

RFP for the enablement of the PRASA Train Control System (“PTCS”) Phase 1 through the Restoration, Verification, Testing, and Commissioning of the existing Original Equipment Manufacturer (“OEM”) electronic signalling interlocking system in PRASA’s Western Cape (“WC”) service region.



Annexure 1: General Technical Requirements

RFP for the enablement of the PRASA Train Control System (“PTCS”) Phase 1 through the Restoration, Verification, Testing, and Commissioning of the existing Original Equipment Manufacturer (“OEM”) electronic signalling interlocking system in PRASA’s Western Cape (“WC”) service region.



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1 GENERAL

1.1 Purpose of the Document

- 1.1.1 The purpose of this document is to provide the General Technical Requirements (“GTR”) which form part of the minimum Requirements of the Passenger Rail Agency of South Africa (“PRASA”) for the enablement of the PRASA Train Control System (“PTCS”) Phase 1 through the restoration, verification, testing, and commissioning of the existing original equipment manufacturer (“OEM”) electronic signalling interlocking system in PRASA’S Western Cape (“WC”) service region (“the Project”) that the Bidder shall meet and deliver at the Bidder’s cost therefore within the Bid Price.
- 1.1.2 This document further introduces the associated Particular Technical Requirements (“PTR”) documentation and the Commercial and Financial Requirements (“CFR”).

1.2 Introduction

- 1.2.1 In conjunction with the contractual definitions and requirements of this Request for Proposal (“the RFP”), this document contains Conditions of Invitation and Instructions to Bidders to which the Bidder shall comply. The Bidder shall confirm unequivocal compliance with these Conditions of Invitation and Instructions to Bidders in the Statements of Compliance. PRASA Requirements, Conditions of Invitation and Instructions to Bidders are, at a minimum, comprised of the following sets of documents that shall be read in conjunction:
- a) The General Technical Requirements (“GTR”), which defines overarching requirements, needs, expectations and outputs of the Project which the Bidder shall meet and achieve.
 - b) The Particular Technical Requirements (“PTR”), which defines specific requirements, needs, expectations and outputs of the Project which the Bidder shall meet and achieve.
 - c) The Commercial and Financial Requirements (“CFR”), which defines specific requirements needs, expectations and outputs of the Project which the Bidder shall meet and achieve.

1.3 Executive Overview

- 1.3.1 Notwithstanding any other PRASA Requirements stated throughout the RFP, the Bidder shall uncompromisingly deliver the whole of the Works required to achieve successful delivery of the Project.
- 1.3.2 The Bidder shall work in collaboration with the Contractor(s) on the Western Cape network which includes Cape Town – Simon’s Towns Lines, Cape Town – Salt River - Southfield (via Athlone) Lines, Bellville – Woltemade - Kensington - Cape Town Lines,

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Kuilsrivier-Eersterivier-Strand-Muldersvlei Lines and Maitland Signalling Equipment Room work packages and where interfacing is required.

1.3.3 The Works is, at a minimum, summarised as follows:

- a) Restore the hardware previously installed for the train control, remote control and original equipment manufacturer (“OEM”) electronic signalling Interlocking System.
- b) Restoration of all specified railway lines according to the as-built signalling drawings that will be issued.
- c) Completion of all enabling and specified Telecommunication, Electrical, and other works.
- d) Restore the functionality of the previously installed Maitland Signalling Equipment Room including outdoor works.
- e) Provision of all required solutions (to be approved by PRASA) and resources (to be approved by PRASA) to deliver the Works.
- f) Any other works, activities and resources required to restore the full functionality of the original equipment manufacturer (“OEM”) electronic signalling Interlocking System.

1.3.4 The boundaries of the Site(s) are PRASA’s Western Cape Region rail servitudes are defined hereunder and are shown on Figure 1 the WC Recovery Overview.

❖ Western Cape Network:

- WC Southern Suburban Line
 - Cape Town – Simon’s town (Salt River Excl)
- WC Flats Line
 - Salt River (Incl) – Athlone - Southfield
 - Hazendal - Langa
- WC Northern Line
 - Bellville – Woltemade - Kensington - Cape Town
 - Koeberg
 - Mutual – Langa
- WC Branch Line
 - Kuilsrivier-Eerste Rivier-Strand
 - Eersterivier - Muldersvlei
- Maitland Signalling Equipment Room

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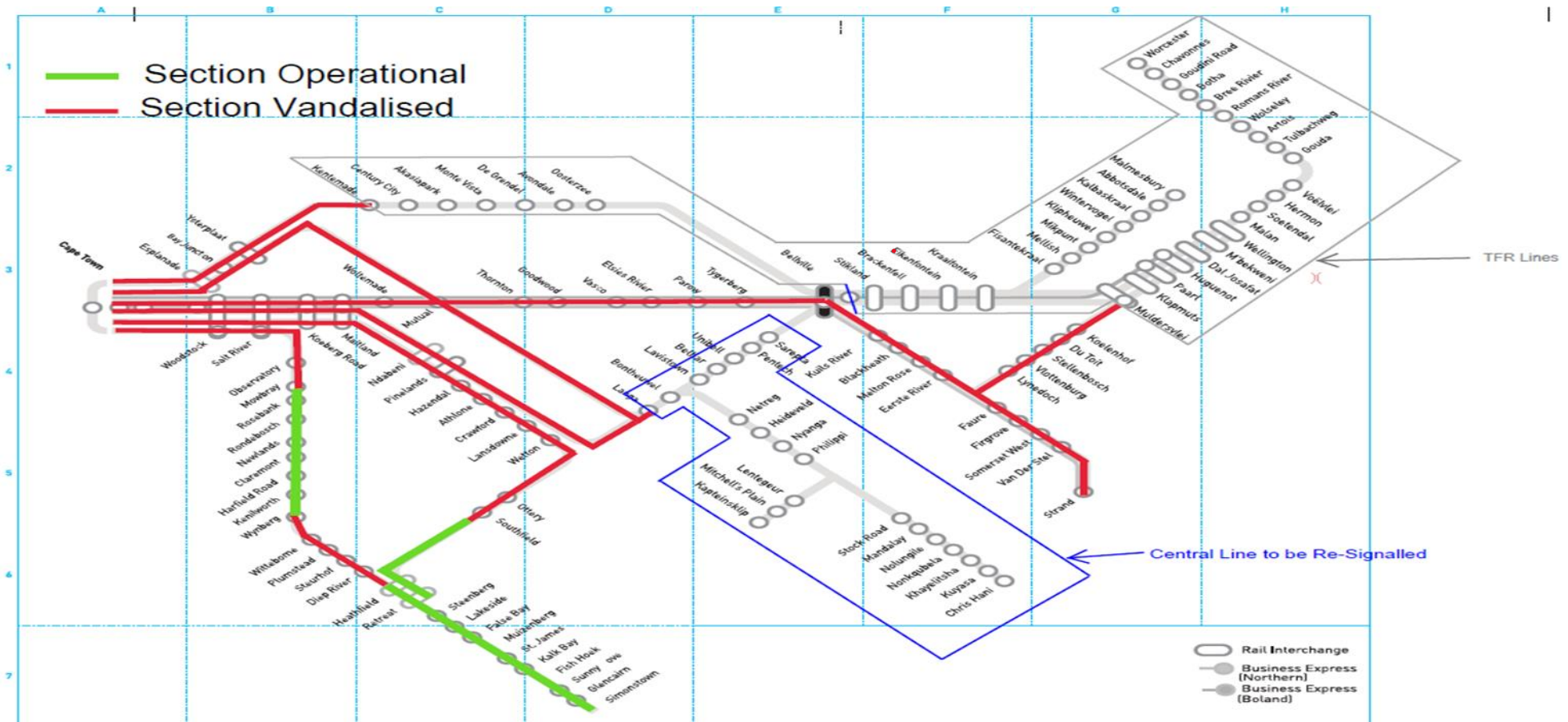


- Indoor equipment
- Trackside Equipment

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Figure 2: WC Recovery Overview



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1.4 Employer’s Objectives

1.4.1 PRASA’s objectives are:

- a) To restore the full functionality of the original equipment manufacturer (“OEM”) electronic signalling Interlocking System on the Western Cape Rail Network to regain the reliability, safety, and availability of a traffic system.
- b) The restoration will regain the headways and flexibility aligned with PRASA’s operational requirements.
- c) To improve the handling of trains within a safe speed profile.
- d) Any other works, activities and resources required to restore the full functionality of the original equipment manufacturer (“OEM”) electronic signalling Interlocking System.

1.5 Technical Requirements Overview

1.5.1 The Technical Requirements are defined in the following documents, that should all be read in conjunction with each other:

- a) General Technical Requirements:
 - Annexure 1: GTR
 - Annexure 1.1: GTR Signalling
 - Annexure 1.2: GTR Telecommunication
 - Annexure 1.3: GTR Electrical
 - Annexure 1.4: Main Technical References
 - Annexure 1.5: Glossary of Terms
 - Annexure 1.6: Returnable Documents
 - Annexure 1.6.1 GTR Returnable Documents - Project List Table
 - Annexure 1.6.2 GTR Returnable Documents - Bidders Experience Questionnaire
- b) Particular Technical Requirements:
 - Annexure 2: PTR Western Cape Network
 - Annexure 2.1: PTR Section 1: Cape Town – Simon’sTown
 - Annexure 2.2 PTR Section 2: Cape Town – Southfield (via Athlone)
 - Annexure 2.3 PTR Section 3: Bellville - Cape Town (via Ysterplaat)

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- Annexure 2.4 PTR Section 4: Kuilsrivier - Eersterivier – Strand - Muldersvlei
- Annexure 2.5 PTR Section 5: Maitland AR including indoor and outdoor works.

2 MINIMUM APPLICABLE CONDITIONS

2.1 Infrastructure

2.1.1 The following minimum conditions in respect of delivery of infrastructure shall apply, unless the Bidder is otherwise instructed in writing by PRASA:

- a) The infrastructure shall consist of single and double lines
- b) Rails shall be at 48kg/m
- c) Sleepers may be concrete and wooden
- d) Gauge shall be at 1065mm
- e) Standard crossing angle of points shall be 1:12
- f) Traction shall be at 3kV DC

2.2 Operations

2.2.1 The following minimum conditions in respect of operation shall apply, unless the Bidder is otherwise instructed in writing by PRASA:

- a) The lines are operated with mixed traffic, i.e. passenger and goods trains
- b) Current maximum line speed is 90 km/h
- c) Future line speed to be achieved is 120 km/h

2.3 Rolling Stock

2.3.1 The minimum conditions in respect of rolling stock which shall apply, unless the Bidder is otherwise instructed in writing by PRASA, is included in the MTR.

2.4 General

2.4.1 The Bidder shall, at the Bidder’s cost, undertake any other works, activities and provide the necessary resources required to meet all conditions specified by PRASA, throughout the RFP and throughout the duration of the Contract, to restore a fully functional, original equipment manufacturer (“OEM”) electronic signalling Interlocking System.

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3 MINIMUM TECHNICAL REQUIREMENTS

3.1 Works Specification

- 3.1.1 The Works Specification includes, inter alia; all general specifications and requirements, technical specifications and requirements, particular specifications and requirements, and all other specifications and requirements included throughout the RFP (including Annexures/Appendices etc.) and all instructions provided and/or to be provided in writing by PRASA – all of which shall form part of the Contract to be entered into between PRASA and the Bidder.
- 3.1.2 The Bidder shall unequivocally commit to comprehensive and uncompromised execution of the Works through strict adherence to the Works Specification and achievement of all Key Dates, within the specified Time for Completion for the whole of the Works. Failure of the Bidder to meet any of these requirements at any time throughout the duration of the Contract shall give PRASA an unprejudiced discretionary right to immediately terminate the Contract, without allowing the Bidder any period of rectification, and all costs, damages and penalties related to such termination shall be borne by the Bidder.
- 3.1.3 The Bidder shall submit all reports, Designs and/or other Project documentation, for all Works (as stated throughout the RFP or as instructed in writing by PRASA), to PRASA for acceptance and approval by PRASA before any procurement and Installation of the Works.
- 3.1.4 Each completed Section of the Works shall be tested, commissioned and handed over to PRASA, as soon as possible for interim operational purposes, for which such hand over shall be signed and accepted by PRASA. Notwithstanding this interim Sectional completion, final Tests on Completion, Commissioning, Completion and Taking Over of the whole of the Works by PRASA shall be done by the Completion Date.
- 3.1.5 The Bidder shall, at the Bidder’s cost and regardless of the extent of this requirement, take interim Warranty and Defects Liability responsibility for each portion of work that has been tested, commissioned and handed over to PRASA from the date of interim hand over to the Completion Date.
- 3.1.6 The Bidder shall take full Warranty responsibility and liability for all new equipment and works that has been tested, commissioned and handed over to PRASA from the date of hand over for a period of 365 calendar days.

3.2 Works Overview

- 3.2.1 The restored original equipment manufacturer (“OEM”) electronic signalling Interlocking System consist of at least the following, which shall first be approved by PRASA prior to implementation, unless otherwise instructed in writing by PRASA:

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- a) The original equipment manufacturer (“OEM”) electronic signalling Interlocking System, including interlocking and Lineside Signalling.
- b) The restoration of Maitland Signal Equipment Room (indoor and outside works) as specified to achieve its designed functional ability.
- c) Associated Telecommunication, Electrical, and other Systems, sub-Systems and Equipment.
- d) All other Works as specified by PRASA throughout the RFP, the duration of the Contract and as required to deliver the Project.

3.2.2 The Maitland AR including outdoor works and the restored original equipment manufacturer (“OEM”) electronic signalling Interlocking System, subsystems and Equipment shall, at a minimum, comply with all standards, specifications, regulations and procedures as defined throughout the RFP.

3.2.3 The Bidder shall take full responsibility and implement all necessary measures to protect the restored Signalling System, sub-Systems, and all Equipment against at least the following threats, throughout the duration of the Bidder’s Contract duration, at the Bidder’s cost:

- a) Theft and vandalism.
- b) Continues exposure to extreme direct sunlight and elevated temperatures.
- c) Continues exposure to high humidity.
- d) Environmental conditions causing damaged such as corrosion.
- e) Incoming high voltages, spikes, Electromagnetic Compatibility (“EMC”) and fluctuating voltages.
- f) Intermittent flash flooding in low laying areas.
- g) Severe thunderstorms with extreme lightning.

3.2.4 The Bidder shall, at the Bidder’s cost, undertake any other works, activities and provide all necessary resources (provide a minimum organogram), collocated in the Western Cape Area, required to meet all the requirements specified by PRASA throughout the RFP and to achieve a fully integrated, functional, complete Maitland AR and outdoor restorations.

3.3 Site(s) Data and Security of the Site(s)

3.3.1 The Bidder shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances, which may influence or affect the Works and the Bidder’s pricing. To the same extent, the Bidder shall be deemed to have inspected and examined the Site(s) and surroundings, and other available information, and to have been satisfied before submitting the Bid as to all relevant matters, including (without limitation):

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- a) The form and nature of the Site, including sub-surface conditions.
- b) The hydrological, climatic, heritage and environmental conditions and requirements.
- c) The extent and nature of all Works including, but not limited to, all necessary requirements and solutions that the Bidder shall have to meet, and respectively provide, for the Bidder’s achievement of successful execution and completion of the Works, the Project and the Contract (including remedying of any defects).
- d) The Laws, procedures and labour practices of South Africa.
- e) The Bidder’s requirements for access, accommodation, facilities, personnel, power, transport, water and other services.
- f) The Bidder’s requirements for capturing the required geographic map data (“Geodata”), including all resources, Material and Equipment.
- g) The extent and nature of all Works including, but not limited to, all necessary requirements and solutions that the Bidder shall have to meet to protect the Site(s) and the Works by preventing theft, vandalism and respectively provide, for the Bidder’s achievement of successful execution and completion of the Works, the Project and the Contract (including remedying of any defects).

3.3.2 Authorised persons shall be limited to the Bidder’s personnel, PRASA’s personnel and to any other personnel notified to the Bidder, by PRASA, as authorised personnel of PRASA’s other Bidders on the Site(s).

3.4 Theft and Vandalism

3.4.1 The Bidder shall, at the Bidder’s cost and regardless of the extent of this requirement, be responsible for preventing all theft and vandalism of the whole of the Works from initial Contractor site access to beneficial occupation handover of each section/site to PRASA for the duration of the Contract. The Bidder shall use any legal means necessary to meet this requirement and shall, at a minimum, implement all requisite measures to, deter, delay and prevent any attempted theft and vandalism.

3.4.2 The Bidder shall take full responsibility and accept all liability in respect of any vandalised PRASA/Project assets that form part of the Contract and/or Project and/or Works. The Bidder shall further ensure that any stolen or vandalised assets are reinstated during their period of the Works up to handover to standards approved by PRASA, within timeframes stipulated by PRASA, and at the Bidder’s cost. regardless of the number of incidents that may occur.

3.4.3 The Bidder shall, at a minimum, implement measures described throughout the RFP for which such implementation shall not, in any manner whatsoever, relieve the Bidder of his responsibility to implement additional measures to prevent of theft and vandalism of the whole of the Works for the duration of the Contract.

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- 3.4.4 The Bidder shall, as part of the Bid, submit a Detailed Method Statement describing all the measures, techniques, and installation rules it intends to implement addressing all theft and vandalism matters that could affect delivery of the Works and the Project in its entirety.

3.5 Use of Existing Information

- 3.5.1 Soft copies of all existing information, approved Designs and as-built drawings relevant to the Works shall be supplied to the Bidder.
- 3.5.2 The Bidder shall verify the accuracy of all existing as-built drawings, notify PRASA of any discrepancies and rectify all discrepancies, as part of the Works, to ensure that the version of as-built drawings to be issued by the Bidder, as part of the Works, are accurate.
- 3.5.3 The Bidder shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances, which may influence or affect the Works and the Bidder’s pricing. To the same extent, the Bidder shall be deemed to have inspected and examined the information provided, including the quantum of the vandalised and stolen elements, and to have been satisfied before submitting the Bid as to all relevant matters.

3.6 Design Services and Activity Matrix

- 3.6.1 The Bidder shall uncompromisingly Restore the whole of the Works unless the use of Designs issued by PRASA is expressly permitted or required as requested throughout the RFP or as otherwise instructed in writing by PRASA.

3.7 PRASA Acceptance of Bidder's Project Documentation, Reports and Designs

- 3.7.1 Failure of the Bidder to meet any document management, reporting and Restoration procedures and requirements at any time throughout the duration of the Contract, shall give PRASA an unprejudiced right to immediately apply penalties (as specified throughout the RFP) for each incident (from the date that PRASA decides is the date on which the incident commenced until the date on which PRASA confirms, in writing, that PRASA is completely satisfied that the incident is completely resolved by the Bidder).
- 3.7.2 The Bidder shall uncompromisingly submit all reports, and/or other Project documentation, for all Works (as stated throughout the RFP or as otherwise instructed in writing by PRASA), to PRASA for acceptance and approval by PRASA before any procurement and Installation of the Works.
- 3.7.3 The Bidder shall uncompromisingly correct, re-check and re-submit any portions of his reports, and/or other Project documentation that do not comply with the RFP (and

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instructions issued in writing by PRASA) until unequivocal compliance is achieved to the absolute satisfaction of PRASA. PRASA need not give any exhaustive details as to why PRASA does not accept the Bidder's reports, Designs and/or other Project documentation or portions thereof.

- 3.7.4 Despite any checks done by PRASA, it remains the Bidder's responsibility to check his reports, Restoration and/or other Project documentation and ensure unequivocal compliance with the RFP or as otherwise instructed in writing by PRASA. For all the Designs, the Bidder shall provide proof of certification by a professional in terms of the South African Engineering Act and any other South African professional body as required in terms of South African legislation, regulations and by-laws.
- 3.7.5 PRASA shall have the right to reject any and/or all the Bidder’s reports, Designs and/or other Project documentation should such reports, Designs and/or other Project documentation not uncompromisingly and unequivocally comply with the RFP (and instructions issued in writing by PRASA) to the absolute satisfaction of PRASA. PRASA shall not, under any circumstance nor in any manner whatsoever, be held liable for any costs, delays or any other impacts (Material or otherwise) resulting from such rejection(s).

3.8 Equipment

- 3.8.1 All Equipment (which shall include, but not be limited to, all Equipment, Materials, Equipment, Tools, Spares, Software, Technology and Components) to be provided by the Bidder to deliver the Project shall be brand new.
- 3.8.2 In the case of use of old or refurbished Equipment and Materials, such use shall first be proposed by the Bidder and expressly permitted in writing by PRASA and as stated elsewhere in the RFP or as otherwise instructed in writing by PRASA.
- 3.8.3 All imported Equipment to be provided by the Bidder shall be brand new and of merchantable quality, to recognised South African national standards and approved by PRASA, with all proprietary products installed to manufacturers' instructions.
- 3.8.4 The Bidder shall, uncompromisingly and without hesitation, replace any damaged Equipment (whether on the Site(s) or not and whether part of the temporary or permanent Works) and any Equipment with defects further notifying PRASA each time such replacement is required and scheduled.
- 3.8.5 PRASA may have certain Equipment and Materials available in storage that may be used by the Bidder, subject to the Bidder’s complete offered solution remaining compliant with the RFP and that the Bidder has satisfied itself that such Equipment and Materials are suitable for use by the Bidder therefore the Bidder shall accept all risk related to the use of such Equipment and Materials.
- 3.8.6 The Bidder shall use as much existing, Equipment and Materials as possible and if not possible then motivate why not in a robust but controllable manner. Should the Bidder

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wish to replace any existing Equipment and Materials with new Equipment and Materials, the Bidder shall first make PRASA a fair market value offer to pay PRASA for such existing Equipment and Materials for which such offer shall first be accepted by PRASA. The Bidder’s disposal of existing Equipment and Materials can thereafter be implemented.

- 3.8.7 Useful life of all Equipment shall be a minimum of 20 years from the date on which PRASA issues the Performance Certificate unless otherwise specified throughout the RFP.

4 DELIVERY OF THE WORKS

4.1 General

- 4.1.1 A Project of this magnitude can only be successfully implemented on time and within budget with a precise coordination of all tasks to achieve a high standard of quality.
- 4.1.2 Project Engineering views the individual parts of project management in isolation and in their reciprocal effects to achieve the optimum results in the interaction between project execution, project scheduling, project controlling and Project supervision. All these need to follow a well-defined and founded methodology throughout the whole lifecycle of the Project to prevent:
- a) Programme slippages.
 - b) Cost slippages.
 - c) Misunderstanding and gaps in communication within the own organisation.
 - d) Misunderstanding and gaps in communication with the other contractual partners.
 - e) Waste of capacity in respect to human resources.
 - f) Waste of Plant and Material.
- 4.1.3 The Bidder shall plan all Works in a manner that ensures minimal interruption to normal train services and any other services rendered by PRASA.
- 4.1.4 Works execution for the restoration of the original equipment manufacturer (“OEM”) electronic signalling Interlocking System and lineside signalling may start simultaneously for the whole of the Works (in Sections).
- 4.1.5 The Works shall be executed as per prioritization of sequencing of the delivery Works as follows unless otherwise agreed to in writing with PRASA:
- a) **Section 1: Cape Town - Simonstown**
 - o Electrical 11kV manual switches
 - o Restoration of Telecommunication cables

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- Replacement of selected Power Equipment inside SER/ARs
- Testing and Commissioning

b) Section 2: Cape Town – Southfield (via Athlone)

- Electrical 11kV manual switches
- Restoration of Telecommunication and Signalling cables
- Restoration/Replacement of Lineside Signalling Equipment
- Replacement of selected Power Equipment inside SER/ARs
- Testing and Commissioning

c) Section 3: Bellville – Cape Town (via Ysterplaat)

- Electrical 11kV manual switches
- Restoration of Telecommunication and Signalling cables
- Restoration/Replacement of Lineside Signalling Equipment
- Replacement of selected Power Equipment inside SER/ARs
- Testing and Commissioning

d) Section 4: Kuilsrivier-Eersterivier-Strand-Muldersvlei Lines

- Electrical 11kV manual switches
- Restoration of Telecommunication and Signalling cables
- Restoration/Replacement of Lineside Signalling Equipment
- Replacement of selected Power Equipment inside SER/ARs
- Testing and Commissioning

e) Section 5: Maitland Indoor and Outdoor Works

- Restoration of Telecommunication and Signalling cables
- Restoration/Replacement of Lineside Signalling Equipment
- Supply and install complete new Signalling and Telecommunication Equipment
- Testing and Commissioning

4.2 Management and Implementation Methodology

4.2.1 The Bidder shall, at a minimum and as part of the Bid, provide the following comprehensive Management and Implementation Methodology, for which detailed; organisation, strategy, policies, procedures, sequencing and Construction processes that the Bidder shall put in place, at a minimum in accordance with the Project

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Management Body of Knowledge (“PMBOK® Guide”) for; Planning, Execution, Scheduling, Controlling and Supervision of the delivery of Works, is required:

a) Project Management:

- Organisation Chart
- Contract Management and Reporting Responsibilities
- Roles and Responsibilities Matrix
- Interdependency and Integration
- Document Management

b) Human Resources:

- Identification and Planning
- In-house or Acquisition
- Training and Development
- Management and Control

c) Procurement:

- Subcontractor(s) Procurement, Contracting and Management
- Equipment Supplier(s) Procurement, Contracting and Management
- Specific Goals Target Achievement and Compliance Matrix

d) Communications and Stakeholder Engagement:

- Planning
- Protocols
- Information distribution
- Performance reporting
- Stakeholder management (identification and relationship management)

e) Project Programme:

- Identification and definition of Major Milestones, Deliverables and Key Dates
- Identification and definition of Work Breakdown Structure (“WBS”)
- Identification and definition of tasks and activities including resource and duration estimation
- Sequencing of tasks and activities including resource and duration estimation

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- Programme Development and Progress Reporting
 - Programme Change/Update Control
- f) Project Cost Control:
- Resource Planning
 - Cost Estimating, Budgeting and Control
 - Payment Milestone Schedule linked to/extracted from the Bid Programme
- g) Project Quality Management:
- Planning
 - Assurance
 - Control
- h) Occupational Health, Safety and Security (“OHS”):
- Site(s)
 - Project Team
 - Public and Third Parties
- i) Environmental and Heritage:
- Air and Dust Control
 - Noise Pollution Prevention
 - Flora and Fauna Protection
 - Sustainable Construction Practice
 - Stormwater Management
 - Waste Management
- j) Risks, Issues and Lessons Learnt:
- Risks management Planning and identification, analysis (qualitative and quantitative), response (action) Planning, monitoring and control
 - Issues management Planning and identification, analysis (qualitative and quantitative), response (action) Planning, monitoring and control
 - Lessons Learnt identification, analysis (qualitative and quantitative) and logging
- k) Construction Technology and Methodology:
- Site(s) Hand Over to Bidder

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- Project Signage
- Site Logistics
- Local Authority(s) Management, Coordination and Compliance
- Step by Step Construction Method Statements linked to sequencing of tasks and activities in the Bid Programme
- Interim Inspections, Tests and Commissioning (strategy, approach, deliverables)
- Sectional Interim hand over to PRASA
- Final Inspections, Tests on Completion, Commissioning, Completion (strategy, approach, deliverables)
- Provision of As-built Information
- Decommissioning
- PRASA Acceptance of Works
- Taking Over, Warranties and Defects Liability After PRASA Taking Over (strategy, approach, deliverables)
- Project Close-out

4.2.2 The above-mentioned Implementation Methodology and Management Plans shall be finalised and agreed between PRASA and the Bidder during Contract negotiations thereafter included in the Contract as the Approved Project Charter/Project Execution Plan/ Project Management Procedure Handbook.

4.3 Project Programme and Time Management

4.3.1 Notwithstanding the date of signature of the Contract, the Time for Completion for the design and construction portion of the Works (including the Warranty and Defects Liability Period of 365 calendar days) shall be 915 calendar days from the agreed Commencement Date (agreed Commencement Date inclusive) or until PRASA issuance of the Performance Certificate (the later of the 2 dates at PRASA’s sole discretion).

4.3.2 Notwithstanding the date of signature of the Contract, the Time for Completion for the whole of the Works (including the Contract Close-out Administrative Processes of 182 calendar days and the full Warranty and Defects Liability Period of 365 calendar days) shall be 1097 calendar days from the agreed Commencement Date (agreed Commencement Date inclusive) or until PRASA issuance of the Performance Certificate (the later of the 2 dates at PRASA’s sole discretion).

4.3.3 Notwithstanding the date of signature of the Contract, the initial Contract Period shall be 915 calendar days from the agreed Commencement Date (agreed Commencement

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Date inclusive) or until PRASA issuance of the Performance Certificate (the later of the 2 dates at PRASA’s sole discretion).

- 4.3.4 Achievement of this timeline will require an accelerated Project Programme with possible weekend work, overtime work and work during the night. The Bidder shall allow for all activities, time and costs associated with all such requirements in the Bidder’s proposal.
- 4.3.5 Major Milestones, Deliverables and Key Dates shall, at a minimum, include the Time for Completion, the Completion Date and Section completion dates.
- 4.3.6 Major Milestones, Deliverables and Key Dates that the Bidder shall include in the Bid Programme, at a minimum, are:
- (a) Restoration of all Western Cape Railway lines and Signalling Systems.
 - (i) Completion of each line of the Works.
 - (ii) Provision of restored complete interlockings in Maitland.
 - (iii) Provision of restored complete Telecommunication systems
 - (b) Time for Completion for the design and construct portion of the Works calculated 915 calendar days from the agreed Commencement Date (agreed Commencement Date inclusive).
 - (c) Time for Completion date for the whole of the Works including Contract Close-out Administrative Processes calculated 1097 calendar days from the agreed Commencement Date (agreed Commencement Date inclusive).
- 4.3.7 Failure of the Bidder to achieve any of these Major Milestones and Deliverables on these Key Dates shall give PRASA an unprejudiced discretionary right to immediately Terminate the Contract and claim damages from the Bidder and/or apply penalties. (as specified throughout the RFP) from the aforementioned date until the date on which PRASA confirms, in writing, that PRASA is completely satisfied that all Works is completed. The minimum costs and damages that the Bidder shall pay PRASA is the total amount of money paid to the Bidder plus any other amounts which the Bidder may have been due as at the date of each Key Date.
- 4.3.8 The Bidder shall submit a comprehensive Microsoft Project Bid Programme (showing durations of activities in working days) which shall, at a minimum, clearly show:
- a) Major Milestones and Deliverables including Key Dates throughout the life of the Project that must be met for the Project to finish on time. Major Milestones, Deliverables and Key Dates shall identify intervals that shall reflect appropriate progress of the Project and whether or not the Bidder is meeting the Bidder’s contractual obligations (including, but not limited to; completion of Sections, the Time for Completion of the whole of the Works, Material rate of progress of the Works, measurement of Bidder performance, penalty calculations and Contract

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termination) and establish intervals that shall reflect appropriate progress of the Project.

- b) A detailed Work Breakdown Structure (“WBS”) which shall be a description of tasks arranged and linked in layers of detail. The WBS shall further incorporate all Major Milestones, Deliverables and linked Key Dates.
- c) A detailed Project Plan which shall list and link all activities that are needed to accomplish the tasks identified in the WBS.
- d) The sequencing of the activities according to the order in which the activities are to be accomplished including a Logic Diagram that shall represent the logical sequence of the activities required to complete the Project.
- e) The start and finish dates of each task and activity and the duration of each task and activity whereby some tasks and activities may have to be done sequentially and some concurrently.
- f) The longest path to the completion of the Project therefore the critical path including linking of all dependencies affecting the critical path.
- g) The total Bid Price allocated to each Major Milestone, Deliverable, task and activity in detail.
- h) Project Resources (overheads, human resources, Plant and Equipment etc.) allocated to each Major Milestone, Deliverable, task and activity.
- i) Scheduling of activities in a manner that effectively and efficiently uses Project Resources and completes the Project in the shortest practical time.
- j) Sundays as non-working calendar days.
- k) All official statutory Public Holidays, as declared by the South African National Government as non-working calendar days.
- l) All foreseeable statutory national, provincial or municipal Election Days as declared by the South African National Government.
- m) 14 calendar days (including Sundays, Public Holidays and Election Days) as non-working days for Easter breaks in each calendar year.
- n) 28 calendar days (including Sundays, Public Holidays and Election Days) as non-working calendar days for mid-December to mid-January Construction industry breaks in each calendar year.
- o) Provision for adequate calendar rain days throughout the Contract duration for which such determination shall, at a minimum, be guided by reports officially published by the South African Weather Service (“SAWS”).
- p) The following levels:

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- Level 1 Master Programme - defines the major operations and interfaces between Engineering Design, procurement, fabrication and assembly of Equipment, transportation, Construction, Testing and pre-Commissioning, Commissioning, finalisation and completion
- Level 2 Project Programme - summary Programmes 'rolled up' from Level 3 Project Programme described below
- Level 3 Project Programme - detailed Programmes generated to demonstrate all operations identified on the Programme from the starting date to Completion
- Level 4 Project Programme - detailed discipline specific level developed and maintained by the Bidder relating to all operations identified on the Programme representing the daily activities by each discipline
- A narrative status report, which includes precise status and performance of operations in the Working Areas, precise status and performance of operations outside the Working Areas, manpower histograms, S-curve of overall progress, critical action items (top 20) and deviations from the Accepted Programme and action plan to rectify

q) All other activities of the Project and PRASA, approval authorities, TFR and other interdependencies and interfaces which affect the delivery of the Works.

4.3.9 Scheduling constraints that the Bidder shall adequately plan and provide for in the Bid Programme include:

- a) The lead-time for arranging Site(s) access is at least 21 working days after all requirements for Site(s) access are met and at least 60 working days after the Commencement Date.
- b) The Bidder gives PRASA notice of at least 21 working days to source specific existing information and as-built drawings.
- c) PRASA shall be given at least 21 working days each to check, comment on and/or approve all the Bidder's Project Documentation submitted throughout the duration of the Contract (including, but not limited to, methodologies, implementation plans, reports, Designs, quality plan, safety case, safety management plan and environmental management plan).
- d) PRASA acceptance checking of the Bidder's Designs shall take at least 21 working days.
- e) Excluding the Commissioning Occupation, ad-hoc Testing and inspections by PRASA shall take on average 5 working days per crossing place which may run concurrently if 2 crossing places are required at the same time.

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- f) The minimum lead-time for PRASA arranging Occupations is 21 working days after PRASA’s acceptance of the Bidder’s Occupation plan and Test copies of all relevant drawings related to an Occupation.
- g) The Bidder shall submit the Occupation plan and Test copies of all relevant drawings for PRASA acceptance of any Occupation at least 21 working days before each Occupation.
- h) PRASA’s acceptance inspection (walk-through) shall take 5 working days per crossing place, which may run concurrently, if more than 1 crossing place is required at the same time.
- i) PRASA acceptance Testing and Commissioning shall take 10 working days during each Commissioning Occupation.
- j) After Commissioning each station, 21 working days are allowed for the Bidder’s decommissioning and the finalisation of as-built drawings, manuals, quality records, Software data records, Technology transfer and other documentation, or as specified throughout the RFP (including but not limited to that which is specified in the GTRs, PTRs and/or MTR).
- k) The Bidder’s initial submission of all as-built documentation for a Section shall be within 10 working days after a Section is commissioned and within 40 working days after the whole of the Works is commissioned.

4.3.10 Sequence of the Works:

- a) The Bidder shall plan the Works to meet the Sectional completion dates, otherwise also included under the definition of Key Dates.
- b) The Bid Programme shall be finalised and agreed between PRASA and the Bidder during Contract negotiations thereafter included in the Contract as the “Approved Baseline Contract Programme/Approved Programme.”
- c) Any changes and/or updates to the Approved Programme (including, but not limited to, tracking progress or relating to PRASA approved changes i.e. extensions of time claims, variation order time impacts etc.) shall be recorded in detail.
- d) On each revised Programme, the Bidder shall show a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the Bidder.

4.3.11 The Bidder's Programme shall show the requirements of the System Engineering Services (SES), Project Engineering Services (PES), Safety Management Plan and the Environmental Method Statements.

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4.4 Interface Management

- 4.4.1 This interface work shall ensure that information and clarifications required for the integration and co-ordination of Planning, Supply, Installation, Testing, Commissioning activities between all parties concerned are identified, detailed and clarified in due time.
- 4.4.2 The Bidder shall bear the responsibility for establishing an effective Interface Management procedure and take full risk for all interfaces required for successful delivery of the Works (including, but not limited to, interfaces with TFR) including all consequential and/or related delays.

4.5 Key Personnel Requirements

- 4.5.1 The Bidder shall provide all necessary personnel required by Bidder for the Bidder’s successful delivery of the Works in accordance with the Contract. All personnel to be deployed on the Project shall be detailed under the relevant Sections of the Management and Implementation Methodology.
- 4.5.2 The Bidder’s Project office and key personnel, all of whom shall have enough knowledge and experience on all aspects of the Works and shall be fully conversant with current railway practices in South Africa.
- 4.5.3 The Bidder shall employ full-time a railway Engineer, registered with the Engineering Council of South Africa (“ECSA”) as a Professional Engineer or Professional Technologist, all of whom shall be fully conversant with current railway practices in South Africa and always readily available for delivery of the Works when required.
- 4.5.4 The Bidder shall have suitably qualified supervision staff in charge of the Works. All such supervision staff shall be in direct full-time employment of the main Bidder and/or joint venture partners and/or consortium members and/or subcontractors.
- 4.5.5 Any member and/or representative of PRASA, who may be associated with the Works, is responsible for inspection and acceptance Testing/checking only shall not be required to render any other assistance to the Bidder unless otherwise instructed in writing by PRASA.
- 4.5.6 The Bidder shall, always, have an effective and efficient organisational structure in place to deliver the Works and provide the following Key Personnel, at a minimum, further providing signed and verifiable logbooks for each resource as part of the Bid:
- a) General:
 - Project Manager with experience exceeding 7 years on similar Projects
 - Programmer/Scheduler with experience exceeding 5 years on similar Projects
 - Railway Engineer with experience exceeding 9 years on similar Projects

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- Occupational Health and Safety Manager with experience exceeding 5 years on similar Projects
- Public Participation and Community Liaison Manager with experience exceeding 5 years on similar Projects
- Installation:
 - Site Manager with experience exceeding 5 years on similar signalling installations
 - Installers with Wireman Licence experience exceeding 3 years on similar Projects
- Testing:
 - Tester-in-Charge with experience exceeding 7 years on similar Projects
 - Testers with experience exceeding 5 years on similar Projects

4.5.7 The Bidder shall always make any measuring Tools and Equipment, required to perform quality inspections, tests, Commissioning etc., and for any other purpose of this Project, available to PRASA.

4.6 Document Management

4.6.1 The Bidder shall strictly adhere to document management procedures and requirements stated throughout the RFP. In particular, the Bidder shall, or unless otherwise instructed in writing by PRASA, only use full Microsoft Office suite and Adobe (PDF) Software to produce and issue/submit all Project documentation (other than the Project Programme and drawings). The Project Programme shall be issued in Microsoft Project and Adobe (PDF) formats and drawings shall be issued in DGN, DWG and Adobe (PDF) formats.

4.6.2 All Project documentation shall follow strict certification, date stamping and version control and shall be issued with transmittal notes clearly identifying the sender, receiver, contents and purpose of the submission. The Bidder shall implement proper software, application data and configuration file management, including version control and CRC numbers for all software, application data and configuration files. The Bidder shall submit the relevant configuration management records to PRASA with every submission of software, application data and configuration files. All formats of all Project documentation, as prepared by any Project team member, shall first be approved by PRASA prior to transmission to the rest of the Project team and stakeholders. The Bidder shall, unless otherwise instructed in writing by PRASA, submit all Project documentation to PRASA as follows:

- a) 1 Electronic copy by email.
- b) 2 Bound paper copies by hand.

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c) 2 Electronic copies on portable hard drive/memory stick.

4.6.3 All Project documentation shall bear the logo of PRASA either at the extreme top right of, or above, any other logos (depending of positioning in headers or drawing blocks etc.). Other logos may be added subject to approval by PRASA. The following Project documentation naming conventions shall always be adhered to the Project team:

a) Project Documentation:

- All Project Documentation: “yyyymmdd-PRASA-WC TMSE D&C-[Insert Document Title]-(Version Control)”
- The above translates to the following examples: “20210101-PRASA-WC TMSE D&C-Project Naming Conventions-(Rev00)” in which case the next version of the same document shall for instance read: “20210202-PRASA-WC TMSE D&C-Project Naming Conventions-(Rev01)” and so forth until a final version is reached which shall for instance read “20210303-WC TMSE D&C-Project Naming Conventions-(Final)”
- One shall not leave any spaces between the dashes else this shall negatively affect chronological e-filing sequences

b) Email and Other Correspondence:

- All Titles: “PRASA-WC TMSE D&C-[Insert Subject Title]”
- The above translates to the following example: “PRASA-WC TMSE D&C-Project Naming Conventions”
- One shall not leave any space between the dash else this shall negatively affect chronological e-filing sequences
- However, if one is attaching a document in an email for discussion etc., then the Email Title should be the Document Title of the attached which shall be in accordance with Project Documentation naming convention example; “20210101-WC TMSE D&C-Project Naming Conventions-(Rev00)”

4.6.4 All contract documentation and other key documents containing signature shall be held in hard copy by PRASA and the Bidder as appropriate. Project Team members shall hold and/or file all Project documents in accordance with PRASA’s document management Systems.

4.7 Reporting

4.7.1 The Bidder shall collect and distribute performance information, including status reports, progress measurements and forecasts. The performance reporting process involves the periodic collection and analysis of baseline versus actual data to

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understand and communicate the Project progress and performance as well to forecast the Project results.

4.7.2 The Bidder shall, without contest, provide all reports and unredacted detailed support information as may be requested from PRASA throughout the duration of the Contract. All reporting shall therefore continue until the Performance Certificate has been issued by PRASA or until otherwise instructed by PRASA.

4.7.3 Unless otherwise stated throughout the RFP, all Final and/or Close-out Reports shall be issued 21 calendar days prior to the Completion Date for the whole of the Works.

4.7.4 The minimum reporting requirements are:

a) Project Initiation Report:

- The Bidder shall prepare and submit a Project Initiation Report no later than 15 working days after the Project Commencement Date
- This report shall include the main activities performed since the Commencement Date, the main observations regarding the current situation, identified most critical problems and proposals for the main measures that should be undertaken in joint actions between the Bidder and PRASA

b) Monthly Progress Reports:

- The Bidder shall prepare detailed Monthly Progress Reports and submit same to PRASA on the 2nd Thursday of each calendar month
- The 1st Monthly Progress Report shall be issued on the 2nd Thursday of the calendar month after the calendar month in which the Project Commencement Date falls
- The Monthly Progress Report shall, at a minimum, contain the following information:
 - Executive Summary:
 - Introduction
 - Purpose of this Document
 - Issue Status of this Document
 - Validation of this Document
 - Project Data:
 - Project Description
 - Project Location
 - Project Team

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- Executive Progress:
 - Overall Project Health Chart
 - Table of Approved Project Change Requests and Variation Orders
 - Incident Reports (Environmental / Heritage / Occupational Health and Safety)
 - Table of Claims and/or Notices Issued by Bidder and PRASA
 - Approved Programme Summary and Chart Analysis (Major Milestones, Deliverables and Key Dates)
 - Earned Value Analysis
 - Quality Assurance and Management Summary
 - Community Liaison and Participation Summary
 - Specific Goals, and Training Target Compliance
 - Critical Risks, Issues and Lessons Learnt Review
 - Key Decisions and/or Approvals Required from PRASA
- Comprehensive Progress:
 - Detailed Project Health Status
 - Detailed Approved Programme Progress Review (Major Milestones, Deliverables and Key Dates, Tasks, Activities, Interdependencies and Critical Path Analysis)
 - Detailed Financial Cost Report (Bid Price versus current approved Contract Price, Payment Milestones Claimed vs Payment Milestones Approved, Invoices Issued versus Payments Received etc.)
 - Detailed Quality Assurance and Management Report
 - Detailed Community Liaison and Participation Feedback
 - Detailed Specific Goals and Training Target Compliance Report
 - Detailed Risks, Issues and Lessons Learnt Review
 - Detailed Schedule of Claims and Notices issued by Bidder and PRASA
- Annexures:
 - Annexure A – Updated Approved Programme

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- Annexure B – Copies of Project Change Requests and Variation Orders submitted in the current reporting period
 - Annexure C – Copy of Environmental Control Officer (“ECO”) Agent Monthly Audit Report
 - Annexure D – Copy of OHS Agent Monthly Audit Report
 - Annexure E – Copies of Claims and/or Notices issued by Bidder and PRASA in the current reporting period
 - Annexure F – Copy of Community Liaison Officer (“CLO”) Monthly Report
 - Annexure G – Copy of Community Participation Consultant (“CPC”) Monthly Report
 - Annexure H – Updated Versions of Risks, Issues and Lessons Learnt Registers
- Notwithstanding the above, each Monthly Progress Report shall further include:
 - Charts and detailed descriptions of progress, including each stage of Design, Bidder's documents, procurement, manufacture, delivery to Site(s), Construction, erection, Testing and Commissioning
 - Photographs showing the status of manufacture and of progress on the Site
 - For the manufacture of each main item of Equipment, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of; commencement of manufacture, Bidder inspections and factory acceptance tests, shipment and arrival on Site
 - Detailed records of the Bidder’s Personnel, Plant, Equipment deployed on the Project including detailed Site(s) diaries
 - Copies of all quality assurance documents, Test results and certificates of Materials

c) Annual Progress Reports:

- The Bidder shall prepare detailed Annual Progress Reports and submit same to PRASA. The 1st Annual Progress Report shall be issued on the 365th calendar day from the Commencement Date thereafter every 365 calendar days
- The Annual Progress Report shall, at a minimum, contain an abstract of work performed during the previous year

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d) Specific Goals Reports:

- The Bidder shall prepare and submit detailed Specific Goals Compliance Reports to PRASA further attaching full copies of all unredacted subcontracts, employment contracts and purchase contracts (including unredacted invoices and corresponding proofs of payment etc.) proving actual Specific Goals and Preferential Procurement achievements measured against the Specific Goals and Preferential Procurement Targets and Performance Scorecard. These reports shall further provide substantiating reasons as to why such achievement failed to meet the Specific Goals and Preferential Procurement Targets
- Specific Goals Reports shall be audited by an Independent Auditor registered with the South African Institute of Chartered Accountants (“SAICA”). The Independent Auditor shall issue an Independent Specific Goals Audit Report which shall include a clear statement as to whether “the Bidder failed to meet the Specific Goals Targets” or “the Bidder has met the Specific Goals Targets”. Cost of Independent Auditor’s services shall be borne by the Bidder
- The 1st specific Goals Compliance Reports shall be issued 150 calendar days after the Commencement Date thereafter every 150 calendar days
- Specific Goals Targets and Performance Measurement shall be finalised and agreed between PRASA and the Bidder during Contract negotiations thereafter included in the Contract as the Specific Goals Targets and Performance Measurement Scorecard

e) Training Compliance Reports:

- The Bidder shall submit detailed Training Compliance Reports to PRASA further attaching full copies of all unredacted subcontracts, employment contracts and purchase contracts (including unredacted invoices and corresponding proofs of payment etc.) proving actual Training achievements measured against the Training Targets and Performance Scorecard. These reports shall further provide substantiating reasons as to why such achievement failed to meet the Training Targets
- The Training Compliance Reports shall be audited by an Independent Auditor who is registered with the South African Institute of Chartered Accountants (“SAICA”). The Independent Auditor shall issue an Independent Training Audit Report which shall include a clear statement as to whether “the Bidder failed to meet the Training Targets” or “the Bidder has met the Training Targets”. The cost of the Independent Auditor’s services shall be borne by the Bidder

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- The 1st Training Compliance Reports shall be issued 150 calendar days after the Commencement Date thereafter every 150 calendar days
- Training Targets and Performance Measurement shall be finalised and agreed between PRASA and the Bidder during Contract negotiations thereafter included in the Contract as the Training Targets and Performance Measurement Scorecard

4.8 Project Meetings

- 4.8.1 The Bidder shall attend Project meetings as instructed by PRASA or convened by PRASA.
- 4.8.2 Meeting venues, agendas and attendees shall first be approved by PRASA prior to issuance.
- 4.8.3 Secretariat requirements for each meeting shall be as instructed by PRASA for each type of meeting and minutes of each meeting shall be approved by PRASA prior to issuance to the list of attendees.
- 4.8.4 Monthly Project Management:
- a) Monthly Project Management Meetings shall be held between the Bidder, PRASA and other Project Stakeholders. The primary purpose of these meetings shall be the Bidder’s provision of detailed Project progress and Contract performance updates to PRASA as well as to raise key matters which require direction and/or approval from PRASA’s Project leadership and management team(s).
 - b) Such meetings may therefore include discussions on all aspects included under Monthly Progress Reports and all other contractual matters.
- 4.8.5 Monthly Technical Management and Coordination:
- a) Monthly Technical Management and Coordination Meetings shall be held between the Bidder, PRASA and other Project Stakeholders. The primary purpose of these meetings shall be to coordinate and address technical matters which require PRASA direction and or approval at the Monthly Progress Meetings.
- 4.8.6 Ad-hoc/Other:
- a) Ad-hoc and/or Other Meetings shall be held between the Bidder, PRASA and other Project Stakeholders on an as and when required basis.
 - b) Such meetings may address specific issues or problems relating to the delivery of the Works. Meetings of a specialist nature shall be convened at times and locations upon approval by PRASA. Records of these meetings shall be submitted to PRASA, by the PRASA approved chairperson of a meeting, within 10 working days of the meeting or as otherwise instructed by PRASA.

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4.9 Occupational Health and Safety Management

- 4.9.1 The Bidder is responsible for all Occupational Health and Safety (“OHS”) matters on the Project for the entire duration of the Contract therefore including Warranty and Defects Liability period.
- 4.9.2 The Bidder shall provide protection to all personnel from the danger of passing trains.
- 4.9.3 The Bidder shall implement an OHS Management Plan (“OHS Plan”) that complies with the Health and Safety specifications as stated throughout the RFP.
- 4.9.4 Use of PPE:
- a) The wearing of specified personal protective Equipment is compulsory whilst on or near railway lines or service roads.
 - b) The Bidder shall, at the Contractor’s cost, provide the Employer with at least 15 full sets of Personal Protective Equipment (“PPE”), including safety boots, reflector vests, hard hats, hearing protection and gloves in the sizes as advised by the Employer and/or Engineer.
 - c) PPE requirements for personnel working on or near railway lines or services roads are as follows:
 - Reflective vests shall be required for all personnel in the vicinity of a railway line or service road and an Equipment Room
 - Safety boots shall be required for all personnel on Site(s)
 - Hard hats shall be required where there is a danger of falling objects or close to overhead work
 - Overalls shall be required for all Installation personnel
- 4.9.5 Use of vehicles:
- a) When using service roads, the Bidder shall comply with the relevant legislation and ordinances including, but not limited to, all the traffic signs, speed limits, etc. on service roads.
 - b) Vehicles' main head lights and taillights are always switched on when moving on service roads.
- 4.9.6 High voltage Electrical Equipment:
- a) The Site(s) may have "live" Electrical overhead wires or underground cables and there is a danger of contact with such wires or piercing underground Electrical cable during excavations.
 - b) When doing Installations or working in the vicinity of high voltage Equipment, the Bidder shall take the necessary precautionary measures to safeguard all personnel against injury.

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- c) The Bidder shall consider all Equipment as "live", notwithstanding any safety measures in the System to reduce induced stray voltages to a safe level.
- d) Before work commences the Bidder shall make all personnel aware of the danger of "live" Electrical wires and cables as well as induced stray voltages from AC electrification into Signalling cables and Equipment.

4.9.7 Trackside Works:

- a) When arriving at any Site(s), including Equipment Rooms and substations, the Bidder shall inform the Train Control Officer (“TCO”) of his presence. The Bidder shall also accurately record the date, time and his activities daily in the Equipment Maintenance book.
- b) When the Bidder enters a CTC or any other train control office, the Bidder shall:
 - Identify all applicable personnel to the Section Manager in charge and states the purpose of his visit and enter the details of and reason for the Bidder’s visit in the CTC or train control office logbook and signs the entry
- c) Before the Bidder leaves the Site(s) or CTC or train control office, the Bidder shall report all intended movements to the Section Manager in charge.

4.9.8 Protection of the public:

- a) The Bidder shall ensure that restricted access is in place at all Construction Sites and Site(s) camps.

4.9.9 Security:

- a) The Bidder shall provide security guards on Site(s) for all personnel, Equipment, and PRASA representatives performing their duties. Deployment of security personnel shall be arranged in consultation with PRASA subject to the applicable PRASA regulations.
- b) The Bidder shall liaise with PRASA’s security personnel so that they are always aware of the Bidder's security arrangements on Site(s) and supply all personnel with clearly identifiable clothing clearly marked with Project and Bidder details.
- c) The Bidder shall Supply all personnel with an ID card containing the personnel's photo and identity number and statement of employment with the Bidder. All personnel shall always carry this document. The Bidder shall also ensure that persons no longer in the Bidder’s employ, do not have those ID cards in their possession.
- d) Persons with criminal convictions shall not be employed on Site(s).
- e) Employees shall not be hired nor paid at the Site(s).
- f) All vehicles on Site(s) shall have the Bidder's name clearly marked in a conspicuous position.

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- g) All Bidder personnel shall undergo a security briefing before they are allowed on Site(s).
- h) The Bidder's OHS Plan shall include a detailed method statement on how security matters shall be managed on the Site(s).

4.9.10 General:

- a) The Bidder shall comply with all applicable legislation, regulations issued in terms thereof and PRASA's safety rules, regulations and guidelines entirely at the Bidder’s own cost.
- b) The Bidder’s OHS Plan shall, at a minimum, comply with all standards, specifications, regulations and procedures as stated throughout the RFP.
- c) For the application of the Occupational Health and Safety Act, 1993 the Site(s) is deemed to be under the Bidder's control for the duration of the Contract, The Bidder is responsible for all Occupational Health and Safety (“OHS”) matters on the Project for the entire duration of the Contract site access therefore including execution of the Works during the Warranty and Defects Liability period and including subsequent defects correction periods during which work is taking place. The Bidder may, at the discretion of PRASA, be regarded as PRASA and is responsible for ensuring that the requirements of the Act and the regulations are implemented in the working areas.
- d) All the Bidder's Site(s) personnel shall attend PRASA's and/or TFR’s safety induction courses before commencement of any Works on any Site(s). The duration of each course is anticipated to be a maximum of 8 hours during normal working hours.
- e) Blasting is not allowed on Site(s).
- f) In accordance with the safety case between the Parties, the Bidder shall, at a minimum, comply with the following Acts: -
 - The Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993). The Bidder produces proof of his registration and good standing with the Compensation Commissioner in terms of the Act
 - The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended and Regulations issued in terms thereof or un-repealed regulations issued in terms of the former Act no. 6 of 1983, in his entirety
- g) PRASA's safety representative may attend all Site(s) safety meetings called for in terms of Act 85 of 1993. The Bidder shall promptly submit copies of the minutes of these meetings to PRASA. These meetings shall be monitored to identify any action required to rectify problems.
- h) The storage of flammable Materials shall require attention and management.

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- i) Exceptional care shall be required when welding, flame-cutting or other fire-hazard operations occur, and the Bidder shall provide suitable firefighting Equipment at close hand to those operations.
- j) The Bidder shall report all accidents in writing to PRASA. Any accident resulting in the death of or injury to any person in the working areas shall be reported within 24 hours of its occurrence, and any other accident shall be reported within 48 hours of its occurrence.
- k) Telephone numbers of emergency services, including the local firefighting service, shall be posted conspicuously in the Bidder's Site(s) office near the telephone.
- l) The Bidder shall provide suitable shoring for cable trenches where applicable.
- m) The Bidder shall provide the required services to clean and sanitise the Site(s) from hazards, including raw sewerage, as and when required for the purpose of performing the Works.
- n) The Bidder shall provide additional protection Equipment and clothing for all personnel required for working in areas where environmental and health issues exist.
- o) The Contractor shall always take all necessary precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that:
 - medical staff, first aid facilities, sick bay, ambulance services and any other medical services stated in the Employer's Requirements are always available at the Site(s) and at any accommodation for the Contractor's and the Employer's Personnel; and
 - suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.
- p) The Contractor shall appoint a health and safety officer at the Site(s), responsible for maintaining health, safety and protection against accidents. This officer shall:
 - be qualified, experienced and competent for this responsibility; and
 - be qualified, experienced and competent for this responsibility; and have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorised to enter and/or work on the Site(s) and to take protective measures to prevent accidents.
- q) Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

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4.10 Environmental and Heritage Management

- 4.10.1 The Bidder is responsible for all Environmental and Heritage matters on the Project.
- 4.10.2 The Bidder’s Environmental and Heritage Management shall, at a minimum, comply with all standards, specifications, regulations and procedures as defined throughout the RFP and all legislation, regulations, and by-laws of South Africa.

4.11 Quality Management

- 4.11.1 The Bidder’s Quality Management System (“QMS”) shall, at a minimum, comply with all standards, specifications, regulations and procedures as defined throughout the RFP.
- 4.11.2 The Bidder shall submit his QMS documents to PRASA for approval as part of the Programme. The documents shall include details of the:
- a) Quality Plan for the Works.
 - b) Quality policy.
 - c) Index of procedures to be used.
 - d) Document register.
 - e) Schedule of internal and external audits for the Works.
- 4.11.3 The Bidder shall develop and maintain a comprehensive register of documents that are generated on the Contract including all quality related documents. PRASA shall indicate those documents to be submitted for information, review or approval and the Bidder indicates such requirements within his register of documents. The register indicates the dates of issue of the documents with PRASA responding to documents submitted by the Bidder for review or acceptance within the period for reply (except where stated otherwise) prior to such documents being used by the Bidder.
- 4.11.4 The Bidder shall submit a detailed Test and inspection plan to PRASA for acceptance before manufacturing and Installation start. The Bidder’s Test and inspection plan includes detailed trenching records, witness points and hold points for critical activities.
- 4.11.5 The Quality Plan means the Bidder’s statement, which outlines strategy, methodology, resources allocation, quality assurance and quality control co-ordination activities to ensure that the works meet the standards stated in throughout the RFP. It includes a description of the Bidder’s Test and inspection activities, and Check/Test sheets.

4.12 Temporary Works, Site(s) Services and Construction Constraints

- 4.12.1 PRASA’s Site(s) entry and security control, permits, Site(s) regulations and restrictions on Site(s) use are that:
- a) PRASA may allow access to Site(s), on request, after:

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- The Bidder has requested access from PRASA
 - The Bidder has made all safety, health, environment, quality and any other appointments required to proceed with Site(s) activities
 - The Bidder has provided the safety case as accepted by the relevant Parties
 - PRASA has issued a Site(s) Access Certificate
- b) The Bidder shall be given access to the various Sites at PRASA’s discretion therefore as considered necessary by PRASA.
- c) The Bidder shall comply with the following requirements of PRASA:
- Accurate and transparent reporting of faults and failures
 - Adherence to Occupation requirements
 - Proactive and effective Safety risk management
 - Suitable environmental and heritage constraints compliance, control and management

4.12.2 Access to any third-party property:

- a) The Bidder shall obtain a letter of introduction from PRASA as may be required to enter any third-party property required to deliver the Works.
- b) The Bidder shall ensure that no third-party property is entered, nor any Works executed prior to granting of the required permits and/or wayleaves.
- c) The Bidder shall be responsible to apply and pay for all required permits and/or wayleaves.
- d) The Bidder shall ensure steps taken to ensure that unauthorised persons or livestock do not obtain passage through fences temporarily damaged when executing the Works.
- e) The Bidder shall, at the cost of the Bidder, make good any damage to third party property, resultant from the execution of the Works.
- f) Third party property owners shall be kept informed, proactively by the Bidder, about any changes to the scheduling of the Works should they be affected.

4.12.3 People restrictions on Site(s), hours of work, conduct and records:

- a) The Bidder shall comply with the following hours of work on the Site(s):
 - Normal working hours on Site(s) means the hours of work, as determined by a wage regulating measure or statutory enactment for any trade or activity, in respect of which the basic minimum rate of pay is applicable and excludes all time for which a higher rate of pay is obligatory. Where no wage regulating measure is in force, the normal

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hours shall be 07h00 to 17h00 Mondays to Fridays, including statutory meal breaks etc.

- The Bidder shall confine his work to normal working hours except when work outside these hours is:
 - Specifically provided for in the Contract
 - Permitted by PRASA at the Bidder's request
 - Instructed in writing by PRASA

b) Acceptance Testing and Commissioning may occur during undefined hours, and may include weekends, public holidays and night work, solely at the discretion of PRASA and in accordance with PRASA’s requirements.

c) When the Bidder proposes to work outside normal working hours, the Bidder shall apply to PRASA at least 21 working days in advance. PRASA may, at PRASA’s discretion, not unnecessarily withhold permission however such permission is subject to such conditions as PRASA may impose on the Bidder to protect PRASA's interests. Such permission may be withdrawn by PRASA at any time and without consequence and liability to PRASA. The Bidder is not entitled to any claim for additional payment or time arising from either PRASA refusal to permit such work or the granting of such permission or withdrawal of permission by PRASA.

4.12.4 Cooperating with, obtaining acceptance of and checking the work of others:

a) The Bidder shall inspect the work of others with which the Works interfaces, with support from PRASA, to ensure compliance with the RFP.

4.12.5 Bidder's Equipment:

a) The Bidder shall Supply all Equipment necessary to provide the Works.

b) The Bidder shall promptly replace or repair any faulty Equipment to ensure delivery of the Works.

4.12.6 Existing services, including cable and pipe trenches:

a) The Bidder shall verify the boundaries of the Rail servitude.

b) The Bidder shall locate existing services before commencing work on Site(s).

c) Where the Bidder encounters existing services, he shall take extreme care not to damage them. The Bidder shall, at the cost of the Bidder, repair any such damage caused through the delivery of the Works.

d) The Bidder shall contact all relevant stakeholders and authorities, with assistance from PRASA, to co-ordinate all Site(s) activities.

4.12.7 Hook ups to existing Installations:

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- a) The Bidder shall promptly notify PRASA in writing if any suspected discrepancies with as-built information are noted.
- b) The Bidder shall only implement changes as per red and yellow work drawings approved by PRASA.
- c) The Bidder shall, in accordance with timeframes specified in writing by PRASA, submit proper Occupation plans for PRASA to arrange Occupations for Work.
- d) The Bidder shall ensure prevention of faults as far as possible.
- e) The Bidder shall promptly and transparently notify PRASA of any faults and failures immediately upon becoming aware of such faults and failures further providing the rectification plan to correct the faults and failures.

4.12.8 Construction Trains:

- a) Should the Bidder use On-Track Machines (e.g. for the Installation of new sleepers), the Bidder shall apply the relevant RSR guidance notice “Construction Train Safety Permits” regarding Construction train safety permits.

4.12.9 Temporary Construction Level-Crossings:

- a) The Bidder shall obtain all necessary approvals from the RSR for all temporary Construction level crossings required for the Project, as per South African National Standard (“SANS”) 3000-2-2-1.

4.13 Reporting of Faults and Failures

4.13.1 The Bidder shall keep the Duty Manager in the CTC informed of all Site(s) activities so that each may be contacted without delay in case of an emergency.

4.13.2 The Bidder shall keep PRASA and the Duty Manager in the CTC informed of the names of all personnel who are available to receive calls during specific periods.

4.14 Occupations

4.14.1 Before the Bidder undertakes work involving Track crossings, the Occupation of the Track, dead orders or other interruption of PRASA and/or TFR service, the Bidder shall submit a request for an Occupation in writing to PRASA.

4.14.2 The Bidder shall contact PRASA one calendar day before the date of an Occupation to ascertain whether the Occupation is going ahead and whether the Occupation details have changed. PRASA is at liberty to cancel or postpone any Occupation at any time and at sole PRASA’s discretion for which PRASA shall not accept any liability therefore that Bidder shall accept all liability and consequence for such cancelation or postponement further absorbing any loss of time within the Approved/Contract Programme.

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- 4.14.3 The Bidder shall provide PRASA with a detailed Occupation plan for approval, showing details of:
- a) All decommissioning activities.
 - b) All disciplines involved.
 - c) Hours of work.
 - d) All Equipment, personnel, and other resources the Bidder plans to use on the Occupation.
 - e) Activities that have already been completed in preparation for the Occupation.
 - f) Activities that still needs to be completed in preparation for the Occupation.
 - g) Programme of work for the Occupation.
 - h) All portions of existing Installations that shall be affected by the Works, including a detailed method statement on what measures the Bidder shall implement to minimise the Occupation duration and how the existing Installations shall be protected/isolated from safety risks and disruption.
- 4.14.4 Submission of the Occupation plan serves as confirmation that the Bidder shall use the Occupation subject to approval in writing by PRASA. Failure to submit an Occupation plan puts the Occupation at risk of being cancelled.
- 4.14.5 The Bidder shall provide qualified flagmen with radios and all other Equipment to protect trains where the Works affect safety of trains.
- 4.14.6 The Bidder shall provide protection to all personnel from the danger of passing trains.
- 4.14.7 Before disconnecting or working on any Equipment connected to a working System, the Bidder shall take a local Occupation. Cooperation with the operating staff is essential for safe working and for the efficient completion of work.
- 4.14.8 When an Occupation for work on an existing Installation takes longer than expected, the Bidder promptly notifies PRASA who applies for an extended Occupation.
- 4.14.9 All safety precautions in PRASA's and/or TFR's Train Working Rules (“TWR”) shall apply.
- 4.14.10 The Bidder shall provide all points clamps complete with padlocks, and signal crosses and blanking plates for the protection of trains.

4.15 Operational Readiness

- 4.15.1 The Bidder shall conduct an operational readiness assessment before the Commissioning of each Section and implement required action to ensure operational readiness by time of Commissioning.
- 4.15.2 For each type of Equipment to be installed as part of the Project, the Bidder shall produce Installation procedures document(s) containing:

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- a) Detailed Installation methods.
- b) Detailed Testing procedures.

4.15.3 The Bidder shall for all Systems, sub-Systems and Equipment installed as part of the Project define nomenclature and asset Componentization structures according the PRASA standards.

4.16 Inspections, Interim Tests, Tests on Completion, Commissioning, Completion, Taking Over and Defects After Taking Over

Materials, samples, facilities, logistics and amenities required for; inspections, interim tests, Tests on Completion, Commissioning, Completion and Taking Over:

4.16.1 PRASA will conduct inspections on all assembled material before installation of these items will be allowed.

The Bidder shall, for all PRASA representatives (minimum 15 personnel or at any given instance as instructed by PRASA) and at the Bidder’s cost, uncompromisingly provide all unlimited:

- Plant and Materials
- Facilities
- Samples
- Equipment
- Travel (air and rail and road), Accommodation, meals and incidentals (if more than 50 kilometres outside the contract site location)
- Unfettered office and internet access and any other means required for PRASA to attend and/or perform any local and international; inspections, Validation, Factory Acceptance Testing (“FAT”), Site Acceptance Testing (“SAT”), Tests on Completion, Commissioning, Completion and Taking Over of the Works by PRASA (in Sections thereafter the whole of the Works)

4.16.2 Commissioning and Taking Over procedures:

- a) Tests on Completion, Commissioning and Taking Over shall be done according to the procedures described in the GTRs and MTR or as otherwise instructed in writing by PRASA throughout the duration of the Contract.
- b) After (Sectional) Completion, the Bidder shall, at a minimum, arrange a Taking Over inspection to allow PRASA certification of (Sectional) Completion subject to a Defects list or as otherwise instructed in writing by PRASA.
- c) The Bidder shall, without hesitation, ensure that PRASA has a full, accurate and unredacted dossier of all Project information (including but not limited to as-built

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documents and drawings) that represent the status of the completed Works, in all formats requested by PRASA.

4.16.3 Work to be performed by the Completion Date:

- a) On or before the date of completion of a Section of the Works and then the Completion Date of the whole of the Works, the Bidder shall do all thing necessary to ensure that the Section of the Works and the whole of the Works respectively is delivered to the absolute satisfaction of PRASA, including the work listed below shall be done by completion of each Sectional thereafter comprehensively combined by the Completion Date.
- b) PRASA shall not certify Completion until the whole of the Works, including all the work listed below, is completed to the absolute satisfaction of PRASA and free of all Defects which shall, in PRASA’s opinion, prevent PRASA and other Project beneficiaries from using the Works:

NO	ITEM OF WORK	TO BE COMPLETED WHEN
1	As-built drawings, quality records, and other documentation as requested by PRASA	By the date of completion of each Section thereafter a combined submission by the Completion Date
2	Final Testing and Commissioning	See Testing and Commissioning requirements and programming constraints in the GTRs and MTR
3	Correction of all Defects notified by the end of the Bidder's post Commissioning performance Testing	Within 30 days from the end of the Bidder’s post Commissioning performance Testing and holistically by the Completion Date

4.16.4 Use of the Works before Completion has been certified:

- a) PRASA may use the following Sections of the Works before Completion is certified which does not constitute Taking Over by PRASA:
 - After each Section is commissioned and is handed back to PRASA to continue train operations in the interim until issuance of Performance Certificate
 - Any inspections done to allow PRASA’s use of commissioned Sections of the Works are done to aid prompt correction of Defects and should not be confused with Taking Over procedures.

4.16.5 Access given by PRASA for correction of Defects:

- a) The Bidder shall comply with all constraints and procedures stated as requested throughout the RFP or as otherwise instructed in writing by PRASA and where PRASA arranges access for the Bidder after Completion.

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4.17 Decommissioning

- 4.17.1 The Bidder shall decommission and dismantle all unusable Equipment within 21 working days after Commissioning of the new Equipment, as requested throughout the RFP or as otherwise instructed in writing by PRASA.
- 4.17.2 The Bidder shall take care to not damage serviceable Equipment during the dismantling and transportation process.
- 4.17.3 The Bidder shall capture all decommissioned Equipment and associated information on the standard PRASA Asset Disposal form.
- 4.17.4 The Bidder shall deliver all Equipment, deemed serviceable to the Western Cape PRASA region, to a PRASA storage facility within 100 km of the Site(s) as instructed by PRASA.
- 4.17.5 The Bidder shall either deliver all scrap Equipment to a PRASA storage facility within 100 km of the Site(s) or dispose of all scrap Material in an environmentally friendly way as per instruction of PRASA. The Bidder shall submit a method statement for the disposal of Material to PRASA for acceptance prior to starting the disposal process.