CRR-G-009-G Annex2 v2.0 (HR) Checklist for evaluation of a **Project Hazard Record**

AN COIMISIÚN UM RIALÁIL IARNRÓID
COMMISSION FOR RAILWAY REGULATION

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Issue Date	03 Feb 2021

1 Introduction

This checklist will be employed by the CRR when evaluating a Project Hazard Record (HR) in association with PIS Projects according to IOD or RSA. A Hazard Record shall document and evidence the systematic identification of Hazards and the analysis and suitable mitigation and their associated Risks. This shall provide a major argument within the Application Specific Project Safety Case on the achievement of an appropriate level of safety.
In order to avoid repetition, documentary evidence is expected to be annexed or referenced to a Hazard Record. Any such Annexes and References shall be considered to be part of the Hazard Record. This checklist provides a suitable approach for managing a Hazard Record and an applicant may use their own approach but they must ensure it covers all of the requirement herein.

2 Elaboration of a Project HR

Any Project HR should follow the structure provided below and should include all sections listed. If any section is not relevant for a given project, that section shall still be provided as headline and it shall give a (brief) explanation why this chapter is not relevant.

Each Section shall provide relevant information addressing the Requirements and References given in the list.

For APIS/Acceptance cases, the Project HR must have been prepared under the scope of a certified/ authorised RU/IM SMS under RSD and CSM 402/2013 or an 'RU-Safety Case' in accordance with the RSA approved by the CRR. For APOM cases, it is preferable that the applicant engages with the RU/IM that will be operating the Vehicle/s and uses their certified/authorised SMS in developing the Project HR(as part of the Project SMS).

The HR must comply with current best practice. The application of EN 50126-1, EN 50126-2, EN 50128, EN 50129 in association with CSM 402/2013 is considered to represent current best practice. The applicant should also consider the requirements capture process mandated in (EU) Reg. 2018/545 for IOD-APOM projects.

Each chapter of the HR has to be prepared, detailing any constraints, dependencies, assumptions and caveats.

3 Internal Review Report

The applicant for APIS/APOM/Acceptance must arrange for an internal (or external) review of the HR against

this Checklist by an expert in the field of SMS. This review must cover completeness and plausibility of content of the Hazard Record, and must be documented in a report which must be provided to the CRR with the HR.

4 CRR evaluation of Project HR

The CRR must evaluate the Project (Change acc. to CSM 402/2013) for which the applicant is applying for an APIS/APOM/Acceptance against the requirements of IOD 18 + 20 + 21, RSD 4(1)+6(1), CSM 402/2013 and RSA. The Project HR will be used by the CRR as one element to form an opinion, whether all requirements relating to APIS/APOM/Acceptance have been satisfied.

The attached list contains the minimum set of requirements. Any RU/IM may decide to elaborate on these, if their SMS requires more or higher requirements. Where an RU/IM decides to elaborate, on these requirements, the main chapter headings of the checklist should be retained.

The provision of a Project HR is also considered to support the requirements of RSA 42+43 for providing a New Works Assessment or a New Rolling Stock Assessment.

Note1: *In addition to this Checklist, other requirements may also be applicable, arising from the application of EN 50126-1, EN 50126-2, EN 50128, EN 50129, EN50159-1/-2, CSM 402/2013, (EU) Reg. 2018/545 or the requirements of a certified/ authorised RU/IM SMS.*

Note2: *It is expected that the Hazard Record is maintained throughout the life of the asset. This may be fulfilled after PIS by the management of any open or ongoing hazards (and related Application Conditions) through an authorised / certified SMS of an IM/RU. While the Hazard Record remains a live document throughout the Project Life-Cycle, for each stage of the APIS/APOM/Acceptance Application process, the Hazard Record shall be brought to conclusion as relevant for that stage. A formal version of the Project HR shall be issued as part of the APIS/APOM/Acceptance application for stages 2,3,4,5,6.*

Note3: *All hazard identification, mitigation and risk evaluation shall reflect the* ***design operating state*** *of the part of the rail system under assessment, all* ***permitted degraded operational modes****, all* ***foreseeable degraded modes*** *as well as all* ***interfaces within the affected part and to other parts of the rail system****.*

Note4: *The hazard identification may be done by using checklists, workshops, lessons learnt, accident and incident information, expert knowledge or other means. In any case (for legal compliance) all parameters identified by law and regulations (e.g. TSIs or directives, NRs, or CRR Guidelines) must be considered as minimum.*

5 Checklist for Hazard Record

No.	Section	Requirement	Reference
0	***Document Control***	>Provide title, document identification number, revision, revision history, author, organisation and signatures. >Provide list of referenced documents. (It is highly recommended to assign each referenced document a unique identifier to be used throughout the Project Hazard Record (and ideally throughout any other Project documentation). The Project may decide to keep a List of References as a separate document.)	- CRR-CL- 001

No.	Section	Requirement	Reference
1	***Introduction***		
1.1	Hazard Record Introduction	Describe the aim and purpose of the Project Hazard Record. Make reference to the project scope (asset/ organisation, etc). Refer to the current project lifecycle phase.	- EN50126-1
1.2	Relationship with safety requirements specification	Refer to the Safety Requirements Specification if applicable, or explain where the safety requirements are defined in this Hazard Record (see 7.16 below).	
1.3	Hazard Record management process	Define the process for managing the Hazard Record, such as who may modify it and the approval process for each new entry.	
1.4	Legislation and Standards	List legislation and standards applicable to this Hazard Record. (You may refer to legislation and standards in SP)	
1.5	Personnel involved in Hazard Identification	Information of personnel involved in hazard identification and risk assessment, including their positions/competencies. (You may refer to SP or also to records of attendance / participation in hazard identification workshops / exercises, to include the name, organisation / area of competence and role)	EN50126-2
2	***Hazard Entries (optional)***	*Where useful, for example in more complex projects with a complex arrangement of suppliers or multiple departments, provide separate list(s) of entries to record proposed hazards prior to their analysis. The list shall include as minimum the following information:*	
2.1		unique identifier (per entry)	
2.2		date of entry	
2.3		description of issue	
2.4		origin	
2.5		analysis (e.g. hazard raised, identified as duplicate or other outcome)	
3	***Risk matrix and Risk Acceptability Criteria***	*Provide any Risk Matrices and Risk Acceptability Criteria used for this Hazard Record.*	CSM-RA 402/2013
4	***Hazard Record Matrix***	*Provide matrix containing hazard data. The matrix shall include as minimum the following information:*	EN50126-1

No.	Section	Requirement	Reference
4.1		unique identifier for each hazard	
4.2		origin of hazard i.e. the person, organisation or hazard workshop that identified the hazard (this may be incorporated in the unique identifier)	
4.3		grouping of hazard (this may be incorporated in the unique identifier) (It is highly recommended that the Hazard Record should generally be structured following the systematic order of the CRR Subsystem Parameter Lists in order to enable efficient assessment of completeness.)	
4.4		hazard description (a brief description of the hazard which should include the system functions or interfaces affected and their states that represent the hazard; this shall cover the intended operating state, any permitted degraded operating state, any interfaces and any influencing environmental conditions)	
4.5		consequence (It is sufficient to identify the consequence associated with the highest risk identified for this hazard. For clarification and further information, other consequences may also be listed.)	
4.6		Risk Acceptance Principle according to CSM- RA 402/2013:	CSM-RA 402/2013
4.6.1		1-full and un-derogated compliance code of practice	
4.6.2		2-it has already been proven in-use to have an acceptable safety level and would therefore still qualify for approval in the Member State where the change is to be introduced;	
4.6.3		3a-qualitative risk evaluation	
4.6.4		3b-quantitative risk evaluation	
4.7		initial likelihood (likelihood of consequence before additional safety measures)	
4.8		initial severity (severity of consequence before additional safety measures)	
4.9		initial risk (risk derived from likelihood and severity before additional safety measures, in line with risk matrix and risk acceptability criteria as defined above) (Note: where Codes of Practice or Reference Systems are used as the Risk Acceptance Principle (in accordance with CSM) estimation of likelihood and severity is not required.)	
4.10		Safety measures (which shall relate to the intended operating state, any permitted degraded operating state and any influencing environmental conditions. Record any assumptions made)	

No.	Section	Requirement	Reference
		(Current safety measures and Additional safety measures)	
4.11		residual likelihood (likelihood of consequence after additional safety measures)	
4.12		residual severity (severity of consequence after additional safety measures)	
4.13		residual risk (risk derived from likelihood and severity after additional safety measures, in line with risk matrix and risk acceptability criteria as defined above) (Note: where Codes of Practice or Reference Systems are used as the Risk Acceptance Principle (in accordance with CSM) estimation of likelihood and severity is not required.)	
4.14		risk owner (project participant, responsible for managing this risk)	
4.15		Status of Risk	
4.16		notes (which may include agreements reached, open actions, etc.)	
4.17		safety requirements (these are typically derived from the chosen safety measures) (SRs to be listed in relation to hazards or given by reference to a separate document)	
4.18		reference documents (this shall refer to evidence related to safety measures – e.g. drawings, calculations, test procedures, test reports, V&V evidence, independent assessment, evidence relating to comparability with Reference Systems, etc.) (this may be incorporated into separate columns as appropriate) (Where code of practice is employed, this may reference to an appropriate entry within the SCM to document full close out.)	