

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 2.5:**  
**Particular Technical Requirements**  
**Maitland indoor and outdoor works**

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## 1 GENERAL

### 1.1 Purpose of the Document

1.1.1 The purpose of this document is to provide the Particular Technical Requirements (“PTR”) which forms 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.

### 1.2 Executive Overview

1.2.1 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 Location and Minimum Extent of the Works

1.3.1 The boundaries of the Site are Western Cape region rail servitude for the section:

- a) Maitland AR
- b) Maitland to Koeberg lineside signalling equipment
- c) Maitland / Ndabeni to Hazendal lineside signalling equipment
- d) Maitland to Woltemade lineside signalling equipment.

1.3.2 The extent of the Site is approximately 8.6 km and includes at least:

- a) 1 Installation.

1.3.3 The Site(s) includes at least the following installations located in the Signal Apparatus Room (“AR”).

- a) Maitland

1.3.4 Any other Site(s) and Works, activities and resources required to achieve a fully integrated, functional, complete, and future-proofed RSS and meet any other requirements and specifications as requested throughout the RFP or as otherwise instructed in writing by PRASA.

1.3.5 Below shows the station Maitland indoor and outdoor works:

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Figure 1 – Maitland Area Lineside Signal Equipment

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## 2 MINIMUM SYSTEM REQUIREMENTS

**Restoration Scope summary. Site Detail below.**

**All quantities to be verified by the bidder**

- Railway Signalling Systems
  - Restore the PRASA Railway Signalling System according to the approved As-built drawings provided by PRASA.
  - Restore all OEM FEC systems and sub-systems in its entirety.
  - Restore all signalling power equipment
  - Restore the OP and IDF racks and equipment
  - Restore all OEM Axle counter systems with detection heads.
  - Restore BSG9i Point machines.
  - Restore Lineside Signals with LED clusters.
  - Restore Cable infrastructure inclusive of SCCA4, SCCA5 and signalling cables and 48 Underground (OFC 2) Fibre Cable as per as-built cable plans.
  - Replace UPS with battery back-up with Lithium type solution.
  - All quantities to be verified by Bidders. No “free-issue” material will be made available by PRASA for the Works in this package.
- Telecommunication
  - Restore the optical transmission network to achieve the full redundancy and functionality of the RSS to the required reliability and availability specifications.
  - Install Telecoms network equipment complete with cabinet to the same design and functionality that was validated and approved by PRASA for the Western Cape Re-Signalling project.
  - Implement an access control and intruder alarm System that complies with PRASA requirements .
  - All quantities to be verified by Bidders.
- Electrical
  - Restore, test and commission the change-over panel as per the approved PRASA drawings.

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## 2.1 Maitland AR (Indoor works)

### 2.1.1 Signalling

- (a) Supply, install, test and commission the equipment as per the original OEM electronic interlocking signalling system that was validated and approved by PRASA for the Western Cape Re-Signalling project.
- (b) Replace UPS and battery back-up system with Lithium type solution.

### 2.1.2 Telecommunication

- (a) Supply and install complete new telecommunication equipment as per telecommunication design documentation, including Testing and Commissioning.
- (b) OEM technology or Equivalent Switches to be provided must be able to be managed and monitored from the existing Network Management System (NMS) monitoring software inclusive of all required licenses. Lifetime licenses feature applicable.
- (c) Restore the OEM burglar alarm and access control or equivalent systems that are compatible, inclusive of the Time Distribution System, that can be managed and monitored from the existing Network Management System (NMS) monitoring software inclusive of all required licenses. Lifetime licenses feature applicable.

### 2.1.3 Electrical

- (a) Install, test and commission the change-over panel as per the approved PRASA drawings.

## 2.2 Maitland / Ndabeni – Hazendal Lineside Equipment

### 2.2.1 Signalling

- (a) Restoration/Replacement of Lineside signalling equipment.
- (b) Replace Cable infrastructure inclusive of SCCA4, SCCA5 signalling cables as per as-built cable plans
- (c) Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Maitland AR and the Maitland - Hazendal interface junction point as per the as-built cable plans.

### 2.2.2 Telecommunication

- (a) N/A.

### 2.2.3 Electrical

- (a) N/A.

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## 2.3 Maitland – Koeberg Lineside Equipment

### 2.3.1 Signalling

- (a) Restoration/Replacement of Lineside signalling equipment.
- (b) Restore Cable infrastructure inclusive of SCCA4, SCCA5 signalling cables as per as-built cable plans
- (c) Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Eersterivier AR to Faure AR and Eersterivier AR to Lynedoch AR as per as-built cable plans.

### 2.3.2 Telecommunication

- (a) N/A.

### 2.3.3 Electrical

- (a) N/A.

## 2.4 Maitland – Woltemade Lineside Equipment

### 2.4.1 Signalling

- (a) Restoration/Replacement of Lineside signalling.
- (b) Replace Cable infrastructure inclusive of SCCA4, SCCA5 signalling cables as per as-built cable plans
- (c) Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Maitland AR and the Maitland - Woltemade interface junction point as per the as-built cable plans.

### 2.4.2 Telecommunication

- (a) N/A.

### 2.4.3 Electrical

- (a) N/A.