

Annexure 2.1:

PTR Gauteng North

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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”) North 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 North region rail servitude.
- 1.3.2 Figure 1.3.1 below gives a layout of the Gauteng North PRASA Network.

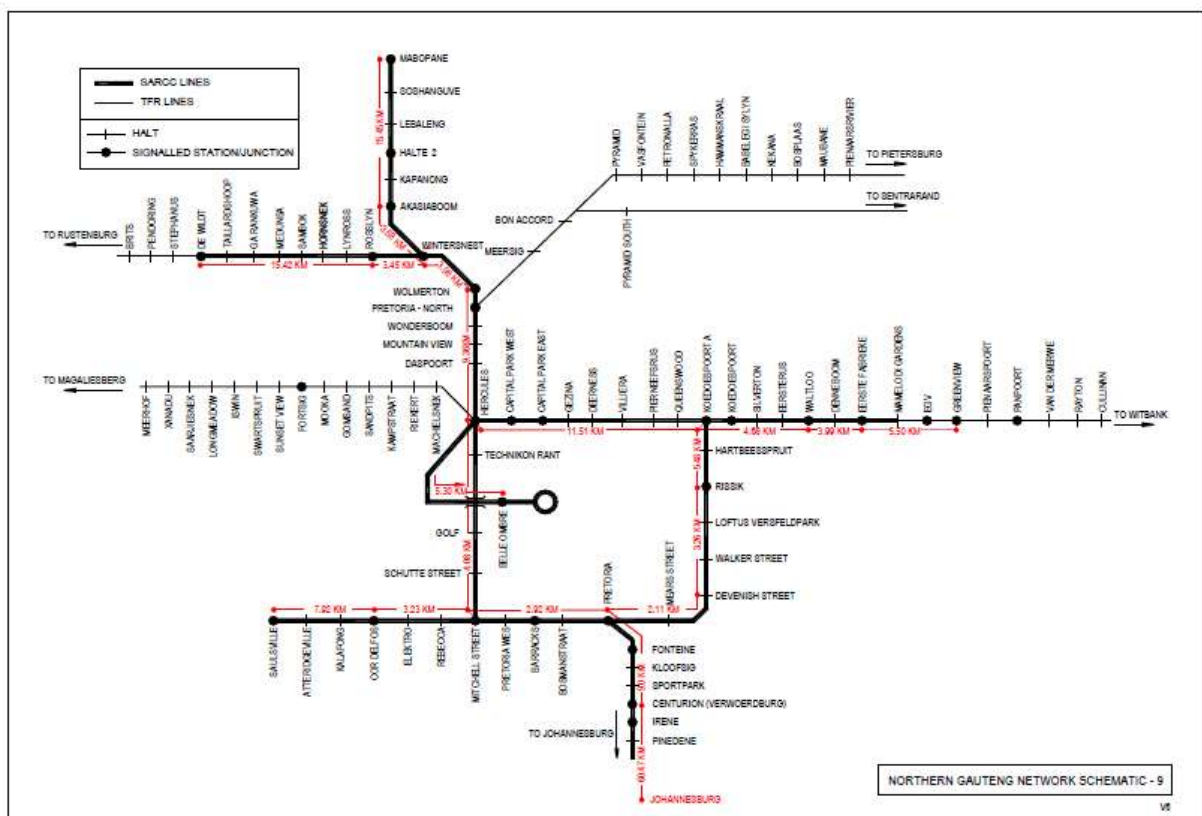


Figure 1.3.1: Gauteng North Network

2 MINIMUM REQUIREMENTS

2.1 General

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

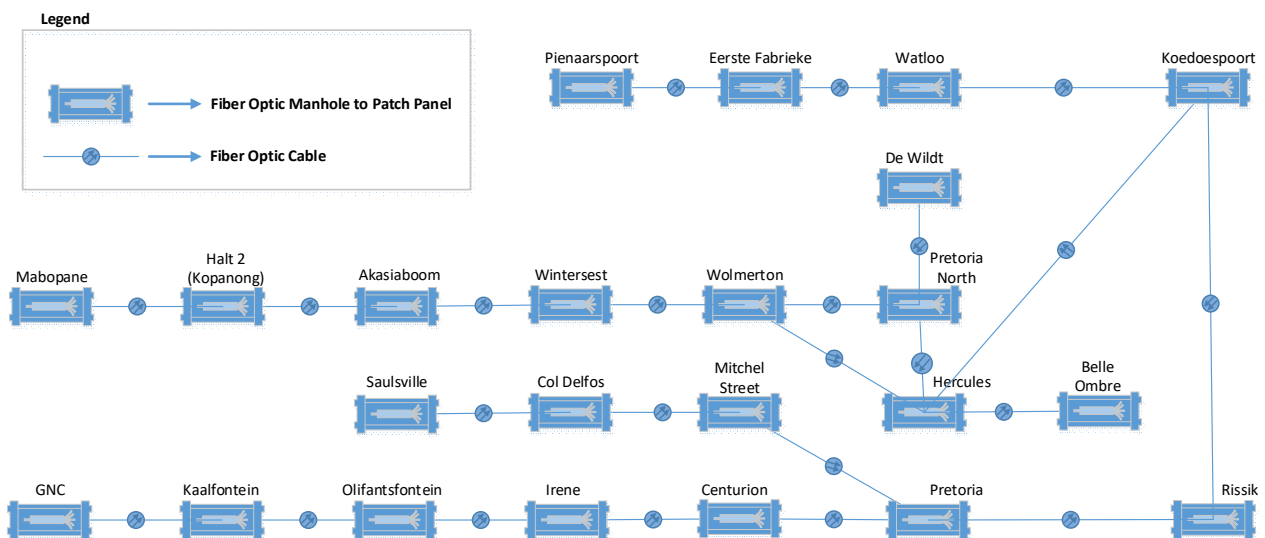


Figure 2.1.1: Concept Gauteng North SER Optical Transmission Network Layout

2.2 Gauteng Nerve Centre (“GNC”) – Pretoria SER

- 2.2.1 Install new OFC between Gauteng Nerve Centre (“GNC”) and Pretoria SER according to the requirements in the RFP.
- 2.2.2 Terminate all new OFC at the GNC.
- 2.2.3 Terminate the new OFC to the following sites according to the standards described in the RFP:
- Kaalfontein SER.
 - Kaalfontein GSM-R.
 - Kaalfontein Sub-Station.
 - Kaalfontein Ticket Office.
 - Oakmore Ticket Office.
 - Oakmore Sub-Station.
 - Olifantsfontein Ticket Office.
 - Olifantsfontein SER.
 - Olifantsfontein GSM-R.

- j) Olifantsfontein Sub-Station.
- k) Pinedene Sub-Station.
- l) Pinedene GSM-R.
- m) Irene Ticket Office.
- n) Irene SER.
- o) Irene GSM-R.
- p) Centurion Ticket Office.
- q) Centurion SER.
- r) Centurion GSM-R.
- s) Centurion Sub-Station.
- t) Sports Park Ticket Office.
- u) Kloofsig Ticket Office.
- v) Fonteine SER.
- w) Fonteine GSM-R.
- x) Pretoria Ticket Office.
- y) Pretoria GSM-R.
- z) Pretoria Data Centre.
- aa) Pretoria Sub-Station.
- bb) Pretoria SER.

2.3 Pretoria SER – Koedoespoort SER

- 2.3.1 Install new OFC between Pretoria SER and Koedoespoort SER according to the requirements in the RFP.
- 2.3.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Pretoria SER.
 - b) Hatfield Data Centre.
 - c) Devenish GSM-R.
 - d) Rissik SER.
 - e) Rissik GSM-R.
 - f) Rissik Ticket Office.
 - g) Rissik Sub-Station.
 - h) Koedoespoort A SER.
 - i) Koedoespoort GSM-R.

- j) Koedoespoort Ticket Office.
- k) Koedoespoort Sub-Station.
- l) Koedoespoort SER.

2.4 Koedoespoort SER – Pienaarspoort SER

- 2.4.1 Install new OFC between Koedoespoort SER and Pienaarspoort SER according to the requirements in the RFP.
- 2.4.2 Terminate the new OFC to the following sites according to the standards described in the RFP:
 - a) Koedoespoort SER.
 - b) Silverton Ticket Office.
 - c) Eersterus Ticket Office.
 - d) Watloo Ticket Office.
 - e) Watloo GSM-R.
 - f) Denneboom Ticket Office.
 - g) Eerstefabrieke Sub-Station.
 - h) Eerstefabrieke Ticket Office.
 - i) Eerstefabrieke SER.
 - j) Eerstefabrieke GSM-R.
 - k) Mamelodi Ticket Office.
 - l) Greenview SER.
 - m) Greenview GSM-R.
 - n) Greenview Ticket Office (make provision for future connection middle of platforms).
 - o) Pienaarspoort Ticket Office.
 - p) GNP SER.
 - q) Pienaarspoort SER.

2.5 Koedoespoort SER – Hercules SER

- 2.5.1 Install new OFC between Koedoespoort SER and Hercules 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) Koedoespoort SER.
 - b) Koedoespoort A SER.

- c) Capital Park East A Sub-Station.
- d) Capital Park East SER.
- e) Capital Park East GSM-R.
- f) Capital Park Depot.
- g) Capital Park West SER.
- h) Hercules SER.

2.6 Hercules SER – Belle Ombre SER

- 2.6.1 Install new OFC between Hercules SER and Belle Ombre 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) Hercules SER.
 - b) Belle Ombre Ticket Office.
 - c) Belle Ombre Sub-Station.
 - d) Belle Ombre SER.

2.7 Hercules SER – Pretoria North SER

- 2.7.1 Install new OFC between Hercules SER and Pretoria North 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) Hercules SER.
 - b) Daspoort Ticket Office.
 - c) Mountain View Ticket Office.
 - d) Mountain View GSM-R.
 - e) Pretoria North Ticket Office.
 - f) Pretoria North Sub-Station.
 - g) Pretoria North GSM-R.
 - h) Pretoria North SER.

2.8 Pretoria North SER – Wintersnest SER

- 2.8.1 Install new OFC between Pretoria North SER and Wintersnest 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) Pretoria North SER.
- b) Wolmerton Sub-Station.
- c) Wolmerton Ticket Office.
- d) Wolmerton GSM-R.
- e) Wolmerton SER.
- f) Winterneest Ticket Office.
- g) Winterneest Sub-Station.
- h) Winterneest SER.

2.9 Winterneest SER – Mabopane SER

- 2.9.1 Install new OFC between Winterneest SER and Mabopane 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) Wintersneest SER.
 - b) Akasiaboom Sub-Station.
 - c) Akasiaboom Ticket Office.
 - d) Akasiaboom SER.
 - e) Kopanong Ticket Office.
 - f) Kopanong Sub-Station.
 - g) Kopanong SER.
 - h) Halt 2 GSM-R.
 - i) Soshanguve Ticket East Office.
 - j) Soshanguve Ticket West Office.
 - k) Soshanguve GSM-R.
 - l) Mabopane SER.
 - m) Mabopane GSM-R.
 - n) Mabopane Ticket Office.
 - o) Mabopane Sub-Station.

2.10 Winterneest SER – De Wildt SER

- 2.10.1 Install new OFC between Winterneest SER and De Wildt 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) Wintersnest SER.
- b) Rosslyn SER.
- c) Rosslyn GSM-R.
- d) Rosslyn Sub-Station.
- e) Lynross Ticket Office.
- f) Medunsa Ticket Office.
- g) Ga-Rankuwa Ticket Office.
- h) Ga-Rankuwa GSM-R.
- i) Talliashoop Ticket Office.
- j) De Wildt Sub-Station.
- k) De Wildt Ticket Office.
- l) De Wildt SER.

2.11 Hercules SER – Mitchell Street SER

- 2.11.1 Install new OFC between Hercules SER and Mitchell Street 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) Hercules SER.
 - b) Technikon Rand GSM-R.
 - c) Mitchell Street SER.
 - d) Mitchell Street Sub Station.

2.12 Mitchell Street SER – Pretoria SER

- 2.12.1 Install new OFC between Mitchell Street SER and Pretoria 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) Mitchell Street SER.
 - b) Barracks SER.
 - c) Bosman Ticket Office.
 - d) Pretoria Data Centre.
 - e) Pretoria SER.
 - f) Pretoria Ticket Office.

2.13 Mitchell Street SER – Saulsville SER

- 2.13.1 Install new OFC between Mitchell Street SER and Saulsville 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) Mitchell Street SER.
 - b) Mitchell Street Sub Station.
 - c) Cor Delfos Sub-Station.
 - d) Cor Delfos SER.
 - e) Cor Delfos Ticket Office.
 - f) Kalafong Ticket Office.
 - g) Atteridgeville Ticket Office.
 - h) Saulsville SER.
 - i) Saulsville GSM-R.
 - j) Saulsville Ticket Office.
 - k) Saulsville Sub-Station.