARKNESS o LIGHT LIT o LIGHT UNLIT	
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)

3.2. Dataset for reporting the consequences of an occurrence

Any reporting of the context of an occurrence shall be implemented using the following dataset.

Dataset for reporting the 'Consequence(s) of an occurrence'		
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 Appendix D – Part B)

Reporting entity category	Entity category code	In accordance with the coding defined in Appendix D – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence concerned	Occurrence ID	In accordance with ISS identification process
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)
Data items	Applicable parameter/values	Comment
HUMAN CONSEQUENCES - PASSENGER	DEATH	(personal data) Total number of person(s)
	SERIOUS INJURY (24hrs hospitalization) (As defined in article 1.19 of the Appendix to Annex I to DIRECTIVE (EU) 2016/798)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(optional) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(optional) 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 article 1.19 of the Appendix to Annex I to DIRECTIVE (EU) 2016/798)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(optional) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(optional) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
	DEATH	(personal data) Total number of person(s)

HUMAN CONSEQUENCES - TRESPASSER	SERIOUS INJURY (24hrs hospitalization) (As defined in article 1.19 of the Appendix to Annex I to DIRECTIVE (EU) 2016/798)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(optional) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(optional) 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 article 1.19 of the Appendix to Annex I to DIRECTIVE (EU) 2016/798)	(personal data) Total number of person(s)
	MINOR INJURY (As used in ERAIL-INV taxonomy)	(personal data) Total number of person(s)
	(optional) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical)	(personal data) Total number of person(s)
	(optional) LIGHT INJURY (AIS <3) (including minor and moderate)	(personal data) Total number of person(s)
HUMAN CONSEQUENCES - DUE TO DANGEROUS GOODS' SUBSTANCES	DEATH Total number of person(s) in each category (Passenger, Employee, Trespasser, Other) - Traumatic - Intoxicated - Burned - Radiation	(personal data)
	SERIOUS INJURY (24hrs hospitalization) (As defined in article 1.19 of the Appendix to Annex I to DIRECTIVE (EU) 2016/798) Total number of person(s) in each category (Passenger, Employee, Trespasser, Other) - Traumatic - Intoxicated - Burned - Radiation	(personal data)
	MINOR INJURY (As used in ERAIL-INV taxonomy) Total number of person(s) in each category (Passenger, Employee, Trespasser, Other)	(personal data)

	- Traumatic - Intoxicated - Burned - Radiation	
	(optional) SERIOUS INJURY (AIS >= 3) (including serious, severe and critical) Total number of person(s) in each category (Passenger, Employee, Trespasser, Other) - Traumatic - Intoxicated - Burned - Radiation	(personal data)
	(optional) LIGHT INJURY (AIS <3) (including minor and moderate) Total number of person(s) in each category (Passenger, Employee, Trespasser, Other) - Traumatic - Intoxicated - Burned - Radiation	(personal data)
Free text (optional)	Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.	(only to be used 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 Appendix D – General Part, section 3.2.	(only to be used 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	(Number)

	- COACHES - WAGONS - LOCOMOTIVE - EMU - DMU	(Number) (Number) (Number) (Number) (Number)
	TOTAL 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 Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)
DAMAGE TO THE RAILWAY INFRASTRUCTURE	TOTAL LENGTH OF TRACK DAMAGED	(m) (sum of distances where at least on element of the track is damaged)
	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 Appendix D – General Part, section 3.2.	(only to be used 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 Appendix D – General Part, section 3.2.	(only to be used if needed for better understanding of the reported dataset)

4. Detailed Reporting on request

In accordance with Article 4(2) and for the event types *level crossing accidents* and *accidents to persons involving rolling stock in motion* the Agency shall request a 'Detailed Reporting' and a 'Reporting of the Occurrence Scenario' in accordance with the following process:

- for each targeted event type, the incoming flow of Simple Reporting is given a '*Rank Number*' automatically incremented,

- an occurrence is selected when the '*Report Test'* equates 1,

  With,

$$Report\ Test =$$

$$Rank\ Number$$

$$MODULO$$

$$E\left(\frac{Number\ of\ simple\ reporting\ in\ previous\ year\ for\ the\ targeted\ event\ type}{Target\ number\ of\ detail\ reporting\ for\ the\ targeted\ event\ type}\right)$$

  And with the '*Targeted number of detailed reporting for the targeted event type'* is set to the following amount:

  - 50 reports per year for *level crossing accidents*, and
  - 100 reports per year for *accidents to persons involving rolling stock in motion.*

- for the selected occurrences the concerned operators are requested to implement Article 4(2)(b).

APPENDIX A – PART B

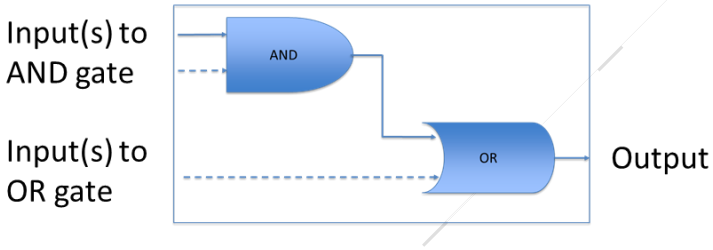
REPORTING OF OCCURRENCE SCENARIOS

1. Generalities

1.1. When reporting an occurrence scenario railway operators shall use the coding of events type established by the Appendix A – Part C and the following rules shall apply:

(a) Applicable sharing data sets defined in section 2 are used to clearly identify the relevant building blocks, event types and links between the building blocks composing the reported occurrence scenario,

(b) An occurrence scenario shall be described with of one or more "building block(s)" as defined below,



Note 1: 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 reported scenario.

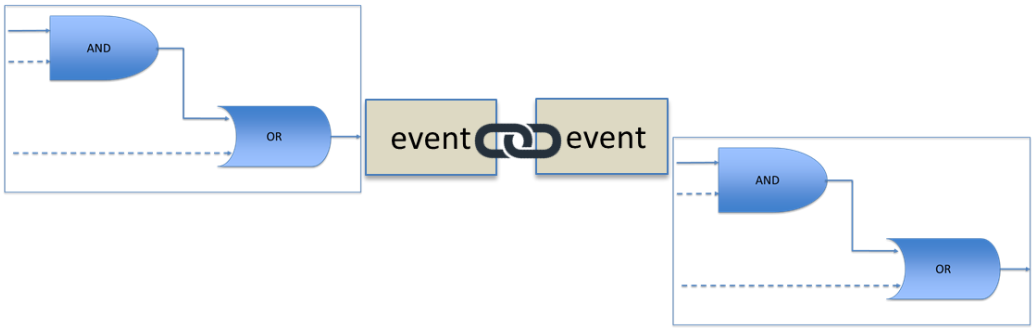
Note 2: The OR gate should only be used when there is an uncertainty on the involvement of causal factors in a reported scenario. In such case, the free text part of the reported building block should clarify the uncertainties concerning the applicable causal factors.

Note 3: When uncertainties on causal factor(s) exist and when the railway operator chooses not to use the OR gate to describe those uncertainties, the event type 'Undeveloped' in accordance with IEC 62740:2015 should be used instead.

(c) Any combination of event types described in the Appendix A – Part C is allowed to describe the scenario which actually occurred,

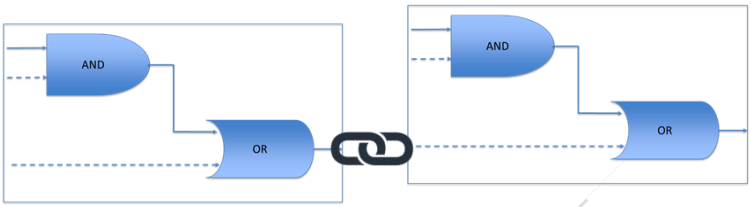
(d) The links between each 'building blocks' composing the reported occurrence scenario shall be clearly identified and shall either correspond to:

i. a 'Matching event' link;



or

ii. A “Neutral link";



(e) A building block can be linked to one or several other building blocks,

(f) A given event type can be used in one or several ‘building blocks’,

(g) A given link (same link ID) can be used in one or several ‘building blocks’.

2. Dataset for reporting an occurrence scenario

2.1 Any ‘Reporting of Occurrence Scenario’ shall be shared using the following dataset.

Dataset for Reporting an Occurrence Scenario		
Data items	**Applicable reports**	**Comment**
Reporting entity identifier	Operator ID	(specific interest data) (if not defined yet, a unique railway operator identifier will be allocated in accordance with Appendix D – Part B)
Reporting entity category	Entity category code	In accordance with the coding defined in Appendix D – Part B
Reporting person identifier	Contact person ID	(personal data)
Occurrence concerned	Occurrence ID	
Occurrence scenario	ID(s) of the Building Block(s) datasets composing the scenario reported in accordance with Section 2.2, including all category A events	

	involved and all other event types needed to fully describe the scenario.	
RCMs relevant for the reported scenario	Failed RCM(s) dataset(s) in accordance with section 2.3 for each reported Building Block, as applicable.	
	Description of failed RCM(s) reported, or updated, in accordance with Appendix B – Part B section 1.1.2 - (mandatory) the 'general information' part of the description template. - (optional) parts 2, 3 and 4 of the description template.	

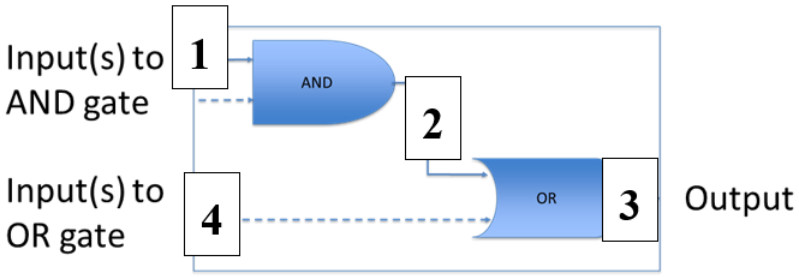
2.2 Any 'Building Block' shall be shared using the following dataset

Dataset for reporting a Building Block of an Occurrence Scenario			
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
(free text) Note: Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.			
Inputs to the 'OR' gate (if used, see notes in Appendix A – Part B section 1)			
		☐ Link (if applicable)	ID of the linked Building Block

[Add rows if necessary]		☐ Link (if applicable)	ID of the linked Building Block
(free text) Note: Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.			
Output event (of the building block)			
[only one row]		☐ Link (if applicable)	ID of the linked Building Block
Contributing and Systemic factors applicable to this building block			
List of contributing factors:			
Applicable contributing factor(s) ID in accordance with Appendix A – Part C2	(free text) Note: Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.		
[Add rows if necessary]			
List of systemic factors:			
Applicable systemic factor(s) ID in accordance Appendix A – Part C3	(free text) Note: Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.		
[Add rows if necessary]			

2.3 Failure of a Risk Control Measure

(a) The following positions 1, 2, 3 or 4 are applicable for reporting the location of a failed 'Risk Control Measure' within a given building block.



(b) The following dataset shall be used to report a failed risk control measure, involved in the reported scenario, taking in to account the coding of the Risk Control Measure positions defined in previous point a)

Dataset for reporting a failed Risk Control Measure involved in an Occurrence Scenario	
Attribute	**Value**
[Building Block ID]	(Identification of the building block concerned reported in accordance with section 2.1)
[Position of failed RCM]	1, 2, 3 or 4 (Position of the failed RCM in the referred building block, indicated in accordance with section 2.3(a))
[RCM ID]	(ID as described in accordance with Appendix B – Part B - section 2.2)
[RCM Description]	(if not yet described, in accordance with Appendix B – Part B - section 2.2)
[Failure mode]	(free text on how the RCM failed) Note: Reported free text shall be in accordance with Appendix D – General Part, section 3.2.
[Failure analysis]	(free text on why the barrier failed) Note: Reported free text shall be in accordance with Appendix D – General Part, section 3.2.
List of Contributing and Systemic factors	(Applicable list of factors involved in the failure of the reported RCM in accordance with Appendix A – Part C2 and Part C3)

APPENDIX A – PART C

TAXONOMIES OF EVENT TYPES, CONTRIBUTING FACTORS, SYSTEMIC FACTORS AND RISK CONTROL MEASURES

1. Implementation

1.1. These taxonomies shall be used as a reference, without modification and in its entirety.

2. Applicable taxonomies

2.1. Parts C1, C2 and C3 of this Appendix define the applicable taxonomy of event types, contributing factors and systemic factors, respectively.

2.2. Part D of this Appendix defines the applicable taxonomy of risk control measures.

3. Updates

3.1. Entities registered in accordance with Article 7(2) shall be entitled to submit observations to the Group of Analysts concerning the suitability of these taxonomies or the need to update or improve them, using the dedicated communication channel of the Information Sharing System.

3.2. Submission of observations, update and improvement requests shall be made with the conditions applicable in sections 3.3 and 3.4.

3.3. Concerning the taxonomy of event types the applicable conditions are:

(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 proposed new category;

(b) There is no pre-existing event type/sub-type listed in this Appendix with a similar name, category or definition to the one proposed.

3.4. Concerning the taxonomy of risk control measures the applicable conditions are:

(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 listed in this Appendix with a similar name, category or definition to the one proposed.

4. Implementation of amendments and consistency of the Information Sharing System

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

4.2. The Group of Analysts shall decide if an amendment proposal in accordance with the previous section 3 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.

4.3. 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). 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 C.1

REFERENCE LISTS OF EVENT TYPES

Reference list for Category A events, in accordance with Article 3 (e) definition			
Code of event type	Name of the event type	Definitions	Allocation of related occurrences
A1	**Collisions**		Section 5.1.3 of Appendix C Part A apply
A1.1	**Collision of train with rail vehicle**	A front to front, front to end or a side collision between a part of a train and a part of another train or rail vehicle, or with shunting rolling stock	Section 5.1.3 of Appendix C Part A apply
A1.2	**Collision of train with obstacle within the clearance gauge**	A collision between a part of a train and objects fixed or temporarily present on or near the track (except at level crossings if lost by a crossing vehicle or user), including collision with overhead contact lines	Section 5.1.3 of Appendix C Part A apply
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.	Section 5.1.3 of Appendix C Part A apply
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.	Section 5.1.3 of Appendix C Part A apply

A1.5	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply
A2	**Derailments**		Section 5.1.3 of Appendix C Part A apply
A2.1	**Derailment of train**	Any case in which at least one wheel of a train leaves the rails	Section 5.1.3 of Appendix C Part A apply
A2.2	**Derailment of one or more rail vehicle**	Same as A2.1 but concerning one or more rail vehicle not forming a train.	Section 5.1.3 of Appendix C Part A apply
A2.3	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply
A3	**Level Crossing Accident**	Any accident at level crossings involving at least one railway vehicle and one or more crossing vehicles, other crossing users such as pedestrians or other objects temporarily present on or near the track if lost by a crossing vehicle or user	Section 5.1.3 of Appendix C Part A apply
A3.1	**Level Crossing Accident involving a train**	Same as A3 but concerning a train.	Section 5.1.3 of Appendix C Part A apply
A3.2	**Level Crossing Accident involving one or more rail vehicles**	Same as A3 but concerning one or more rail vehicle not forming a train.	Section 5.1.3 of Appendix C Part A apply
A3.3	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply

A4	**Accidents to persons involving rolling stock in motion**	Accidents to one or more persons who are either hit by a railway vehicle or by an object attached to, or that has become detached from, the vehicle, this includes persons who fall from railway vehicles as well as persons who fall or are hit by loose objects when travelling on board vehicles	Section 5.1.3 of Appendix C Part A apply
A4.1	**Accidents to persons involving a train**	Same as A4 but concerning rolling stock in motion forming a train.	Section 5.1.3 of Appendix C Part A apply
A4.2	**Accidents to persons involving rail vehicle**	Same as A4 but concerning one or more rail vehicle not forming a train.	Section 5.1.3 of Appendix C Part A apply
A4.3	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply
A5	**Fire (or explosion) in rolling stock**	A fire or explosion that occurs in a railway vehicle (including its load) when it is running between the departure station and the destination, including when stopped at the departure station, the destination or intermediate stops, as well as during re-marshalling operations	Section 5.1.3 of Appendix C Part A apply
A5.1	**Fire (or explosion) in Rolling Stock involving a train**	Same as A5 but concerning rolling stock in motion forming a train.	Section 5.1.3 of Appendix C Part A apply
A5.2	**Fire (or explosion) involving one or more rail vehicle**	Same as A5 but concerning one or more rail vehicle not forming a train.	Section 5.1.3 of Appendix C Part A apply
A5.3	**Others**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply
A6	**Other accident**	any accident other than a collision of train with rail vehicle, collision of train with obstacle within the clearance gauge, derailment of train, level crossing accident, an accident to person involving rolling stock in motion or a fire in rolling stock	Section 5.1.3 of Appendix C Part A apply

A6.1	**Electrocution**	(reserved)	Section 5.1.3 of Appendix C Part A apply
A6.2	**Cargo falling frorm a height**	(reserved) Note: here it is referred to cargo(es) falling from a height during the process of applicable types of railway operations	Section 5.1.3 of Appendix C Part A apply
A6.3	**Dangerous goods occurrence not related to another type A event**	A reporting of information in accordance with section 1.8.5 of 'RID' (as referred to in Annex II.1 to Directive 2008/68/EC, as amended) shall apply.	Section 5.1.3 of Appendix C Part A apply
A6.4	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3 of Appendix C Part A apply
A7	**Suicides and attempted suicides (voluntary reporting)**	Definition applied consistently with Annex I to Directive (EU) 2016/798	Not applicable
A7.1	**Suicide (voluntary reporting)**	An act to deliberately injure oneself resulting in death, as recorded and classified by the competent national authority	Not applicable
A7.2	**Attempted suicide (voluntary reporting)**	An act to deliberately injure oneself resulting in serious injury	Not applicable

Reference list for Category B events, in accordance with Article 3 (f) definition			
Code of event type	Name of the event type	Definitions	By default allocation of related occurrences
B.1	**Operation failures**		Section 5.1.3(c) of Appendix C Part A apply
B.1.1	**Failure to operate the infrastructure**		Section 5.1.3(c) of Appendix C Part A apply
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.	Section 5.1.3(c) of Appendix C Part A apply
B.1.1.4	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	Section 5.1.3(c) of Appendix C Part A apply
B.1.2	**Failure to operate a train or rail vehicle(s)**		RU
B.1.2.1	Signal passed at danger when passing a danger point	Any occasion when any part of a train proceeds beyond its authorised movement and travels beyond the danger point.	RU
B.1.2.2	Signal passed at danger without passing a danger point	Any occasion when any part of a train proceeds beyond its authorised movement but does not travel beyond the danger point	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 section 3.3 of Appendix A - Part C shall apply.	RU
B.1.3.	**Other <u>un-coded operation failure</u>**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	RU
<u>B.2</u>	**<u>Technical Failure of the vehicles</u>**		**RU**
B.2.1	**Failure of the wheelset**		RU
B.2.1.1	Broken wheel on rolling stock in service	A break affecting the wheel and creating a risk of accident (derailment or collision)	RU
B.2.1.2	Broken axle on rolling stock in service	A break affecting the axle and creating a risk of accident (derailment or collision) 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 section 3.3 of Appendix A - Part C shall apply.	RU
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 section 3.3 of Appendix A - Part C shall apply.	RU
B.2.3	**Other failures of the vehicle**		RU
B.2.3.1	Wrong side signaling (vehicle) failure	any technical failure of a signalling system (either to infrastructure or to rolling stock), resulting in signalling information less restrictive than that demanded	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, potentially 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 section 3.3 of Appendix A - Part C shall apply.	RU

B.2.4	**Other <u>un-coded technical failure</u> of the vehicle**	A reporting of information in accordance with section 3.3 of Appendix A - Part C 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	any rail which is separated in two or more pieces, or any rail from which a piece of metal becomes detached, causing a gap of more than 50 mm in length and more than 10 mm in depth on the running surface	IM
B.3.1.2	Track buckle and other track misalignment	any fault related to the continuum and the geometry of track, requiring track to be placed out of service or immediate restriction of permitted speed	IM
B.3.1.2.1	Gauge spread		IM
B.3.1.2.1	Track twist		IM
B.3.1.2.3	Improper rail fastening and joints		IM
B.3.1.2.4	Other		IM
B.3.1.6	Wrong side signaling (infrastructure) failure	any technical failure of a signalling system (either to infrastructure or to rolling stock), resulting in signalling information less restrictive than that demanded	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		IM
B.3.1.10	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	IM
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 section 3.3 of Appendix A - Part C shall apply.	IM
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, potentially leading to victims or damage	IM
B.3.3.5	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	IM
B.3.4	**Other <u>un-coded technical failure</u> of the infrastructure**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	IM

Reference list for Category C events, in accordance with Article 3 (g) definition

Note: In this table, the Category C event type are mainly formulated as a variation in the performance of a railway function or the action of external events 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
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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C shall apply.	IM
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 section 3.3 of Appendix A - Part C shall apply.	RU
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 section 3.3 of Appendix A - Part C shall apply.	IM
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 section 3.3 of Appendix A - Part C shall apply.	RU
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 section 3.3 of Appendix A - Part C shall apply.	RU

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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C shall apply.	
C.2	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.	

APPENDIX A – PART C.2

REFERENCE LIST FOR CONTRIBUTING FACTORS

Note: In accordance with Article 2 of Regulation (EU) 2020/573, 'contributing factor' means any action, omission, event or condition that affects 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
F.1	**Performance relevant factor**	
F.1.1	**Dynamic staff factors**	
F.1.1.1	Intention: Expectation / Intention while acting / Decision model / Error type	
F.1.1.2	Attention / Vigilance/ Concentration	
F.1.1.3	Fatigue	
F.1.1.4	Stress (incl. emotions & psychosocial factors)	
F.1.1.5	Situational awareness (incl. self-awareness - situational self-knowledge)	
F.1.1.6	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.
F.1.2	**Dynamic tasks factors**	

F.1.2.1	Uncertainty-Volatility / Time pressure / Time to respond	
F.1.2.2	Complexity-Ambiguity / Autonomy	
F.1.2.3	Monotony / Routine; habits	
F.1.2.4	Work rythms (working hours, breaks, manning)	
F.1.2.5	Working environment (visibility, noise, vibrations, weather,…)	
F.1.2.6	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.
F.1.3	**Static Staff Factors**	
F.1.3.1	Experience: Familiarity / Individual experiences - job history	
F.1.3.2	Individual characteristics (incl. self-trust, openness (and others aspects of personality,...))	
F.1.3.3	Motivation / Commitment (to goal (priorities, risks), to organisation, to rules)	
F.1.3.4	Fit to work (matching to the requirements of the tasks/activities, health)	
F.1.3.5	Decision making skills	
F.1.3.6	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.
F.1.4	**Static Task Factors**	
F.1.4.1	Communication Means	

F.1.4.2	Task instructions - Quality of procedures and rules	
F.1.4.3	User-centered design / Human Machine Interfaces / Levels of automation	
F.1.4.4	Tools - Preventive dispositions and devices	
F.1.4.5	Societal & Institutional context (regulation, economy, politics, medias, trespassing, sabotage, terrorism…)	
F.1.4.6	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.
F.1.5	**Interactional Factors**	
F.1.5.1	Communication (between employees, within organisation)	
F.1.5.2	Relationships (within team, with team-leader, within organisation) - power issues	
F.1.5.3	Trust in information - in others (management, colleagues, technical means,…)	
F.1.5.4	Positive - negative reinforcement	
F.1.5.5	Involvement in decision making	
F.1.5.6	Other	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.
F.2	**Other**	A reporting of information in accordance with section 3.3 of Appendix A - Part C shall apply.

APPENDIX A – PART C.3

REFERENCE LIST FOR SYSTEMIC FACTORS

Note: In accordance with Article 2 of Regulation (EU) 2020/573, 'Systemic factor' means any causal or contributing factor of an organisational, managerial, societal or regulatory nature that is likely to affect similar and related occurrences in the future, including, in particular the regulatory framework conditions, the design and application of the safety management system, skills of the staff, procedures and maintenance

Code of event type	Name of the event type	Definitions
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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C 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 section 3.3 of Appendix A - Part C shall apply.

APPENDIX A – PART D

TYPES OF RISK CONTROL MEASURES AND LISTS OF REFERENCE RISK CONTROL MEASURES

(reserved)

APPENDIX B – PART A

PROCESS FOR SELF-ESTIMATION OF SAFETY PERFORMANCE

1. This Appendix shall be applied to share data and information required for the implementation of Article 4(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 a continuously increased safety performance.

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. When requested by the Agency, the railway operator shall self-estimate its maturity level in using the self-estimation tables provided in Appendix B – Part B for each following risk management area:

(a) Area P: Planning of risk control measures;

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

(c) Area C: Monitoring of risk control measures;

(d) Area A: Reviewing and adjusting of risk control measures.

3. 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.

4. For a given area, if one or more 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).

APPENDIX B – PART B

COLLECTION OF DATA AND INFORMATION FOR SELF-ESTIMATION OF SAFETY PERFORMANCE

1. Composition of the reporting

The reporting of the self-estimations shall cover the scope of operations declared in the railway operator's registration made in accordance with the Appendix D – Part B.

The reported datasets shall be composed of:

(a) The reporting of the elements of proof, including

(b) The risk control measures to be reported as element of proof number 9, 14, 18 or 21.

2. Applicable datasets

2.1. Dataset for reporting self-estimation and supporting evidences

Any reporting in accordance with Article 4(4)(a) shall be implemented using the following dataset.

Dataset for self-estimation of safety performance		
Data items	**Applicable parameter/values**	**Comment**
Reporting entity identifier	Entity ID Number	(specific interest data – dis-identified) (when not defined yet, an identifier will be allocated in accordance with Appendix D – 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)
Self-estimation	Risk control measures reported in accordance with section 2.2 as supporting evidence for elements of proof number 9, 14, 18 or 21. Self-estimation of levels and the determination of the relevant evidence(s) to be reported shall be based on the reference elements of proofs defined in Appendix B – Part C: - section 5.1 for Area P, - section 5.2 for Area D, - section 5.3 for Area C, and - section 5.4 for Area A.	(specific interest data) (specific interest data) (In case no evidence can be shared for a given area the minimum maturity score (1) will be allocated)

<table>
<tr>
<td></td>
<td>
Self-estimated level for area P: # (1..5)
Supporting evidences 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)
Supporting evidences for area D
<table>
<tr><th>Element #</th><th>Evidence Ref.</th><th>Version</th><th>Date</th></tr>
<tr><td>22</td><td></td><td></td><td></td></tr>
<tr><td>..</td><td></td><td></td><td></td></tr>
<tr><td>33</td><td></td><td></td><td></td></tr>
</table>
Self-estimated level for area C: # (1..5)
Supporting evidences for area C
<table>
<tr><th>Element #</th><th>Evidence Ref.</th><th>Version</th><th>Date</th></tr>
<tr><td>34</td><td></td><td></td><td></td></tr>
<tr><td>..</td><td></td><td></td><td></td></tr>
<tr><td>45</td><td></td><td></td><td></td></tr>
</table>
Self-estimated level for area A: # (1..5)
Supporting evidences for area A
<table>
<tr><th>Element #</th><th>Evidence Ref.</th><th>Version</th><th>Date</th></tr>
<tr><td>46</td><td></td><td></td><td></td></tr>
<tr><td>..</td><td></td><td></td><td></td></tr>
<tr><td>56</td><td></td><td></td><td></td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Free text</td>
<td>(optional)
Content of reported free text shall be in accordance with Appendix D – General Part, section 3.2.</td>
<td>(shall be used only if needed, for better understanding of the reported elements of proof)</td>
</tr>
</table>

2.2. Dataset for reporting the description of a risk control measure

Any description of a risk control measure in accordance with Article 4(4)(b) or in accordance with section 2.3 of Appendix A - Part C shall use the following dataset.

<table>
<tr><th colspan="3">Dataset for reporting the describing of a ‘Risk Control Measure’</th></tr>
<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 Appendix A – Part D)

Aim of the RCM:
(free text)

In accordance with Appendix A – Part D, and summary description of the functioning:
- RCM type
- (free text)

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

Note: Content of reported free text shall be in accordance with Appendix D – 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
(according to coding defined in Appendix A – Part C1)</td><td>(if not referenced yet)
Name of the event
Definition of the event
Category of the event</td></tr>
<tr><td>In case of RCM failure</td><td>Reference(s) of <u>each possible</u> resulting Event type</td><td>(if not referenced yet)</td></tr>
</table>

<table>
<tr><td>(used only in case of failure reporting)</td><td>(according to coding defined Appendix A – Part C1)</td><td>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>

APPENDIX B – PART C

REFERENCE FOR SELF-ESTIMATION OF SAFETY PERFORMANCE

1. Implementation

This appendix shall be used as a reference, without modification and in its entirety.

2. Submission of observations

Entities registered in accordance with Article 7(2) shall be entitled to submit observations to the Group of Analysts concerning the suitability of this appendix or the need to update or improve it, using the dedicated communication channel of the Information Sharing System.

3. Amendments and consistency of the Information Sharing System

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

3.2. The Group of Analysts shall decide if observations in accordance with previous section 2 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.

3.3. 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.

4. Safety performance maturity levels

4.1. 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.

4.2. The performance expected for each maturity level contains a description of the expected performance and reference elements of proof a railway operator needs to provide, as evidence, to demonstrate achieving the corresponding level of maturity.

4.3. To the exception of elements of proof number 9, 14, 18 and 21 which cannot be replaced by another element of proof, the provision of equivalent elements of proof justifying the achievement of a level may be accepted.

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

5. Self-estimation

5.1. Self-estimation of the ‘Planning’ risk control measures (Area P)

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:

(a) potential safety risks and requirements for RCM are identified;

(b) the requirements for a safe working environment which conforms to applicable legislation, in particular Directive 89/391/EEC[8], are identified;

(c) 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;

(d) 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.

5.1.1. Description of Maturity level 1

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

5.1.2. Description of Maturity level 2:

[8] 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).

Description of expected performance for maturity level 2 in 'Planning of risk control measures' area
➢ RCM are identified and for safety critical RCM the expected performance is indicated to support monitoring. ➢ Assumptions and constraints (including Human and Organisational Factors) 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
Reference 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. Risk assessment of operational processes is performed by staff together knowledgeable of risk assessment as well as the assessed operational process 7. The company deploys staff with knowledge of Human and Organisational Factors concepts that can be mobilized in risk management processes 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 part 1 and the part 2 of the applicable dataset in section 2.2 of Appendix B – Part B and limited to the prevented events

Note: For elements 1 to 8, the provision of equivalent elements of proof justifying the achievement of the level may be accepted. Reference element 9 cannot be replaced by another element.

5.1.3. Description of 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
Reference 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 dataset in section 2.2 of Appendix B – Part B

Note: For elements 10 to 13, the provision of equivalent elements of proof justifying the achievement of the level may be accepted. Reference element 14 cannot be replaced by another element.

5.1.4. Description of 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
Reference 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 dataset in section 2.2 of Appendix B – Part B

Note: For elements 15 to 17, the provision of equivalent elements of proof justifying the achievement of the level may be accepted. Reference element 18 cannot be replaced by another element.

5.1.5. Description of 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.
Reference 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 dataset in section 2.2 of Appendix B – Part B

Note: For elements 19 and 20, the provision of equivalent elements of proof justifying the achievement of the level may be accepted. Reference element 21 cannot be replaced by another element.

5.2. Self-estimation of the ‘Setting up and operating’ of risk control measures (Area D)

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:

(a) RCM are designed, manufactured and set up according to specified requirements;

(b) the safe integration of the RCM in the wider railway system is tested and validated;

(c) throughout their entire lifecycle, RCM are operated and maintained according to specifications.

5.2.1. Description of 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 expected evidences for demonstrating the achievement of level 2.

5.2.2. Description of 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 achieved as planned (activities, tasks and work products are defined, required resources and information are identified). ➢ Responsibilities and authorities for operating the RCM are defined
Reference 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 demonstration is made that the risk control measures in place have an assigned responsible(s) in charge of operating and maintaining them. 24. The competence management system ensures staff has the competences needed to implement, operate and maintain risk control measures. 25. The operation of risk control measures and expected performance refers clearly to the system assumptions identified during the risk assessment process and contains a clear reference to the origin of the hazards. 26. The demonstration is made that records of decisions taken by the railway operator take safety into consideration.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.2.3. Description of 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
Reference 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)

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.2.4. Description of 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
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.2.5. Description of 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.
Reference elements of proof for level 5
33. Description of the decision making process at strategic level that includes a risk-based approach

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.3. Self-estimation of the 'Monitoring' of risk control measures (Area C)

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:

(a) the correct application and the effectiveness of technical, operational and organisational risk control measures is checked;

(b) the performance of safety-related tasks is regularly monitored at all levels within the organisation;

(c) a strategy, priorities and plan(s) for monitoring RCM is identified;

(d) information on the functioning of RCM is collected and analysed, according to the strategy.

5.3.1. Description of Maturity level 1

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

5.3.2. Description of 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.
Reference 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

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.3.3. Description of 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.
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.3.4. Description of 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.
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.3.5. Description of 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
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.4. Self-estimation of the ‘Reviewing and adjusting’ of risk control measures (Area A)

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:

(a) the continuing adequacy and effectiveness of the RCM is systematically reviewed, considering at least:
   i. results from the RCM monitoring process
   ii. the achievement of safety objectives
   iii. changing internal and external circumstances

(b) improvement goals are identified and prioritized, and consequent changes to the RCM are defined and implemented;

(c) before the implementation of a change carried out 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.

5.4.1. Description of 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 expected evidences for demonstrating the achievement of level 2.

5.4.2. Description of 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, taking into account RCM effectiveness
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.4.3. Description of 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
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.4.4. Description of 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
Reference 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.

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

5.4.5. Description of 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.
Reference 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)

Note: The provision of equivalent elements of proof justifying the achievement of the level may be accepted.

APPENDIX C – PART A

ASSESSMENT OF SAFETY LEVELS

1. Assessment of railway operators

1.1. The method described in this Appendix 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 Appendix D – 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 Appendix C, as updated in accordance with Article 9(3).

3.2. Safety level assessment results

For each assessed objective and assessment period referred to in section 3.1 the Agency shall use the detailed process and criteria described in Appendix C – Part C and shall determine which of the following possible situations is applicable to the operator:

(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 Article 4, and validated by the railway operators in accordance with Article 5(1).

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 D, as amended in accordance with Article 9(3) and in accordance with the generic formula of section 5.2.2 of this part.

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 levels the 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) In case 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) In case 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) In case the cause(s) – Cat. B event type(s) – are not identified or there is a disagreement between the involved operators.
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, and

(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 level 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 – Part C, the Group of Analysts shall provide a proposal for 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 Appendix C – Part C 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 Appendix C – Part C. 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 those reportable pursuant to Appendix A – Part A section 3.2.

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

7.1. Based on the reported volumes of operation performed by each railway operator in each Member State 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 and describe them in Appendix C – Part 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 – Part 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 publicly available by the Agency.

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

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.

APPENDIX C – PART B

ASSESSMENT OF SAFETY PERFORMANCE

1. Assessment of railway operators

1.2. The method described in this Appendix 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 or worse 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 Appendix D - Part B, over the same reference period of time.

(c) is improved or deteriorated 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.

Reference values and periods of time for assessments			
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 Appendix C – Part C, as updated in accordance with Article 9(3)		

3.2. For each assessed objective and assessment period referred to in section 3.1 the Agency shall determine the situation applicable to the assessed operator by implementing the detailed method of Appendix C - Part C, allowing the following categorisation:

(a) Probable performance deterioration

(b) Potential performance deterioration

(c) Stable performance

(d) Potential performance improvement

(e) Probable performance improvement

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(7).

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 – Part C, as updated in accordance with Article 9(3).

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 – Part C, as updated in accordance with Article 9(3).

6. Information to railway operators

6.1. The reference manual of the Information Sharing System will be made publicly available by the Agency.

6.2. Any modification concerning the practical implementation of the method defined in this Appendix will be notified by the Information Sharing System to the registered entities.

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.

APPENDIX C – PART C

DETAILED RULES FOR THE ASSESSMENTS OF OPERATORS

(reserved)

APPENDIX C – PART D

REPORTING OF THE VOLUMES OF OPERATION PERFORMED

1. Applicable dataset

Any reporting of the 'Volumes of Operation Performed' shall be implemented using the following dataset.

Dataset for reporting the 'Volumes of Operation Performed'		
Data items	**Applicable value**	**Comment**
Reporting entity identifier	Operator ID (if not defined yet, a unique railway operator identifier will be allocated in accordance with Appendix D – Part B)	(specific interest data)
Reporting entity category	'RU' or 'IM'	In accordance with the coding defined in Appendix D – Part B
Reporting person identifier	Contact ID number	(personal data)
Country of operation	Country code	(specific interest data)
Operation of railway lines (including sidings and stations operations)	Reporting by IMs for the total of the infrastructure(s) managed in the operated country: - Number of Passenger train-kilometers - Number of Freight train-kilometers - Number of Freight ton-kilometers - Number of Dangerous goods freight ton-kilometers - Number of track-kilometers operated	(specific interest data)
Operation of terminals	Reporting by IMs for the total of the infrastructure(s) managed in the operated country: - Number of operated terminals - Number of railway vehicle processed in terminals - Number of Dangerous goods railway vehicle processed in terminals - Number of operating hours in terminals	(specific interest data)

	- Number of track-kilometers operated in terminals	
Operation of passenger trains (one report per operated country)	Reporting by RU for each operated country: - Number of Passenger train-kilometers	(specific interest data)
Operation of high speed passenger trains (one report per operated country)	Reporting by RU for each operated country: - Number Passenger train-kilometers with high speed service	(specific interest data)
Operation of freight trains (one report per operated country)	Reporting by RU for each operated country: - 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 for each operated country: - Number of Dangerous goods freight train kilometers - Number of Dangerous goods freight ton kilometers	(specific interest data)
Operation of freight terminals	Reporting by RU for each operated country: - Number of railway vehicle processed in freight terminals - Number of Dangerous goods railway vehicle processed in terminals	(specific interest data)

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 data and information received by them pursuant to 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](DGPR).

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 Appendix.

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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APPENDIX D – PART A

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 Appendix C – Part D;

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

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(s) 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,
   i. may be shared with any registered entity in accordance with Appendix D – Part B section 3, including, Members State authorities, the Group of Analysts and the Agency;
   ii. 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,
   i. may be shared with the any registered entity in accordance with Appendix D – Part B section 3, including Member State authorities, Group of analysts and the Agency;
   ii. 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.
The sharing of data and information will be managed, when necessary under a specific fee-based regime, 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 Member State(s) 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 Member State(s)</td></tr>
<tr><td>European Union Agency for Railways
(the Agency)</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 may be drafted in any of the applicable language of the European Union

and shall be shared in line with applicable EU legislation on the protection of personal and specific interest data and information, including this Appendix.

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.

APPENDIX D – PART B

REGISTRATION OF ENTITIES SHARING DATA AND INFORMATION WITH THE INFORMATION SHARING SYSTEM

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 Appendix.

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

Entity categories	**Entity code**	**Entity definition**
Infrastructure Managers	IM	as defined in point (2) of Article 3 of Directive 2012/34/EU of the European Parliament and of the Council
	Applicable type(s) of operation	
	Operation code	Operation name
	IM-1	Operating railway lines (including sidings and stations operations)
	IM-2	Operating terminals (including sidings and stations operations)
Railway Undertakings	RU	as defined in point (3) of Article 3 of Directive (EU) 2016/798
	Applicable type(s) of operation	
	Operation code	Operation name
	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 categories	Entity code	Entity definition
Entity in charge of Maintenance	ECM	ECM implementing the functions defined in article 14(3)(a) of Directive (EU) 2016/798 (in accordance with Regulation 2019/779[13])
	Applicable type(s) of operation (tick the applicable box)	
	ECM-b ☐	ECM outsourcing the function defined in article 14(3)(b) of Directive (EU) 2016/798
	ECM-c ☐	ECM outsourcing the function defined in article 14(3)(c) of Directive (EU) 2016/798
	ECM-d ☐	ECM outsourcing the function defined in article 14(3)(d) of Directive (EU) 2016/798
Maintenance workshops	MWS	MWS implementing the functions defined in article 14(3)(b)(c)(d) of Directive (EU) 2016/798 (in accordance with Regulation 2019/779) for an ECM
	Applicable type(s) of operation (tick the applicable box)	
	MWS-b ☐	MWS implementing the function defined in article 14(3)(b) of Directive (EU) 2016/798 (in accordance with Regulation 2019/779)
	MWS-c ☐	MWS implementing the functions defined in article 14(3)(c) of Directive (EU) 2016/798 (in accordance with Regulation 2019/779)
	MWS-d ☐	MWS implementing the functions defined in article 14(3)(d) of Directive (EU) 2016/798 (in accordance with Regulation 2019/779)
National entities	NAT	Any national legal entity
	Applicable type(s)	
	NSA	National Safety Authority, as defined in point (7) of Article 3 of Directive (EU) 2016/798
	TDG CA	Transport of Dangerous Goods Competent Authority, as referred to in section 1.8.5.1 of

[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).

Entity categories	Entity code	Entity definition
		'RID' as defined in Annex II.1 to Directive 2008/68/EC, as amended.
	NIB	National Investigating Body, as defined in Article 22 of Directive (EU) 2016/798
Other entities	OENT	Any entity not categorized above
	Applicable type(s)	
	EU	European Union
	EC	European Commission
	ERA (the Agency)	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 registration form		
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)	(mandatory field)	(specific interest data)

(Applicable code(s) as defined in Appendix D – Part B – section 1.2.)		
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(6))	(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(7). 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)

APPENDIX D – PART C

ENTITIES'S REQUEST FOR SHARING OF DATA AND INFORMATION WITH THE INFORMATION SHARING SYSTEM

1. Sharing request application scope

1.1. Any entity which is sharing data and information in application of the present Regulation shall be registered in accordance with this Appendix.

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.

Data items	Applicable value	Comment
Requesting entity (mandatory field)	Entity ID	(specific interest data)
Requested entity (mandatory field)	Entity ID	(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 update, validation, correction or extraction) or 'NEW'	(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)	DD:MM:YYYY – HH:MM:SS	
End date and time of the reporting period (if applicable)	DD:MM:YYYY – HH:MM:SS	
Sharing deadline (mandatory field)	DD:MM:YYYY – HH:MM:SS	
Validation date and time (if applicable)	DD:MM:YYYY – HH:MM:SS	
Closure of the sharing request (mandatory field)	DD:MM:YYYY – HH:MM:SS	

APPENDIX D – PART D

GENERIC PROCESS FOR SHARING DATA AND INFORMATION WITH THE INFORAMTION SHARING SYSTEM

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 Appendix D – 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.

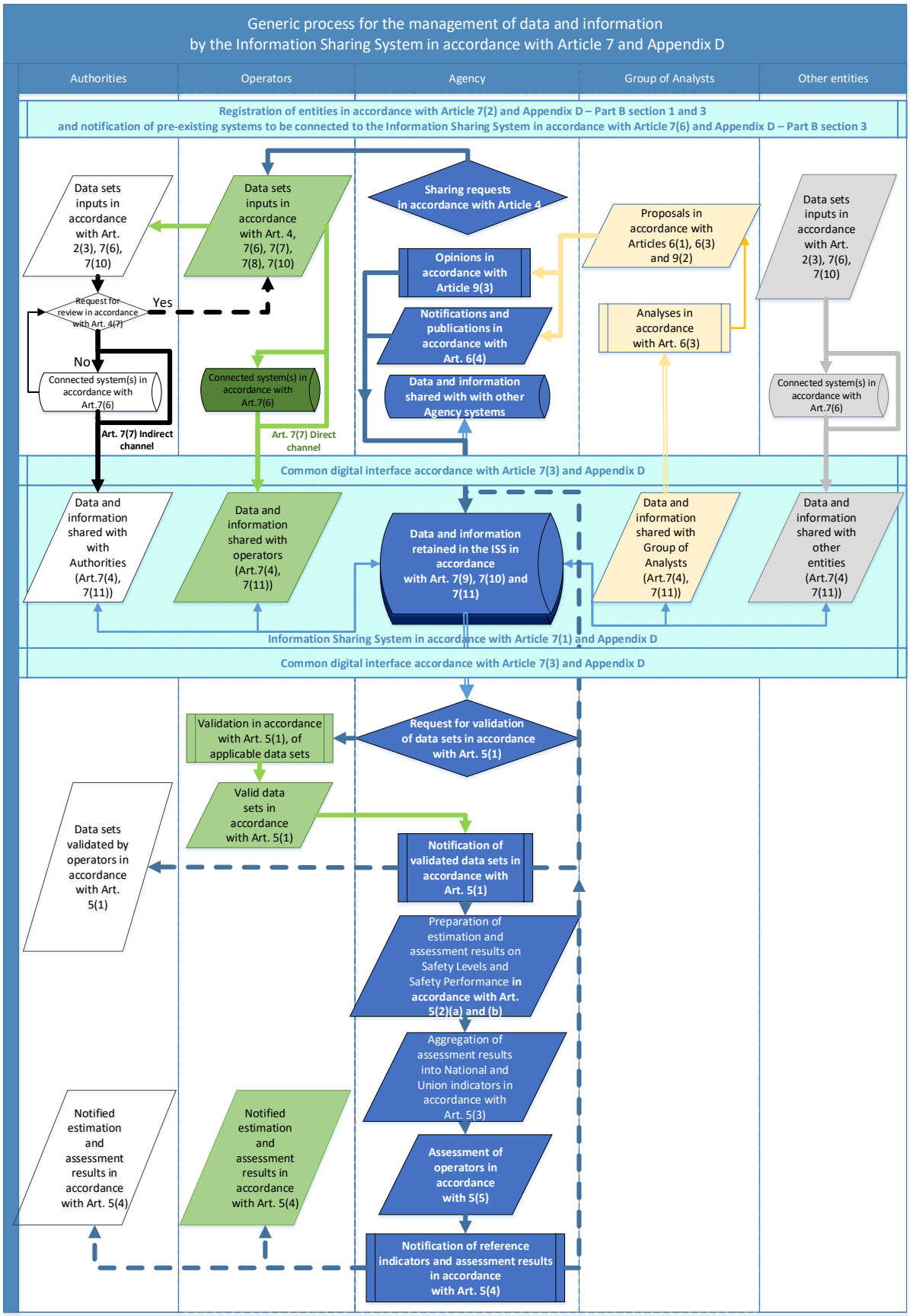
2.4 The element  represents one or several data sets that are shared in application of this Regulation. These data sets may be new inputs, corrections, updates, extraction or validations. At any time, the data sets that prevail are the one retained in the ISS (tube-like symbol indicating the ISS data 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 Supplements to this Appendix and other supporting documents may be developed in collaboration with the Group of Analysts, in accordance with Article 10, in order to ensure the full applicability of this Regulation with the future Information Sharing System.


Generic process for the management of data and information
by the Information Sharing System in accordance with Article 7 and Appendix D
Authorities
Operators
Agency
Group of Analysts
Other entities
Registration of entities in accordance with Article 7(2) and Appendix D – 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(6) and Appendix D – Part B section 3
Data sets inputs in accordance with Art. 2(3), 7(6), 7(10)
Data sets inputs in accordance with Art. 4, 7(6), 7(7), 7(8), 7(10)
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. 2(3), 7(6), 7(10)
Request for review in accordance with Art. 4(7)
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(6)
Connected system(s) in accordance with Art.7(6)
Data and information shared with with other Agency systems
Connected system(s) in accordance with Art.7(6)
Art. 7(7) Indirect channel
Art. 7(7) Direct channel
Common digital interface accordance with Article 7(3) and Appendix D
Data and information shared with with Authorities (Art.7(4), 7(11))
Data and information shared with operators (Art.7(4), 7(11))
Data and information retained in the ISS in accordance with Art. 7(9), 7(10) and 7(11)
Data and information shared with Group of Analysts (Art.7(4), 7(11))
Data and information shared with other entities (Art.7(4) 7(11))
Information Sharing System in accordance with Article 7(1) and Appendix D
Common digital interface accordance with Article 7(3) and Appendix D
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)
Preparation of estimation and assessment results on Safety Levels and Safety Performance in accordance with Art. 5(2)(a) and (b)
Aggregation of assessment results into National and Union indicators in accordance with Art. 5(3)
Assessment of operators in accordance with 5(5)
Notified estimation and assessment results in accordance with Art. 5(4)
Notified estimation and assessment results in accordance with Art. 5(4)
Notification of reference indicators and assessment 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 that data and information will be kept in anonymised form for statistical and analysis purposes.