



# **Transnet Freight Rail**

an Operating Division of **TRANSNET SOC LTD** [hereinafter referred to as **Transnet**] [Registration No. 1990/000900/30]

# **REQUEST FOR INFORMATION [RFI]**

INFORMATION IS REQUIRED TO ENABLE TRANSNET TO IDENTIFY A SERVICE PROVIDER TO ASSIST IN THE RECOVERY, UPGRADE, AND LONGTERM SUPPORT OF THE CLASS 20E, 21E, AND 22E LOCOMOTIVE FLEETS.

### **THEREAFTER**

THROUGH A SEPARATE "REQUEST FOR PROPOSAL" [RFP] PROCESS

TO APPOINT NATIONAL SERVICE PROVIDERS TO UNDERTAKE THE PROVISION OF RECOVERY, UPGRADE, AND LONG-TERM SUPPORT OF THE CLASS 20E, 21E, AND 22E LOCOMOTIVE FLEET OVER AN AGREED PERIOD.

RFI NUMBER: HOAC-HO-49860

ISSUE DATE: 16 JANUARY 2025

**BRIEFING SESSION:** 29 JANUARY 2025 (MICROSOFT TEAMS) 11:00am

CLOSING DATE: 27 FEBRUARY 2025

CLOSING TIME: 11:00 AM

### Note to the bidders:

Bidders are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Bidder can upload 30mb per upload and multiple uploads are permitted.

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ANNEXURE A TECHNICAL SUBMISSION / QUESTIONNAIRE SECTION 3 SCOPE OF REQUIREMENTS TO THIS RFI/EOI ANNEXURE B NON-DISCLOSURE AGREEMENT ANNEXURE C TRANSNET'S GENERAL BID CONDITIONS ANNEXURE D TRANSNET'S SUPPLIER INTEGRITY PACT

RFI FOR THE PROVISION OF INFORMATION TO ENABLE TRANSNET TO IDENTIFY A SERVICE PROVIDER TO ASSIST IN THE RECOVERY, UPGRADE, AND LONG-TERM SUPPORT OF THE CLASS 20E, 21E, AND 22E LOCOMOTIVE FLEETS.

# **SECTION 1: SBD1 FORM**

# PART A INVITATION TO BID

YOU ARE HEREE	YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF TRANSNET FREIGHT RAIL, A DIVISION TRANSNET SOC LTD									
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Respondent's Signature Date and Company Stamp

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DOES	THE ENTITY H	AVE A PERMANENT ESTAB	BLISHMENT I	N THE RSA?		☐ YES ☐ NO
DOES	THE ENTITY H	AVE ANY SOURCE OF INCO	OME IN THE	RSA?		☐ YES ☐ NO
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N	B: FAILURE TO	PROVIDE / OR COMPLY W	/ITH ANY OF	THE ABOVE PARTICULAR	S MAY RENDER THE	BID INVALID.
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С	APACITY UN	DER WHICH THIS BID	IS SIGNED	):		
(F	Proof of autho	rity must be submitted e.	.g. compan	y resolution)		
П	ATE:					

Respondent's Signature

Date and Company Stamp

## **SECTION 2: NOTICE TO RESPONDENTS**

#### 1 **INFORMATION REQUEST**

Information is requested from interested persons, companies, close corporations or enterprises [hereinafter referred to as the **Respondent(s)**] to supply the aforementioned information to Transnet. Respondents are to note that only those that have responded to this RFI will be allowed to participate in the Stage 2 RFP process.

#### 2 **EXPRESSION OF INTEREST [EOI]**

This RFI aims to:

- Assess technical expertise available in the market.
- Prequalify respondents for the subsequent Request for Proposal (RFP) process.
- Gather information to refine specifications for the RFP.

DESCRIPTION	SUPPORT OF THE CLASS 20E, 21E, AND 22E LOCOMOTIVE FLEETS. [the Services]						
TENDER ADVERT	All Transnet tenders are advertised on the National Treasury's e-Tender Publication Portal and the Transnet website. Should one of these media (i.e. National Treasury's e-Tender Publication Portal or Transnet website) not be available, bidders are advised to check on the other media for advertised tenders.						
	This <b>RFI</b> may be downloaded directly from National Treasury's e-Tender Publication Portal at <a href="https://www.etenders.gov.za">www.etenders.gov.za</a> free of charge.						
	To download RFI and Annexures:						
	Click on "Tender Opportunities";						
	Select "Advertised Tenders";						
RFI DOWNLOADING	<ul> <li>In the "Department" box, select Transnet SOC Ltd;</li> </ul>						
	Once the tender has been located in the list, click on the 'Tender documents" tab and process to download all uploaded documents.						
	The <b>RFI</b> may also be downloaded from the Transnet Portal at <a href="https://transnetetenders.azurewebsites.net">https://transnetetenders.azurewebsites.net</a> (please use <b>Google Chrome</b> to access Transnet link) free of charge (refer to section 2, paragraph 4 below for detailed steps)						
COMMUNICATION	Any addenda to the RFI or clarifications will be published on the e-tender portal and Transnet website. Bidders are required to check the e-tender portal and Transnet website prior to finalising their bid submissions for any changes or clarifications to the RFI.						
	Transnet will not be held liable if Bidders do not receive the latest information regarding this RFI.						
	Yes - Non-compulsory (MICROSOFT TEAMS) 0n 29 01 2025 at 11:00am						
BRIEFING SESSION	Bidders are required to confirm their attendance and to send their contact details including the number of representatives (where applicable) to the following address: buyisiwe.hlatshwayo@transnet.net						
	This is to ensure that Transnet may make the necessary arrangements for the briefing session.						
	Refer to paragraph 3 for details.						

CLOSING DATE	11:00 am on Thursday, 27 February 2025  Bidders must ensure that bids are uploaded timeously onto the system.  As a general rule, if a bid is late, it will not be accepted for consideration.  Bidders are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Bidder can upload 30mb per upload and multiple uploads are permitted.			
	180 Business Days from Closing Date.			
VALIDITY PERIOD	Bidders are to note that they may be requested to extend the validity period of their bid, on the same terms and conditions, if the internal evaluation process has not been finalised within the validity period. However, once the adjudication body has approved the process, the validity of the bidder(s)' bid will be deemed to remain valid until the RFI process has been concluded.			

Any additional information or clarification will be published on the e-Tender portal and Transnet website, if necessary.

#### 3 **FORMAL BRIEFING**

Despite the briefing session being non-compulsory, Transnet nevertheless encourages all Respondents 3.1 to attend. Transnet will not be held responsible if any Respondent who did not attend the noncompulsory session subsequently feels disadvantaged as a result thereof.

#### 4 RESPONSE SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

- a) The Transnet e-Tender Submission Portal can be accessed as follows:
  - Transnet eTenders management Portal Log the platform website/ ((transnetetenders.azurewebsites.net) Please use Google Chrome to access Transnet link/site)
  - Click on "ADVERTISED TENDERS" to view advertised tenders;
  - Click on "SIGN IN/REGISTER for bidder to register their information (must fill in all mandatory information);
  - Click on "SIGN IN/REGISTER" to sign in if already registered;
  - Toggle (click to switch) the "Log an Intent" button to submit a bid;
  - Submit bid documents by uploading them into the system against each tender selected;
  - No late submissions will be accepted. The bidder guide can be found on the Transnet Portal transnetetenders.azurewebsites.net

#### 5 **RFI/EOI INSTRUCTIONS**

- 5.1 All returnable documents listed in the expression of interest [section 5] in this RFI must be returned with your submission.
- 5.2 The person or persons signing the submission must be legally authorised by the respondent to do so.

#### **B-BBEE JOINT VENTURES OR CONSORTIUMS** 6

Bidders may choose during the subsequent RFP process to enter into a Joint Venture with B-BBEE companies. RFP Bidders will also be required to submit a signed JV agreement between the parties clearly stating the

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percentage [%] split of business and the associated responsibilities of each party. If at the time of the bid submission such a JV or consortium agreement has not been concluded, the partners must submit confirmation in writing of their intention to enter into a JV or consortium agreement should they be awarded business by Transnet through the RFP process. This written confirmation must clearly indicate the percentage [%] split of business and the responsibilities of each party. In such cases, award of business will only take place once a signed copy of a JV or consortium agreement is submitted to Transnet.

Please indicate below whether your entity has an existing JV, and if so, provide details, including details of the percentage split of business, or whether your entity intends to create a JV relationship for RFP purposes:

# **7** COMMUNICATION

- 7.1 For specific queries relating to this RFI a Clarification Request Form should be submitted onto the system and to Buyisiwe.hlatshwayo@transnet.net before **12:00 pm on 20 February 2025** substantially in the form set out in Section 8. In the interest of fairness and transparency Transnet's response to such a query will be published on the e-tender portal and Transnet website.
- 7.2 After the closing date of the RFI/EOI a Respondent may only communicate with **Prudence Nkabinde**(DBAC Secretariat), at telephone number: **011 584 0821**, email:

  Prudence.Nkabinde@transnet.net on any matter relating to its RFI/EOI Proposal.
- 7.3 Respondents are to note that changes to its submission will not be considered after the closing date.
- 7.4 It is prohibited for Respondents to attempt, either directly or indirectly, to canvass any officer or employee of Transnet in respect of this RFI/EOI.
- 7.5 Respondents found to be in collusion with one another will be automatically disqualified and restricted from doing business with organs of state for a specified period.

### 8 CONFIDENTIALITY

All information related to this RFI/EOI is to be treated with strict confidence. In this regard Respondents are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information related to this RFI or the subsequent RFP process, written approval to divulge such information must be obtained from Transnet.

# 9 STATUS OF THIS RFI AND SUBSEQUENT PROCESS

- 9.1 It is envisaged that Service Provider will be appointed, through a separate RFP process, to provide recovery, upgrade, and long-term maintenance support requirements for the Class 20E, 21E, and 22E locomotive fleet.
- 9.2 This RFI is not an offer to purchase, and Transnet is under no obligation to accept any proposals in this process and/or the subsequent RFP which may be issued hereafter.
- 9.3 As this is a Request for Information only, no business will be awarded through this process.

	 <del></del>
Respondent's Signature	Date and Company Stamp

### 10 DISCLAIMERS

- 10.1 Respondents are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this RFI and/or its receipt of submissions in response to it. In particular, please note that Transnet reserves the right and at its sole and full discretion to:
  - (a) utilise any information provided to it in response to this RFI to draft the scope of requirements for inclusion in an RFP;
  - (b) take no further action whatsoever, if it so decides;
  - (c) withdraw from this process and the provisions of this project at any time;
  - (d) select the RFI and RFP participants based on Transnet's criteria;
  - (e) change the dates of adjudication and submission;
  - (f) not issue a follow up RFP nor invite RFI respondents for further participation in the RFP process, following this RFI;
  - (g) not bind itself to accept any or all of the RFIs;
  - (h) increase or decrease the quantities/scope as indicated in the RFI;
  - (i) validate any information submitted by Respondents in response to this bid. This would include, but
    is not limited to, requesting the Respondents to provide supporting evidence. By submitting a bid,
    Respondents hereby irrevocably grant the necessary consent to Transnet to do so;
  - (j) request audited financial statements or other documentation for the purposes of a due diligence exercise;
  - (k) not accept any changes or purported changes by the Respondent to the bid rates after the closing date:
- 10.2 Note that Transnet will not reimburse any Respondent for any preparatory costs or other work performed in connection with this submission.

# 11 SECURITY CLEARANCE

Acceptance of this bid could be subject to the condition that the Successful Respondent, its personnel providing the goods and its subcontractor(s) must obtain security clearance from the appropriate authorities to the level of **CONFIDENTIAL/ SECRET/TOP SECRET**. Obtaining the required clearance is the responsibility of the Successful Respondent. Acceptance of the bid is also subject to the condition that the Successful Respondent will implement all such security measures as the safe performance of the contract may require.

# 12 NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Respondents are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. Respondents must register on the CSD prior to submitting their bids. Business may not be awarded to a Respondent who has failed to register on the CSD. Only foreign suppliers with no local registered entity need not register on the CSD.

For this purpose, the attached SBD 1 Form must be completed and submitted as a returnable document by the closing date and time of the bid.

## 13 TAX COMPLIANCE

Respondents must be compliant when submitting future proposals to Transnet and remain compliant for the entire contract term with all applicable tax legislation, including but not limited to the Income Tax Act, 1962 (Act No. 58 of 1962) and Value Added Tax Act, 1991 (Act No. 89 of 1991).

It is a condition of this bid that the tax matters of the successful Respondents be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

The Tax Compliance status requirements are also applicable to foreign Respondents / individuals who wish to submit bids.

Where Consortia / Joint Ventures / Sub-contractors are involved, each party must be registered on the Central Supplier Database and their tax compliance status will be verified through the Central Supplier Database.



# **SECTION 3: RFI SCOPE OF REQUIREMENTS**

## 1 INTRODUCTION

Transnet Freight Rail (TFR) is embarking on a program to recover, upgrade, and enhance the operational performance of its Class 20E, 21E, and 22E locomotive fleet. This initiative seeks to address critical challenges, including reduced fleet availability, maintenance complexities, and the lack of Original Equipment Manufacturer (OEM) support. The recovery and upgrade program is essential to improving freight capacity, operational efficiency, and reliability across the rail network.

This Request for Information (RFI) is issued to gather insights from industry stakeholders regarding innovative solutions, technical capabilities, and best practices to support the development of a comprehensive Request for Proposal (RFP) for this critical project.

## 2 BACKGROUND

2.1 Since 2013, Transnet Freight Rail (TFR) has introduced a new generation of electric locomotives, procured from a single OEM, and designated under the Transnet Fleet Classifications as 20E, 21E, and 22E. These locomotives were intended to modernize the fleet and enhance rail freight capacity. However, several units within each class have been taken out of service due to various challenges, including derailments, accidents, vandalism, and pending component replacements. These factors have resulted in a staged fleet, with some locomotives awaiting repairs or upgrades to return to operational status. Fleet size breakdown:

Class	Locomotive Description	Operation Description (Depot)	Total Fleet (Size)
20E	3kVdc/25kVac Electric Bo-Bo	Cape Corridor	94
21E	3kVdc/25kVac Electric Bo-Bo	North Corridor	100
22E	3kVdc/25kVac Electric Co-Co	GFB (Various Corridors)	261

- 2.2 After the suspension of the OEM's contract to deliver 359 Class 22E locomotives, the OEM formally notified Transnet Freight Rail (TFR) of its decision to cease all maintenance and support services for the fleets previously supplied. This withdrawal affects the entire series of new-generation electric locomotives in TFR's fleet—specifically the 20E, 21E, and 22E classes. This development has significant operational implications, as it removes OEM support for essential maintenance, repairs, and component supply across these locomotive classes.
- 2.3 Transnet Freight Rail (TFR) invites qualified bidders to submit proposals to address the operational needs of its Class 20E, 21E, and 22E locomotive fleets. The scope of this proposal includes:
  - 2.3.1 Experienced Respondent for Fleet Takeover: TFR seeks a seasoned Respondent with a proven track record in fleet management to assume full operational responsibility for the 20E, 21E, and 22E classes. The Respondent will be required to utilize specified existing locomotive components and integrate a new locomotive control system that meets the functional requirements set forth by TFR.

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- 2.3.2 Supply of Components on Demand: The Respondent will supply necessary components for the Class 20E, 21E, and 22E locomotives on an as-needed basis, ensuring continued availability and support for fleet maintenance and repairs. This proposal aims to restore and maintain TFR's new-generation locomotive fleet in optimal condition, ensuring uninterrupted service and reliability across operations.
- 2.3.3 The Respondent(s) should also indicate capability and ability to support the organisation with a long-term maintenance and support agreement for the lifespan of the entire fleet.

#### 3 **KEY OBJECTIVES OF THIS RFI PROCESS**

The following list of deliverables captures the minimum intent and objectives of the RFI process. Transnet requests all Respondents to assist with the achievement of these objectives by submitting the requested information as indicated below. This will be finalised in the RFP documents following the RFI process:

- a) Full operational responsibility for the 20E, 21E, and 22E locomotives.
- b) Supply and integration of a new locomotive control system.
- c) Long-term supply and availability of critical components.
- d) Comprehensive maintenance and support agreement for the lifespan of the fleets.

#### GENERAL RESPONDENT OBLIGATIONS 4

- 4.1 The Respondent(s) shall be fully responsible to Transnet for the acts and omissions of persons directly or indirectly employed by them.
- 4.2 The Respondent (s) must comply with the requirements stated in this RFI.

#### 5 **CONFIDENTIALITY AND COMPLIANCE**

This RFI and information contained herein or provided for purposes thereof, remain the property of Transnet and may not be reproduced, sold or otherwise disposed of. All recipients of this document (whether a RFI is submitted or not) shall treat the details of this document as strictly private and confidential.

Information disclosed in this RFI is given in good faith and only for the purposes of providing sufficient information to the Respondent to enable submission of a well-informed and realistic RFI.

#### 6 **UNDERTAKINGS BY RESPONDENT**

It will be accepted that the Respondent, on submitting the RFI response, has read, understood and accepted all the terms and conditions of the document. The submission of an RFI by any Respondent shall presume complete acceptance of the terms and conditions of the document. All qualifications and or exceptions should be noted in the RFI Response document.

#### **COSTS TO RESPOND TO THE RFI** 7

- 7.1 All Respondents wishing to submit a RFI response must be in possession of this document, the RFI. Transnet will not be responsible for or pay any expense or losses which may be incurred by any Respondent in the preparation and submission of the RFI and the costs of the RFI at all stages of the RFI process. Costs, if any, will be for each Respondent's own account.
- 7.2 Transnet reserves the right to invite certain Respondents to present or otherwise demonstrate their proposed solution as per their RFI, at the Respondent's own cost.

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## 8 AUTHORITY OF SIGNATORY

- 8.1 If the RFI Respondent is a company, a certified copy of the resolution of the Board of Directors (i.e. personally signed by the Chairman or Secretary of the Board) authorising the person who signs this RFI to do so and any other documents and correspondence in connection with this RFI and/or agreement on behalf of the company, must be submitted with their RFI.
- 8.2 If the RFI Respondent is a partnership, a certified copy of the resolution of the partners (personally signed by all the partners) authorising the person who signs this RFI to do so and any other documents and correspondence in connection with this RFI and/or agreement on behalf of the partnership, must be submitted with this RFI.
- 8.3 If the RFI Respondent constitutes a "one-man business", certified proof must be submitted that the person signing this RFI and any other documents and correspondence in connection with this RFI and/or agreement is the sole owner of the one-man business.

Failure to comply with this clause may result in rejection of the RFI response.

### 9 OFFERING OF COMMISSION OR GRATUITY

If a Respondent, or any person employed by him, is found to have either directly or indirectly offered, promised or given to any person in the employ of Transnet, any commission, gratuity, gift or other consideration, Transnet shall have the right and without prejudice to any other legal remedy which it may have in regard to any loss or additional cost or expenses, to disqualify the RFI Respondent from further participation in this process and any other subsequent processes in this regard. The RFI Respondent will be responsible for all and any loss that Transnet may suffer as a result thereof. In addition, Transnet reserves the right to exclude such a Respondent from future business with Transnet.

# 10 UNDERTAKING BY TRANSNET

In responding to this RFI, Transnet encourages all RFI Respondents to put their best effort into the construction and development of the proposal.

The RFI process will include due governance, and the results of the adjudication process will be available to Respondents.

Nb\* The subsequent RFP to this RFI will be closed to the respondents of this RFI only.

- Following the evaluation of the responses, the respondents will be shortlisted for further participation on the RFP based on the obtained score of 80% or more

### **SECTION 4: TRANSNET'S RFI INFORMATION**

# 1 STATISTICS [The Services]

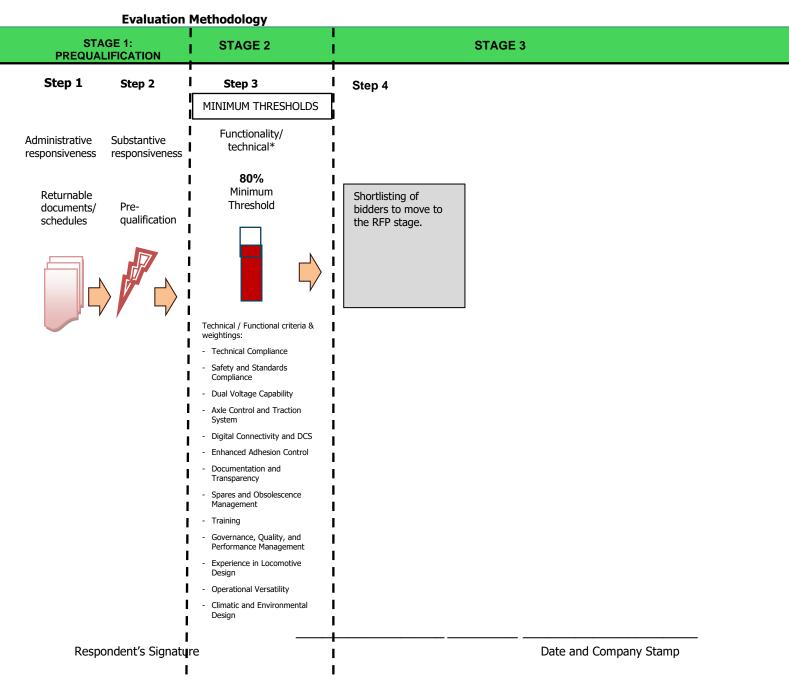
Please note that the below mentioned information is provided merely as an indication of the size and nature of Transnet's current requirements and consequently does not necessarily reflect the extent of the Services to be provided by appointed Service Provider(s) through an award of business at any future date.

# 2 REQUIREMENTS FOR RFI

Respondents expressing an interest to participate in this RFI stage must provide the full range of Services, as set out below:

- (i) Fleet recovery and upgrade services for Class 20E, 21E, and 22E locomotives, including integration of a new locomotive control system;
- (ii) Supply and availability of critical components for locomotive maintenance and repairs; and
- (iii) Long-term maintenance and support services for the operational lifespan of the fleet.

Nb\* bidders may express interest in part or all of the fleets of locomotives mentioned.



# 3 TECHNICAL CAPABILITY

Respondents are required to indicate their existing technical capability by ticking the applicable box in the table below: Please refer to Annexure B for comprehensive evaluation scoring matrix. Respondents are required to obtain 80% of the total scores in order to be considered for the RFP stage.

Weighting:100%
Minimum Score required:80%
Required evidence provided= 2
Partial evidence provided = 1
No evidence provided= 0

		Technical	Required	Means of Compliance (Evidence provided –	
Criteria	Sub-Criteria	Requirement	Evidence	Yes/No)	Score 0-2
		Heavy-haul freight capability.	Provide designs and technical specifications for heavy-haul locomotives demonstrating high tractive effort and loadpulling capacity.		
		Robust design for narrow-gauge operations (1,067mm).	Submit axle and bogie designs showing durability and stability for narrow-gauge operations under high loads.		
			Evidence of locomotive performance in extreme conditions (e.g., high temperatures,		
		Capability to handle environmental challenges.	humidity, salinity, and dust) through operational data or test results.		
TECHNICAL	Locomotive		Submit lifecycle cost analysis documentation		
TECHNICAL COMPLIANCE	Design and Purpose		from past projects, including operating costs, maintenance schedules, and		
		Expertise in lifecycle cost analysis.	component replacement plans.		

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			Provide designs	
			and testing data	
			_	
			for vibration	
		A alconocia di citi	damping systems	
		Advanced vibration	implemented in	
		damping systems.	other projects.	
			Submit a portfolio	
			of projects	
			demonstrating	
			locomotive	
			designs delivered	
			and adapted for	
			operations in	
			multiple regions	
			(e.g., Asia, Africa,	
			Europe, North	
			America) with	
			regional	
			adaptations for	
			varying track	
		Experience in	gauges, voltage	
		multi-region	systems, and	
		locomotive design	environmental	
		and delivery.	conditions.	
		and delivery.		
			Provide case studies of	
			successfully	
			delivered	
			locomotive	
			systems or	
			components to	
			clients in diverse	
			global regions,	
			highlighting	
			challenges and	
		Proven capacity in	how they were	
		delivering	overcome (e.g.,	
		locomotive	logistics, customs	
		systems and	regulations,	
		components	regional	
		globally.	compliance).	
			Provide copies of	
			certifications, test	
		Compliance with	reports, or audit	
		SANS 3000, EN	results proving	
		50121, EN 50155,	adherence to the	
		IEC 60571, and IEC	specified	
		61373 standards.	standards.	
			Submit designs	
			and test results	
SAFETY AND	Compliance with		demonstrating	
STANDARDS	international		fault recovery and	
COMPLIANCE	standards.		redundancy for	
			braking, traction,	
		System	and	
		redundancy for	communication	
		critical operations.	systems.	
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Provide designs	
and certifications	
demonstrating	
compliance with	
crashworthiness	
Advanced standards and	
crashworthiness impact testing	
standards. data.	
Submit ISO 14001	
certification or	
documentation	
Environmental demonstrating	
compliance compliance with	
standards (ISO similar	
14001 or environmental	
equivalent).	
Provide evidence	
of compliance	
with specific	
regional standards	
for delivered	
locomotives and	
components (e.g.,	
Adherence to AAR for North	
regional safety and America, UIC for	
regulatory Europe, RSR for	
standards. South Africa).	
Include technical	
data on	
transformer	
Optimized efficiency and	
transformer performance	
designs for high under dual-	
efficiency and voltage conditions	
minimal energy from past	
loss. projects.	
Provide designs	
and performance	
data showing	
effective heat	
dissipation	
Heat management mechanisms	
systems for under high-load	
transformers. conditions.	
Provide technical	
documentation on	
Voltage transition	
efficiency and systems, including	
DUAL VOLTAGE power examples of	
CAPABILITY conversion. successful voltage	
Seamless voltage transitions in	
transition systems. similar projects.	
Submit system	
AXLE CONTROL Enhanced documentation	
AND TRACTION traction showing dynamic	
SYSTEM systems. Real-time power axle power	
distribution to management and	
axles for optimized optimization	
traction. algorithms.	

Provide technical documentation and test results demonstrating regenerative braking Regenerative performance braking under different integration.  Include examples	
and test results demonstrating regenerative braking Regenerative performance braking under different integration. conditions.	
demonstrating regenerative braking Regenerative performance braking under different integration. conditions.	
regenerative braking Regenerative performance braking under different integration. conditions.	
regenerative braking Regenerative performance braking under different integration. conditions.	
Regenerative performance braking under different integration.	
Regenerative performance braking under different integration. conditions.	
braking under different integration. conditions.	
integration. conditions.	
Include examples	
of systems that	
provide predictive	
analytics for axle	
Advanced axle maintenance and	
monitoring. fault detection.	
Submit energy	
efficiency	
calculations and	
data for traction	
Energy efficiency systems	
enhancements for implemented in	
traction systems. other projects.	
Submit system	
architecture	
diagrams	
demonstrating	
data transfer	
capabilities,	
Real-time data   including real-	
diagnostics and time tracking and	
location tracking. diagnostics.	
Provide designs	
and case studies	
showing	
redundancy	
Fault tolerance and measures and	
redundancy fault recovery	
mechanisms. mechanisms.	
Provide	
architecture	
designs and	
operational data	
from fleet	
management	
Integration with systems	
centralized fleet integrating digital	
management connectivity and	
systems. diagnostics.	
Submit	
cybersecurity	
DIGITAL Advanced strategy	
CONNECTIVITY communication documentation,	
AND DCS systems. penetration	
Cybersecurity testing results,	
resilience for and certifications	
connected (e.g., ISO 27001 or	
systems. NIST compliance).	

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			Include evidence		
			of Al-powered		
			CCTV features for		
			obstacle detection		
			and track		
		AI-enhanced CCTV	monitoring, with		
		systems for safety	examples of		
		and track	integration in past		
		inspection.	projects.		
			Provide evidence		
			of implemented		
			algorithms and		
			operational data		
			demonstrating		
		Real-time	effective re-		
		adjustments based	adhesion under		
		on load and track	variable loads and		
		conditions.	gradients.		
			Submit data from		
			durability tests		
			and maintenance		
			records showing		
		Long-term	minimal wear		
		durability of	over extended		
		adhesion systems.	operations.		
		auricsion systems.	Include operator		
			interface designs		
ENHANCED	Advanced re-		and examples of		
ADHESION	adhesion		feedback systems		
CONTROL			for monitoring slip		
CONTROL	algorithms.	Real-time operator	and traction		
		feedback.	performance.		
			Submit		
			interoperability		
		- 11	matrices and		
		Full documentation	system		
		of interoperability	integration plans		
		with other OEM	from past		
		systems.	projects.		
			Provide licensing		
			agreements and		
			usage terms		
			demonstrating		
			flexibility in		
		Open-source or	software		
		flexible licensing	ownership and		
		for software	modification		
		components.	rights.		
			Include examples		
			of fault logging		
DOCUMENTATION			systems and		
AND	Transparent		analytics reports		
TRANSPARENCY	system design.	Comprehensive	used for		
		fault logs and	diagnostics in		
		analytics.	previous projects.		
	i		Provide		
i				l	
			documentation of		
			phased transition		
SPARES AND	Innovative	Transition plans for	phased transition		
SPARES AND OBSOLESCENCE	Innovative obsolescence	Transition plans for components	phased transition strategies for		
			phased transition strategies for obsolete		
OBSOLESCENCE	obsolescence	components	phased transition strategies for obsolete components		

TRAINING  Comprehensive skill transfer.  Comprehensive skill t	İ	1		projects.	
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GOVERNANCE, QUALITY, AND PERFORMANCE MANAGEMENT  MANAGEMENT  EXPERIENCE IN LOCOMOTIVE DESIGN  Design Life and  Advanced metrics, from past performance metrics, from projects.  Include  stakeholder analysis plans and engagement engagement reports from previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational					
GOVERNANCE, QUALITY, AND PERFORMANCE MANAGEMENT  Systems.  Advanced Proven track Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational					
GOVERNANCE, QUALITY, AND PERFORMANCE MANAGEMENT  MANAGEMENT  EXPERIENCE IN LOCOMOTIVE DESIGN  Design Life and  Advanced project managements systems.  Advanced project management stakeholder analysis plans and engagement reports from previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational			Long-term service		
GOVERNANCE, QUALITY, AND PERFORMANCE MANAGEMENT  Stakeholder engagement engagement frameworks.  Proven track record in designing locomotives with a minimum lifecycle of 30 years under DESIGN  projects.  Include stakeholder analysis plans and engagement reports from previous complex previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational			_	_	
GOVERNANCE, QUALITY, AND PERFORMANCE MANAGEMENT  Stakeholder engagement engagement frameworks.  Provide technical documentation of delivered locomotives with a minimum lifecycle of 30 years under DESIGN  Include stakeholder engagement reports from previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational			performance	metrics, from past	
GOVERNANCE, QUALITY, AND project analysis plans and engagement reports from previous complex projects.  MANAGEMENT Stakeholder engagement previous complex frameworks.  Provide technical documentation of delivered record in designing locomotives with a minimum lifecycle of 30 years under DESIGN  Design Life and demanding stakeholder analysis plans and engagement previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational			guarantees.		
QUALITY, AND PERFORMANCE MANAGEMENT  Project management systems.  Stakeholder engagement previous complex projects.  Provide technical documentation of delivered record in designing locomotives with a minimum lifecycle of 30 years under DESIGN  project  analysis plans and engagement previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational					
PERFORMANCE management systems.  Stakeholder reports from previous complex projects.  Provide technical documentation of delivered record in designing locomotives with a minimum lifecycle of 30 years under DESIGN  Design Life and demanding engagement reports from previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational					
MANAGEMENT  systems.  Stakeholder reports from previous complex projects.  Provide technical documentation of delivered record in designing locomotives, including lifecycle assessments, durability testing, and operational					
engagement previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, DESIGN  engagement previous complex previous complex projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational		-	Stakeholder		
frameworks. projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, pesign Life and demanding projects.  Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, and operational	MANAGENIENI	Systems.			
Provide technical documentation of delivered locomotives, including lifecycle assessments, durability testing, pesign Life and demanding locomotives locomotives with a minimum lifecycle and operational					
documentation of delivered locomotives, including lifecycle assessments, durability testing, pesign Updated and operational					
Proven track record in designing locomotives, including lifecycle assessments, durability testing, pesign Life and delivered locomotives, including lifecycle assessments, durability testing, and operational					
record in designing locomotives, including lifecycle assessments, durability testing, and operational			Proven track		
Including lifecycle					
EXPERIENCE IN LOCOMOTIVE DESIGN  minimum lifecycle of 30 years under demanding  minimum lifecycle assessments, durability testing, and operational				· · · · · · · · · · · · · · · · · · ·	
LOCOMOTIVE     of 30 years under     durability testing, and operational       DESIGN     Design Life and     demanding	EXPERIENCE IN				
DESIGN         Design Life and         demanding         and operational			-		
Durability conditions data	DESIGN	Design Life and			
Conditions. data.		Durability	conditions.	data.	

1	1	1	1	1	
			Submit design		
			specifications and		
			certifications		
		Capability to	demonstrating		
		design locomotives	adherence to axle		
	Axle Load and	with axle loads	load standards for		
	Weight	compliant to < 22	freight		
	Standards	tonnes per axle.	applications.		
	Standards	·	Provide technical		
		Experience			
		delivering dual-	specifications and		
		voltage (AC/DC)	operational data		
		locomotives for	for dual-voltage		
		mixed operations	locomotives		
	Dual Voltage	with seamless "on-	previously		
	Capability	the-fly" transitions.	delivered.		
	capability	Ability to design	delivered.		
		locomotives			
		capable of	Include		
		multiple-unit	interoperability		
		operation across	test reports and		
		various classes	examples of multi-		
		(electric and	class operational		
	Interoperability	diesel).	deployments.		
	interoperability	Experience in	Submit system		
			· · · · · · · · · · · · · · · · · · ·		
		designing	architecture		
		locomotives with	diagrams and case		
		compatibility for	studies showing		
OPERATIONAL		ECP, WDP, and RDP	integration of		
VERSATILITY	Distributed	systems for long-	distributed power		
	Power Systems	haul operations.	systems.		
	,	Proven	7		
		performance of	Provide		
		l '			
		locomotives under	operational data		
		diverse conditions	or test results for		
		(e.g., extreme	locomotives		
	Extreme	temperatures,	deployed in		
	Climatic	humidity, and	similar challenging		
	Conditions	dust).	environments.		
		Ability to design			
		locomotives	Submit materials		
		locomotives	Submit materials		
CLIMATIC AND		suitable for coastal	specifications and		
CLIMATIC AND		suitable for coastal and humid	specifications and examples of		
ENVIRONMENTAL		suitable for coastal and humid environments with	specifications and examples of solutions used to		
	Corrosion	suitable for coastal and humid environments with anti-corrosion	specifications and examples of solutions used to mitigate corrosion		
ENVIRONMENTAL	Corrosion Resistance	suitable for coastal and humid environments with	specifications and examples of solutions used to		
ENVIRONMENTAL		suitable for coastal and humid environments with anti-corrosion	specifications and examples of solutions used to mitigate corrosion		
ENVIRONMENTAL		suitable for coastal and humid environments with anti-corrosion features.	specifications and examples of solutions used to mitigate corrosion		
ENVIRONMENTAL		suitable for coastal and humid environments with anti-corrosion features. Experience	specifications and examples of solutions used to mitigate corrosion risks.		
ENVIRONMENTAL		suitable for coastal and humid environments with anti-corrosion features. Experience delivering locomotives with	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data,		
ENVIRONMENTAL		suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle		
ENVIRONMENTAL	Resistance	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms		
ENVIRONMENTAL	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and dead-	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force		
ENVIRONMENTAL	Resistance	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.		
ENVIRONMENTAL	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and dead-	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit		
ENVIRONMENTAL	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and dead-	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.		
ENVIRONMENTAL	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and dead-	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit		
ENVIRONMENTAL	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and deadnotch-free braking.	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit documentation showing		
ENVIRONMENTAL DESIGN	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and deadnotch-free braking.	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit documentation showing regenerative		
ENVIRONMENTAL DESIGN  TRACTION AND BRAKING	Advanced Traction Control	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and deadnotch-free braking.  Integration of regenerative braking systems to	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit documentation showing regenerative braking designs		
ENVIRONMENTAL DESIGN  TRACTION AND	Resistance  Advanced	suitable for coastal and humid environments with anti-corrosion features.  Experience delivering locomotives with optimized axle control, AC traction motors, and deadnotch-free braking.	specifications and examples of solutions used to mitigate corrosion risks.  Provide traction performance data, including axle control algorithms and braking force curves.  Submit documentation showing regenerative		

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		Expertise in	Include	
		designing	compliance	
		communication	certifications and	
		systems compliant	examples of	
	Inter-	with international	interoperable	
	Locomotive	standards (e.g., IEC	communication	
	Communication	protocols).	solutions.	
		Proven capability		
		in integrating data		
		transfer systems	Provide examples	
DIGITAL		for real-time	of real-time	
COMMUNICATION	Data Transfer	diagnostics and	monitoring	
SYSTEMS	and Remote	remote	systems deployed	
	Diagnostics	monitoring.	on locomotives.	
	_		Submit	
			documentation of	
		Use of	paint	
		environmentally	specifications and	
		friendly, water-	examples of past	
		based paints for	compliance with	
PAINTING AND	Environmental	locomotive	eco-friendly	
MARKING	Paints	painting.	standards.	
		Capability to offer		
		locomotives with	Provide technical	
		modular	details of modular	
		components for	systems used in	
INNOVATION AND		ease of	previous	
MODULAR	Modular Sub-	maintenance and	locomotive	
DESIGN	Systems	upgrades.	designs.	
			Submit examples	
			of RFID systems	
		Experience in	deployed,	
		implementing RFID	including case	
		systems for	studies and	
RADIO		locomotive	results of	
FREQUENCY		tracking and asset	operational	
IDENTIFICATION	RFID Integration	management.	improvements.	
		Proven track	Portfolio of	
		record of designing	delivered	
		locomotives	locomotives,	
		meeting	technical	
	Locomotive	operational	specifications, test	
	Design	requirements.	results.	
	_ 20.5	. equiternents.	Documentation of	
		Expertise in	implemented	
		advanced traction,	systems,	
		dynamic braking,	efficiency data,	
	Traction and	and regenerative	and performance	
	Braking Systems	braking systems.	logs.	
	Draking Systems	Integration of	1063.	
		_	Evamples of	
TECHNICAL		energy-saving systems such as	Examples of locomotives with	
EXPERTISE		regenerative	energy-efficient	
LAFERIIJE	Energy	braking and energy	features and	
	Efficiency		results.	
	Еписепсу	meters.	resuits.	
		Experience with		
ODEDATIONAL		dual-voltage	Coco etudica af	
OPERATIONAL		locomotives and	Case studies of	
FLEXIBILITY	Dural Malta	automatic AC/DC	dual-voltage	
	Dual Voltage Capability	changeover	locomotives and performance data.	
	Lanahility	systems.	i performance data.	l

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		Operability in	Operational		
		extreme conditions	performance data		
	Climate	(heat, humidity,	from extreme		
	Adaptability	dust, salinity).	environments.		
			Detailed design		
		Ability to deliver	documentation		
		modular systems	and examples of		
		for maintenance	modular system		
	Modular Design	and upgrades.	implementations.		
	Woddidi Design	Adherence to	Certifications and		
		international	audit reports for		
		safety and	compliance with		
	Compliance with	operational	relevant		
	Standards	standards.	standards.		
	Standards				
		Proven ability to	Examples of fault		
	Fault Datastian	integrate fault detection and	recovery systems		
	Fault Detection		and supporting		
	and Recovery	recovery systems.	documentation.		
SAFETY AND		Integration of			
COMPLIANCE		safety systems like	Examples of safety		
	Advanced Safety	vigilance and fire	system		
	Systems	detection.	implementations.		
		Deployment of			
		systems for real-			
		time fault/event	Sample logs and		
	Real-Time Data	logging and	documentation of		
	Logging	diagnostics.	deployed systems.		
		Development of	Specifications of		
		ergonomic and	DDUs and		
	Driver Display	durable display	operator		
	Units (DDU)	units.	feedback.		
		Expertise in			
DIGITAL AND		integrating remote	Case studies of		
COMMUNICATION		diagnostics and	remote		
	Remote	connectivity	connectivity		
	Connectivity	systems.	features.		
		Long-term support	Lifecycle		
		and parts	management		
	Lifecycle	availability for	plans and		
	Management	locomotives.	examples.		
	<u> </u>	Predictive	Maintenance		
		maintenance and	schedules and		
MAINTENANCE		condition	predictive		
AND LONGEVITY	Maintenance	monitoring	analytics tool		
	Optimization	systems.	documentation.		
		Integration of	Project		
		cutting-edge	documentation		
		technologies like	showcasing		
	Advanced	IoT and AI-based	innovative		
	Technology	diagnostics.	solutions.		
		<u> </u>	Environmental		
			impact		
		Eco-friendly design	assessments and		
INNOVATION AND		practices and	case studies of		
SUSTAINABILITY	Environmental	energy-efficient	green design		
	Sustainability	systems.	projects.		
		, · <del>-</del> -	Case studies of		
			projects across		
TRACK RECORD		Successful delivery	different		
ILLOOND	Global	of locomotives in	geographical		
	Deployment	diverse regions.	regions.		
	Deployment	aiverse regions.	regions.		

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		Positive references	Client testimonials		
	Client	from previous	and performance		
	References	clients.	reviews.		
		Use of			
		components/sub-			
		systems with	Evidence of at		
		proven	least two years of		
		l '			
		performance in	operational		
	Service Proven	similar operating	reliability and		
	Components	conditions.	availability.		
		Use of AC traction	Graphs for		
		motors and	-		
	Traction and		voltage, current,		
		auxiliary motors	tractive effort,		
	Auxiliary	with appropriate	and speed; life		
	Systems	characteristics.	cycle cost analysis.		
		Effective forced			
		ventilation and air	Details of air		
	Ventilation and	filtration for	filtration system		
	Cooling	rotating machines.	and airflow tests.		
	, ,	_			
		Robust and	Evidence of		
		maintainable	compliance with		
		design for rotating	ISO standards for		
	Mechanical	machines and	balance and		
	Design	auxiliary systems.	vibration testing.		
		Use of high-quality			
		materials and	Certification of		
DESIGN		components to	materials,		
220.0		ensure longevity	lubricant details,		
		(e.g., bearings,	and bearing life		
	Durahility		_		
	Durability	lubricants).	cycle analysis.		
		Design allows for			
		efficient			
		maintenance,			
		interchangeability	Maintenance and		
		of components,	overhaul plans,		
		and minimal	documentation on		
	Ease of	special	component		
	Maintenance	adjustments.	interchangeability.		
	Wantenance	adjustificitis.	Details on		
		Use of durable and	material		
		corrosion-resistant	specifications and		
		materials (e.g.,	life expectancy		
	Durability of	insulated bearings,	under operational		
	Materials	resilient seals).	conditions.		
		Utilization of local			
MAINTAINABILITY		suppliers and			
	Local	materials where	Evidence of supply		
	Adaptability	possible.	chain localization.		
	, ,	Integration of			
		safety lugs, theft			
		prevention			
		· ·	Docian and tast		
		measures, and	Design and test		
	Cofotu Factures	secure mounting of	details for safety		
	Safety Features	components.	features.		
		Measures to	<u> </u>		
		prevent	Design and		
		environmental	operational		
		contamination	details for sealing		
SAFETY	Environmental	(e.g., lubricant	and containment		
	Protection	leakage).	systems.		
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			Comprehensive		
		Adherence to type	testing for		
		test requirements	vibration,		
		for traction motors	temperature rise,		
		and auxiliary	and overload		
	Type Tests	systems.	conditions.		
	7,000	Regular testing of			
			D		
		traction motors	Documentation of		
		and components to	routine test		
	Routine Tests	ensure compliance.	protocols.		
		Long-term			
		vibration testing to			
		ensure durability	Baseline vibration		
TESTING		of internal and	data and		
	Vibration	external	comparative test		
	Testing	components.	results.		
	resting	components.			
		Drovicion of	Manuals covering		
		Provision of user	all components		
MAINTENANCE	Maintenance	and maintenance	and maintenance		
MANUALS	Manuals	manuals in English.	processes.		
			Documented		
		Adherence to IEC	compliance with		
		standards, such as	IEC standards for		
INITEDNIATIONIAL	C	-			
INTERNATIONAL	Compliance to	IEC 60076, 60310,	design, testing,		
STANDARDS	IEC Standards	60850, and 61133.	and construction.		
			Submission of		
		Rated power,	technical		
		voltage, current,	specifications		
DESIGN	Transformer	and other critical	aligned with IEC		
INFORMATION	Ratings	parameters.	definitions.		
		•	Confirmation of		
			core-type design		
		Use of core-type	with detailed		
TRANSFORMER		transformer	construction		
CONSTRUCTION	Cara Dasian		plans.		
CONSTRUCTION	Core Design	construction.	1		
		5	Test data		
		Basic insulation	confirming		
		level of at least	compliance with		
		190kV (peak	insulation		
	Insulation Levels	value).	standards.		
			Submission of		
		Compliance with	temperature rise		
		maximum	characteristic		
INSULATION &		temperature rise	curves and		
TEMPERATURE	Temperature	limits (e.g., winding	ambient condition		
	Rise	< 80K, oil < 65K).	evaluations.		
		, , , ,	Specifications for		
			conductor		
			material and		
	Conductor and	Use of copper	insulation		
	Insulation	conductors and	material		
MATERIALC					
MATERIALS	Materials	Nomex insulation.	properties.		<u> </u>
			Detailed mounting		
			plans showing		
			placement and		
		Preference for	protective		
		transformer	measures for		
POSITIONING &	Mounting	placement within	external		
MOUNTING	Location	locomotive body.	placement.		
			p.acccirc	<u> </u>	1

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		Use of oil-			
		immersed	Design details and		
		transformers with	operational		
TRANSFORMER	Oil Cooling	an oil-conservator	guidelines for		
TYPE	System	system.	cooling systems.		
			Documentation of		
			auxiliary		
		Explosion vent, oil	equipment design		
		level indicators,	and integration		
		temperature	with safety and		
	Safety	gauges, and	protection		
	Mechanisms	alarms.	systems.		
		Integration of			
		dissolved gas	Details of		
TRANSFORMER		analysis (DGA) and	monitoring		
AUXILIARY	Online	other condition	system design and		
EQUIPMENT	Monitoring	monitoring	service-proven		
	Systems	equipment.	performance.		
		Use of transformer	Certification of oil		
		oil compliant with	quality and		
		SABS 555 or	evidence of		
		equivalent	service-proven		
	Oil Quality	standards.	performance.		
			Detailed radiator		
		Mechanical	designs and		
		bonding of core	maintenance		
TRANSFORMER		tubes and fins to	plans for debris		
OIL & COOLING		prevent thermal	cleaning and air		
	Radiator Design	aging.	filtration.		
		Compressed air	Design		
		brakes and hand-	compliance,		
	Independent	operated brakes	operational		
	Independent Brake Systems	operated brakes acting			
	Independent Brake Systems	operated brakes	operational independence of		
		operated brakes acting independently. Simultaneous	operational independence of braking systems.		
	Brake Systems	operated brakes acting independently.	operational independence of braking systems. Demonstration of uniform		
	Brake Systems Simultaneous	operated brakes acting independently. Simultaneous operation of air	operational independence of braking systems.  Demonstration of		
GENERAL BRAKE	Brake Systems Simultaneous Air Brake	operated brakes acting independently. Simultaneous operation of air brakes on all	operational independence of braking systems.  Demonstration of uniform application		
GENERAL BRAKE SYSTEM	Brake Systems Simultaneous Air Brake	operated brakes acting independently. Simultaneous operation of air brakes on all	operational independence of braking systems.  Demonstration of uniform application through tests.		
_	Brake Systems Simultaneous Air Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results		
_	Simultaneous Air Brake Application	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%).	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.		
_	Simultaneous Air Brake Application  Equal Brake	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to		
_	Brake Systems  Simultaneous Air Brake Application  Equal Brake Block Pressure	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear		
_	Brake Systems  Simultaneous Air Brake Application  Equal Brake Block Pressure	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments.	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.		
_	Brake Systems  Simultaneous Air Brake Application  Equal Brake Block Pressure	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical		
_	Brake Systems  Simultaneous Air Brake Application  Equal Brake Block Pressure	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of		
-	Simultaneous Air Brake Application  Equal Brake Block Pressure  Wear Tolerance	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without dismantling or	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of brake block		
_	Simultaneous Air Brake Application  Equal Brake Block Pressure  Wear Tolerance	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without dismantling or special tools.	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of brake block		
SYSTEM	Simultaneous Air Brake Application  Equal Brake Block Pressure  Wear Tolerance	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without dismantling or special tools. Automatic slack	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of brake block renewal.		
SYSTEM  BRAKE BLOCK	Simultaneous Air Brake Application  Equal Brake Block Pressure  Wear Tolerance	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without dismantling or special tools. Automatic slack adjusters	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of brake block renewal.		
SYSTEM  BRAKE BLOCK	Simultaneous Air Brake Application  Equal Brake Block Pressure  Wear Tolerance	operated brakes acting independently. Simultaneous operation of air brakes on all bogies.  Brake blocks exert equal pressure (within 5%). Brake blocks should function effectively down to a thickness of 13mm without manual adjustments. Easy renewal without dismantling or special tools. Automatic slack adjusters maintaining	operational independence of braking systems.  Demonstration of uniform application through tests.  Test results showing brake pressure uniformity.  Design compliance to minimum wear tolerance.  Practical demonstration of brake block renewal.  Design and operational		

Stopping within specified distances under defined conditions (e.g., AAR RP-599 1200m at 1200m at standards for stopping distance.  Ability to hold stationary on 2.5% force for stationary holding.  HAND BRAKE DESIGN Exhaust air released outside the cab.  Delivery of Blastrite or sand to leading wheels in both directions.  Sand Delivery both directions.  Easy maintenance with watertight lids and Operation prevention.  BANDING GEAR Maintenance and Operation prevention.  SAFETY FEATURES Paguirements  Stopping distance.  Compliance with AAR RP-599 Standards for stopping distance.  Calculated braking force for stationary holding.  Safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Demonstration of maintenance ease and functional design.  Interlock soft independent brake application at specific conditions (e.g., speed = 0, 120R) are specific conditions.  The locomotive main power system comprises all power equipment associated with traction and electric braking, electric	Stationary Holding Force  ND BRAKE SIGN Exhaust Ventilation
BRAKE PERFORMANCE  Stopping Distance  Ability to hold stationary on 2.5% gradient without skidding wheels.  PERHORMANCE  Exhaust Ventilation  Sand Delivery  Band Delivery  Ability to hold stationary on 2.5% gradient without skidding wheels.  Delivery of Blastrite or sand to leading wheels in both directions.  Sand Delivery  Band Depration  Fare and Operation  Interlocks Application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power equipment associated with standards for stopping distance.  Calculated braking force for stationary holding.  Safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Demonstration of maintenance ease and functional design.  System compliance with interlock safety requirements.	Stationary Holding Force  ND BRAKE SIGN Exhaust Ventilation
BRAKE PERFORMANCE  Stopping Distance  100km/h).  Stopping distance.  Ability to hold stationary on 2.5% gradient without skidding wheels. holding.  Exhaust Ventilation  Sand Delivery  Sand Delivery  Basy maintenance with watertight lids and drainage and Operation  Interlock SAFETY FEATURES  Stopping  1200m at standards for stationary standards for stopping distance.  Ability to hold stationary on 2.5% gradient without skidding wheels. holding.  Exhaust air safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Easy maintenance with watertight lids and drainage and functional design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	Stationary Holding Force  ND BRAKE SIGN Exhaust Ventilation
BRAKE PERFORMANCE   Distance   1200m at 100km/h).   stapping distance.	Stationary Holding Force  ND BRAKE SIGN Exhaust Ventilation
PERFORMANCE Distance 100km/h). stopping distance.  Ability to hold stationary or gradient without skidding wheels. holding.  HAND BRAKE DESIGN Exhaust released outside the cab. System design ensuring consistent sand delivery for leading wheels in Sand Delivery or both directions.  SANDING GEAR Maintenance and Operation Prevention.  Bastrite or sand to leading wheels in Sand Delivery both directions.  Easy maintenance with watertight lids and drainage prevention.  Interlocks for independent brake application at specific conditions and specific conditions.  Interlock (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	Stationary Holding Force  ND BRAKE SIGN Exhaust Ventilation
Ability to hold stationary on 2.5% gradient without skidding wheels.   Safety design for air exhaust from handbrakes.	Stationary Holding Force ND BRAKE SIGN Exhaust Ventilation
Stationary Holding Force  HAND BRAKE DESIGN  Exhaust Ventilation  Sand Delivery  Sand Delivery  Sand Delivery  Sand Delivery  Sand Delivery  Exay maintenance and Operation  Interlock (e.g., speed = 0, 120 kpa pressure).  SAFETY FEATURES  Stationary Holding Force  Stationary skidding wheels.  Exhaust ir released outside the cab. Safety design for air exhaust from handbrakes. System design consistent sand delivery for traction.  Easy maintenance with watertight lids and drainage prevention.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	ND BRAKE SIGN Exhaust Ventilation
HAND BRAKE DESIGN  Exhaust released outside the cab.  Delivery of Blastrite or sand to leading wheels in the with watertight lids and Operation  SANDING GEAR  Maintenance and Operation  Interlock Requirements  SAFETY FEATURES  Stationary skidding wheels.  Exhaust released outside the cab.  Safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Demonstration of maintenance ease and functional design.  Demonstration of maintenance ease and functional design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	ND BRAKE SIGN Exhaust Ventilation
HAND BRAKE DESIGN  Exhaust released outside the cab.  Delivery of Blastrite or sand to leading wheels in both directions.  Sand Delivery  Maintenance and Operation  Interlock (e.g., speed = 0, 120kPa pressure).  SAFETY FEATURES  Holding Force skidding wheels. holding.  Exhaust released outside the cab.  Safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Demonstration of maintenance ease and functional design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	ND BRAKE SIGN Exhaust Ventilation
HAND BRAKE DESIGN  Exhaust released outside the cab.  Delivery of Blastrite or sand to leading wheels in both directions.  Easy maintenance with watertight lids and Operation  Interlock sor independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  SAFETY FEATURES  Exhaust air released outside the cab.  Safety design for air exhaust from handbrakes.  System design ensuring consistent sand delivery for traction.  Demonstration of maintenance ease and functional design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	ND BRAKE SIGN Exhaust Ventilation
DESIGN   Exhaust   released outside   the cab.   System design   consistent sand delivery for traction.	SIGN Exhaust Ventilation
Ventilation   the cab.   handbrakes.	Ventilation
SANDING GEAR  Maintenance and Operation  Interlock SAFETY FEATURES  Interlock Requirements  Interlock Requirements  Interlock associated with associated with associated with traction and deligent or sand to leading wheels in both directions.  Easy maintenance with watertight lids and drainage and functional design.  Demonstration of maintenance ease and functional design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
Delivery of Blastrite or sand to leading wheels in both directions.	Sand Delivery
Sand Delivery both directions.  Sand Delivery both directions.  Easy maintenance with watertight lids and drainage prevention.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and delivery for traction.  Demonstration of maintenance ease and functional design.  System compliance with interlock safety requirements.  The locomotive main power equipment associated with traction and diagrams,	Sand Delivery
SANDING GEAR  Maintenance and Operation  Interlock (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and interlock traction.  Ieasy maintenance with watertight lids maintenance ease and functional design.  Demonstration of maintenance ease and functional design.  System  compliance with interlock safety requirements.  The locomotive main power system comprises all power equipment associated with traction and diagrams,	Sand Delivery
SANDING GEAR  Maintenance with watertight lids and Operation  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	Sand Delivery
SANDING GEAR  Maintenance and Operation  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	Janu Denvery
SANDING GEAR  Maintenance and Operation  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	I
SANDING GEAR  Maintenance and drainage prevention.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
and Operation prevention. design.  Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	NDING GEAR Maintenance
Interlocks for independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
independent brake application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	and operation
application at specific conditions (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
SAFETY FEATURES  Interlock (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
Interlock Requirements (e.g., speed = 0, 120kPa pressure).  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
SAFETY FEATURES Requirements 120kPa pressure). requirements.  The locomotive main power system comprises all power equipment associated with traction and diagrams,	
The locomotive main power system comprises all power equipment Detailed associated with schematic traction and diagrams,	Interlock
main power system comprises all power equipment associated with traction and diagrams,	ETY FEATURES Requirements
system comprises all power equipment associated with schematic traction and diagrams,	
all power equipment Detailed associated with schematic traction and diagrams,	
equipment Detailed schematic traction and diagrams,	
associated with schematic traction and diagrams,	
traction and diagrams,	
including descriptions, and	
pantograph, VCB, compliance with	
HSCB, converters, IEC 60850 and IEC	
transformers, and 61287-1/2	
Definition traction motors. standards.	Definition
Ability to	
withstand	
operational Technical	
voltages and specifications and	
currents while test results for	
MAIN POWER offering protection protective	
SYSTEMS Protective against overloads equipment under	IN POWER
Equipment and faults. fault conditions.	
Modern IGBT-	STEMS Protective
based auxiliary	STEMS Protective
power supply System	STEMS Protective
system with schematics,	STEMS Protective
AUXILIARY redundancy to redundancy	STEMS Protective
SYSTEMS support auxiliary documentation,	STEMS Protective Equipment
Auxiliary Power machines and and load capacity	STEMS Protective Equipment
Supply future expansion. tests.	XILIARY STEMS  Auxiliary Power

		Intelligent battery charger compliant with EN 50272 and	Manufacturer	
	Battery Charger  Cooling and	integrated into the locomotive control system.  Effective cooling and ventilation systems, ensuring component reliability under harsh operational	documentation, compliance certificates, and test reports.  Test results, technical descriptions, and compliance certificates for IEC 60529 and EN	
	Ventilation	Compliance with international norms (IEC 60077, 61287, 61373, EN	Certificates of compliance and deviations justified with	
	Standards and	50463, and SANS	documentary	
	Norms	standards). Use of components	evidence. Service history,	
	Service Proven Components	with proven reliability in similar applications worldwide.	failure analysis reports, and supplier guarantees.	
	Type Testing	Conformance of power converters, transformers, and auxiliary systems to IEC 61287 and 61373 standards.	Test certificates and documentation from certified testing authorities.	
	Routine Testing	Routine stress tests for all major components, eliminating early failures (e.g., IGBT modules).	Factory routine test reports and quality control documentation.	
	Noutille Testing	Demonstration of	documentation.	
	Combination Testing	system integration and stability during simulated operational conditions.	Test facility descriptions, combination test results, and simulation data.	
	Compliance with	Ensure all electric/electronic equipment adheres to Cenelec EN50153, EN50124-1, and	Certificates of compliance, detailed equipment standards list, and deviations	
	International Norms	EN45545 standards.	supported by justifications.	
HARDWARE	Component Description	Comprehensive details of TCU, ACU, interface cards, and all modules.	Technical descriptions, maintenance schedules, and component datasheets.	

1	I	1	I	
		Diagram showing	Complete TCU	
		all controlled	network diagram	
		devices,	with device	
		communication		
	NI-AII		descriptions and	
	Network	interfaces, and	communication	
	Diagram	descriptions.	types.	
		Dedicated traction		
		control unit per	System	
		axle with sufficient	architecture	
		control capacity for	diagram, software	
		speed range	specifications, and	
		0ââ,¬â€œ110	proof of	
	Axle Control	km/h.	capabilities.	
		Traction		
		performance vs.		
		line voltage curve		
		for AC/DC		
		territories;	Performance	
		guaranteed	curves, voltage	
	Performance	performance under	deration policies,	
SOFTWARE	under Line	specified voltage	and testing	
JOHNANE	Voltage	ranges.	results.	
	Tollage	Compliance with	i courto.	
		mandatory tractive		
		effort (TE)		
		requirements	TF	
		under varied	TE curves,	
		weather	detailed system	
		conditions;	description, and	
		minimize load-	maximum	
		sharing imbalances	allowable wheel	
		between axles and	diameter	
	Tractive Effort	bogies.	differences.	
		Fully combined		
		regenerative and		
		rheostatic braking	Braking effort	
		system with	curves, system	
		tolerances	failure design	
TRACTION AND		specified under	documentation,	
BRAKING		adverse weather	and compliance	
	Electric Braking	conditions.	certificates.	
		Minimum of two		
		probes per axle,		
		accurate direction	Sensor	
		detection, failure	specifications,	
		detection, and	fault detection	
		axle-specific	logic	
		traction cut-out	documentation,	
		during speed probe	and maintenance	
	Speed Sensor	failure.	logs.	
		Service-proven		 
		two-channel		
		Doppler Radar		
		Sensor with	IP rating	
		protective design	certificates, test	
		and accurate	results, and failure	
SENSORS		ground speed	handling	
SENSONS	Donnlar Padar		documentation.	
	Doppler Radar	measurement.	documentation.	

				T
		Use Doppler Radar		
		as reference		
		speed; resilient	Control logic	
		calculations in case	Control logic	
		of failures	documentation,	
		considering all axial	calculation	
		speed sensors and	methodologies,	
		synchronous wheel	and validation	
	Reference Speed	slip/slide scenarios.	results.	
		Fast-acting re-		
		adhesion control	Re-adhesion	
		scheme with creep	control algorithm	
		optimization;	details, testing	
		robust	results under	
		performance under	varying	
		undulated rail	conditions, and	
	Re-Adhesion	tracks and adverse	energy efficiency	
	Control	conditions.	metrics.	
		Accurate axle		
		acceleration		
		monitoring and		
		locked axle	Control logic,	
CONTROL AND		detection in	_	
CONTROL AND	A acalous 4:		performance	
MONITORING	Acceleration and Axle Lock	powering, braking,	thresholds, and	
		and coasting	axle condition	
	Detection	modes.	detection reports.	
			Comprehensive	
		Detailed hardware	documentation	
		and software	including function	
		architecture,	descriptions,	
		interface	input/output	
		descriptions, and	signals, and	
	Traction Control	key functional	operation	
	Unit	specifications.	principles.	
		Real-time		 
		monitoring, data		
		logging, and	Specifications,	
		accessible	sample outputs,	
		transient recorder	and descriptions	
	Transient	outputs for	of logging	
	Recorder	diagnostics.	functions.	
			Comprehensive	
		Submission of	and accurate	
		detailed technical	technical	
	Comprehensive	data for brake	documents for	
	Information			
	เกเบเกลนเบท	systems.	evaluation.	
		Submission of all		
DOCUMENTATION		necessary technical	Detailed design	
		details, drawings,	documents,	
	Detailed Design	and performance	including technical	
	Data	curves.	specifications.	
			Certificates of	
		Compliance with	compliance,	
	Standards and	international and	documented	
	Norms	local standards.	deviations.	
	14011113	Adherence to		
	Eupotional		Technical	
TECHNICA:	Functional	functional	descriptions, test	
TECHNICAL	Requirements	specifications.	reports.	
COMPLIANCE		Proven reliability of	Service history,	
		components and	failure analysis	
	Reliability	systems.	reports.	

		Ease of	Design philosophy	
		maintenance and	documents,	
	Simplicity of	operational	maintenance	
		'	manuals.	
	Design	simplicity.	manuais.	
DESIGN AND		Scalability and	Documentation	
INNOVATION		adaptability to	on expandability	
	Future-Proofing	future needs.	and upgrades.	
		System efficiency		
		under various		
		operating	Efficiency curves,	
	Efficiency	conditions.	test data.	
	·			
		Performance under	Stress test results,	
PERFORMANCE		extreme	environmental	
	Robustness	conditions.	compliance.	
	Hobustiless	Implementation of	compliance.	
		safety protocols	Safety audits, risk	
	Safety Measures	and measures.	assessments.	
	Safety Wieasures	and measures.		
CAFETY AND		A alla a u a u a a a a a	Compliance	
SAFETY AND		Adherence to	certificates,	
COMPLIANCE	Environmental	environmental	environmental	
	Compliance	standards.	impact studies.	
		Comprehensive		
		testing of	Certified test	
		components and	results, validation	
	Type Testing	systems.	reports.	
TESTING AND		Ongoing validation	Routine test data,	
VALIDATION		and quality	quality control	
	Routine Testing	assurance.	records.	

**Total Weighting:** 

Minimum qualifying score required:

Nb\*There are 144 questions in total, which adds up to a score of 248. A bidder will be required to score 80% of the total scores which will be calculated in the following manner: x/y\*100= percentage score obtained. i.e if a bidder scores 144 out of the 248 questionnaire it will be interpreted as 144/248\*100=50%

Note: The extent to which you are able to provide all or any of the Technical Criteria indicated above will not necessarily penalise you from further participation in an RFP process. Responses to this RFI will permit Transnet to consider and formulate various options in terms of the proposed allocation of its supply requirements and/or allied Services.

# 4 FINANCIAL REQUIREMENTS FOR FUTURE AWARD OF BUSINESS

In the event of a RFP following this RFI process, it will be a condition precedent prior to the award of business in terms of that RFP that the successful Respondent demonstrates its ability to fund Transnet's requirements.

## 5 TEST FOR ADMINISTRATIVE RESPONSIVENESS

The test for administrative responsiveness will include the following:

	Administrative responsiveness check
•	Whether the Bid has been lodged on time

Respondent's Signature	Date and Company Stamp

# **Administrative responsiveness check**

- Whether all Returnable Documents and/or schedules [where applicable] were completed and returned by the closing date and time
- Verify the validity of all returnable documents
- Verify if the Bid document has been duly signed by the authorised respondent

Respondent's Signature

# **SECTION 5: EXPRESSION OF INTEREST**

I/We		
	ne of company, close corporation or partnership]	
of [f	ull address]	
carry	ring on business under style or title of [trading as]	
repre	esented by	
in m	y capacity as	
	g duly authorised, hereby lodge an <b>Expression of Interest</b> in the provision of recovery, upgrade, and los support of the Class 20E, 21E, and 22E locomotive fleet over an agreed period, as follows:	ng-
ADD	RESS FOR NOTICES	
Resp	ondent to indicate its domicilium citandi et executandi hereunder:	
Nam	e of entity:	
Facs	imile:	
Addr	ess:	
NAM	IE(s) AND ADDRESS / ADDRESSES OF DIRECTOR(s) OR MEMBER(s)	
	Respondent must disclose hereunder the full name(s) and address(s) of the director(s) or members of pany or close corporation [C.C.] on whose behalf the RFI is submitted.	the
(i)	Registration number of company / C.C.	
(ii)	Registered name of company / C.C.	
(iii)	Full name(s) of director/member(s):  Address/Addresses:  ID Number/s:	

Date and Company Stamp

# **RETURNABLE DOCUMENTS**

Respondents must submit with their responses to this RFI, **as a minimum requirement**, all the returnable documents indicated below with a  $[\sqrt{\ }]$ . All Sections must be signed and dated by the Respondent.

Minimum Requirements - Returnable Documents	Submitted [√]
SECTION 1: SBD1 FORM	
SECTION 2: Notice to Respondents	
SECTION 3: RFI Scope of Requirements	
SECTION 4: Transnet's RFI Information	
SECTION 5: Expression of Interest	
Technical Submission- Technical evaluation Questionnaire and responses	
Valid proof of Respondent's compliance to B-BBEE requirements (Valid B-BBEE certificate or Sworn Affidavit) stipulated in Section 7 of this RFI	
In the case of Joint Ventures, a copy of the Joint Venture Agreement or written confirmation of	
the intention to enter into a Joint Venture Agreement	
SECTION 6: Certificate Of Acquaintance with RFI, Terms & Conditions & Applicable Documents	
SECTION 9: SBD 4 - Bidder's Disclosure	
SECTION 10: Protection of Personal Information	

# **CONTINUED VALIDITY OF RETURNABLE DOCUMENTS**

The Respondent will be required to ensure the validity of all returnable documents, including but not limited to its valid proof of B-BBEE status, for the duration of this RFI/EOI process.

SIGNED at	on this	day of	20
SIGNATURE OF WITNESSES		ADDRESS OF WITNES	SSES
1			
Name			
2			
Name			
SIGNATURE OF RESPONDENT'S AUTHO	ORISED REPRESE	NTATIVE:	
NAME:			
DESIGNATION:			
Respondent's Signature			Date and Company Stamp

# SECTION 6: CERTIFICATE OF ACQUAINTANCE WITH RFI, TERMS & CONDITIONS & APPLICABLE DOCUMENTS

By signing these RFI documents, the Respondent is deemed to acknowledge that he/she has made himself/herself thoroughly familiar with all the conditions governing this RFI, including those contained in any printed form stated to form part hereof including but not limited to the documents stated below. Transnet SOC Ltd will recognise no claim for relief based on an allegation that the Respondent overlooked any such term or condition.

1	TECHNICAL SUBMISSION / QUESTIONNAIRE – Annexure A
2	SCOPE OF REQUIREMENTS TO THIS RFI/EOI – Section 3
3	TRANSNET'S GENERAL BID CONDITIONS - Annexure B
4	NON-DISCLOSURE AGREEMENT- Annexure C
5	TRANSNET'S SUPPLIER INTEGRITY PACT – Annexure D

Should the Bidder find any terms or conditions stipulated in any of the relevant documents quoted in this RFI/EOI unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Bid. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be. A material deviation from any term or condition may result in disqualification.

Bidders accept that an obligation rests on them to clarify any uncertainties regarding any bid to which they intend to respond on, before submitting the bid. The Bidder agrees that he/she will have no claim or cause of action based on an allegation that any aspect of this RFI/EOI was unclear but in respect of which he/she failed to obtain clarity.

The bidder understands that his/her Bid will be disqualified if the Certificate of Acquaintance with RFI documents included in the RFI/EOI as a returnable document, is found not to be true and complete in every respect.

SIGNED at	on this day	/ of	20
SIGNATURE OF WITNESSES		ADDRESS OF WITNESSES	
1			
Name			
2			
Name			
NAME:	T'S AUTHORISED REPRESENTATI	VE:	

Respondent's Signature	Date and Company Stamp

# SECTION 7: RFI CLARIFICATION REQUEST FORM

Deadline for RFI	I clarification submissions: Before <b>12:00 pm on</b> 20 February 2025
TO:	Transnet SOC Ltd
ATTENTION:	Buyisiwe Hlatshwayo
EMAIL	buyisiwe.hlatshwayo@trananset.net
DATE:	
FROM:	
RFI Clarification	No [to be inserted by Transnet]
	REQUEST FOR RFI CLARIFICATION:

## **SECTION 8: SBD 4 - BIDDER'S DISCLOSURE**

# 1 PURPOSE OF THE FORM

- 1.1 Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.
- 1.2 Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

### 2 Bidder's declaration

2.2.1.

If so, furnish particulars:

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest<sup>1</sup> in the enterprise, employed by the state?
YES/NO

2.1.1. If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of S institution	State

2.2	Do you, or any person connected with the bidder, have a relationship with any	
	person who is employed by the procuring institution?	YES/NO

the power, by one person or a group of persons holding the majority of the equity of an enterprise, alter	natively the nercon/c
the power, by one person of a group of persons holding the majority of the equity of an enterprise, after	hadvery, the person/s
having the deciding vote or nower to influence or to direct the course and decisions of the enterprise	

Respondent's Signature — — — — — — — Date and Company Stamp

i	Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?  If so, furnish particulars:
DEC	LARATION
	ne undersigned, (name) in submitting the accompar
bid,	do hereby make the following statements that I certify to be true and complete in every respect:
3.1	I have read and I understand the contents of this disclosure;
3.2	I understand that the accompanying bid will be disqualified if this disclosure is found not to be and complete in every respect;
3.3	The bidder has arrived at the accompanying bid independently from, and without consultation, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium will not be construed as collusive bidding.
3.4	In addition, there have been no consultations, communications, agreements or arrangements with competitor regarding the quality, quantity, specifications, prices, including methods, factor formulas used to calculate prices, market allocation, the intention or decision to submit or no submit the bid, bidding with the intention not to win the bid and conditions or delivery particular the products or services to which this bid invitation relates.
3.5	The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, direct indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding the contract.
3.6	There have been no consultations, communications, agreements or arrangements made by the bit with any official of the procuring institution in relation to this procurement process prior to and do the bidding process except to provide clarification on the bid submitted where so required by institution; and the bidder was not involved in the drafting of the specifications or terms of refer for this bid.
3.7	I am aware that, in addition and without prejudice to any other remedy provided to combat restrictive practices related to bids and contracts, bids that are suspicious will be reported to Competition Commission for investigation and possible imposition of administrative penalties in t

Respondent's Signature Date and Company Stamp

of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

## **SECTION 9: PROTECTION OF PERSONAL INFORMATION**

- 1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No.4 of 2013. ("POPIA"):
  - consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2. Transnet will process all information by the Respondent in terms of the requirements contemplated in Section 4(1) of the POPIA:
  - Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 3. The Parties acknowledge and agree that, in relation to personal information that will be processed pursuant to this RFI, the Responsible party is "Transnet," and the Data subject is the "Respondent." Transnet will process personal information only with the knowledge and authorisation of the Respondent and will treat personal information which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this RFI and the Respondent is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 5. In responding to this bid, Transnet acknowledges that it will obtain and have access to personal information of the Respondent. Transnet agrees that it shall only process the information disclosed by Respondent in their response to this bid for the purpose of evaluating and subsequent award of business and in accordance with any applicable law.
- 6. Transnet further agrees that in submitting any information or documentation requested in this RFI, the Respondent is consenting to the further processing of their personal information for the purpose of, but not limited to, risk assessment, assurances, contract award, contract management, auditing, legal opinions/litigations, investigations (if applicable), document storage for the legislatively required period, destruction, de-identification and publishing of personal information by Transnet and/or its authorised appointed third parties.
- 7. Furthermore, Transnet will not otherwise modify, amend, or alter any personal data submitted by the Respondent or disclose or permit the disclosure of any personal data to any third party without the prior written consent from the Respondent. Similarly, Transnet requires the Respondent to process any personal information disclosed by Transnet in the bidding process in the same manner.
- 8. Transnet shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to this RFI (physically, through a computer or any other form of electronic communication).

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- 9. Transnet shall notify the Respondent in writing of any unauthorised access to information, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Respondent must take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and to restore the integrity of the affected personal information as quickly as is possible.
- 10. The Respondent may, in writing, request Transnet to confirm and/or make available any personal information in its possession in relation to the Respondent and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA. The Respondent may further request that Transnet correct (excluding critical/mandatory or evaluation information), delete, destroy, withdraw consent or object to the processing of any personal information relating to the Respondent in Transnet's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.
- 11. In submitting any information or documentation requested in this RFI, the Respondent is hereby consenting to the processing of their personal information for the purpose of this RFI and further confirming that they are aware of their rights in terms of Section 5 of POPIA

Respondents are	required to	provide	consent below:
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YES			NO	
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- 12. Further, the Respondent declares that they have obtained all consents pertaining to other data subject's personal information included in its submission and thereby indemnifying Transnet against any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that the Respondent submitted.
- 13. The Respondent declares that the personal information submitted for the purpose of this RFI is complete, accurate, not misleading, is up to date and may be updated where applicable.

C' , CD , I , I , I , I , I , I , I , I , I ,	
Signature of Respondent's authorised representative:	

Should a Respondent have any complaints or objections to processing of its personal information, by Transnet, the Respondent can submit a complaint to the Information Regulator on <a href="https://www.justice.gov.za/inforeg/">https://www.justice.gov.za/inforeg/</a>, click on contact us, click on complaints.IR@justice.gov.za

Respondent's Signature Date and Company Stamp