



**TRAIN OPERATORS GUIDE FOR ROLLING STOCK ACCEPTANCE IN  
SOUTH AFRICAN NETWORK**

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DOCUMENT CONTROL

Compiled by:

Name and Surname	Signature
Joseph Nethathe	

Reviewed by:

Name and Surname	Signature	Date
Roling Stock Working Group		

Approved by:

Head: Research and Technical Skills Development	Signature	Date
Freddie Kgomari		

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## CHANGE HISTORY

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## ABBREVIATIONS

Acronym	Definition
AIA	Approved Inspection Authority
ECSA	Engineering Council of South Africa
HL	Hazard Log
LC	Life Cycle
LCP	Life Cycle Phase
OHTE	Over Head Traction Equipment
QA	Quality Assurance
RA	Risk Assessment
RAMS	Reliability, Availability, Maintainability, Safety
RSR	Railway Safety Regulator
SANS	South African National Standard
SMS	Safety Management System
URS	User Requirement Specification

## DEFINITIONS

Term	Definition
<b>Approved Inspection Authority</b>	A person or organisation accredited by SANAS and approved by department of labour for inspection of an organisation against the relevant standards and legislation, such as ISO/IEC 17020, to confirm its technical competence, impartiality, and reliability
<b>Approval Notice</b>	A written notice from the RSR indicating that, based on the submission provided, the Regulator has Approval Notice to the proceeding to the next project phase. This is not an approval of the final product.
<b>Competent Authority</b>	National body or authority, designated, or otherwise recognised for the control or regulation of a particular aspect of the transport of dangerous goods
<b>Competent Person</b>	A person registered in a relevant professional category with the Engineering Council of South Africa (ECSA), or who possesses the required qualifications, training, and experience to perform a specific duty.
<b>Custodian</b>	A person who has responsibility for taking care of or protecting something.
<b>Independent Assessor</b>	An impartial, qualified third party hired to evaluate, audit, or investigate a situation, system without bias or conflict of interest.
<b>Operator</b>	A Network operator, train operator, station operator or a combination of two or three of them
<b>Person</b>	Includes an unincorporated body, an organ of state and Minister
<b>Policy</b>	A policy is a statement of intent that is implemented as a procedure or protocol

Term	Definition
<b>Railway Operation</b>	The activities performed by a Network operator, train operator, station operator, or a combination of the two or three of them
<b>Rolling Stock</b>	A vehicle that can operate on a railway irrespective of its capability of independent motion
<b>Rolling Certification</b>	The independent evaluation of trains and components (locomotives, wagons, coaches) to confirm they meet safety, performance and regulatory standards for operation
<b>Rolling Stock Registration</b>	The formal recording of railway vehicles in a database to authorise their operation and verify technical compliance.
<b>Safety Permit</b>	An official document issued by the Railway Safety Regulator that allows an operator the right to undertake any railway operation or a component of a railway operation
<b>Safe Railway Operation</b>	A railway operation in which the risks associated with the railway operation which may impact on the safety of persons and property transported by railway and the safety of other persons, other property, and the environment, are as low as is reasonably practicable in the given set of circumstances, and does not include security

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## 1 Purpose

The purpose of this document is to guide the Train Operating Companies (TOC) when procuring new or old rolling stock that will be utilised on the South African railway network. The rolling stock can be procured from state owned manufacturers in South Africa or private rolling stock manufactures within the country, however, the same guide can also be used by Train Operating Companies that wish to procure their rolling stock from international manufacturers or railway rolling stock operators.

The guide gives a phased approach for the interaction between the Railway Safety Regulator and TOCs during the purchase or manufacturing of the rolling stock. The phases at which the TOCs must interact with the RSR will commence at the Concept Phase when the TOC has decided to add or introduce new rolling stock to their fleet of wagons, coaches or locomotives, this will be followed by requirements during Design, Manufacturing, Testing & Commissioning, Operations & Maintenance and Decommissioning phase. The guide also gives additional information in Annexure A for TOCs to consider when conducting Risk Assessment on each phase of the project life cycle.

## 2 Scope

The Guideline for rolling stock submission requirements document applies to all Train Operating Companies (Existing and new entrants) and covers the minimum Life Cycle Phase (LCP) requirements for new works, new technology and modifications to rolling stock to be manufactured or procured by the TOC.

### **Exclusions**

This guideline does not apply to rolling stock operating on amusement parks, underground mining and rail gauge less than 600mm.

### 3. Governing Legislation and Standards

All activities described herein are subject to, and must be read in conjunction with, the following legislation and key technical standards:

Category	Reference	Relevance
Primary Legislation	<b>Railway Safety Act, 2024 (Act No. 30 of 2024)</b>	The founding Act establishing the RSR and its powers. <b>All submissions derive authority from this Act.</b>
	<b>National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)</b>	The Act is to provide for pollution, ecological degradation, and securing sustainable development while promoting social and economic growth.
	<b>Engineering Profession Act, 2000 (Act No.46 of 2000)</b>	Governs the professional registration of certified engineers, engineers, and engineering technicians
	<b>Legal Metrology Act, 2014 (Act No. 9 of 2014)</b>	Governs the accuracy of measuring instruments used in testing and verification.
Core Technical Standards	<b>SANS 3000-1:2016</b>	Railway Safety Management General
	<b>SANS 10400 Series &amp; SANS 10160</b>	National Building Regulations & Structural Design Codes (for depot/workshop modifications).
	<b>SANS 10228 &amp; SANS 10227</b>	The identification of hazardous substances and classification of dangerous goods for transport.
Rolling Stock Specific	<b>SANS 3000-2-3: 2017</b>	Requirements for systemic engineering and operational safety standards — Rolling stock

Category	Reference	Relevance
Minimum Network Owner Standards	Latest Network Owner Network Statement	Relevant annexures to the latest published Network Statement by the relevant owner of the network that the rolling stock will be operated on.

## 4 TOC details submission

4.1. Submissions made by a Train Operating Company shall include the following project details:

- i) Company Profile
- ii) RSR Permit Details (If available)
- iii) Project Description
- iv) Project Objectives
- v) Location of Project
- vi) Allocated routes
- vii) Operating environment
- viii) Brief Technology Description
- ix) Project Plan
- x) Interactions – Project Organizational Structure with a list of all the service providers including their roles and responsibilities

## 5 Concept Phase

5.1. The Concept Phase notification submission shall be made to the RSR by the Train Operating Company.

5.2. The RSR shall review the submission and respond to the operator by issuing a **Notice of Approval** provided all requirements/conditions are complied with.

5.3. The Concept Phase submission to the RSR shall include the following:

- i) A project definition and scope description
- ii) An indication of the design standards to be implemented

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- iii) A robust design change procedure identifying all persons concerned with the Project Team outlining the appropriate roles and responsibilities assigned
  - iv) A project hazard log and risk assessment, managed by a competent person with the appropriate authority to expedite the completion of corrective or mitigating actions and counter signed by all affected parties.

**5.4. Collaboration between TOC, RSR and Network Owner shall include but not be limited to the following:**

- 5.4.1 The RSR and TOC to arrange a virtual or physical meeting where the rolling stock project is discussed and explained to the Regulator by the Project Lead and the support team of specialists where required
- 5.4.2 In case of the Train Operating Company procuring existing rolling stock outside of South Africa, operational or non-operational, the TOC and RSR to arrange an inspection of the rolling stock to validate compatibility to South African railway Network.
  - A. The RSR and TOC must extend and submit the Concept to the Network Owner
  - B. The RSR and the TOC must extend the invitation for inspection of the rolling stock to the Network owner of the route where the rolling stock will be utilised.
  - C. For second hand rolling stock, the TOC must submit evidence (documented) of standards and verification and validation tests of RS to be utilised in SA Network. The documentation shall include the utilisation history (life cycle) and type of commodities that it was used for.
  - D. Approved Independent Assessor (AIA) to be appointed to assess the conformity of the Rolling Stock to Network technical requirements i.e. homologation, performance history, etc.

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## 6 Design Phase

- 6.1 The Design phase ***shall not*** proceed until the RSR has issued a **Notice of Approval** on the Concept Phase.
- 6.2 The Design Phase notification submission shall be prepared by the Train Operating Company upon receipt of an Notice of Approval on the Concept Phase.
- 6.3 The submission to the RSR must include the following:
- i) A policy deliberate statement of principles to guide decisions and achieve rational outcomes
  - ii) A User Requirement Specification (URS) document, signed off by the appropriate delegated authority or competent person
  - iii) A project organisational structure and an operational framework guiding decisions document (Competent, qualification and capabilities)
  - iv) An audit trail substantiated by an organisational management procedure, defining the organisational involvement in the project, be it: define, design, sub-contract, manufacture, integrate, operate, maintain and transfer or any combination(s) thereof
  - v) A project purpose definition or functional description compilation of a risk analysis (RA) and hazard log (HL)
  - vi) Statutory requirements (including environmental) to adhere to, or obtained prior to realization of the product
  - vii) Standards, tools and methods used for the design
  - viii) Product performance evidence envelope (functional, maintainability, reliability, availability)
  - ix) Conformity to Infrastructure requirements (facilities, processes etc.) to sustain the product over the Life Cycle (LC)
  - x) Operator machine interface over the LC leading to ergonomic requirements and

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- xi) Railway systemic environment that rolling stock will be utilised, i.e. Infrastructure, (i.e. structural clearances, track gauge, track forces, electrical loading, and signalling compatibility), maintenance facilities, train control, Information & Communication and sustainability

#### **6.4 Additional considerations for the design phase:**

- 6.4.1 Documented evidence of decisions, analysis reports, drawings and motivations of design alternatives including system specifications, standards, process, materials, Integration acceptance, quality assurance (QA) plan, updated RA and HL, compliance or verification checks (or both) as required and cost optimisation analysis to reach best alternative selection
- 6.4.2 Process for procurement, if applicable
- 6.4.3 Procedure for technology validation and verification
- 6.4.4 Documented evidence of all legal and legislative requirements associated with the implementation of the product utilised in the rolling stock
- 6.4.5 Evidence of a documented change management process which captures all changes in detail design, manufacturing requirements, standards, technology, compliance conditions and impact on the RA, HL and cost optimisation
- 6.4.6 Application of document control system and notification process for the introduction of new technology
- 6.4.7 Preparation of drawings, revised bill of materials, list of standards that the design is based upon, manufacturer's instructions, project schedules and supplier's business continuity management (Risk Management) compliance certificate
- 6.4.8 Generating reports on all type and prototype testing as required by statutory, safety and performance standards adopted including, scope of test, measurement norms, measurement methodology, failure criteria and any variations approved

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6.4.9 Specifications and drawings - system drawings, layouts, schematics and specifications signalling and telecommunications if rolling stock will use on board system signed off by a registered professional as per ECSA requirements

6.4.10 Standards compliance statement, and

6.4.11 Any requests for derogations to standards and regulations

**6.5 Collaboration between TOC, RSR and Network Owner shall include but not limited to the following:**

6.5.1 RSR and TOC to arrange a virtual or physical meeting where the design of the rolling stock is discussed and explained to the Regulator by the Project Lead and the support team of specialists where required.

6.5.2 Train Operating Company procuring rolling stock outside of South Africa must arrange design review meetings with the supplier where the RSR will participate to get detailed understanding of the RS design.

6.5.3 TOC must inform or extend the invitation for design reviews of the rolling stock to the Network owner of the route where the rolling stock will be utilised.

6.5.4 List of design meetings / components (Kick off design meeting)/ final design from the TOC

## 7 Manufacturing Phase

7.1 The Execution/Manufacturing phase **shall not** proceed until the RSR has issued an **Approval** notice on the Design Phase, provided all requirements/conditions are complied with.

7.2 Notification submissions for the execution/manufacturing, assembly or production phase shall include the following:

- i) Proof of Environmental Impact Authorisation for the rolling stock where required
- ii) A plant, product or process documentation pack inclusive of: -

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- a) All drawings
  - b) Bills of Material
  - c) Manufacturing or refurbishing, assembly or production assembly execution plans
  - d) Quality Plans, processes, norms and methodologies
  - e) Supply Chain sustainability and competence procedures and
  - f) Interface agreements with all affected parties
- iii) Define and implement such procedures required for safe working and certified hand over between sub-system or component groups. Such procedures shall clearly indicate integration and resolution process responsibility.
  - iv) A robust and enforced design change procedure (as required during manufacture/ assembly for which the detail design did not accommodate) shall be in place with sign off from all persons as identified within the project team with the appropriate role & responsibility.
  - v) The project hazard log and risk register shall be current, managed by a competent person with the appropriate authority to expedite the completion of corrective or mitigating actions and counter signed by all affected parties.

**7.3. Collaboration between TOC, RSR and Network Owner shall include but not limited to the following:**

7.3.1 RSR and TOC to arrange a virtual or physical meeting where the manufacturing process of the rolling stock is discussed and explained to the Regulator by the Project Lead and the suppliers of critical systems and sub-systems as identified by the RSR

7.3.2 Train Operating Company procuring rolling stock outside of South Africa must arrange site visits to critical components suppliers where verification and validation tests can be witnessed by the RSR to ensure RAMS concepts are complied to by the manufacturers on site.

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- 7.3.3 The Network Owner may consider participating in validation and verification test of the rolling stock on the route where the rolling stock will be utilised.
- 7.3.4 For complex rolling stock project, the TOC shall appoint an Authorised Independent Authority (AIA) to witness validation and verification test at OEM facilities and submit report to the RSR.
- 7.3.5 The Train Operating Company procuring rolling stock to collaborate with Network owner for fitment of the prescribed Vehicle Identification System (VIS) device(s) to their rolling stock, verification of the coded data and provision of compliance evidence to any prescribed standards such as ICASA.

## 8 Inspection, Test and Commissioning Phase

- 8.1 The Inspection, Testing and Commissioning phase **shall not** proceed until the RSR has issued an **Approval Notice** for the manufacturing phase of the rolling stock.
- 8.2 Procedures, processes, documents and notification submissions for the Testing and Commissioning phase shall include the following:
- i) A Test & Commissioning plan must be in place and be signed off by the relevant competent person
  - ii) The test plan shall cater for rolling stock functionality and rolling stock safety as experienced by operators or users (or both) of the rolling stock or service
  - iii) The plan shall include the scope, parameters, measures, methodology, norms and acceptance criteria for the rolling stock systems/sub-systems or process or a combination thereof
  - iv) The plan shall define certification contents and signatories for each component, system and sub-system
  - v) The plan shall be submitted to the RSR for review and issuance of an approval prior to commencement of the ITC phase

- vi) Where applicable, the Train Operating Company shall make a submission to the RSR, in the appropriate format, for a Testing and Commissioning Permit. The RSR will advise on the need for a permit
- vii) The Testing and Commissioning entity or AIA shall notify the RSR of any intended change or new test requirements after original submission
- viii) The hazard log and risk register shall be current, managed by a custodian with the appropriate authority to expedite the completion of corrective or mitigating actions and counter signed by the responsible competent person
- ix) Define and implement such procedures required for safe working during execution of the testing and commissioning tests. Such procedures must clearly indicate completion or demarcate areas where other sub-system groups may operate
- x) Appropriate certification shall be available and rendered to the RSR for ratification that the system, sub-system or component is fit for use from a safety aspect
- xi) Certification shall also include correct functional operation of the sub-system if the output of the sub-system is an input to another sub-system and certify that if required the change process was followed to implement a design or manufacturing or assembly change
- xii) Submission of the Test Engineer Certification (including ECSA registration) and a resume
- xiii) A comprehensive and complete document pack (As-Built) shall be available for audit which includes all documentation pertinent to the system development excluding any modification or decommissioning or disposal documentation where that has not yet been implemented or initiated

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**8.3 Collaboration between TOC, RSR and Network Owner shall include but not limited to the following:**

- 8.3.1 RSR and TOC to arrange a virtual or physical meeting where the Inspection, Testing & Commissioning process of the rolling stock is discussed and explained to the Regulator by the Project Lead and test team to the RSR
- 8.3.2 Train Operating Company procuring rolling stock outside of South Africa must ensure that the test routes are identified and arrangements are done with the Network owner to allocate slots for the rolling stock to be tested.
- 8.3.3 The inspection and static tests of the procured rolling stock must be conducted at the harbour or entry yard/siding where the rolling stock will be received in South Africa by the TOC. These tests must be conducted by the AIA and witnessed by the RSR and the Network owner.
- 8.3.4 The TOC, RSR and the Network owner must accompany the rolling stock from arrival point to a distance as advised by the regulatory authority
- 8.3.5 The RSR and the TOC must extend an invitation for inspection, testing and commissioning of the rolling stock to the Network owner specialists.
- 8.3.6 For locomotives, motor coaches and EMU's project, the RSR will appoint and Authorised Independent Authority (AIA) to witness the testing and commissioning and submit a detailed report to the RSR.
- 8.3.7 The RSR will also utilise the expertise of certified AIA for the certification of rolling stock drivers on routes that the TOC has been allocated slots to utilise the procured rolling stock
- 8.3.8 The TOC and AIA must submit the test period for the RS, and RSR must evaluate the Testing and commissioning period depending on the complexity of the project. Test plans should include static tests, dynamic test, train sets or independents RS.

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## 9 Operations Phase

- 9.1 The Operations phase **shall not** proceed until the RSR has issued an **Approval Notice** for the Testing and commissioning phase.
- 9.2 Any envisaged changes to monitoring and maintenance standards, procedures, processes, agreements, and associated activities shall require notification submissions to the RSR for consideration and shall include the following:
- i) Human resource plan, including recruiting and training plan where applicable.
  - ii) Documented proof of the existence and effectiveness of operational standards, procedures and processes and an audit trail of any change management activities, implementation and training thereof (**Note: A competent person must be empowered to manage, sustain, and monitor the above**)
  - iii) Any change envisaged must be pre-empted with a submission to the RSR and must include the purpose, scope, methodology of implementation, training norms and acceptance criteria and risk assessment for the envisaged change.
  - iv) The submission must define certification contents and signatories for the envisaged changes for each system, sub-system or component.
  - v) The submission must be made to the relevant RSR department/unit for review prior to service implementation, in the appropriate format.

**NB:** Any change effected should consider the following:

- a) Revised organisational structure, roles and responsibilities and competency impacts
- b) Revised processes or procedures
- c) Impact (risk assessment) of the introduction of new assets, procedures, processes, technology or service providers and
- d) Notification to the RSR of such changes
- vi) Risk assessments of the operating procedures.
- vii) A hazard log and risk register must be developed for the envisaged changes, kept updated and managed by a custodian with the appropriate authority to

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expedite the completion of corrective or mitigating actions and counter signed by the assigned competent person.

- viii) Define and implement such procedures required for safe working during execution of the envisaged changes.
- ix) Appropriate certification must be available and rendered to the RSR for ratification that the envisaged changes to system, sub-system or component maintenance or monitoring (or both) is fit for use from a safety aspect. Certification shall also include the correct functional operation of the sub-system if the output of the sub-system is an input to another sub-system and certify that if required the change process was followed to implement a design or execution change.

#### **9.4 Collaboration between TOC, RSR and Network Owner shall include but not limited to the following:**

- 9.4.1. RSR and TOC to arrange a physical meeting where an Inspection of the operations will be conducted, the TOC will demonstrate processes and the change management processes followed for the procured rolling stock
- 9.4.2. Train Operating Company to provide details of safety critical employees certified for the utilisation of the procured rolling stock, i.e. rolling stock drivers, rolling stock critical component/system approved testing personnel
- 9.4.3. The inspection of operation of the procured rolling stock must be conducted at the routes allocated for the TOC to operate
- 9.4.4. Task observation requirements

## **10 Monitoring and Maintenance Phase**

- 10.1 Any envisaged changes to monitoring and maintenance standards, procedures, processes, agreements, and associated activities shall require notification submissions to the RSR for approval and shall include the following:
  - i) Documented proof of the existence and effectiveness of the monitoring and maintenance policy, strategy, and plan (**Note: The monitoring plan, parameters**

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*and analysis must cater for the system functionality and safety as experienced by operators or users (or both) of the system within the operating environment)*

- ii) The scope, parameters, measures, methodology, norms, and acceptance criteria for the asset, system, or process (or a combination thereof)
- iii) Defined certification contents and signatories for the envisaged changes for each system, sub-system, and component
- iv) Submission made to relevant RSR Department/unit for review and issuance of **Approval Notice** prior to service implementation.
- v) The Operator shall make the submission to the RSR, in the appropriate format and any change submission shall include the following:
  - a) Revised organisational structure, roles and responsibilities
  - b) Revised asset management policy, strategy, objectives and plans
  - c) Revised processes or procedures (or both)
  - d) Impact (Risk Assessment) of the introduction of new assets, procedures, processes, technology or service providers
  - e) Description of the change including specifications, drawings or schematics where applicable.
  - f) Proof of the availability of spares and
  - g) Proof that the maintenance personnel is trained to maintain the system and operations personnel trained to operate the system
- vi) A hazard log and risk register shall be developed for the envisaged changes, kept updated and managed by a competent person with the appropriate authority to expedite the completion of corrective or mitigating actions and counter signed by the assigned responsible person.
- vii) Define and implement such procedures required for safe working during execution of the envisaged changes.
- viii) Appropriate certification shall be available and rendered to the RSR for ratification that the envisaged changes to the maintenance or monitoring (or both) of the system, sub-system or component is fit for use from a safety aspect. Certification shall also include correct functional operation of the sub-system if

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the output of the sub-system or component is an input to another sub-system and certify that, if required, the change process was followed to implement a design or execution change (or both).

**10.2 Collaboration between TOC, RSR and Network Owner shall include but not limited to the following:**

10.2.1 RSR and TOC to arrange a physical meeting where an Inspection of the monitoring and maintenance of the rolling stock will be conducted, the TOC will demonstrate processes and the change management processes followed for the procured rolling stock

10.2.2 The TOC to provide proof of training for maintenance team/employees on the maintenance of the new asset or technology installed on the rolling stock

10.2.3 The TOC shall provide a comprehensive and complete document pack for audit by the regulator inspectors which includes all documentation pertinent to the Rolling Stock maintenance

10.2.4 Approval of maintenance facilities and bodies (Yard operating company inspections agreements)

## 11 Modification Phase

11.1 Modified systems **shall not** be put into Operations without an **Approval Notice** from the RSR. Standards and procedures for the control of the process for modification or re-assembly of systems and components shall include consideration for the following:

- i) Effects of the proposed modification on the railway system as a whole
- ii) Effects of the environment on the proposed modification
- iii) Design, implementation and commissioning of the modification or re-build in accordance with clause 4 to clause 9 (inclusive)
- iv) Effective recording, promulgation and communication of changes and modifications where especially operational safety is affected.

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## 12 Decommissioning Phase

- 12.1 Systems **shall not** be decommissioned without an **Approval Notice** issued from the RSR. Standards and procedures for the decommissioning, disposal and means of preventing inappropriate usage after disposal shall be developed.
- 12.2 The Train Operating Company shall include in their Safety Management System (SMS) as referenced in the SANS 3000-1 Standard, the following as considerations for decommissioning:
- i) Appropriate marking of each decommissioned item for identification purposes
  - ii) The movement of decommissioned rolling stock, including rolling stock systems, sub-systems or components, and the identification of a person(s) appointed to authorize such movement.
  - iii) Ensuring safe operations during decommissioning, scrapping, and disposal
  - iv) Ensuring that the condition of decommissioned material and equipment is clearly identified.
  - v) Prevention of inappropriate re-use of decommissioned material
  - vi) Minimizing environmental risks, including health, safety and pollution hazards associated with the decommissioned items and the process thereof as well as considering both short-term and long-term impact.
- 12.3. The Train Operating Company shall make a submission of intent to the RSR that must include the following:
- 12.3.1. Description and identification of assets involved
  - 12.3.2. Disposal strategy and plan including environmental considerations
  - 12.3.3 Complete risk assessment including socio economic, environmental and statutory impacts or requirements
  - 12.3.4 Safe working operations during disposal
  - 12.3.5 All required certification, signed off by a competent person, that the disposal is compliant to all statutory or other requirements
  - 12.3.6 Identification of storage facility or area of decommissioned rolling stock and rolling stock components
  - 12.3.7 The TOC must submit to the regulator an updated operator asset register.

ANNEXURE A

Life Cycle Stages vs Impact on Stakeholders Risk Impact/ Significance Rating H-High/M-Medium/L-Low		TRIM	PUBLIC	(Other) TOC's	GOV	DOL	DOEA	CUSTOMERS (Infrastructure/ Interface)	Other	Description of Other
DESIGN PHASE	DESIGN/REDESIGN/MODIFICATION/UPGRADE	Design Standards (Inc RSR)								
		Track interface								
		Overhead interface								
		Signal interface								
		Vehicle Gauge								
		Operational Environment								
		Maintainability								
		Product safety								
		Interoperability								
		Control Systems								
		On board systems and RS Interior/Cab Layout								
		RS Structure								
		Cyber security requirements								
		Imaging technologies inclusion								
		Commodity or product containment								
		Vehicle Identification requirements								
		Bogie requirements								
		Items Requiring approval to a standard								

	MATERIAL and COMPONENT SPECIFICATION & QUALITY STANDARDS	Approved Supplier List										
		Verification of Material and Components fitted										
MANUFACTURE	MANUFACTURE (INC. REFURBISHMENT /REBUILD/UPGRADES)	Manufacture standards/processes										
		Quality processes (Inc Welding Processes/Procedures)										
		AIA* Design oversight /signoff (where applicable)										
	COMMISSIONING/ RECOMMISSIONING	Conducted by /Witnessed by Whom?										
		AIA* Approval (where applicable)										
MAINTENANCE	MAINTENANCE	Intervention Planning and management										
		Condition Monitoring										
		Execution and Quality Planning &Monitoring										
		AIA Certification of Continuity (where applicable)										
INSPECTION	ROADWORTHY INSPECTIONS	Formalisation and Verification of Inspector Qualification/Certification										
		Formalisation of Inspection Process /Content										
		Formulation of Plan/Frequency										