

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 2.1:
Particular Technical Requirements
Cape Town to Simonstown

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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) Cape Town to Simonstown (Suburban Line)

1.3.2 The extent of the Site is approximately 36.15 km and includes at least:

a) 12 Installations.

b) Below shows the section from Cape Town to Simonstown:

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

a) Cape Town (Woodstock incl.)

b) Salt River

c) Mowbray

d) Newlands

e) Wynberg

f) Plumstead

g) Dieprivier

h) Retreat

i) Steenberg

j) Muizenberg

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- k) Fish Hoek
- l) Simonstown

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.

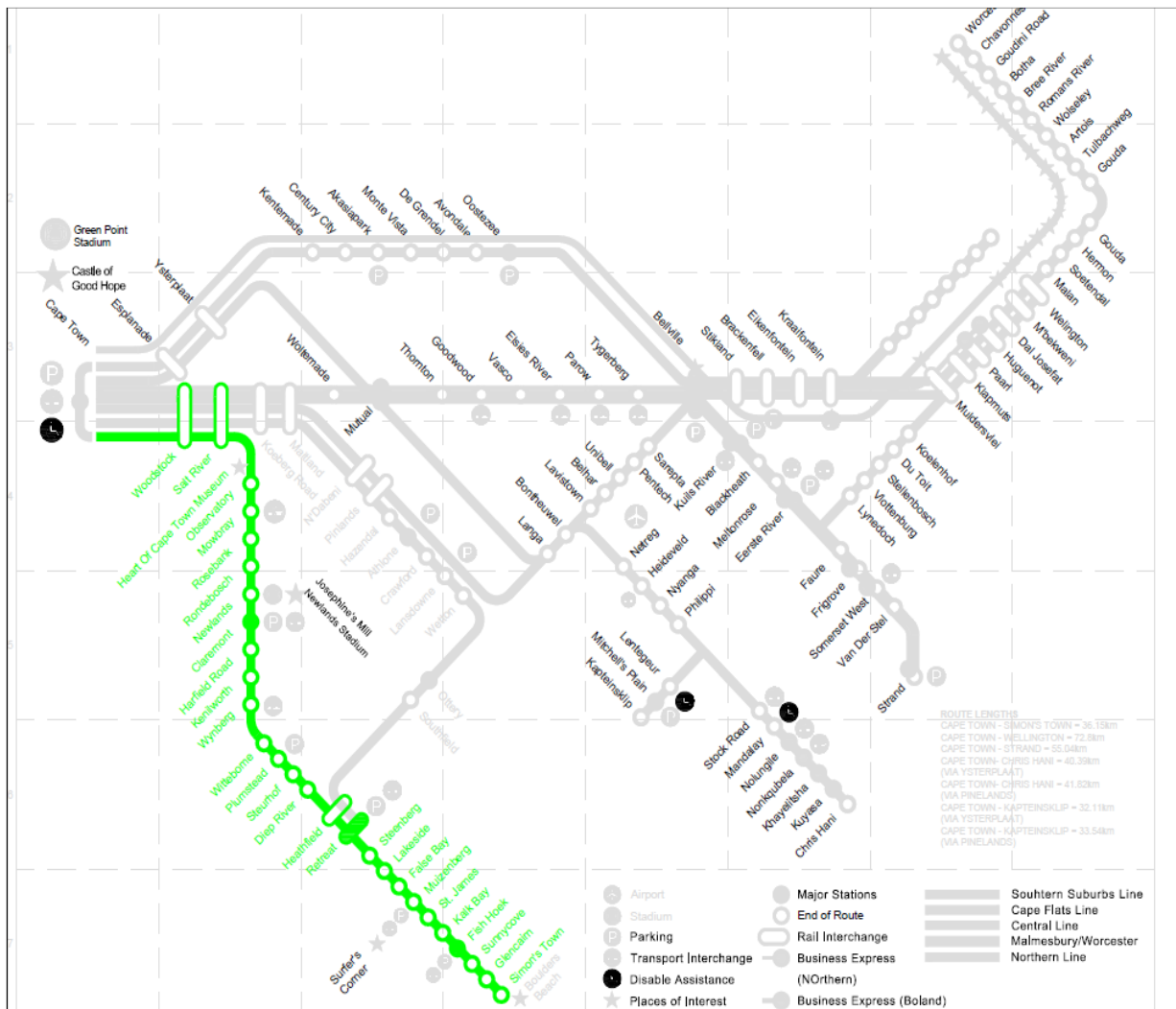


Figure 1 - Southern Suburban line sections

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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
 - Replace UPS with battery back-up with Lithium type solution.
 - Install / Replace, where required, the Underground Signalling 48 Core Fibre Cable (OFC 2) as per as-built cable plans between CTC, SERs and ARs to enable a fully functional RSS. The restored RSS shall, at a minimum, comply with all relevant Standards, Specifications, Regulations and Procedures as specified throughout the RFP.
- Telecommunication
 - Restore the optical transmission network to achieve the full redundancy and functionality of the RSS to the required reliability and availability specifications.
 - Install / Replace, where required the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1) as per regional Fibre Optic Link Plans to enable a fully functional RSS, Transmission and Telephone System for operational applications.
 - All quantities to be verified by Bidders.
- Electrical
 - Install Electrical 11kV manual operated link switches.
 - Install connection point for mobile Generators at SERs/Ars
 - Restore, test and commission the alternative supply and associated feeder cable

2.1 Cape Town

2.1.1 Signalling

- (a) Replace UPS and battery back-up system at the SER with Lithium type solution.
- (b) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Cape Town SER to the interface junction point towards Salt River.

2.1.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Cape Town to Salt River

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- 2.1.3 Electrical
 - (a) Install connection point at Cape Town SER for mobile Generator.

2.2 Salt River

- 2.2.1 Signalling
 - (a) N/A. Lineside signalling scope in Annexure2.2.
- 2.2.2 Telecommunication
 - (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Salt River to Mowbray.
- 2.2.3 Electrical
 - (a) N/A

2.3 Mowbray

- 2.3.1 Signalling
 - (a) N/A.
- 2.3.2 Telecommunication
 - (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Mowbray and Newlands.
- 2.3.3 Electrical
 - (a) Install connection point for mobile Generator at AR.
 - (b) Install Electrical 11kV manual operated link switch.

2.4 Newlands

- 2.4.1 Signalling
 - (a) N/A.
- 2.4.2 Telecommunication
 - (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Newlands to Wynberg.
- 2.4.3 Electrical
 - (a) Install connection point for mobile Generators at AR

2.5 Wynberg

- 2.5.1 Signalling

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- (a) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Wynberg to Plumstead.

2.5.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Wynberg to Plumstead.

2.5.3 Electrical

- (a) Install connection point for mobile Generator at the AR.

2.6 Plumstead

2.6.1 Signalling

- (a) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Plumstead to Dieprivier.

2.6.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Plumstead to Dieprivier.

2.6.3 Electrical

- (a) Install connection point at AR for mobile Generator.

2.7 Dieprivier

2.7.1 Signalling

- (a) Replace UPS and battery back-up system with Lithium type solution.
- (b) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Dieprivier to Steenberg.
- (c) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels between Dieprivier to the interface junction point towards Southfield.

2.7.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Dieprivier to Steenberg.

2.7.3 Electrical

- (a) Install connection point at AR for mobile Generator.

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2.8 Retreat

2.8.1 Railway Signalling Systems

- (a) Replace UPS with battery back-up with Lithium type solution.

2.8.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Dieprivier to Steenberg.

2.8.3 Electrical

- (a) Install connection point at SER for mobile Generator.

2.9 Steenberg

2.9.1 Signalling

- (a) Install / Replace the Underground Signalling 48 Core Fibre Cable (OFC 2), including patch panels, between Steenberg to Muizenberg.

2.9.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Steenberg to Muizenberg.

2.9.3 Electrical

- (a) Install connection point at AR for mobile Generator.
- (b) Install 2 x Electrical 11kV manual operated link switches.

2.10 Muizenberg

2.10.1 Signalling

- (a) N/A

2.10.2 Telecommunication

- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Muizenberg to Fish Hoek.

2.10.3 Electrical

- (a) Install connection point at AR for mobile Generator.

2.11 Fish Hoek

2.11.1 Signalling

- (a) N/A

2.11.2 Telecommunication

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- (a) Install / Replace the Telecommunication 48 Core Aerial Optic Fibre Cable (OFC 1), including patch panels, between Fish Hoek to Simonstown.

2.11.3 Electrical

- (a) Install connection point at AR for mobile Generator.

2.12 Simonstown

2.12.1 Signalling

- (a) Replace UPS and battery back-up system with Lithium type solution with 8 hour backup capacity at full load.

2.12.2 Telecommunication

- (a) N/A.

2.12.3 Electrical

- (a) Install connection point at AR for mobile Generator.