

Annexure 2.2:
PTR Gauteng East

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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 form part of the minimum Requirements of the Passenger Rail Agency of South Africa (“PRASA”) for the Gauteng (“GP”) East related Works that form part of the planning, design, supply, construction, installation, testing, commissioning and maintenance of a new fully integrated, functional, complete and future-proofed expanded PRASA OTN in PRASA’s GP and Western Cape (“WC”) service regions (“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 the Gauteng East region rail servitude.

1.3.2 Figure 1.3.1 below gives a layout of the Gauteng South PRASA Network, which includes the Gauteng East region.

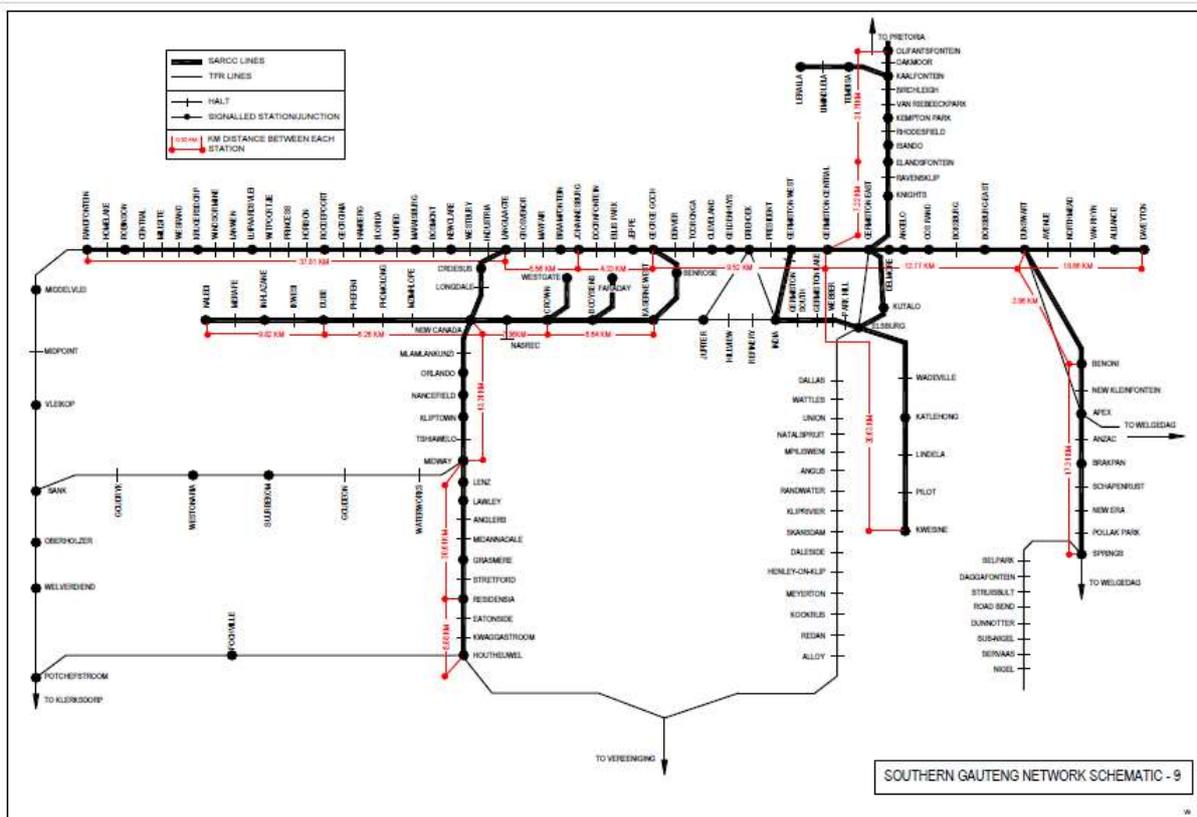


Figure 1.3.1: Gauteng South Network

2 MINIMUM REQUIREMENTS

2.1 General

2.1.1 The OTN-1 shall at a minimum be connected as illustrated in Figure 2.1 below.

2.1.2 The OTN-2 shall at a minimum be connected in the Ticket Office (a.k.a. Passenger Station Equipment Room), IT Data Centre, Traction Substation and Security Equipment Room.

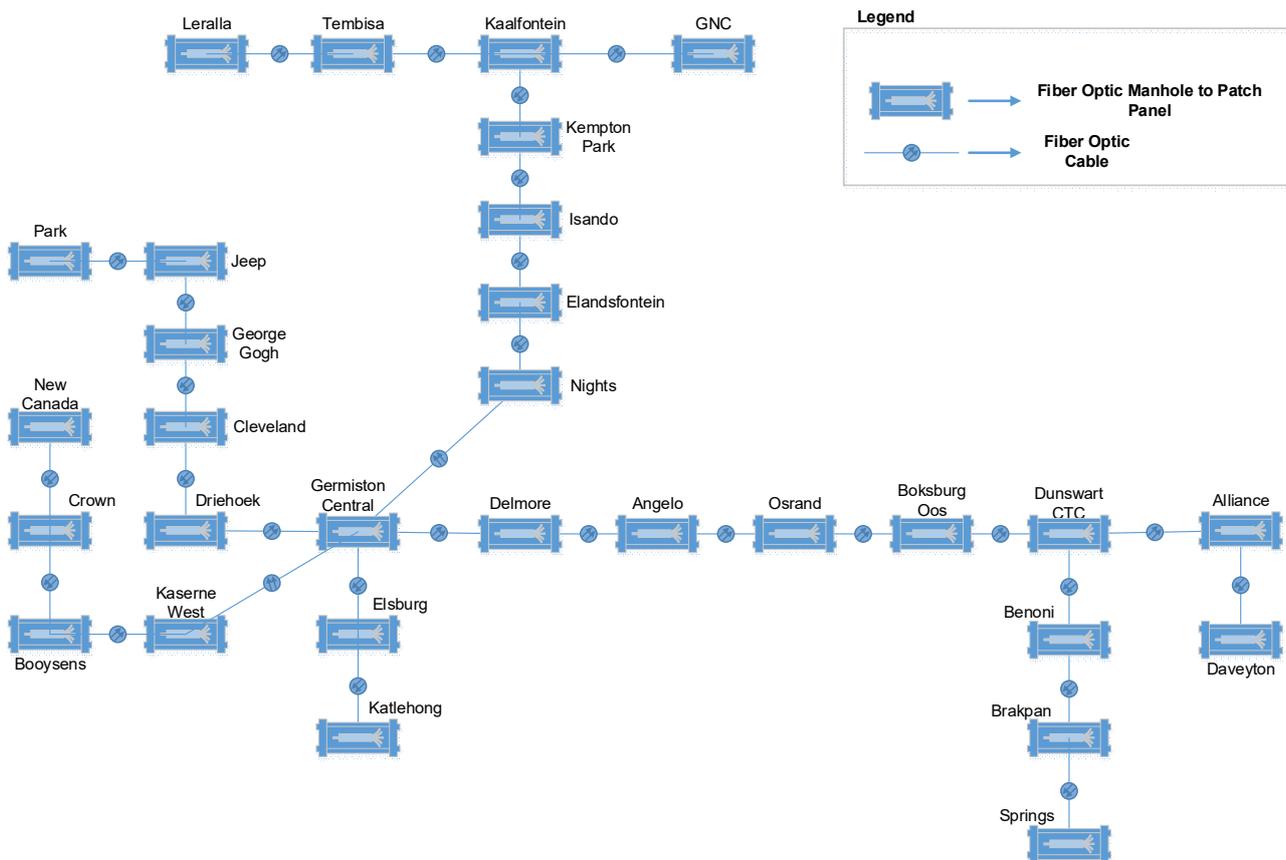


Figure 2.1: Concept Gauteng East SER Optical Transmission Network Layout

2.2 Kaalfontein SER – Leralla SER

2.2.1 Install new OFC between Kaalfontein SER and Leralla SER according to the requirements in the RFP.

2.2.2 Terminate the new OFC to the following sites according to the standards described in the RFP:

- a) Kaalfontein SER.
- b) Kaalfontein GSM-R.
- c) Kaalfontein Sub-Station.
- d) Tembisa SER.

- e) Tembisa Ticket Office.
- f) Lindela Ticket Office.
- g) Lindela GSM-R.
- h) Leralla SER.
- i) Leralla Ticket Office.

2.3 Kaalfontein SER – Germiston Central SER

2.3.1 Install new OFC between Kaalfontein SER and Germiston Central SER according to the requirements in the RFP.

2.3.2 Terminate OTN-1 and OTN-2 to Kaalfontein SER

2.3.3 Terminate the new OFC to the following sites according to the standards described in the RFP:

- a) Kaalfontein SER.
- b) Kaalfontein Ticket Office.
- c) Birchleigh Sub-Station.
- d) Birchleigh Ticket Office.
- e) Birchleigh GSM-R.
- f) Van Riebeeck Ticket Office.
- g) Kempton Park Ticket Office.
- h) Kempton Park Sub-Station.
- i) Kempton Park CTC.
- j) Kempton Park SER.
- k) Kempton Park GSM-R.
- l) Rhodesfield Sub-Station.
- m) Rhodesfield Ticket Office.
- n) Rhodesfield GSM-R.
- o) Isando Ticket Office.
- p) Isando SER.
- q) Elandsfontein GSM-R.
- r) Elandsfontein Sub-Station.
- s) Elandsfontein SER.
- t) Elandsfontein Depot.
- u) Elandsfontein Ticket Office.
- v) Elandsfontein Train Operations.

- w) Ravensklip Ticket Office.
- x) Knights Ticket Office.
- y) Knights Sub-Station.
- z) Knights SER.
- aa) Germiston Central GSM-R.
- bb) Germiston Central Ticket office.
- cc) Germiston Central Data Centre.
- dd) Germiston Central SER.

2.4 Germiston Central SER – Dunswart SER

- 2.4.1 Install new OFC between Germiston Central SER and Dunswart SER according to the requirements in the RFP.
- 2.4.2 Terminate OTN-1 and OTN-2 to Germiston Central SER
- 2.4.3 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Germiston Central SER.
 - b) Germiston GSM-R.
 - c) Delmore SER.
 - d) Delmore Ticket Office.
 - e) Angelo SER.
 - f) Angelo Ticket Office.
 - g) Angelo Sub-Station.
 - h) Oos Rand SER.
 - i) Oos Rand Ticket Office.
 - j) Oos Rand Sub-Station.
 - k) Boksburg GSM-R.
 - l) Boksburg Ticket Office.
 - m) Boksburg Oos SER.
 - n) Boksburg Oos Ticket Office.
 - o) Boksburg Oos Sub-Station.
 - p) Dunswart Sub-Station.
 - q) Dunswart SER.
 - r) Dunswart Ticket Office 1.
 - s) Dunswart Ticket Office 2.

2.5 Dunswart SER – Daveyton SER

- 2.5.1 Install new OFC between Dunswart SER and Daveyton SER according to the requirements in the RFP.
- 2.5.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
- a) Dunswart SER.
 - b) Northmead Ticket Office 1.
 - c) Van Rhyn GSM-R.
 - d) Van Rhyn Sub-Station.
 - e) Van Rhyn Ticket Office.
 - f) Alliance Sub-Station 3kV and 6.6 kV.
 - g) Alliance Ticket Office.
 - h) Alliance SER.
 - i) Daveton Ticket Office.
 - j) Daveyton SER.

2.6 Dunswart SER – Springs SER

- 2.6.1 Install new OFC between Dunswart SER and Springs SER according to the requirements in the RFP.
- 2.6.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
- a) Dunswart SER.
 - b) Benoni GSM-R.
 - c) Benoni Ticket Office.
 - d) Benoni SER.
 - e) Apex 6.6 kV Sub-Station.
 - f) Apex SER.
 - g) Apex Ticket Office.
 - h) Apex 3 kV Sub-Station.
 - i) Brakpan GSM-R.
 - j) Brakpan Ticket Office.
 - k) Brakpan SER.
 - l) Schapenrust Ticket Office.
 - m) Schapenrust Sub-Station.

- n) New Era Ticket Office.
- o) Pollak Park Ticket Office.
- p) Pollak Park 3 kV Sub-Station.
- q) Springs SER.
- r) Springs GSM-R.
- s) Springs Ticket Office.
- t) Springs 6.6kV Sub-Station.

2.7 Germiston Central SER – Elsburg SER

- 2.7.1 Install new OFC between Germiston Central SER and Elsburg SER according to the requirements in the RFP.
- 2.7.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Germiston Central SER.
 - b) Germiston East SER.
 - c) Kutalo SER.
 - d) Elsburg GSM-R.
 - e) Elsburg SER.
 - f) Elsburg Ticket Office.

2.8 Elsburg SER – Kwesine SER

- 2.8.1 Install new OFC between Elsburg SER and Kwesine SER according to the requirements in the RFP.
- 2.8.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Elsburg SER.
 - b) Wadeville GSM-R.
 - c) Wadeville Ticket Office.
 - d) Katlehong Sub-Station.
 - e) Katlehong Ticket Office.
 - f) Katlehong SER.
 - g) Lindela GSM-R.
 - h) Lindela Ticket Office.
 - i) Pilot Ticket Office.
 - j) Kwesine Sub-Station.

- k) Kwesine Ticket Office.
- l) Kwesine SER.

2.9 Germiston Central SER – George Gogh SER

2.9.1 Install new OFC between Germiston Central SER and George Gogh SER according to the requirements in the RFP.

2.9.2 Terminate the new OFC to the following sites according to the standards described in the RFP:

- a) Germiston Central SER.
- b) Germiston Central Sub-Station.
- c) Driehoek Ticket Office.
- d) Driehoek GSM-R.
- e) Driehoek SER.
- f) Driehoek Sub-Station.
- g) Geldenhuys SER.
- h) Geldenhuys Sub-Station.
- i) Cleveland GSM-R.
- j) Cleveland Ticket Office.
- k) Cleveland SER.
- l) Toronga Ticket Office.
- m) Denver Ticket Office.
- n) George Gogh SER.
- o) George Gogh Sub-Station.
- p) George Gogh Ticket Office.
- q) George Gogh GSM-R.

2.10 George Gogh SER – Park Station SER

2.10.1 Install new OFC between George Gogh SER and Park Station SER according to the requirements in the RFP.

2.10.2 Terminate the new OFC to the following sites according to the standards described in the RFP:

- a) George Gogh SER.
- b) Jeppe SER.
- c) Jeppe Sub-Station.
- d) Jeppe Ticket Office.

- e) Doornfonten Ticket Office.
- f) Doornfonten GSM-R.
- g) Park Station SER.
- h) Park Station Ticket Office.
- i) Umjantshi Building.
- j) Park Station Sub-Station.

2.11 Germiston Central SER – Kaserne West SER

- 2.11.1 Install new OFC between Germiston Central SER and Kaserne West SER according to the requirements in the RFP.
- 2.11.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Germiston Central.
 - b) Germiston West SER.
 - c) Germiston West Sub-Station.
 - d) President Ticket Office.
 - e) India Station (Termination point to be advised).
 - f) Jupiter Station (Termination point to be advised).
 - g) Benrose SER.
 - h) Kaserne West GSM-R.
 - i) Kaserne West SER.
 - j) Kaserne West Sub-Station.
 - k) Kaserne West Ticket Office.

2.12 Kaserne West SER – George Gogh SER

- 2.12.1 Install new OFC between Kaserne West SER and George Gogh SER according to the requirements in the RFP.
- 2.12.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Kaserne West SER.
 - b) Benrose SER.
 - c) George Gogh SER.

2.13 Kaserne West SER – New Canada SER

2.13.1 Install new OFC between Kaserne West SER and New Canada SER according to the requirements in the RFP.

2.13.2 Terminate the new OFC to the following sites according to the standards described in the RFP:

- a) Kaserne West SER.
- b) Village Main SER.
- c) Village Main Ticket Office.
- d) Faraday SER.
- e) Faraday Ticket Office.
- f) Booyens 6.6 kV Sub-Station.
- g) Booyens Ticket Office.
- h) Booyens 3 kV Sub-Station.
- i) Westgate Ticket Office.
- j) Westgate SER.
- k) Westgate Sub-Station.
- l) Crown 3 kV Sub-Station.
- m) Crown Ticket Office.
- n) Crown GSM-R.
- o) Crown SER.
- p) Crown 6.6 kV Sub-Station.
- q) Nasrec North SER.
- r) Nasrec SER.
- s) Nasrec Ticket Office.
- t) Nasrec GSM-R.
- u) New Canada Sub-Station.
- v) New Canada Data Center.
- w) New Canada SER.