CITY OF TSHWANE METROPOLITAN MUNICIPALITY

TENDER NUMBER:

EED 20-2023/24

TENDER DESCRIPTION:	**TENDER FOR THE SUPPLY, SUPPORT, UPGRADING AND MAINTENANCE OF SUBSTATIONS MULTIPLEXERS AND NETWORK MANAGEMENT SYSTEM, AS AND WHEN REQUIRED FOR THE PERIOD OF (3) THREE**

NAME OF BIDDER: ……..

CSD NUMBER: …….....

VENDOR NUMBER (WHERE APPLICABLE) …….

Prepared by:
City of Tshwane Metropolitan Municipality
Tshwane House
320 Madiba Street
Pretoria CBD
0002
Tel: 012 358 9999

BID CLOSING DATE	**29 FEBRUARY 2024**

Only bidders registered on the central supplier database (CSD) and with a CSD number will be considered for this tender, as this is a requirement from the National Treasury.

“Note: Bidders are required to submit electronic copies of the bid either by memory stick/USB flash drive/CD/DVD together with the hard copy of the Bid/Proposals”

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

DEPARTMENT: Energy and Electricity

Bids are hereby invited from suppliers for the following bid:

Bid number	Description	Department	Contact person	Compulsory briefing session	Closing date
EED 20-2023/24	TENDER FOR THE SUPPLY, SUPPORT, UPGRADING AND MAINTENANCE OF SUBSTATIONS MULTIPLEXERS AND NETWORK MANAGEMENT SYSTEM, AS AND WHEN REQUIRED FOR THE PERIOD OF (3) THREE	Energy and Electricity	Setshaba A. Mogane	Date:05 February 2024 Venue:190 Johan Heyns, Riviere 0082 Time: 10:00	29 February 2024 at 10:00

THE DOCUMENT IS DOWNLOADABLE ON THE TSHWANE WEBSITE (www.tshwane.gov.za) and on the E-tender portal.

Each tender shall be enclosed in a sealed envelope that bears the correct identification details and shall be placed in the tender box located at:

"Note: Bidders are required to submit electronic copies of the bid either by memory stick/USB flash drive together with the hard copy of the Bid/Proposals"

Tshwane House
320 Madiba Street
Pretoria CBD
0002

Documents must be deposited in the bid box not later than **10:00 on 29 February 2024**

Bidders must contact the following officials for any enquiries:

- Technical enquiries: Setshaba A. Mogane (012 358 5749 or setshabam@tshwane.gov.za)
- Supply chain enquiries: Mulondi Rasekgala (012 358 6636 or mulondin@tshwane.gov.za)

Bids will remain valid for a period of 90 days after the closing date.

Bids received after the closing date and time will not be considered. The City of Tshwane does not bind itself to accept the lowest or any other bid in whole or in part.

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VERY IMPORTANT NOTICE ON DISQUALIFICATIONS

A bid that does not comply with the peremptory requirements stated hereunder will be regarded as not being an "acceptable bid", and such a bid will be rejected. An "acceptable bid" means any bid which, in all respects, complies with the conditions of the bid and the specifications as set out in the bid documents, including the conditions as specified in the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) and related legislation as published in *Government Gazette 22549*, dated 10 August 2001, in terms of which provision is made for this policy.

1. If any pages have been removed from the bid document and have therefore not been submitted or if a copy of the original bid document has been submitted.

2. If the bid document is completed using a pencil or Tippex corrections were made, or any other colour ink. Only black ink must be used to complete the bid document.

3. The bidder attempts to influence or has in fact influenced the evaluation and/or awarding of the contract.

4. The bid has been submitted after the relevant closing date and time.

5. If any bidder who, during the last five years, has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.

6. The accounting officer must ensure that, irrespective of the procurement process followed, no award may be given to a person –

   (a) who is in the service of the state;

      i. if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or
      ii. who is an advisor or consultant contracted to the municipality in respect of a contract that would cause a conflict of interest.

7. Bid offers will be rejected if the bidder or any of his/her directors are listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act 12 of 2004) as a person prohibited from doing business with the public sector.

8. Bid offers will be rejected if the bidder has abused the City of Tshwane supply chain management system.

9. Failure to complete and sign the certificate of independent determination or disclosure of wrong information.

10. Duly Signed and completed MBD forms (MBD 1, 4, 5, 8 and 9) The person signing the bid documentation must be authorised to sign on behalf of the bidder. Where the signatory is not a Director / Member / Owner / Shareholder of the company, an official letter of authorization or delegation of authority should be submitted with the bid document.

11. All MBD documents fully completed (i.e. no blank spaces) and fully signed? By the authorized personnel.

12. False or incorrect declarations on any of the MBD documents will result in the rejection of the bidder.

13 It is the responsibility of the bidder to disclose in MBD4 any interest in any other related companies or business whether they are bidding for this contract. Failure to disclose this interest will result in the rejection of the bid.

14 Joint Ventures (JV) – (Only applicable when the bidder tender as a joint venture)

i. Where the bidder bid as a Joint Ventures (JV), the required or relevant documents under administrative requirements must be provided/submitted for all JV parties. (These include MBD4, MBD5, MBD8, MBD 9, CSD and/ or SARS pin, Confirmation that the bidder's municipal rates and taxes are up to date.)
ii. In addition to the above the bidder must submit a Joint Venture (JV) agreement signed by the relevant parties.
iii. It is a condition of this bid that the successful bidder will continue with same Joint Venture (JV) for the duration of the contract, unless prior approval is obtained from City of Tshwane.
iv. JV agreement must be complete, relevant and signed by all parties.

Failure to comply with the above will lead to immediate disqualification.

Bidder

CERTIFICATE OF AUTHORITY FOR SIGNATORY

Status of concern submitting tender (delete whichever is not applicable):

COMPANY/PARTNERSHIP/ONE-PERSON BUSINESS/CLOSE CORPORATION/JOINT VENTURE

A. COMPANY

If the bidder is a company, a certified copy of the resolution of the board of directors that is personally signed by the chairperson of the board, authorising the person who signs this bid to do so and to sign any contract resulting from this bid, and any other documents and correspondence in connection with this bid or contract on behalf of the company, must be submitted with this bid.

An example is shown below:

By resolution of the board of directors on ……..…….…… 20….., Mr/Ms ……..……..... has been duly authorised to sign all documents in connection with Bid Number ……..……

SIGNED ON BEHALF OF THE COMPANY: ……...

IN HIS/HER CAPACITY AS ……....

DATE: …….

SIGNATURE OF SIGNATORY: …….

WITNESSES: 1. ……..…….

2. ……..

B. PARTNERSHIP

The following particulars in respect of every partner must be furnished and signed by every partner:

Full name of partner	**Residential address**	**Signature**
…….....	……	….....
…….....	……	….....
…….....	……	….....

We, the undersigned partners in the business trading as ……....., hereby authorise ……..…… to sign this bid as well as any contract resulting from the bid and any other documents and correspondence in connection with this bid or contract on our behalf.

……	……	……
Signature	**Signature**	**Signature**
……	……	……
Date	**Date**	**Date**

C. ONE-PERSON BUSINESS

I, the undersigned, ……..... , hereby confirm that I am the sole owner of the business trading as …….

……	……
Signature	**Date**

D. CLOSE CORPORATION

In the case of a close corporation submitting a bid, a certified copy of the founding statement of such corporation shall be included with the bid with a resolution by its members, authorising a member or other official of the corporation to sign the documents and correspondence in connection with this bid or contract on behalf of the company.

An example is shown below:

By resolution of the members at the meeting on ……..……..... 20…….... at ……..……, Mr/Ms ……, whose signature appears below, has been duly authorised to sign all documents in connection with Bid Number ……..……..……

SIGNED ON BEHALF OF THE CLOSE CORPORATION: ……..

IN HIS/HER CAPACITY AS: ……..

DATE: …….

SIGNATURE OF SIGNATORY: …….

WITNESSES: **1. ……..**

2. ……..

E. CERTIFICATE OF AUTHORITY FOR JOINT VENTURES

This returnable schedule is to be completed by joint ventures.

We, the undersigned, are submitting this bid offer in joint venture and hereby authorise Mr/Ms ..... , authorised signatory of the company..... , acting in the capacity of the lead partner, to sign all documents in connection with the bid offer and any contract resulting from it on our behalf.

NAME OF FIRM	**ADDRESS**	**DULY AUTHORISED SIGNATORY**
Lead partner		Signature: ..... Name: ..... Designation: .....
		Signature: ..... Name: ..... Designation: .....
		Signature: ..... Name: ..... Designation: .....
		Signature: ..... Name: ..... Designation: .....

SPECIFICATION OR TERMS OF REFERENCE

ENERGY AND ELECTRICITY DEPARTMENT

BID NAME

Tender for the Supply, Support, Upgrading and Maintenance of Substations Multiplexers and Network Management System, as and when required for the Period of (3) Three years.

BID NUMBER

(EED 20-2023/24)

1. INTRODUCTION AND PURPOSE

The aim of this tender invitation is to invite prospective service providers for the supply, support, upgrading and maintenance of substations Multiplexers and Network Management System for the period of three (3) years as and when required.

2. BACKGROUND

The City of Tshwane operates a fiber optic communication network consisting of 65 STM-1/4 FOX 515 multiplexers and 12 FOX 615 multiplexers, located in 132kV primary substations. A further 206 PDH FOX 515 Multiplexers are in 11kV Secondary Substations. The complete network is managed via a Network Management System. The City of Tshwane Communication network covers an area of 3200 square kilometers.

The data protection and communication network of Energy and Electricity Department services the various users of the Energy and Electricity sections. At present, the primary task of the system is to provide communication for the substation protection and power line protection systems. In addition, it provides communication to various substation emergency telephone networks, the Scada system, Tetra network and various load and quality monitoring systems including access control system to the substations.

3. ABBREVIATION

AAL – ATM Adapter Layer
ADSL – Asymmetric Digital Subscriber Line
ATM – Automated Teller Machines
APN – Access Point Name
BFD – Bidirectional Forwarding Detection
BIP – Bit-interleaved Parity
CAS – Channel-Associated Signal
CCITT – Consultative Committee for International Telephony and Telegraphy
CCS – Common Channel Signalling
CES – Circuit Emulation Service
CESoP – Circuit Emulation Service over Packet

CMI – Code Mark Inversion
CoT – City of Tshwane
CWDM – Coarse Wavelength Division Multiplexing
DCN – Data Communication Network
DS – Digital signal
DSL – Digital Subscriber Line
DTMF – Dual-Tone Multi-Frequency
DWDM – Dense Wavelength Division Multiplexing
DXC – Digital Cross Connect
ECC – Embedded Communication Channel
EFM – Enterprise Feedback Management
EOC – Embedded Operational Channel
EMC – Electro Magnetic Compatibility
EoL – End of Line
EoS – Ethernet over SDH
ETSI – European Telecommunications Standards Institute
FE – Fast Ethernet
ERPS – Ethernet Ring Protection Switching
FOX – Fibre Optic Multiplexer
FXO – Foreign Exchange Office
FXS – Foreign eXchange Station
GbE – Gigabit Ethernet
GFP – Generic Framing Procedure
GPS – Global Position System
GPRS – General Packet Radio Service
HDLC – High-Level Data Link Control
HDSL – High-bit-rate Digital Subscriber Line
IEEE - Institute for Electrical and Electronics Engineers
IF – Interface
IP – Internet Protocol
ITU-T – International Telecommunications Union-Telecommunications Section
LAG – Link Aggregation
LAN – Local Area Network
LCAS – Link Capacity Adjustment Scheme
LES – Loop Emulation Service
LT – Line Termination
LTE – Long Term Evolution
LTP – Linear Trail Protection
MCAS – Mercury-CAS
MCMI – Modified Code Mark Inversion
MIB – Management Information Base
MLPPP- Multi Link Point to Point Protocol
MM – Multi Mode
MSP – Multiplex Section Protection
MSTP – Multiple Spanning Tree Control
MTBF – Mean Time Between Failure
NE – Network Element
NMS – Network Management System
NT – Network Termination
OHC – Overhead Channel
OSI – Open System Interconnection
OSPF – Open Shortest Path First

PAM – Pulse Amplitude Modulation
PDH – Plesiochronous Digital Hierarchy
PoE – Power over Ethernet
PPP – Point to Point Protocol
PSTN – Public Switched Telephone Network
PWE – Pseudo Wire Emulation
RFC – Remote Function Call
RIP – Routing Information Protocol
RSTP – Rapid Spanning Tree Protocol
Rx – Receiver
SAToP – Structure-Agnostic Time over Packet
SCADA – Supervisory Control and Data Acquisition
SDH – Synchronous Digital Hierarchy
SETS – Synchronous Equipment Timing Source
SFP – Small Form-factor Pluggable
SHDSL – Single-pair High-speed Digital Subscriber Line
SIP- Session Initiation Protocol
SM – Single Mode
SNCP – Sub-Network Connection Protection
SNMP – Simple Network Management Protocol
SOH – Start of Heading
SSM – Synchronisation Status Messaging
STM – Synchronous Transport Module
STP – Spanning Tree Protocol
TCPAM – Trellis-Coded Pulse Amplitude Modulation
TCP/IP - Transmission Control Protocol/Internet Protocol
TCP - Transmission Control Protocol
TDM – Time Division Multiplex
TETRA – Terrestrial Trunked Radio
TPE – Tele-Protection Equipment
TTI – Time-Temperature Indicator
Tx – Transmitter
UCST – Universal Configuration Software Tool
UNEM – Universal Network Management
VC – Virtual Container
VCAT – Virtual Concatenation
VLAN – Virtual local area network
VOIP – Voice over Internet Protocol
VRRP – Virtual Router Redundancy Protocol
WAN – Wide-area network

4. PROJECT SCOPE

The transmission network of the CoT is based on Synchronous Digital Hierarchy (SDH) transmission facilities. The city is planning to support, maintain, and service the existing ABB FOX 515 and FOX 615 SDH/PDH Multiplexers and the Network Management System (NMS). This tender is for the maintenance of the existing communication network infrastructure, supply of new multiplexer equipment and expansion of the STM-16 multiplexer network.

The bidder/s who will be awarded this tender are expected to supply multiplexer equipment, install, test and commission new multiplexers where necessary.

The type of contract for this tender document is Government Procurement General Conditions of Contracts ("GCC").

4.1 Requirements from the bidder

- The bidder must be available as requested for 24 hours for support of service.
- All equipment supplied are to be delivered sealed, properly packaged and in a good working condition.
- A service provider is required to provide City of Tshwane with an option to add new software version when available.
- All support is to be provided in English language.
- Bidders must take note that they must supply, deliver, maintain, and upgrade the multiplexer network city wide, meaning in all regions within City of Tshwane boundaries.

4.2 SPECIFICATION(S) – PART A

SUPPLY, DELIVERY, MAINTENANCE, SUPPORT SERVICE, AND SOFTWARE OF THE EXISTING FOX 515, FOX 615 MULTIPLEXERS.

4.2.1 Maintenance

The bidder will be required to provide maintenance on the existing fibre-optic multiplexer and Network Management System which includes the following:

- Repair and replacement of faulty FOX 515 and FOX 615 interface cards.
- Repair and replacement of faulty FOX 515 and FOX 615 equipment and components.
- FOXMAN NMS Upgrade and update of Universal Configuration Software Tool.
- Maintenance and service of back up battery chargers for FOX 515 and FOX 615 Multiplexers.

4.2.2 Support

- The successful bidder shall provide available team to assist the City of Tshwane with faults that will occur during the period of this tender.
- The City of Tshwane will report all the faults by communicating (via telephone call or e-mail) to the Bidder.

- All faults must be recorded by the bidder with a unique job card number for records and tracing purposes. When a fault is resolved, the bidder will provide the City a written report.

- The City of Tshwane and the awarded bidder will have regular progress meetings on updates at no cost to the City of Tshwane.

- In a case when the main exchange switch or standby exchange switch is faulty bidder is expected to resolve to fault within 24 hours.

- The awarded bidder is expected to collect, repair, and return all faulty fibre-optic multiplexer equipment within 21 working days.

- All faults will only be closed after the problem has been fully resolved.

4.2.3 FOXMAN NMS Software Upgrades and Updates

4.2.3.1 The Tenderer shall provide additional licenses for the extension and support of existing FOXMAN NMS.

4.2.3.2 The communication network shall be managed by a FOXMAN NMS that covers Access- and Transport- level in an integrated way.

4.2.3.3 The awarded bidder will support the latest release of the software during the period of this tender and provide the most recent updates on the existing multiplexer network system.

4.2.3.4 The COT will procure once off software licenses for all the required software upgrades, and they will remain property of the City. All required documentation (installation manual, product key, etc.) either softcopy or hardcopy must be submitted as well.

4.2.3.5 The NMS shall comply with the following requirements:

- The NMS shall offer easy operation and hierarchical geographical network representation for point and click operation.

- A PC-based solution is required. The PC-based NMS shall support dual-view-display which allows to display the geographical network representation on a separate display.

- A LINUX-based solution is required.

- The NMS shall support North-and South-bound SNMP-based interface for integration with other systems/devices.

- The NMS shall support manual and auto-discovery functionality for the network elements.

- For local management, either Serial- or Ethernet connection shall be possible.

- The NMS operators shall be able to define criteria for alternative routing within the network. Should the main path fail, the defined standby path shall be automatically activated.

- For remote management, all the following possibilities shall be possible:

  - Via TCP/IP over LAN, connected to Management-port.
  - Via TCP/IP carried in a user-defined LAN-WAN connection embedded in the payload of a connected STM-1 trunk.
  - Via TCP/IP carried in a LAN-WAN connection embedded in the SDH – overhead-channels. (OSI tunnelling)

4.2.4 STRUCTURE AND PRE-REQUISITES

The Tenderer shall offer a communication solution that can be functionally split in 2 layers:

- Access S bus layer functionally with – transport capacity up to STM-16.
- Broadband transport – layer functionality with trunk – capacities of STM-1 and higher.

The functionality of both layers shall be covered by the same solution – family and managed with one NMS (Network Management System). The solution offered shall belong to Next Generation Multiplexers for Utilities, with support of Ethernet-connectivity over SDH. TDM as well as Ethernet – services shall be handled by the same NMS.

Network with bandwidth needs up to STM-16 can be realized by implementing the access layer functionality with integrated transport.

Offered solution family shall have a track record of not less than 1 year with an overall installed base network of not less than 100 (one hundred) nodes.

The awarded Tenderer will support the latest release of the NMS software during this tender and provide most recent updates.

4.2.4.1 GENERAL REQUIREMENTS

i. The equipment shall provide a range of access interfaces for telephony, data, and LAN. Transport facilities shall include optical and

electrical STM-1/4/16 SDH & ATM aggregate interfaces (155Mbit/s), XDSL (HDSL/SHDSL and ADSL) interfaces and a range of PDH optical and electrical interfaces.

ii. The digital multiplex equipment shall be universal, software-controlled, and provide various interface cards to connect tributary interfaces signals such as voice, tele-protection, and data to aggregate interfaces. On aggregate level 2Mbit/s electrical and 8Mbit/s optical interfaces complying with ITU-T Recommendations G.703 / G.704 and 2Mbit/s HDSL/SHDSL interfaces shall be available. In addition, optical STM1/4/16 aggregate interfaces on 155Mbit/s shall be available. All modules shall form an integrated part of a 19" shelf.

iii. The platform shall have means to cross-connect, drop, and insert VC-12 (with termination), 2Mbit/s G.703 unframed signals, and 2Mbit/s G.704 framed signals and individual 64kbit/s timeslots. Path protection on VC-12, 2Mbit/s and 64kbit/s shall be supported.

iv. For power system networks it shall be suitable for operation in substations with harsh environment with high electromagnetic interference, be highly reliable and provide secure communications for real time signals such as voice, SCADA, tele-protection, and status/control signals. The equipment offered shall already be working successfully in telecommunication networks operated by power utilities. **Tenderers shall provide details of successful operation of the equipment offered**. It shall comply with the latest ITU-T recommendations and ETSI standards and be able to be interconnected with legacy multiplex and other telecommunication equipment.

v. For stations with tele-protection and telecommunication requirements and integrated tele-protection functionality (distance and differential protection) must be provided. External tele-protection equipment's are only accepted in stations, where existing equipment's must be extended.

vi. For substation automation purpose integrated electrical and optical Ethernet interfaces are required.

vii. Each network element shall be manageable from an operation centre and there shall be means to supervise external/existing equipment. It must be possible to access the platform over a common TCP-IP network. Access over SDH OHC channel using the OSI protocol shall be possible.

viii. To adapt transmission to higher bit rates, the equipment shall allow the integration into STM-4 or STM-16 networks by adding higher order SDH equipment.

ix. Modules for the following user signals shall be available as plug-in units for the equipment:

FOX 515	FOX 615	Description
COBUx	CESM1(-F) / CESM2(-F)	Central Ethernet Switch Unit
--	CEPI1	Circuit Emulation over Packet unit
--	COSI1	Conversion unit VoIP/SIP unit
STICx	DATI1	SHDSL aggregate TDM unit
SUBHx	LESU1	Legacy Subscriber interface unit
EXLAN	LEXI1	Legacy Exchange interface unit
NEMSG	LEDA1	2/4 Wire analogue E&M unit
GECOD	LECO1	G.703 64kbit/s co-directional interface unit
--	LECA1	G.703 64kbit/s contra-directional interface unit
SYN4E / SYNAC	SAMO1	SDH aggregate STM-1/4 unit
--	SAMO2(-F)	SDH aggregate STM-1/4/16 unit
--	SAMO3	SDH aggregate STM-1/4/16 unit, 48x E1 IF
LOMIF	LEDE1	(Legacy Data) 8 x E1 port data unit
DATAx	LEDS1	(Legacy Data) Multiprotocol serial data unit
SWITE	EPOI1	Power over Ethernet unit
NEBR	ELET1	Electrical 24 port Ethernet unit
NEBRx	ETOP(-F)	Optical 12 port Ethernet unit
ETER1	EPSI1	Ethernet over PDH unit
TEBIT	TEPI1	Tele-protection interface unit
OPTIF	OPIC1	Optical protection interface unit
TUPON	--	PDH optical 8 Mbps aggregate
POSUM/POSUS	--	Not required on FOX 615

The equipment shall provide the following integrated aggregates:

- Up to 8 x STM-16 SDH optical ports
- Up to 16 x STM-4 SDH optical ports
- Up to 8 x STM-1 SDH optical port / electrical ports
- Up to 4 x 10GE Ethernet optical ports
- N x 2 Mbit/s SHDSL ports
- N x 2 Mbit/s electrical E1 ports
- N x 1 GbE optical / electrical ports

4.2.4.2 Tele-protection Requirements

i. The Tele-protection and communication system must ensure the easy and secure function of the tele-protection. Therefore, following features must be provided:

- At least an 8-bit command addressing for tele-protection signal shall be provided to prevent tripping if the signal is inadvertently re-routed through the telecommunication network.
- An automatic and periodic loop test (<100s) must be provided for a signal delay measurement.
- A switch-over of the tele-protection command in less than 10 ms must be guaranteed.
- The configuration of the tele-protection must be integrated into the communication configuration tool to ensure an easy maintenance.
- More details on the requirement of the tele-protection features are defined under the Tele-protection Interface.

4.2.4.3 General Conditions

The equipment shall be capable of functioning as a terminal, in 'through connection' (transit, repeater) mode and as add-drop multiplex. First order multiplexing (2Mbps), second order multiplexing (8Mbps) and STM-1/4/16 multiplexing shall be integrated.
Conference for voice channels and point to multipoint function for data signals shall be possible. The equipment shall be of fully modular design.

4.2.4.4 Channel capacity: Digital Cross Connection

The equipment shall be equipped with redundant, decentralised cross-connection functions. The cross-connect capacity shall be at least 128 x 2Mbit/s (i.e. 3840 x 64kbit/s) and non-blocking. For high-density applications, the cross-connect capacity shall be upgradeable up to 128 x 2 Mbit/s. It shall cross-connect 64kBit/s as well as 2Mbit/s (G.703 unframed and G.704 framed) and VC-12. The cross-connect shall be capable of cross-connecting the SDH overhead with any 64kBit/s timeslot on the system.

On addition the equipment shall offer an SDH cross-connect capacity of up to 128x128 VC-4 and a low order cross-connect for VC-3 and VC-12 in the same equipment with the capacity of up to 1008 x 1008 VC-12.

Furthermore, the design of the backplane shall provide direct GbE connectivity between the slots and central (redundant) Ethernet switching matrix slots. Between the uplink positions a backplane capacity of n x 10 GbE shall be available (n>2). For future upgrade purposes a 10 GbE a backplane connection from the central Ethernet switching matrix to x

different slots shall be available (x > 6). The central switching matrix shall at least support 60 Gbit/s full duplex switching capacity.

i. Redundant centralised functions

The equipment shall provide enhanced redundancy features in order to ensure highest availability of the communication network. The following redundancy schemes shall be supported:

- Redundant or distributed cross connect.
- Redundant power feeding
- Redundant CPU functionality
- HW redundancy of SDH aggregate interfaces
- HW redundancy of GbE and 10 GbE aggregate interfaces
- HW redundancy of voice and data conferencing
- HW redundancy of central Ethernet switching matrix
- Enhanced TDM traffic protection schemes
- SNCP on 1 or 2 aggregate modules
- MSP on 1 or 2 aggregate modules
- Enhanced PSN traffic protection schemes
- 1 + 1 and 1:1 LSP protection switching
- Link aggregation on 1 or 2 aggregate modules
- XSTP and ERPS loop prevention

ii. Power Supply

The multiplex equipment shall operate from a nominal 48 Volt-dc battery with positive ground. The equipment shall work satisfactorily over battery voltage variations of ±15% (40.8 volts through 72 volts). The equipment shall support dual power feed (1+1 hardware protection) i.e. that two power sources can be connected directly to the equipment (two connection points) and 220V insulation transformer.
The equipment shall supervise the power sources and provide corresponding alarming in case of loss of either power source.

iii. Safety

The equipment shall be safe to use and shall comply with latest EN 60950 class VI.

iv. Electromagnetic compatibility and safety regulations.

The equipment shall comply with the EN latest class A, EN300386, IEC 61000-6-2, IEC 61000-6-4 and shall be conformant with CE.

v. Ambient Conditions

- Storage and transport: -40°C ... +70°C; 98% (no condensation)
- Operation temperature range for operational applications: - 5°C up to 55°C, humidity of max. 95% (no condensation)

- Operation temperature range for XDSL, ISDN and ATM applications: - 5° C up to 45°C, humidity of max. 95% (no condensation)

vi. Mechanical construction

The equipment shall be available as a 19” shelve to be mounted in a 19” rack or 19” cabinet. It shall be of robust design. All tributary and aggregate units shall be integrated in the same shelf. All connectors shall be accessible from the front and comply with international specifications. The minimum cabinet depth required should also be stated.

vii. Network configuration/management system

The Network Management System shall be used to supervise the PDH, SDH and tele-protection system. For tele-protection, the configuration and management must be fully integrated and comprehensive alarm information (severity and extract alarm description) shall be available in the same management.

The Network Management System (NMS) shall have to supervise, control, monitor and configure the network. It shall have capabilities of fault, configuration, performance and security management. It shall provide various views to the network such as geographical overview, logical network structure, and hierarchical view. The network management system shall allow defining different user profiles.

A comprehensive alarm management shall show current alarms such, that Icons of the network elements change their colours according to the alarm level. The alarms shall be categorised as critical, major, minor alarms and of the warnings and a summary shall indicate the total number of them in the entire network. An alarm list shall be possible to filter alarms with various filter criteria. Operators shall be able to add comments to the alarms.

The NMS and the Network element shall support connections over a TCP-IP based network.

The management system shall offer a SNMP interface for alarm integration into higher order network. It can be browser based.

viii. Local User Terminal

It shall be possible to connect the craft terminal to any network element in the network using the TCP/IP protocol. The craft terminal shall support configuration, maintenance, and status information. It shall provide a ‘windows’-oriented user interface.

ix. Path Protection

The equipment shall provide means to protect 64 kBit/s channels. The protection shall be end to end from one interface (telephone or data) to the other. It shall switch automatically from the main channel to the standby channel. It shall be configurable whether the system switches back to the main channel (reversible switching) or not (non-reversible).

x. Section Protection

The equipment shall provide means to protect STM-1 (MSP) and 8 Mbit/s connections. It shall be possible to use two independent links: one as the main and the other as the standby. The system shall automatically switch to the standby connection is disturbed.

The switching shall be done within the multiplexer without using the Network Management System.

xi. Network Topology

It shall be possible to build point to point, linear, ring, T, and meshed networks.

xii. Synchronisation

It shall be possible to synchronise the equipment using an external clock source, derived from a network or with an internal oscillator. The synchronisation shall be configurable and shall be possible to distribute the synchronisation to other equipment as well. The system shall have the means of switching to select the synchronisation source as well as a means of preventing the system from creating synchronisation by means of SSM (Synchronisation Status Messaging) feature according to ITU-T G.704 or priority a based sequence.

xiii. Alarms

Each module shall supervise its functions and shall have an alarm-indication LED on its front. All alarms shall be collected by the NMS. Each node shall be capable of collecting up to 12 external alarms.

xiv. Test Loops

The equipment shall provide means to loop signals on 64kBit/s level as well as on 2 Mbit/s level. It shall indicate an alarm if a loop is activated.

xv. Maintenance facilities

Every Network Element shall have a built-in Signal Generator and Analyser to analyse communication paths. It must be possible to connect the Generator and Analyser to the communication channels and terminate the signal on other Network Elements. It shall be possible to configure circuits locally with the craft terminal and remotely from the

NMS or the craft terminal. It shall be possible to loop-back signals locally and remotely using the craft terminal or the NMS.

4.2.4.5 Requirements for Transport Level

i. SYN4E / SYNAC / SAMO1-3 Aggregate Unit

The interface shall be designed for use on single mode fibre (conforming to ITU-T G.652) at 1310nm and 1550nm.

- The following main functions shall be supported:

- Termination of the OS-, RS-, MS- and VC-4 layer
- Extraction and insertion of the SOH communications information
- Through connections of VC-12 and VC-3

- The following maintenance functions shall be supported:
- Status indications
- Loops
- Restart after ALS
- TTI monitoring
- BIP Error Insertion

- The following SDH interfaces shall be available:
- STM-1/4 (622Mbit/s / 155Mbit/s) optical 4-port interface
- STM-4 (622Mbit/s) optical 4-port interface
- STM-4/16 (2.5Gbit/s / 622Mbit/s) optical 4-port interface

- This interface shall provide Multiples Section Protection (MSP):
- 1+1 Section Protection
- STM-1 (155Mbit/s) electrical 1-port interface

- Furthermore, optical ATM STM-1 interfaces at 1310nm and 1550nm shall be available.

- The following main functions shall be supported:

- Termination/generation of ATM cells using AAL1/CCS, AAL2/LES
- Multiplexing and cross-connecting of ATM VCs/VPs

- SFP's

Suitable SFP's to match offered equipment, as per price list. **(Table A2 – Item 18.2 to 18.10)**

ii. LOMIF / LEDE1 Aggregate Unit

Up to four 8Mbit/s optical interfaces (1310nm and 1550nm) shall be available. Each interface shall provide at least 2 x 2Mbit/s (G.703/G.704)

electrical interfaces and have an integrated switch matrix to convert the incoming optical stream directly into an electrical G.703 stream.

iii. STICx / DATI1 Interface Unit

The 2Mbit/s HDSL interface shall provide means to interconnect the multiplexer over two pairs of copper wire up to 10 km using following modulations: CAP, PAM16 or G.SHDSL. It shall communicate either with another interface of the same type or with a remote desktop terminal.

- **HDSL Line Protection**
  The HDSL equipment shall (where necessary) be protected against influences of induced voltages up to 10 kV.

iv. NEMSG / LEDA1 Interface Unit

This interface shall provide 8 voice channels with a bandwidth of 300 Hz – 3.4 kHz and 2 signalling channels (M => E, M' => E') per voice channel. Each interface shall be configurable to operate with or without CAS. With CAS it shall use the "a" and "b" bits for the two signalling channels.

- The level shall be software adjustable within the following range:
  - Input: +7.5 to -16dBr
  - Output: +7.0 to -16dBr

- Modules where each interface can be individually configured with 1+1 path protection shall be available.

v. SUBHx / LESU1 Interface Unit

An interface with at least 10 subscribers as well as high-density analogue subscriber card with up to 30 subscribers shall be available. The ringing generator shall be integrated in the subscriber module interface. The ringer frequency shall be adjustable for 20Hz, 25Hz, and 50Hz. The following main functions shall be supported:

- Downstream signalling

  - Ringing
  - Metering
  - Polarity reversal
  - Reduced battery
  - No battery

- Upstream signalling

  - On/off-hook
  - Pulse and DTMF dialling
  - Flash impulse
  - Earth key

- General:

- Constant current line feeding
- Line test
- Permanent line checks
- CLIP (On-hook VF transmission)
- Metering after on-hook

vi. EXLAN / LEXI1 Interface

- This interface shall provide at least 10 ports for connection to remote analogue subscribers to an exchange. It shall provide the following functions:

  - Pulse dialling
  - Tone dialling (DTMF)
  - Earth key function
  - Metering function (12 kHz or 16 kHz)
  - Flash impulse
  - Polarity reversal
  - Indication of busy lines

- The following parameters shall be configurable by software:

  - Input voice level -5 +4dBr
  - Output voice level -7.5 -1dBr
  - Metering pulse enable/disable
  - Signalling bit definition
  - Loop back of voice to the telephone

vii. COSI1 (Engineering Order Wire)

An engineering order wire (EOW) facility shall be provided at each multiplexer. Following options shall be available:

- The EOW shall be configured as a party line and use in band DTMF signalling to call another EOW-Terminal. The Terminal shall have an integrated DTMF decoder allowing to program a subscriber call number and two group call numbers.
- EOW based on Voice over IP (VoIP). The EOW traffic shall be routed over the management channel.

viii. DATAx / LEDS1 Interface

- V.24/V.28 RS232 Interface
  It shall support the following bit rates:

  0 to 0.3 kbit/s transp (V.110)

  0.6 to 38.4 kbit/s synchronous / asynchronous (V.110)

Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.11/X.24 Interface

This interface shall comply to the ITU-T X.24 recommendation for signal definition and to V.11 for electrical characteristics.

It shall support the following bit rates:

48, 56, nx 64 kbit/s (n = 1 to 31) synchronous
0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.35 Interface

This interface shall comply with the ITU-T V.35 and V.110 recommendations.

It shall support the following bit rates:

48, 56, n x 64 kbit/s (n = 1 to 31) synchronous
0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.36 / RS 449 Interface

This interface shall comply with the ITU-T V.36 and V.110 recommendations.

It shall support the following bit rates:

48, 56, nx 64 kbit/s (n = 1 to 31) synchronous
0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
Modules where each interface can be individually configured with 1+1 path protection shall be available.

ix. GECOD / LECO1 Interface Unit

This interface shall comply with the ITU-T G.703 part 1.2.1 for co-directional data transfer. A module shall have at least 8 interfaces. Modules where each interface can be individually configured with 1+1 path protection shall be available.

x. ETER1 / EPSI1 Unit

A 10/100/1000BaseT interface shall be available. Following specification shall be covered:

- Ethernet connection: 10/100/1000BaseT
- Connectors: SFP technology

- Switching: bypass mode according to IEEE Std 802.3 frame or based on port or VLAN tag ID
- WAN capacity: 63Xvc-12 OR 3Xvc-3
- Logical WAN ports (LWP): minimum 8
- Framing: according to General Framing Procedure GFP (ITU-T G.7041)
- Features: Virtual Concatenation (VCAT) acc. ITU-T G.707
- Link Capacity Adjustment Scheme (LCAS) acc. ITU-T G.7043

On addition an Ethernet Router interface shall be available with the following function:

- Ethernet connection: minimum 10/100BaseT
- Routing Protocols: static IP route, OSPF2 V2, RIP V2
- WAN protocols: PPP, Frame Relay (including RFC 1490)
- WAN capacity: 16 x 2Mbit/s
- WAN-ports > 60

xi. NEBRx / ETOP1(-F) Ethernet Unit

A 100/1000BaseF interface shall be available. Following specification shall be covered:

- Ethernet connection: 100/1000 BaseF
- Connectors: SFP technology
- Switching: bypass mode according to IEEE Std 802.3 frame or based on port or VLAN tag ID
- WAN capacity: 63Xvc-12 OR 3Xvc-3
- Logical WAN ports (LWP): minimum 8
- Framing: according to General Framing Procedure GFP (ITU-T G.7041)
- Features: Virtual Concatenation (VCAT) acc. ITU-T G.707
- Link Capacity Adjustment Scheme (LCAS) acc. ITU-T G.7043

xii. ALCAR Interface

The module shall provide means to collect at least 12 or more external alarms, which will be displayed, on the Network Management System. It shall be used to supervise external equipment by the Network Management System. A minimum of 8 outputs, which can be switched by the Network Management System, shall be available. It shall be possible to connect an input to an output so that if an alarm occurs, the output contact will be switched.

Logical operations among alarm inputs shall be supported.

It shall be possible to label an alarm. The label-text shall be read from the interface module so that it can be indicated on the Network Management System as well as on the local craft terminal.

xiii. TEBIT / TEPI1 Interface Unit

This interface shall provide means to transmit four bi-directional command channels.

The signals shall be adjustable from 24 to 250Vdc by means of software.

All inputs and outputs shall be isolated and with EMC immunity for harsh environment. Security, Dependability and Transmission speed shall be selectable and programmable.

It shall be able to drop and insert commands, transfer commands as a transit station and it shall be possible to have AND- and OR-connections between commands. The interface shall support T-node configurations.

The Tele-protection interface shall provide an integrated non-volatile event-recorder, which shall be synchronise either internally or by Global Positioning System (GPS) and a command counter, which counts trip commands.

The tele-protection interface shall provide means for signal delay measurement. 1+1 protection must be available; the switching shall be done within less than 4ms (typical value). The interface shall do automatic loop test periodically (preferably every 60s). The tenderer shall confirm that under no circumstances will the interface cause trip-commands in case of power supply failure or when equipment is put into or taken out of service.

Command addressing shall be used to prevent tripping if the signal is inadvertently re-routed through the telecommunication network.

xiv. OPTIF / OPIC1 Interface Unit

This interface shall have an optical port to connect protection relays for tele-protection to the multiplexer. It shall operate according to IEC 870-5-1, format class FT 1.2 on 1300nm using MCMI line coding.

xv. TUPON Interface

This interface shall comply with the ITU-T G.703 and G.704 recommendations.

The interface module shall have at least four interfaces, each of which may be individually activated. It shall be possible to have up to 128 x 2Mbit/s interface modules in a multiplexer.

In order to connect different equipment, the interfaces shall be available with the impedance of 120 ohms and 75 ohms. The interface shall support

CRC-4 multi-frame according to ITU-T G.704 (enabled and disabled by software).

The CAS signalling according to ITU-T G.704 shall be activated optionally.

The interface shall be able to extract the 2.048MHz clock, which can be used to synchronise the multiplex equipment. The interface module shall support 2Mbit/s loop-back of the incoming signal as well as the loop-back of the internal signals.

xvi. Training

The successful Tenderer shall price on the pricing schedule the cost of providing training for a group of maximum six persons per session to enable the CoT personnel to install, programme, maintain and operate the management multiplexers and associated equipment offered.

4.3 SPECIFICATION(S) – PART B

SUPPLY, INSTALLATION, SUPPORT SERVICES AND SOFTWARE OF AN SDH/PDH MULTI-SERVICE MULTIPLEXER FOR USE IN SUBSTATIONS.

This section specifies the requirements of a new SDH/PDH multi-service multiplexing communication system for the following services, which includes a dedicated communications equipment for protection signalling purposes and dedicated equipment for voice and data communications.

The bidder/s must supply the equipment according to the given specification.

The equipment offered must comply with the ETSI specifications for an SDH/PDH multiplexer system and it must meet the ITU-T recommendations for multiplexing communication system. The new equipment offered must be able to interface with the existing City of Tshwane FOX 515 and FOX 615 multiplexing communication infrastructure and it must be tested and proved to be working on the current City infrastructure at the cost of the bidder.

The successful bidder must adhere to all Network policies/procedures of the CoT

4.3.1 NETWORK MANAGEMENT SYSTEM (NMS)

4.3.1.1 The Tenderer shall provide license for the NMS.

4.3.1.2 The Tenderer shall describe in writing in the company letterhead the proposed extension and support of the management system. (Attach letter in Annexure D1)

4.3.1.3 The communication network shall be managed by an NMS that covers Access- and Transport- level in an integrated way.

4.3.1.4 The CoT will procure once off software licenses for all the required software upgrades, and they will remain property of the City. All required documentation (installation manual, product key, etc.) either softcopy or hardcopy must be submitted as well.

4.3.1.5 The NMS shall comply with the following requirements:

- The NMS shall offer easy operation and hierarchical geographical network representation for point and click operation.

- A PC-based solution is required. The PC-based NMS shall support dual-view-display which allows to display the geographical network representation on a separate display.

- A Windows based or LINUX-based solution is required.

- The Tenderer shall explain in writing in the company letterhead, how non-fibre-optic devices (e.g. Tele-protection devices) can be manged and routed remotely with the proposed NMS. (Attach letter in Annexure D2)

- The NMS shall support North-and South-bound SNMP-based interface for integration with other systems/devices.

- The NMS shall support manual and auto-discovery functionality for the network elements.
- For local management, either Serial- or Ethernet connection shall be possible.

- The NMS operators shall be able to define criteria for alternative routing within the network. Should the main path fail, the defined standby path shall be automatically activated in less than 50ms.

- Visual alarms to allow for fault detection and early warning of degraded performance.

- For remote management, all the following possibilities shall be possible:

  - Via TCP/IP over LAN, connected to Management-port.
  - Via TCP/IP carried in a user-defined LAN-WAN connection embedded in the payload of a connected site and accessible from all connected sites.
  - Remote access via dial-up or GPRS/LTE modem or APN.
  - The management platform shall not be critical in the automatic protection switching of the network. It will only report the event in detail to the network operator.
  - Relevant configuration details shall be stored in non-volatile memory of each node. After configuration, the network shall continue to work autonomously and shall reconfigure in error situations. It is therefore necessary that the reconfiguration algorithm resides in the nodes themselves.

4.3.2 STRUCTURE AND PREREQUISITES SDH/PDH

The equipment manufacturer shall provide a high-capacity optical Ethernet telecommunication equipment that can support both backbone and access service locations and is based on active nodes that are linked by the Ethernet connections over optical fibre or other media, to form reliable and redundant high-speed networks for the transparent transport of legacy TDM (SDH/PDH) and Ethernet based interface services.

The equipment shall be connection oriented and implemented on a physical layer of Ethernet or on standard SDH/PDH standards.

The installed system shall have the following characteristics:

- High Availability
- High Reliability
- Easy to install and operate
- Scalable
- High degree of flexibility with respect to the type of interfaces

The network equipment shall use automatic protection switching based on SDH/PDH and will ensure that any service switched to the protection path will provide symmetrical delays for each application that is critical.

Protection switching that creates asymmetrical delays is not acceptable.

The entire telecommunication network(s) equipment will be managed from a central point via a sophisticated network management system.

Network with the bandwidth is required to accommodate up to 10Gb or more.

Offered solution family shall have a track record of not less than 1 year with overall installed base not less than 100 (one hundred) nodes.

The awarded Tenderer will support the latest release of the NMS software during this tender and provide most recent updates.

4.3.2.1 GENERAL REQUIREMENTS: SDH/PDH

i. The network equipment shall allow creating networks of any topology. This includes ring topology, ring with spurs, meshed or linear operation. The network will be controlled via a centralised management system without a dynamic control plane to avoid complexity and non-deterministic behaviour under fault conditions. At any given point in time, it must be possible to identify the traffic flows of each individual application/service.

For power system networks, it shall be suitable for operation in substations with harsh environment with high electromagnetic interference, be highly reliable and provide secure communications for

real time signals, such as voice, SCADA. Tele-protection and status/control signals. The equipment offered shall already be working successfully in telecommunication networks operated by power utilities. **Tenderers shall provide details of successful operation of the equipment offered**. It shall comply with the latest ITU-T recommendations and RFC standards.

All provisioning parameters for setting up the network, including initial configuration and discovery, must be organised via the NMS. This NMS shall guide the operator via point and click wizards through the different steps of configuration of the individual network elements and services.

ii. The digital multiplexer equipment shall be universal, software-controlled, and provide various interface cards to connect tributary interface signals such as voice, tele-protection, and data to aggregate interfaces.

All interface cards shall form an integrated part of a 19" shelf and no freestanding or add-on external devices will be allowed.

For stations with tele-protection and telecommunication requirements, integrated tele-protection functionality (distance and differential protection must be provided. External mounted tele-protection equipment are not accepted.

iii. The platform shall have means to cross-connect, drop and insert VC-12 (with termination), 2 Mbit/s G.703 unframed signals, and 2 Mbit/s G.704 framed signals and individual 64 kbit/s timeslots. Path protection on VC-12, 2 Mbit/s and 64 kbit/s shall be supported.

Each network element shall be manageable from an operation centre and there shall be means to supervise external/existing equipment. It must be possible to access the platform over a common TCP/IP network. Access using OSI protocol shall be possible.

iv. The different traffic flows over the network will be organised in pseudo wires and tunnels. The network must support point-to-point and multipoint connections. In case of point-to-point connections, it must be possible to create transparent connections for all protocols.

The network must allow transporting time division (TDM) oriented signals using circuit emulation. Traffic flows will be identified at ingress side of the network as port based or VLAN based.

v. For substation automation purpose, integrated electrical and optical Ethernet interfaces are required.

vi. Modules for the following user signals shall be available as plug-in units for the equipment:

- Analogue subscriber interface: subscriber FXS and exchange side FXO
- 4-wire E&M voice interface

- X.24/V.11 (RS-422), nx64kbit/s data interface
- V.24/V.28 (RS-232), data interface
- V.35, nx64kbit/s data interface
- RS-485 data interface 2-wire and 4-wire
- 64 kbit/s CODIR electrical interface acc. to ITU-T G.703
- Alarm collection interface
- Optical interface module for up to 4 protection relays compliant to IEEE C37.94
- 2Mbit/s electrical interface for unframed signals acc. to ITU-T G.703 and framed signals acc. to G.703
- Ethernet interface 10/100/1000BaseT, electrical
- Ethernet interface for 100BaseFX and 1000BaseLX/SX, optical
- Support of L2 switching functions
- Support of L3 routing functions
- Support of Power over Ethernet
- VoIP Interface

The equipment shall provide the following integrated aggregates:

- Up to 4 x 10GE Ethernet optical ports
- N x 2 Mbit/s SHDSL ports
- N x 2 Mbit/s electrical E1 ports
- N x 1 GbE optical / electrical ports

4.3.2.2 Tele-protection Requirements

The Tele-protection and communication system must ensure the easy and secure function of the tele-protection. Therefore, following features must be provided:

SDH/PDH

The interface shall have at least two interfaces for C37.94 and at least two interfaces for E1/T1.

The interface shall comply with standards IEEE C37.94 for the C37.94 interfaces. The interface shall be compliant with ITU-T G.703, ANSI T1.102 and ITU-T G.823 for the E1 interfaces.

The C37.94 shall have optical levels compliant with the C37.94 interface, offered via SFP modules for easy replacement in case a defect of the optical component. The interface shall be able to loop the C37.94 data to an E1/T1 port on the same board. This function must be realised without circuit emulation.

The interface card shall at least have the following status information via LEDs on the front panel: Power input OK/NOK, Card status OK/NOK,

Alarm Indication Signal detected (E1/T1 ports), Remote Defect Indication (C37.94 ports) and Loss of Signal detected.

4.3.2.3 General Conditions

The network nodes shall be of a modular design allowing the installation of additional modules or replacement of modules.
The network nodes shall consist of a chassis, one or two hot swappable, redundant power supplies, slots for interface cards, and the system module.

The 19” chassis shall be available in three chassis sizes, small, medium, and large.

The slots shall allow a mix of interfaces to be installed. Interface cards should be hot swappable.

Each of the Ethernet ports on the node must be configurable as access port (connection towards the application) or interconnection port (between network nodes).

The nodes shall support the entire temperature range without moving fans (no moving parts).

The chassis shall be 19” mountable and distinguishes itself through an industrial quality design. The network nodes shall be front access only.

The interface modules shall be easy to install. It must be possible to insert and remove interface cards during system operation.

To optimize the network design there shall be multiple chassis types available with different number of slots and capacity.

The chassis shall have support for a minimum of two input and two output contacts to trigger a local alarm or to pick up a local alarm and forward it to the network management system.

4.3.2.4 Bandwidth / Channel Capacity

SDH/PDH

The equipment shall be equipped with redundant, decentralised cross-connection functions. The cross-connect capacity shall be at least 128 x 2Mbit/s (i.e. 3840 x 64kbit/s) and non-blocking. For high-density applications, the cross-connect capacity shall be upgradeable up to 128 x 2 Mbit/s. It shall cross-connect 64kBit/s as well as 2Mbit/s (G.703 unframed and G.704 framed) and VC-12. The cross-connect shall be capable of cross-connecting the SDH overhead with any 64kBit/s timeslot on the system.

On addition the equipment shall offer an SDH cross-connect capacity of up to 128x128 VC-4 and a low order cross-connect for VC-3 and VC-12 in the same equipment with the capacity of up to 1008 x 1008 VC-12.

Furthermore, the design of the backplane shall provide direct GbE connectivity between the slots and central (redundant) Ethernet switching matrix slots. Between the uplink positions a backplane capacity of n x 10 GbE shall be available (n>2). For future upgrade purposes a 10 GbE a backplane connection from the central Ethernet switching matrix to x different slots shall be available (x > 6). The central switching matrix shall at least support 60 Gbit/s full duplex switching capacity.

i. Availability and Reliability

SDH/PDH

To ensure maximum system availability and minimum downtimes, special precautions must be taken on the system.

The equipment shall provide enhanced redundancy features in order to ensure highest availability of the communication network. The following redundancy schemes shall be supported:

- Redundant or distributed cross connect.
- Redundant power feeding
- Redundant CPU functionality
- HW redundancy of SDH aggregate interfaces
- HW redundancy of GbE and 10 GbE aggregate interfaces
- HW redundancy of voice and data conferencing
- HW redundancy of central Ethernet switching matrix
- Enhanced TDM traffic protection schemes
- SNCP on 1 or 2 aggregate modules
- MSP on 1 or 2 aggregate modules
- Enhanced PSN traffic protection schemes
- 1 + 1 and 1:1 LSP protection switching
- Link aggregation on 1 or 2 aggregate modules
- Xstp and ERPS loop prevention

For TDM service, it must be possible to protect services in a 1+1 configuration without packet loss. In this configuration, there must also be the possibility to compensate the delay difference between the fastest path and the slowest path on the network to avoid the TDM application that has a jump in end-to-end delay when activating the backup path.

Dual hot swappable power supplies with separate power cords/connections are required.

All common control and switching equipment required for full operation of the node or network should be fully redundant.

Configuration data shall be stored locally in every access node to ensure a quick restart after a power outage.

The maximum reconfiguration time, in case of a node failure or cable break, shall not exceed 50ms for 1:1 protected services.

The database holding all relevant information on the system configuration shall be backed up in the network management system. If configuration data is lost in a particular node, the network management system must be able to restore the data remotely.

ii. Power Supply

The multiplex equipment shall operate from a nominal 48 Volt-dc battery with positive ground. The equipment shall work satisfactorily over battery voltage variations of ±15% (40.8 volts through 72 volts). The equipment shall support dual power feed (1+1 hardware protection) i.e. that two power sources can be connected directly to the equipment (two connection points) and 220V insulation transformer.

The equipment shall supervise the power sources and provide corresponding alarming in case of loss of either power source.

iii. Safety

The equipment shall be safe to use and shall comply with latest NEN-EN-IEC 60950 – 1:2006.

iv. Electromagnetic compatibility and safety regulations.

The equipment shall comply with the EN50022 latest class B, EN61000-6-3 and shall be conformant with CE.

v. Ambient Conditions

- Storage and transport: -30°C ... +75°C; 95% (no condensation)
- Operation temperature range for operational applications: - 30°C up to 65°C, humidity of max. 95% (no condensation)

vi. Mechanical construction

The equipment shall be available as a 19” shelve to be mounted in a 19” rack or 19” cabinet. It shall be of robust design. All tributary and aggregate units shall be integrated in the same shelf. All connectors shall be accessible from the front and comply with international specifications. The minimum cabinet depth required should also be stated.

vii. Network configuration/management system

The network shall be equipped with a user-friendly Linux or Microsoft Windows based Network Management System (NMS). The NMS shall allow the operator to manage and monitor the entire network in an efficient way.

The NMS shall have the following functionality: network configuration, configuration of services, monitoring, diagnostics, activation-deactivation of interface modules, bandwidth allocation, alarms and event logging and graphical network representation.

The network management hardware shall consist of one or more server/computers, which at the time of installation is the current industry standard.

The NMS architecture shall be based on client-server technology. It must be possible to connect multiple active clients to the NMS server allowing network management from multiple and/or remote locations or by multiple users. For reliability, it must be possible to configure the NMS in a warm standby configuration.

The NMS shall have facilities to supervise, monitor, control and configure the network. It shall have capabilities of fault, configuration, performance, and security management. It shall provide various views to the network such as geographical overview, logical network structure, and hierarchical view. The network management system shall allow defining different user profiles.

A comprehensive alarm management shall show current alarms such, that icons of the network elements change their colours according to the alarms level. The alarms shall be categorised as critical, major, minor alarms and of the warnings and summary shall indicate the total number of them in the entire network. An alarm list shall list all alarms of the entire network according to the time of their occurrence. It shall be possible to filter alarms with various filter criteria. Operators shall be able to add comments to the alarms.

viii. Local User Terminal

It shall be possible to connect the craft terminal to any network element in the network using the TCP/IP protocol. The craft terminal shall support configuration, maintenance, and status information. It shall provide a ‘windows’-oriented user interface.

ix. Path Protection

The equipment shall provide means to protect 64 kBit/s channels. The protection shall be end to end from one interface (telephone or data) to the other. It shall switch automatically from the main channel to the standby channel. It shall be configurable whether the system switches back to the main channel (reversible switching) or not (non-reversible).

If a path has switched to its standby route because the main route is disturbed, this shall be indicated with an alarm. The switching shall be done within the multiplexer without using the NMS.

x. Network Topology

It shall be possible to build point to point, linear, ring, T, and meshed networks.

xi. Synchronisation

SDH/PDH

It shall be possible to synchronise the equipment using an external clock source, derived from a network or with an internal oscillator. The synchronisation shall be configurable and shall be possible to distribute the synchronisation to other equipment as well. The system shall have the means of switching to select the synchronisation source as well as a means of preventing the system from creating synchronisation by means of SSM (Synchronisation Status Messaging) feature according to ITU-T G.704 or priority a based sequence.

For tele-protection event recording, it shall be possible to synchronise the clock of all tele-protection interfaces with one GPS in one station. The GPS time shall be distributed over the tele-protection channel.

xii. Alarms

Each module shall supervise its functions and shall have an alarm-indication LED on its front. All alarms shall be collected by the NMS. Each node shall be capable of collecting up to 12 external alarms.

xiii. Test Loops

The equipment shall provide means to loop signals on 64kBit/s level as well as on 2 Mbit/s level. Bit error testing and status information to diagnose the connections without going on-site.

4.3.2.5 Requirements for Transport Level

SDH/PDH

i. SDH Aggregate Units

The interface shall be designed for use on single mode fibre (conforming to ITU-T G.652) at 1310nm and 1550nm.

- The following main functions shall be supported:

- Termination of the OS-, RS-, MS- and VC-4 layer
- Extraction and insertion of the SOH communications information
- Through connections of VC-12 and VC-3

- The following maintenance functions shall be supported:

- Status indications
- Loops
- Restart after ALS
- TTI monitoring
- BIP Error Insertion

- The following SDH interfaces shall be available:

- STM-1/4 (622Mbit/s / 155Mbit/s) optical 4-port interface
- STM-4 (622Mbit/s) optical 4-port interface
- STM-4/16 (2.5Gbit/s / 622Mbit/s) optical 4-port interface

- This interface shall provide Multiples Section Protection (MSP):

- 1+1 Section Protection
- STM-1 (155Mbit/s) electrical 1-port interface

- Furthermore, optical ATM STM-1 interfaces at 1310nm and 1550nm shall be available.

- The following main functions shall be supported:
- Termination/generation of ATM cells using AAL1/CCS, AAL2/LES
- Multiplexing and cross-connecting of ATM VCs/VPs

ii. PDH Aggregate Units

Up to four 8Mbit/s optical interfaces (1310nm and 1550nm) shall be available. Each interface shall provide at least 2 x 2Mbit/s (G.703/G.704) electrical interfaces and have an integrated switch matrix to convert the incoming optical stream directly into an electrical G.703 stream.

iii. HDSL Trunk Units

The 2Mbit/s HDSL interface shall provide means to interconnect the multiplexer over two pairs of copper wire up to 10 km using following modulations: CAP, PAM16 or G.SHDSL. It shall communicate either with another interface of the same type or with a remote desktop terminal.

- **HDSL Line Protection**

  The HDSL equipment shall (where necessary) be protected against influences of induced voltages up to 10 kV.

iv. 4-Wire Interface (VF interface)

This interface shall provide 8 voice channels with a bandwidth of 300 Hz – 3.4 kHz and 2 signalling channels (M => E, M' => E') per voice channel. Each interface shall be configurable to operate with or without CAS. With CAS it shall use the "a" and "b" bits for the two signalling channels.

- The level shall be software adjustable within the following range:
  - Input: +7.5 to -16dBr
  - Output: +7.0 to -16dBr

- Modules where each interface can be individually configured with 1+1 path protection shall be available.

v. Analogue Subscriber Interface

An interface with at least 10 subscribers as well as high-density analogue subscriber card with up to 30 subscribers shall be available. The ringing generator shall be integrated in the subscriber module interface. The ringer frequency shall be adjustable for 20Hz, 25Hz, and 50Hz. The following main functions shall be supported:

- Downstream signalling

  - Ringing
  - Metering
  - Polarity reversal
  - Reduced battery
  - No battery

- Upstream signalling

  - On/off-hook
  - Pulse and DTMF dialling
  - Flash impulse
  - Earth key

- General:

  - Constant current line feeding
  - Line test
  - Permanent line checks
  - CLIP (On-hook VF transmission)
  - Metering after on-hook

vi. Exchange Interface

- This interface shall provide at least 10 ports for connection to remote analogue subscribers to an exchange. It shall provide the following functions:

  - Pulse dialling
  - Tone dialling (DTMF)
  - Earth key function
  - Metering function (12 kHz or 16 kHz)
  - Flash impulse
  - Polarity reversal
  - Indication of busy lines

- The following parameters shall be configurable by software:

  - Input voice level -5 +4dBr
  - Output voice level -7.5 -1dBr
  - Metering pulse enable/disable
  - Signalling bit definition
  - Loop back of voice to the telephone

vii. Party line Telephone System (Engineering Order Wire)

An engineering order wire (EOW) facility shall be provided at each multiplexer. Following options shall be available:

- The EOW shall be configured as a party line and use in band DTMF signalling to call another EOW-Terminal. The Terminal shall have an integrated DTMF decoder allowing to program a subscriber call number and two group call numbers.
- EOW based on Voice over IP (VoIP). The EOW traffic shall be routed over the management channel.

viii. Serial Data Interface

- V.24/V.28 RS232 Interface

  It shall support the following bit rates:
  0 to 0.3 kbit/s transp (V.110)
  0.6 to 38.4 kbit/s synchronous / asynchronous (V.110)
  Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.11/X.24 Interface

  This interface shall comply to the ITU-T X.24 recommendation for signal
  definition and to V.11 for electrical characteristics.

  It shall support the following bit rates:

48, 56, nx 64 kbit/s (n = 1 to 31) synchronous
0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.35 Interface

  This interface shall comply with the ITU-T V.35 and V.110 recommendations
  It shall support the following bit rates:

  48, 56, nx 64 kbit/s (n = 1 to 31) synchronous
  0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
  Modules where each interface can be individually configured with 1+1 path protection shall be available.

- V.36 / RS 449 Interface

  This interface shall comply with the ITU-T V.36 and V.110 recommendations
  It shall support the following bit rates:

  48, 56, n x 64 kbit/s (n = 1 to 31) synchronous
  0.6 – 38.4 kbit/s synchronous / asynchronous (X.30)
  Modules where each interface can be individually configured with 1+1 path protection shall be available.

ix. 64kBit/s Co-Directional Interface

This interface shall comply with the ITU-T G.703 part 1.2.1 for co-directional data transfer. A module shall have at least 8 interfaces. Modules where each interface can be individually configured with 1+1 path protection shall be available.

x. 10/100/1000BaseT Ethernet Interface

A 10/100/1000BaseT interface shall be available. Following specification shall be covered:

- Ethernet connection: 10/100/1000BaseT
- Connectors: SFP technology
- Switching: bypass mode according to IEEE Std 802.3 frame or based on port or VLAN tag ID
- WAN capacity: 63Xvc-12 OR 3Xvc-3
- Logical WAN ports (LWP): minimum 8
- Framing: according to General Framing Procedure GFP (ITU-T G.7041)
- Features: Virtual Concatenation (VCAT) acc. ITU-T G.707
- Link Capacity Adjustment Scheme (LCAS) acc. ITU-T G.7043

On addition an Ethernet Router interface shall be available with the following function:

- Ethernet connection: minimum 10/100BaseT
- Routing Protocols: static IP route, OSPF2 V2, RIP V2
- WAN protocols: PPP, Frame Relay (including RFC 1490)
- WAN capacity: 16 x 2Mbit/s
- WAN-ports > 60

xi. 100/1000BaseF Ethernet Interface

A 100/1000BaseF interface shall be available. Following specification shall be covered:

- Ethernet connection: 100/1000 BaseF
- Connectors: SFP technology
- Switching: bypass mode according to IEEE Std 802.3 frame or based on port or VLAN tag ID
- WAN capacity: 63Xvc-12 OR 3Xvc-3
- Logical WAN ports (LWP): minimum 8
- Framing: according to General Framing Procedure GFP (ITU-T G.7041)
- Features: Virtual Concatenation (VCAT) acc. ITU-T G.707
- Link Capacity Adjustment Scheme (LCAS) acc. ITU-T G.7043

xii. Alarm Interface

The module shall provide means to collect at least 12 external alarms, which will be displayed, on the Network Management System. It shall be used to supervise external equipment by the Network Management System. A minimum of 8 outputs, which can be switched by the Network Management System, shall be available. It shall be possible to connect an input to an output so that if an alarm occurs, the output contact will be switched.

Logical operations among alarm inputs shall be supported.

It shall be possible to label an alarm. The label-text shall be read from the interface module so that it can be indicated on the Network Management System as well as on the local craft terminal.

xiii. Tele-Protection Interface

This interface shall provide means to transmit four bi-directional command channels.

The signals shall be adjustable from 24 to 250Vdc by means of software.

All inputs and outputs shall be isolated and with EMC immunity for harsh environment. Security, Dependability and Transmission speed shall be selectable and programmable.

It shall be able to drop and insert commands, transfer commands as a transit station and it shall be possible to have AND- and OR-connections between commands. The interface shall support T-node configurations.

The Tele-protection interface shall provide an integrated non-volatile event-recorder, which shall be synchronise either internally or by Global Positioning System (GPS) and a command counter, which counts trip commands.

The tele-protection interface shall provide means for signal delay measurement. 1+1 protection must be available; the switching shall be done within less than 4ms (typical value). The interface shall do automatic loop test periodically (preferably every 60s). The tenderer shall confirm that under no circumstances will the interface cause trip-commands in case of power supply failure or when equipment is put into or taken out of service.

Command addressing shall be used to prevent tripping if the signal is inadvertently re-routed through the telecommunication network.

xiv. Optical Protection Relays Interface

This interface shall have an optical port to connect protection relays for tele-protection to the multiplexer. It shall operate according to IEC 870-5-1, format class FT 1.2 on 1300nm using MCMI line coding.

xv. Binary Contact Interface

This interface shall provide means to transmit binary signals.
The inputs and outputs shall be isolated.
The inputs shall be suitable for 24Vdc to 60Vdc. Outputs shall be solid-state relays.

The interface shall provide a 24Vdc short circuit proofed auxiliary power supply.
It shall be able to drop and insert commands, transfer commands, as a transit station and it shall be possible to have AND- and OR- connections between commands. The Binary Contact Interface shall be integrated with the Tele-protection interface and shall provide an integrated event recorder, which shall be synchronically either internally or by GPS.

xvi. 2Mbit/s G.703 / G.704 Interface

This interface shall comply with the ITU-T G.703 and G.704 recommendations.
The interface module shall have at least four interfaces, each of which may be individually activated. It shall be possible to have up to 128 x 2Mbit/s interface modules in a multiplexer.

In order to connect different equipment, the interfaces shall be available with the impedance of 120 ohms and 75 ohms. The interface shall support

CRC-4 multi-frame according to ITU-T G.704 (enabled and disabled by software).

The CAS signalling according to ITU-T G.704 shall be activated optionally.

The interface shall be able to extract the 2.048MHz clock, which can be used to synchronise the multiplex equipment. The interface module shall support 2Mbit/s loop-back of the incoming signal as well as the loop-back of the internal signals.

xvii. Training

The successful Tenderer shall price on the pricing schedule the cost of providing training for a group of maximum six persons per session to enable the CoT personnel to install, programme, maintain and operate the management multiplexers and associated equipment offered.

5. PART C – STANDARD CONDITIONS OF THE TENDER

5.1 General

- All materials and components used in the manufacture and fabrication of equipment to be supplied under this contract shall be of the best quality and class suitable for the purpose specified.
- The equipment offered against this specification shall comply fully with the requirements thereof. Any deviation from this specification shall be clearly stated.
- Alternative offers will be considered, providing the equipment offered complies fully with the minimum requirements of this specification.
- The tenderer shall submit a detailed statement of compliance or non-compliance and reasons (if any) for each, and every requirement called for in this specification.
- Any non-conformance not indicated will render the supplier liable for any expenses incurred by City of Tshwane Electricity to make good the non-conformance.

5.2 Works Content

- The tenderer shall be responsible for the manufacturing or sourcing and delivery to site of the equipment, accessories and/or options and the carrying out of installation works in installing the said equipment, accessories and/or options, asked for in this specification.

- The tenderer shall be required to source, transport to his/her workshops and deliver to site after fitment of equipment any cabinet, rack or tray needed in order to install the equipment called for in this specification.

5.3 Quality Management

Applicable Quality Assurance Standards

The Tenderer shall provide a coordinated and formally documented statement of his quality management system, including quality management objectives, policies, organization, and procedures. Quality monitoring and control by the City's personnel may be done at any time on any material.

Quality Assurance Staff

The Tenderer must provide suitable qualified staff that shall be assigned to control the quality of the material offered within RSA.

Design and Standardization

All equipment shall be designed to ensure the maximum possible continuity of service to be maintained, and to facilitate inspection, testing, maintenance, and repair. Drawings and Dimensions to be attached to confirm compatibility with existing items on Annexure E and Schedule G to be completed.

Occupational Health and safety System

The service provider shall be responsible for ensuring compliance with all the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and it indemnifies the City against any claim which may arise in respect of such act by its personnel against the City.

5.4 Maintenance

The system shall be installed on the City's premises

Tenderers shall state what facilities (hardware and/or software) can be provided at the City's premises for regular servicing and maintenance. A price schedule should be submitted of all components that are likely to require periodic replacement. The name and address of the nearest service depot and supplier of such components should be stated. A service provider with service depot distributed within Gauteng shall be required.

During the maintenance period the Tenderer shall visit the site (over and above such visits as may become necessary due to system breakdowns), at intervals as specified latter in the tender to ascertain that the system is working well. Within 14 days of each such visit the Contractor shall submit a detailed report to the City, which shall include details of all faults that were found as well as a statement that such faults were rectified.

5.5 Installation of Equipment

Equipment shall be mounted for maximum accessibility and visibility.
Workmanship shall be of good quality and all cutting, drilling, welding, etc, shall be neatly done. Each completed installation, including supports, brackets and wiring shall present a clean, compact appearance.

All fixing hardware for field mounted equipment shall be finished off free from jagged edges.

5.5.1 Test, strip, assess and quote

The contractor will be notified to collect the faulty Multiplexer equipment from a particular substation to the contractor's workshop where the equipment will be tested, stripped and assessed. The contractor will strip the relevant equipment, perform electrical/electronic tests, visually inspect for faults and assess the condition of each component.

The contractor must compile and submit an assessment report/quotation to the Deputy Director: Electronic systems management who will have the final say in whether repair/replacement work must continue or not. The assessment report/quotation to the Deputy Director: Electronic systems management must be submitted within the strip and assess duration period as indicated by the successful tenderer in the Duration Schedule of this tender.
The assessment report/quotation shall detail the cause of failure and the work required to bring the Multiplexer equipment into proper and safe operation and shall include recommended options regarding:

- parts that require repair or replacement or
- scrapping of equipment
- Name of repair workshop
- Repair work Job number
- Date of repair

The Multiplexer equipment must only be repaired/replaced after an official order number has been received from the CoT.

When the Multiplexer equipment cannot be repaired or when it is too costly compared with new prices to be repaired the equipment must be completely assembled again, without the omission of any parts, clearly marked on a tag the workshop name and job number and together with the assessment report delivered back to wired section storage at the Electronics Services depot. A separate assemble price is provided for in the price schedule.

All the repair/replacement work on the Multiplexer equipment must be done in accordance with the applicable ETSI standards.

Note: All standards are subject to revision and since any reference to a standard is deemed to be a reference to the latest edition of that standard, contractors to agreements based on standards are encouraged to take steps to ensure the use of the most recent editions of the standards referred to.

The test, strip and assess cost shall include transportation costs from substation A and the transportation back to substation A after repairs.

The tendered price for repairs must include all possible items as mentioned in Table A3 but the final invoice price will be determined by the actual parts which have been replaced.

5.5.2 Time required for the work

The time to do the Strip, Quote and repair is required for evaluation and contract management purposes. The attached duration schedule shall be completed for that purpose.

5.6 Demonstration and Pilot Testing

The bidders will be requested to commission and run a pilot test during the evaluation process at their (bidder's) costs, to ensure that their system can interface with the existing multiplexer system. The bidders will be given a period of five working days to run the pilot.

The City will provide facilities for bidders to run pilot testing of equipment to be offered and the City's personnel will inspect if that system meets all specifications required.

N.B Bidders must take note that the successful run of the pilot test does not guarantee that they will be awarded the tender.

5.7 Compliance with specifications

The tenderer shall be required to comply with all standards mentioned in the document.

5.8 Works Content

The Tenderer shall be responsible for the manufacturing or sourcing and delivery to site of the equipment, accessories and/or options and the carrying out of installation works in installing the said equipment, accessories and/or options, asked for in this specification.

The Tenderer shall be required to source, transport to his/her workshops and deliver to site after fitment of equipment any cabinet, rack or tray needed in order to install the equipment called for in this specification.

5.9 Guarantee and defects

The Tenderer shall guarantee the satisfactory operation of the complete repair work and accept liability for the manufacture's defects that may appear in design, materials and workmanship.

Any fault occurring within the guarantee period during installation or commissioning process of this contract shall automatically be deemed an inherent defect. Such inherent defect shall be fully rectified to the satisfaction of the Deputy Director: Electronic Systems Management at the cost of the Tenderer.

5.10 Safety

The Tenderer shall comply with the Occupational Health and Safety Act and Regulations, 1993 (Act 85 of 1993)

5.11 Property of the CoT

The equipment in the workshop of the Tenderer must clearly be marked by the Tenderer as the “Property of the City of Tshwane”. The equipment must immediately be returned to the Electronics Services storeroom in case of liquidation or for whatever other reason the workshop of the Tenderer is closed.

Bidders must fill the table below to indicate the duration of repair work on specified items.

Item 1: Duration schedule for Multiplexer Equipment

Item No.	Description	Strip & assess duration	Repair duration	Commission & Testing duration
1	COBUX card			
2	SYNIO card			
3	SYN4E card			
4	TEBIT card			
5	ETER card			
6	DATAx card			
7	TUPON card			
8	Fox charger Module for 48 Vdc			

6.AWARD

This tender will be awarded to one service provider.

7.TYPE OF AGREEMENT REQUIRED

The leading department should indicate whether there will be a Service Level Agreement or Memorandum of Understanding/Agreement to be completed after the appointment.

8.VALIDITY PERIOD

The validity period for the tender after closure is 90 days. CoT shall have right and power to extent any tender validity period beyond any initial validity period set and subsequent extensions. SCM shall ensure that an extension of validity is requested in writing from all bidders before the validity expiry date. Extension of validity shall be finalised while the quotations/bids are still valid.

9.MARKET ANALYSIS

The city of Tshwane reserves the right to conduct market analysis. Should the city exercise this option, where a tenderer offers a price that is deemed not to be viable to supply goods or services as required, written confirmation will be made with the tenderer if they will be able to deliver on the price, if a tenderer confirm that they cannot, the tenderer will be disqualified based on being non-responsive. If they confirm that they can deliver, a tight contract to mitigate the risk of non-performance will be entered into with the service provider. Further action on failures by the supplier to deliver will be handled in terms of the contract including performance warnings and listing on the database of restricted suppliers.

The city further reserves the right to negotiate a market related price with a tenderer scoring the highest points. If the tenderer does not agree to a market-related price, the city reserves the right to negotiate a market-related price with the tenderer scoring the second highest points, if the tenderer scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the tenderer scoring the third highest points. If a market-related price is not agreed, the city reserves the right to cancel the tender.

10. DRAFT SERVICE LEVEL AGREEMENTS

Specification to be accompanied by a draft service level agreement (SLA).

11. STAGES OF EVALUATION

Stage 1: Administrative compliance.

Stage 2: Mandatory Requirements

Stage 3: Functionality Criteria

Stage 4: Interoperability Technical Evaluation

Stage 5: Preference Point System

11.1 Stage 1: ADMINISTRATIVE COMPLIANCE

All the bids will be evaluated against the administrative requirements as set out in the list of returnable documents.

Compulsory Returnable Documentation (Submission of these are compulsory)	**Submitted (YES or NO)**	**Checklist (Guide for Bidder and the Bid Evaluation Committee)**
a) To enable The City to verify the bidder's tax compliance status, the bidder must provide; • A copy of their Tax Clearance Certificate (TCS); or • Indicate their tax compliance status PIN.		TCS must be in the same business name as the bidding company. TCS must be valid. Tax status must be compliant before the award.
b) A copy of their Central Supplier Database (CSD) registration; or indicate their Master Registration Number / CSD Number;		CSD must be valid. Tax status must be compliant before the award.
c) Confirmation that the bidding company's rates and taxes are up to date: Original or copy of Municipal Account Statement of the Bidder (bidding company) not older than 3 months and account must not be in arrears for more than ninety (90) days; or ,signed lease agreement or In case of bidders located in informal settlement, rural areas or areas where they are not required to pay Rates and Taxes a letter from the local councillor confirming they are operating in that area		Was a Municipal Account Statement or landlord letter provided for the bidding company? The name and / or addresses of the bidder's statement correspond with CIPC document, Address on CSD or Company profile? Are all payment(s) up to date (i.e. not in arrears for more than 90 days?
d) In addition to the above, confirmation that all the bidding company's owners / members / directors / major shareholders rates and taxes are up to date: • Original or copy of Municipal Account Statement of all the South African based owners / members / directors / major shareholders not older than 3 months and the account/s may not be in arrears for more than ninety (90) days; or a signed lease agreement of owners / members / directors / major		Was a Municipal Account Statement or landlord letter provided for the bidding company? The name and / or addresses of the bidder's statement correspond with CIPC document, Address on CSD or Company profile? Are all payment(s) up to date (i.e. not in arrears for more than 90 days?

Compulsory Returnable Documentation (Submission of these are compulsory)	**Submitted (YES or NO)**	**Checklist (Guide for Bidder and the Bid Evaluation Committee)**
shareholders or In case of bidders located in informal settlement, rural areas or areas where they are not required to pay Rates and Taxes a letter from the local councillor confirming they are residing in that area		
e) Duly Signed and completed MBD forms (MBD 1, 4, 5, 8 and 9) The person signing the bid documentation must be authorized to sign on behalf of the bidder. Where the signatory is not a Director / Member / Owner / Shareholder of the company, an official letter of authorization or delegation of authority should be submitted with the bid document. **NB: Bidders must ensure that the directors, trustees, managers, principal shareholders, or stakeholders of this company, declare any interest in any other related companies or business, whether or not they are bidding for this contract. *See Question 3.14 of MBD 4. Failure to declare interest will result in a disqualification*****		All documents fully completed (i.e. no blank spaces)? All documents fully signed? Signature authorized (any director / member / trustee as indicated on the CIPC document, alternatively a delegation of authority would be required? Documents completed in black ink (i.e. no "Tippex" corrections, no pencil, no other color ink, or **non-submission of the above**, will be considered)?
f) Financial Statements for the most recent three (3) years or financial statements from date of existence for companies less than three years old. **NB**: The bidder must submit signed audited annual financial statements for the most recent three years, or if established for a shorter period, submit audited annual financial statements from date of establishment. If the bidder is not required by law to prepare signed annual financial statements for auditing purposes, then	NOT APPLICABLE. Tender value below R10m	Applicable for tenders above R10m in conjunction with MBD 5) Are Audited financial statements provided (Audited financials must be signed by auditor)? Or proof that the bidder is not required by law to prepare audited financial statements.

Compulsory Returnable Documentation (Submission of these are compulsory)	**Submitted (YES or NO)**	**Checklist (Guide for Bidder and the Bid Evaluation Committee)**
the bidder must submit proof that the bidder is not required by law to prepare audited financial statements.		
g) Joint Ventures (JV) – (Only applicable when the bidder tenders as a joint venture) Where the bidder bids as a joint venture (JV), the required or relevant documents as per (a) to (f) above must be provided for all JV parties. In addition to the above the bidder must submit a Joint Venture (JV) agreement signed by the relevant parties. **NB**: It is a condition of this bid that the successful bidder will continue with the same Joint Venture (JV) for the duration of the contract unless prior approval is obtained from the City.		If applicable. JV agreement provided? JV agreement complete and relevant? Agreement signed by all parties? All required documents as per (i.e. a to f) must be provided for all partners of the JV.
h) Bidder attended a compulsory briefing session where applicable		A compulsory briefing register must be signed by the bidder. **Bidders will be disqualified should they fail to attend compulsory briefing session**
i) Pricing schedule (All items must be quoted for in pricing schedule and if not, all items are quoted the bidder will be disqualified). Unless the tender is awarded per item or per section where the bidder only quoted the items or sections, they are interested in.		Incomplete pricing schedule results in totals being incomparable. Bidder must be disqualified. **Bidder will be disqualified should they make corrections on the price schedule without attaching a signature thereto.**

Compulsory Returnable Documentation (Submission of these are compulsory)	Submitted (YES or NO)	Checklist (Guide for Bidder and the Bid Evaluation Committee)
		Bidder will be disqualified should they use tippex/ correction ink, on the price schedule.

11.2 STAGE 2: MANDATORY REQUIREMENT(S)

Bidders are required to submit the following, and failure to submit will result in the bidder being disqualified.

Item	Mandatory	Item Submitted (Yes□ /No□) mark with x
OEM	It is mandatory that the bidders have proof in writing in the form of a signed letter with a template that they have the support of the Original Equipment Manufacturer (OEM) of the Multiplexer equipment infrastructure. This only applies if the bidder is not the Original Equipment Manufacturer	Please provide evidence in Annexure A
		Item Submitted (Yes□ /No□) mark with x
ECSA	It is mandatory to attach certified ECSA registration certificates for key personnel.	Please provide evidence in Annexure C2

11.3 STAGE 3: FUNCTIONALITY CRITERIA

Only those tenders submitted by tenderers who achieve the minimum score of **70 points (out of 100)** for functionality as stated below will be declared responsive.

The description of the functionality criteria and the maximum possible score for each is shown in the tables below. The score achieved for functionality will be

the sum of the scores achieved, in the evaluation process, for the individual criteria.

Criteria	Sub-Criteria	Scale	Weight	High Possible Score
PART A – Track Record and Technical Expertise Companies proven track record in the Maintenance, Service and Support of a FOX 515 and FOX 615 Multiplexers network system. (Refer to Schedule D1 and E1) Attach signed appointment and reference letter(s) in the company letterhead with completion certificate(s) for project successfully completed. (Annexure B1 and Annexure B2)	Only projects with variable documentary proof in the form of both appointment letter(s) and completion certificate(s) will be considered and awarded points.			
	Appointment letter and completion certificate for 1 Project	1	5	25
	Appointment letters and completion certificates for 2 Projects	2		
	Appointment letters and completion certificates for 3 Projects	3		
	Appointment letters and completion certificates for 4 Projects	4		
	Appointment letters and completion certificates for 5 Projects	5		
PART B – Track Record and Technical Expertise Companies proven track record in the Installation, Testing and Commissioning of a Multiplexer network system in substations. (Refer to Schedule D2 and E2) Attach signed appointment and reference letter(s) in the company letterhead with completion certificate(s) for project successfully completed. (Annexure B3 and Annexure B4)	Only projects with variable documentary proof in the form of both appointment letter(s) and completion certificate(s) will be considered and awarded points.			
	Appointment letter and completion certificate for 1 Project	1	5	25
	Appointment letters and completion certificates for 2 Projects	2		
	Appointment letters and completion certificates for 3 Projects	3		
	Appointment letters and completion certificates for 4 Projects	4		
	Appointment letters and completion certificates for 5 Projects	5		
Key Personnel and Experience	The tenderer must have in his/her employee, personnel with the following minimum qualifications in Electronics/Electrical Engineering.			

Proven experience of the Technician (Field Service Engineer) (Refer to Schedule C) It is mandatory to attach certified copies of qualification and valid ECSA registration certificates for key personnel. (Annexure C2) Attach Curriculum Vitae (Annexure C1).	**(Note: Points will be allocated and added for each personnel in this section)**				
	Engineer: Degree (BEng/BSc/B-Tech) in Electronic/Electrical Engineering (NQF Level 7 qualification)	1 Year + 2 Years + 3 Years + 4 Years + 5 Years +	2 3 4 5 6	5	30
	Technician: National Diploma in Electronic/Electrical Engineering (NQF Level 5 qualification)	1 Year + 2 Years + 3 Years + 4 to 5 Years + 	1 2 3 4	5	20
Total					**100**

The minimum score of **70 points (out of 100)** is required to go through to the next stage of the tender.

Tenderers shall ensure that all relevant information has been submitted with the tender offer in the prescribed format to ensure optimal scoring of functionality points for each Evaluation Criteria. Failure to provide all information in this Tender submission could result in the Tenderer not being able to achieve the specified minimum scoring.

11.4 STAGE 4: Interoperability Technical Evaluation

It is important to note that all new equipment to be supplied and installed under this tender shall seamlessly integrate and work with the comprehensive system already successfully deployed by the City. New equipment must interface and run similar protocols to the existing system.

Although all the functionality requirements are listed here under Standard Specification, it shall be noted that all functional requirements shall be adhered to in full in all aspects to the specification. All the functional requirements as listed in the Standard and the tender specification are fully utilized by the CoT. It is thus of extreme importance that the tenderer fully complies with all functionalities, hardware and software as requested in the specifications.

The CoT currently operates a fibre optic communication network consisting of ABB FOX 515/615 STM-1/4/16 multiplexers with a complete network managed via a FOXMAN Network Management System (NMS) at Electronic System Management depot. Therefore, if bidders are supplying a different brand of Multiplexer equipment, the bidders shall be requested for multiplexer testing to ensure that the City will have an uninterrupted and full functional Multiplexer communication network operation with existing equipment.

NOTE: For evaluation purposes, SCHEDULE B will be done by the COT official during site testing and 100% functional Multiplexer system is required to go through to the next stage of the tender. Should the bidders Multiplexer equipment, (e.g. the interface card) not 100% functional to requirements, the bidder will be disqualified to progress to the next stage of the tender.

11.5 STAGE 5: PREFERENCE POINT SYSTEM

The preferential point system used will be the 80/20 points system in terms of the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) Regulations 2022.

- 80 points for price
- 20 points for Specific goals

Specific Goals

- Bidders are required to submit supporting documents for their bids to claim the specific goal points.
- Non-compliance with specific goals will not lead to disqualification but bidders will not be allocated specific goal points. Bidders will score points out of 90 for price only and zero (0) points out of 10 for specific goals.
- Cot shall act against any bidder or person when it detects that the specific goals were claimed or obtained on a fraudulent basis.
-

Specific goals	**80/20 preference point system**	**Proof of specific goals to be submitted**
BB-BEE score of companies • Level 1 • Level 2 • Level 3 • Level 4 • Level 5 • Level 6 • Level 7 • Level 8 • Non-compliant	• 8 Points • 7 Points • 6 Points • 5 Points • 4 Points • 3 Points • 2 Points • 1 Point • 0 Points	Valid Certified copy of BBBEE certificate. Sworn Affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises or CIPC BBBEE certificate.
EME and/ or QSE	2 Points	Valid Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises or CIPC BBBEE certificate
At least 51% of Women-owned companies	2 Points	Certified copy of Identity Document/s **and** proof of ownership (Sworn affidavit for B-BBEE qualifying

Specific goals	80/20 preference point system	Proof of specific goals to be submitted
		small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership)
At least 51% owned companies by People with disability	2 Points	Medical Certificate with doctor's details (Practice Number, Physical Address, and contact numbers) and proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership
At least 51% owned companies by Youth	2 Point	Certified copy of Identity Document/s **and** proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership
Local Economic Participation • City of Tshwane • Gauteng • National	 4 Points 2 Points 1 Point	Municipal Account statement/Lease agreement.

For points to be allocated as per above the tenderers will be required to submit proof of documentation as evidence for claims made. Any tenderer that does not submit evidence as stated in the bid document to claim applicable points will be allocated zero points.

12. PART E – PRICING SCHEDULE

NB. Bidders must take note that the estimated quantities on the pricing schedules are for evaluation purposes only

7.1 Pricing instructions

7.1.1 State the rates and prices in Rand unless instructed otherwise in the tender conditions.

7.1.2 All prices tendered must include all expenses, disbursement and costs (e.g. transport, accommodation, etc.) that maybe required for the execution of the tenderer's obligations in terms of the contract, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the Contract as well as overhead charges and profit (in the event the tender is successful). All prices tendered will be final and binding.

7.1.3 All prices shall be tendered in accordance with the units specified in this schedule.

The successful tenderer is required to perform all tasks listed against each item. The tenderer must therefore tender prices/rates on all items as per position in the Price Schedule**. An item against which no rate is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been**

entered against an item, i.e. that there is no charge for that item. The tenderer maybe requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform risk analysis with regard to the reasonableness of such rates.

7.1.4 Table B3 must be priced for Year 1, Year 2, and Year 3. Not subjected to price adjustment.

7.1.5 Bidders are required to quote on items per table as specified and must quote on all tables**.**

7.1.6 As per price schedule, Table A1 to Table A5 is to supply, maintain, support, and upgrade the existing SDH/PDH multiplexer and Network Management System and is grouped as one in Summary Table for PART A and all items must be tendered on. Table B1 to Table B3 is for supply, installation of new multiplexer and NMS that is similar and equivalent to the existing installed multiplexer and is grouped as one in Summary Table for PART B. Tenderers must price all items in a table to be responsive. Tender will be awarded to the highest ranked responsive tenderer and a tenderer will be awarded to one service provider.

PART A

SUPPLY, DELIVERY, MAINTENANCE, AND SUPPORT SERVICE OF THE EXISTING ABB FOX 515, FOX 615 MULTIPLEXERS

Table A1: FOXMAN Software Upgrade (3029826 – Material Number)

Item No.	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
1	4.2.3	NMS Software (UCST)	Each	Once-off		
2	4.2.3	Management Hot Standby Server	Each	Once-off		
					Subtotal (excl. VAT)	**R**
					VAT (15%)	**R**
					Subtotal (incl. VAT)	**R**

Table A2: FOX 515 and FOX 615 (Supply and Delivery)

(3029825 – Material Number)

Item No	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
1	Multiplexer / Node					
1.1	4.2.4	Supply, factory test and delivery of chassis 19" mountable, small. This shall be equipped with Dual PSU input at 48 Vdc	each	10		
1.2	4.2.4	Supply, factory test and delivery of chassis 19" mountable, medium. This shall be equipped with Dual PSU input at 48 Vdc	each	10		
1.3	4.2.4	Supply, factory test and delivery of chassis 19" mountable, large. This shall be equipped with Dual PSU input at 48 Vdc	each	10		
2	In ref. to PDH/SDH access Unit					
2.1	4.2.4.5 i	SYN4E trunk link complete with SFPs	each	20		
2.2	4.2.4.5 i	SYNAC	each	20		
2.3	4.2.4.5 i	SAMO1 trunk link complete with SFPs	each	50		
2.4	4.2.4.5 i	SAMO2(-F) trunk link complete with SFPs	each	50		
2.5	4.2.4.5 i	SAMO3 trunk link complete with SFPs	each	50		
3	Core Unit					
3.1	4.2.4.1	COBUX	each	30		
3.2	4.2.4.1	CESM	each	30		
4	HDSL trunk link					
4.1	4.2.4.5 iii	STICx	each	30		
4.2	4.2.4.5 iii	DATI1	each	30		
5	4 – Wire Interface					
5.1	4.2.4.5 iv	NEMSG	each	30		
5.2	4.2.4.5 iv	LEDA1	each	30		
6	Analogue Subscriber Interface					

Item No	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
6.1	4.2.4.5 v	SUBHx	each	20		
6.2	4.2.4.5 v	LESU1	each	20		
7	Exchange Interface					
7.1	4.2.4.5 vi	EXLAN	each	20		
7.2	4.2.4.5 vi	LEXI1	each	20		
8	Data Interface					
8.1	4.2.4.5 viii	DATAx	each	50		
8.2	4.2.4.5 viii	LEDS1	each	50		
9	64 kBits Co-directional Interface					
9.1	4.2.4.5 ix	GECOD	each	20		
9.2	4.2.4.5 ix	LECO1	each	20		
10	24 port 10/100/1000 BaseT Ethernet Interface					
10.1	4.2.4.5 x	NEBRx	each	40		
10.2	4.2.4.5 x	ELET1	each	40		
11	12 port 100/1000 BaseF Ethernet Interface					
11.1	4.2.4.5 xi	NEBRx	each	30		
11.2	4.2.4.5 xi	ETOP1(-F)	each	30		
12	4 port Router interface					
12.1	4.2.4.5 x	ETER1	each	20		
12.2	4.2.4.5 x	EPSI1	each	20		
13	Tele-protection Interface					
13.1	4.2.4.5 xiii	TEBIT	each	50		
13.2	4.2.4.5 xiii	TEPI1	each	50		
14	Optical Protection Relays Interface					
14.1	4.2.4.5 xiv	OPTIF	each	20		
14.2	4.2.4.5 xiv	OPIC1	each	20		
15	PDH Aggregate Unit					
15.1	4.2.4.5 ii	LOMIF	each	30		
15.2	4.2.4.5 ii	LEDE1	each	30		

Item No	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
15.3	4.2.4.5 xv	TUPON	each	30		
16	4.2.4.5 xii	ALCAR Interface	each	10		
17	4.2.4.5 vii	COSI1 Interface	each	10		
18	SFP's					
18.1	4.2.4.5 i	Feature License: Upgrade STM4 to STM16	once-off	1		
18.2	4.2.4.5 i	S1.1 SFP – STM1 (155Mbps) – 20km	each	100		
18.3	4.2.4.5 i	L1.1 SFP – STM1 (155Mbps) – 40km	each	100		
18.4	4.2.4.5 i	L1.2 SFP – STM1 (155Mbps) – 80km	each	100		
18.5	4.2.4.5 i	L4.1 SFP – STM4 (622Mbps) – 20km	each	100		
18.6	4.2.4.5 i	L4.1 SFP – STM4 (622Mbps) – 40km	each	100		
18.7	4.2.4.5 i	L4.2 SFP – STM4 (622Mbps) – 80km	each	100		
18.8	4.2.4.5 i	S16.1 SFP – STM16 (2.5Gbps) – 20km	each	100		
18.9	4.2.4.5 i	L16.1 SFP – STM16 (2.5Gbps) – 40km	each	100		
18.10	4.2.4.5 i	L16.2 SFP – STM16 (2.5Gbps) – 80km	each	100		
28	**SDH/PDH Additional System Requirements**					
28.1	4.2.4.4 ii	48 Volt DC Charger. (Dual 220Vac – 48Vdc)	each	20		
28.2	-	Battery Charger Module. Single charger module for 48Vdc charger described in 28.1	each	40		
28.3	4.2.4.5 xvi	Training on the existing FOXMAN Network Management System	Per Session	6 Candidates		
28.4	-	Delivery of Equipment	Per km	50 km		
Subtotal (excl. VAT)						**R**
VAT (15%)						**R**
Subtotal (incl. VAT)						**R**

Table A3: Existing Multiplexer Equipment (Repairs)

(3029827 – Material Number)

NOTE: Y= R10 000.00 This figure is an estimated value for the OEM cost which is for evaluation purposes only.

Item No.	Description	Price to test, strip, assess and submit report. (a) (R)	OEM replacement parts mark-up percentage (to replace the broken parts) The limited markup percentage is limited to a maximum of 10%. % (b) (R)	Repair and test of Multiplexer Equipment Labour (c) (R)	Total each (excl VAT) (a)+[(b) x (Y)] + (c) (R)
1	COBUX card				
2	SYNIO card				
3	SYN4E card				
4	TEBIT card				
5	TUPON card				
6	ETER card				
7	DATAx card				
8	Fox charger module for 48Vdc				
Subtotal (excl. VAT)					**R**
VAT (15%)					**R**
Subtotal (incl. VAT)					**R**

Table A4: Onsite Support routine maintenance for Multiplexers (Substations)

(3029828 – Material Number)

Item No.	Description	Unit	Quantity (Estimated)	Unit Rate Price (excl. VAT) (R)	Total Rate Price (excl. VAT) (R)
1	**Work Schedule**				
1.1	Planned routine & preventative maintenance of Multiplexer equipment	Monthly	36		
Item No.	**Description**	**Rate**	**Worked Hours**	**Unit Rate Price (excl. VAT) (R)**	**Total Rate Price (excl. VAT) (R)**
1.2	**Personnel**				
1.2.1	Project Manager (Electronic/Electrical Engineering)	Per hour	1000		
1.2.2	Engineer (Electronic/Electrical Engineering)	Per hour	1000		
1.2.3	Technician (Electronic/Electrical Engineering)	Per hour	1000		
1.2.4	Artisan (Electronic/Electrical Engineering)	Per hour	1000		
1.2.5	General Worker	Per hour	1000		
Subtotal (excl. VAT)					**R**
VAT (15%)					**R**
Subtotal (incl. VAT)					**R**

N.B Bidders will be requested to do online maintenance as and when required.

Table A5: Online Support

(3031620 – Material Number)

Item No.	Description	Rate	Quantity Estimated hours	Unit Rate Price (excl. VAT) (R)	Total Rate Price (excl. VAT) (R)
1	Online or Over the phone Support Service from 3rd level help desk facility	Per hour	500		
Subtotal (excl. VAT)					**R**
VAT (15%)					**R**
Subtotal (incl. VAT)					**R**

Summary Table – Part A

Note: Bidders must fill out the summary table below.

SECTION		TOTAL
PART A		
Table A1	SUBTOTAL INCLUDING VAT	R
Table A2	SUBTOTAL INCLUDING VAT	R
Table A3	SUBTOTAL INCLUDING VAT	R
Table A4	SUBTOTAL INCLUDING VAT	R
Table A5	SUBTOTAL INCLUDING VAT	R
PART A - TOTAL INCLUDING VAT		**R**

PART B

SUPPLY, INSTALLATION, SOFTWARE AND SUPPORT SERVICE OF AN SDH/PDH MULTIPLEXER FOR USE IN SUBSTATIONS.

Table B1 – Software (Supply and Installation) (3031621 – Material Number)

Item No.	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
1	4.3.1	NMS Software	Each	Once-off		
2	4.3.1	Management Hot Standby Server	Each	Once-off		
Subtotal (excl. VAT)						**R**
VAT (15%)						**R**
Subtotal (incl. VAT)						**R**

Table B2 – Multiplexer modules and equipment (Supply and Installation) (3031622 – Material Number)

Item No.	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
1	**SDH/PDH**					
1.1	4.3.2	Multiplexer full rack for communication using optical and SHDSL networks, complete with power supply, control unit and fan unit	each	20		
1.2	4.3.2.5 i	SDH aggregate unit with E1 interface	each	10		
1.3	4.3.2.5 ix	E1 port data unit	each	10		
1.4	4.3.2.5 ix	Multiprotocol serial data module	each	10		
1.6	4.3.2.5 xiv	Teleprotection interface unit	each	10		
1.8	4.3.2.5 iv	Subscriber interface unit	each	10		
1.9	4.3.2.5 v	4 wire analogue E&M unit	each	10		
1.10	4.3.2.5 xv	Optical protection interface unit	each	10		
1.11	4.3.2.5 vii	Exchange interface unit	each	10		
		Other Devices: To meet overall functionality				
2	-	Installation of new multiplexer	each	10		

Item No.	Refer To Spec Items	Description	Unit	Estimated Qty	Unit Price (excl. VAT) (R)	Total Price (excl. VAT) (R)
3	4.3.2.4 ii	48 Volt DC Charger. (Dual 220Vac – 48Vdc)	each	20		
4	-	Testing and commissioning	once-off	1		
5	-	Configurations	once-off	1		
6	4.3.2.5 xvii	Training on the Network Management system	Per Session	6 Candidates		
7	-	Delivery of Equipment	Per km	50 km		
Subtotal (excl. VAT)						**R**
VAT (15%)						**R**
Subtotal (incl. VAT)						**R**

TABLE B3: Batteries (Supply and Delivery)
(3031623- Material Number)

Item No.	Description	Unit	Est. Qty	Unit Price (excl. VAT) (R)			Total Price (excl. VAT) (R)
				Year 1	Year 2	Year 3	
Batteries							
1	Batteries 48Volt Calcium 100 to 105 Amp Hours as described in Table B2 item 3	Each	20				
2	Batteries 48Volt Lead acid Gel Pack 100 Amp Hours as described in Table B2 item 3	Each	20				
3	Batteries 48Volt Lithium-ion battery pack 100 Hrs as described in Table B2 item 3	Each	20				
Subtotal (excl. VAT)							**R**
VAT (15%)							**R**
Subtotal (incl. VAT)							**R**

Summary table for PART B

Note: Bidders must fill out the summary table below

SECTION		TOTAL
PART B		
TABLE B1	SUBTOTAL INCLUDING VAT	R
TABLE B2	SUBTOTAL INCLUDING VAT	R
TABLE B3	SUBTOTAL INCLUDING VAT	R
PART B - TOTAL INCLUDING VAT		**R**

Summary table for PART A and B

DESCRIPTION	TOTAL
PART A - TOTAL INCLUDING VAT	R
PART B - TOTAL INCLUDING VAT	R
GRAND TOTAL INCLUDING VAT	**R**

13. SUPPORTING SCHEDULES

Information to be provided with the tender.

The following information shall be provided with the tender:

i. Schedule A: Schedule of Technical Particulars
ii. Schedule B: Interoperability of the Multiplexers
iii. Schedule C: Annexures for Functionality Scoring
iv. Schedule D: Schedule of Previous Relevant Experience
v. Schedule E: Schedule Reference Substation Projects
vi. Schedule F: The Schedule of Battery specifications
vii. Schedule G: Drawings and samples to be provided on request to confirm compatibility with existing items

SCHEDULE A: Schedule of Technical Particulars SDH/PDH

Bidders must indicate on the table below whether they are Original Equipment Manufacturer (OEM) or Distributors of the items offered. Please refer to the specifications and item description in the pricing schedule.

In the table below bidders must provide the product list and technical data sheet in response to the specification requirements. It is equally important for bidders to indicate the brand, make and/or model of the items to be offered.
ONLY items that are equivalent or better than the specified items in the pricing schedule will be considered.

NAME OF MANUFACTURER: _____

MODEL: _____

TYPE: _____

OEM / DISTRIBUTOR: _____

Item	Description	Requirements	Offered	Adaptable to existing equipment		Comments
				Yes	No	
1 **SDH module**						
1.1	Number of SDH ports	- Min. 4 (2 x STM-1/4, 2 x STM-4/16 SFP-cage) - SFPs available with optical LC/PC (STM-1/4/16) or electrical DIN 1.0/2.3 75Ω (STM-1) connector				
1.2	Number of Ethernet ports	- Min. 4 x 10/100/100 BaseT RJ-45 connector				
1.3	SDH features	- 128 x 128 VC-4 HO cross connect - 1008 x 1008 VC-12 LO cross connect - Max. 64 x P12 termination to TDM Bus - 80 x AU4 backplane connectivity				
1.4	Ethernet features	- Member of chassis switch - Max. 32 x EoS mappers with at least 2.4 Gbit/s - Onboard of at least 10Gbit/s VLAN-aware switch				
1.5	Traffic protection	- SNCP/MSP for SDH traffic (inter and intra module) - GFP/VCAT/LCAS for EoS mappers				

		- Chassis switch features				
1.6	Equipment protection	1+1 HW Protection				
1.7	Number of Electrical ports	- Min. 48 x E1 acc. G.703/G.704				
1.8	Bit rate	- 2048 kbit/s ±50ppm				
1.9	Line Impedance	- 75Ω asymmetrical or 120Ω symmetrical				
1.10	Traffic protection	- SNCP on 64 kbit/s and P12 layer for transparent E1 channels				
1.11	Features	- Tributary or aggregate interface - Two-slot unit				
2 **PDH module**						
2.1	Number of electrical ports	- Min. 8 x E1 acc. G.703/G.704				
2.2	Bit rate	- 2048 kbit/s ± 50 ppm				
2.3	Line impedance120	- 120 Ω symmetrical or 75 Ω asymmetrical				
2.4	Traffic protection	- SNCP on 64kbit/s and P12 layer for transparent E1 channels				
2.5	Features	- Tributary or aggregate interface				
3 **SHDSL module**						
3.1	Number of ports	- Min. 8 x 1-pair or 4 x 2-pair				

3.2	Line code	- 16 Trellis coded-PAM acc. G.991 .2				
3.3	Line rate	- n x 64 Kbps duplex via 1 or 2 copper pairs, n = 3 ... 32				
3.4	Service rate	- n x 64 Kbps duplex via 1 or 2 copper pairs, n = 1 ... 32				
3.5	Transmission range	- Up to 25 km				
3.6	Transmission mode	- 1- or 2-pair				
3.7	Traffic protection	- 1+1 path protection				
3.8	Features	- Tributary or aggregate interface Remote powering				
4 **2Mbit/s SHDSL Desktop Terminal**						
4.1	Number of transmission ports	- Min. 1 x 1-pair or 2-pair				
	Number of access ports	- Fixed G.703/G.704 120 Ω or 1 modular interface (G.703/G.704 75 Ω, V.24, X.21 /V.11, V.35, V.36, Ethernet)				
4.2	Line code	- 16 Trellis coded-PAM acc. G.991.2				
4.3	Line rate	- n x 64 Kbps duplex via 1 or 2 copper pairs, n = 3 ... 32				
4.4	Service rate	- n x 64 Kbps duplex via 1 or 2 copper pairs, n = 1 ... 32				
4.5	Transmission range	- Up to 25 km				
4.6	Options:	- Remote powering				

4.7	Local power supply	- 115/230 VAC: 88 VAC … 264 VAC, 50/60 Hz 48 VDC: - 38 VDC … - 60 VDC				
5 **SHDSL regenerator**						
5.1	Line code	- 16 Trellis coded-PAM acc. G.991 .2				
5.2	Types	- Indoor (IP21), outdoor (IP54), underground (IP68)				
5.3	Power options	- Local 48 VDC power or remote power feeding				
6 **2/4 Wire Analogue E&M unit**						
6.1	Number of ports	- Min. 8 x 2-/4-wire voice channels according ITU-T G.712 – G.715				
6.2	Coding	- A-law according ITU-T G.711				
6.3	Input (from exchange)	* - 16.0 ... + 9.5 dBr, programmable				
6.4	Output (to exchange)	* - 20.0 ... + 7.0 dBr, programmable				
6.5	Nominal impedance	- 600 Ω				
6.6	Channel Bandwidth	- 300 ... 3400 Hz				
6.7	Signalling	- E, M, E', M' Support of signalling types I to V				
6.8	Traffic protection	- 1+1 path protection				
6.9	Equipment protection	- 1+1 HW protection for voice conferences				

6.10	Features	- Min. 10 x voice conferences with max. 32 participants per unit, point-multipoint and multipoint-multipoint topologies				
7 **Subscriber Interface unit**						
7.1	Number of ports	- Min. 16 x 2-wire FXS interface acc. ITU-T Q.552				
7.2	Coding	- A-law acc. ITU-T G.711				
7.3	Input (from subscriber)	* - 4.0 ... + 4.0 dBr, programmable				
7.4	Output (to subscriber)	* - 10.0 ... + 0.0 dBr, programmable				
7.5	Nominal impedance	- Complex or 600 Ω, programmable				
7.6	Channel bandwidth	- 300 ... 3400 Hz				
7.7	Signalling & functionality	- V5.x, MCAS, carrier adapter, phone exchange, full test for subscriber lines, ring over b-wire				
8 **Exchange Interface unit**						
8.1	Number of ports	- Min. 12 x 2-wire FXO acc. ITU-T Q.522 (Z-interface)				
8.2	Coding	- A-law acc. ITU-T G.711				

8.3	Input (from exchange)	* - 5 … + 4 dBr, programmable				
8.4	Output (to exchange)	* - 7.5 … – 3 dBr, programmable				
8.5	Nominal impedance	- Complex or 600 Ω				
8.6	Channel bandwidth	- 300 … 3400 Hz				
8.7	Signalling & functionality	- Seizure, ringing, ringing off, transmission of flash pulses, pulse dialling, DTMF without accompanying signal, earth key, charging using 12/16 kHz pulses.				
9 **64kBit/s Co-directional Interface**						
9.1	Number of ports	- Min. 8 x 64 kbit/s according to ITU-T G.703				
9.2	Bit rate	- 64 kbit/s codirectional				
9.3	Traffic protection	- 1+1 path protection				
10 **Electrical 24 port Ethernet unit**						
10.1	Number of physical ports	- Min. 24 x 10/100/1000 BaseT				
10.2	Features	- Member of chassis switch Two-slot unit				

10.3	Traffic protection	- Chassis switch features				
11 Optical 12 port Ethernet unit						
11.1	Number of physical ports	- Min. 12 x FE/ GbE, SFP based				
11.2	Features	- Member of chassis switch				
11.3	Traffic protection	- Chassis switch features				
12 Power over Ethernet unit						
12.1	Number of physical ports	- Min. 12 x 10/100/1000 BaseT, RJ45 connector with PoE				
12.2	Features	- Member of chassis switch PoE according to ITU-T 802.3af / 802.3at: Max. 84 W per module Max. 30 W per port (PoE+)				
12.3	Traffic protection	- Chassis switch features				
13 Ethernet over PDH unit						
13.1	Number of physical ports	- Min. 4 x 10/100 BaseT, RJ45 connector				
13.2	Number of PDH ports	- 64 x TDM bus access, 16 x P12 interfaces supporting PPP/MLPPP/ HDLC traffic encapsulation and				

		32 x virtual router interfaces				
13.3	L2-switching features	- 8 x bridge instances according to IEEE 802.1D/802.1Q Traffic prioritization according to IEEE E 802.1p				
13.4	L3-routing features	- OSPF v2 according to RFC 2328, RIP v2 according to RFC 2453, Static routing, VRRP, Inter-VLAN routing				
13.5	Traffic protection	- MLPPP, RSTP, VRRP, OSPF v2, RIP v2				
13.6	Equipment protection	- 1+1 HW protection				
14 **Teleprotection Interface unit**						
14.1	Number of protection ports	- Min. 4 x protection commands				
14.2	Connector	- Terminal block for direct wiring				
14.3	Protection voltage	- 24 VDC … 250 VDC, programmable				
14.4	Protection signal features	- Protection link addressing, transmission time supervision, logical combinations (OR, AND) for T-operation, command drop & insert, event recorder, IRIG-B time stamping, aux. relay outputs				
14.5	Traffic protection	1+1 path protection, typically 3.5 ms switch-over time				

14.6	Number of auxiliary ports	Min. 16 x binary signal input and 8 x binary signal outputs				
14.7	Auxiliary power supply	24 VDC onboard				
14.8	Auxiliary signal functions	Logical combinations (OR, AND), alarm acquisition and monitoring, remote control (ALCAR functionality)				
15 **Optical Protection Interface unit**						
15.1	Number of ports	- Min. 4 x differential protection ports with SFP cages for: MM SFP 850 nm, LC/PC and SM SFP 1310 nm, LC/PC				
15.2	Bit rate	- Line rate 2048 kbit/s according to ITU-T G.704 - IEEE C37.94, payload 63 – 768 kbit/s (1 – 12 time slots) - TPE payload 64 – 1 92 kbit/s (1 – 3 time slots)				
15.3	Protection features	- Standardized IEEE C37.94 connection to protection relays - Proprietary SFC-protocol connection to protection relays				
15.4	Traffic protection	- 1+1 path protection, bidirectional symmetrical switching				
16 **Alarm Interface**						

16.1	Management interfaces	- 10/100/1000 BaseT (IEEE 802.3) and LCT, VLAN, MCC, DCC-interfaces				
16.2	Synch I/O	- 2048 kHz: 2 synch inputs, 2 synch outputs				
16.3	Alarm I/O	- 12 alarm inputs, 2 alarm relay outputs				
16.4	Main features	- Central processing unit, DCN IP routing, management of Ethernet crossbar, chassis switch and MPLS-TP features, Ethernet aggregation, 1+1 equipment protection (warm standby), PETS and packet timing (Sync-E, PTP OC, BC and E2E TC)				
16.5	Number of Ethernet ports	- 1 or more x LCT port, Min. 2 x GbE/10 GbE, SFP + based, Min. 3 x 10/100/1000 BaseT				
17 **Circuit Emulation over Packet Unit**						
17.1	Number of electrical ports	- Min. 8 x E1 acc. G.703/G.704				
17.2	Bit rate	- 2048 Kbps ± 50 ppm				
17.3	Line impedance	- 120 Ω symmetrical or 75 Ω asymmetrical				
17.4	Features	- Circuit emulation using SAToP according to IETF PWE3 for 64 kbit/s and P12 layer, Min. 8 x P12 signals over packet				

18 **Multiprotocol serial data unit**						
18.1	Number of Legacy data ports	- Min. 4 x V.11/X.24, V24/V.28, RS-485 (2-wire and 4-wire)				
18.2	Options	- 1 + 1 path protection - Sub rate 64 kbit/s (future release) - Point-multipoint, multipoint-multipoint data conferencing with 4, 8 or 16 participants - Performance monitoring according to ITU-T G.826				
18.3	Traffic Protection	- 1 + 1 path protection, shared protection ring				
18.4	Equipment protection	- 1 + 1 HW protection for data conferences				
18.5	Bit rate	- 0 … 600 kbit/s: oversampling for V.11 / X.24, V.35, RS-485 - 0 … 96 kbit/s: oversampling for V.24/V.28 - For all interface types: 0.6 … 38.4 kbit/s, a-/synchronous and 48, 56, 64 kbit/s, synchronous				
18.6	Ethernet port	- 1 or more x 10/100 BaseT, RJ45 electrical				
18.7	Ethernet features	- Bridge over PDH functionality, PPP, HDLC encapsulation				
19						

Conversion VoIP/SIP unit						
19.1	Number of ports	- Up to 912 PSTN subscribers (no physical ports)				
19.2	Features	- SIP gateway for voice over IP of PSTN ports - Codec G.711 and G.729A support including silence 82uppression - Fax service according to T.38, DTMF according to RFC 2833, SIP authentication according to RFC 2617				
20 **Fan unit**						
20.1	Number of fans	- Min. of 10				
20.2	Operation	- Temperature controlled				
20.3	Installation	- Above equipment, 1 HU, no mechanical slot required				
21 **Multiplexer main characteristics**						
21.1	**Architecture**	- Modular design with connectivity on backplane for hot-pluggable modules				
21.1.1	Backplane connection	- TDM bus, Ethernet star				
21.2	**TDM cross connect**	- Non-blocking				
21.2.1	PDH	- 128 x 2 Mbit/s, granularity 64kbit/s				
21.2.2	SDH	VC-12, VC-3, VC-4				

21.3	**Ethernet crossbar**					
21.3.1	Capacity	- Distributed switching architecture with centralised 64 Gbps switching fabric for intermodule				
21.4	**Communication technology**	- PDH, SDH, IP/Ethernet, EoS, CES				
21.5	**Equipment protection**	* 1 + 1 HW Protection				
21.6	**Traffic Protection**	* 1 + 1 path protection n x 64 kbit/s - SNCP (VC-12, VC-3, VC-4) - MSP (STM-1, STM-4, STM-16) - RSTP, MSTP (Chassis switch)				
21.7	**Aggregate bit rates**					
21.7.1	SDH	- Feature: STM-1, STM-4, STM-16				
21.7.2	Ethernet	- GbE, 10 GbE				
21.7.3	SHDSL, net capacity	- n x 64 kbit/s or 2 Mbit/s (n = 3 … 32)				
21.8	**Power Supply**					
21.8.1	Input voltage range	* 48 VDC, 60 VDC or external power converter - 39.5 VDC … -72 VDC				
21.8.2	Max. input current	* 30 A				
21.8.3	Hardware Protection	* 1 + 1, hot standby				

21.9	**Standardisation**					
21.9.1	PDH / SDH	- ITU-T G.702, G.703, G.704, G.706, G.707, G.7041, G.7042, G.711 to G.715, G.732, G.736, G.737, G.742, G.821, G.823, G.826				
21.9.2	Optical parameters	- G.692, G.694.1, G.694.2, G.957				
21.9.3	Ethernet	- IEEE 802.1D, 802.1Q, 802.1p, 802.15, 802.39d, 802.1w, 802.3af, 802.3at, 802.3z, 802.1s, 802.3ad, RFC 2328, RFC 2453, 802.1ad				
21.9.4	Safety	- IEC 60950-1, EN 60950-1 - IEC60825				
22 **General**						
22.1	**Configuration Tool**					
22.1.1	Type/Name of configuration tool					
22.1.2	For Local / remote operation	Yes / Yes				
22.1.3	Data communication network (DCN)	Ethernet / IP				
22.1.4	Integrated Management of Tele-protection Command Module	Yes				
22.2	**Network Management System**					
22.2.1	Type/Name of configuration tool					

	For fault / configuration management	Yes / Yes				
	Data communication network	Ethernet / IP				
	Management of integrated Tele-protection Command Module	Yes				

EMISSION OF THE EQUIPMENT (SUBSTATION ENVIRONMENT)					
No	**Test Name**	**Description**	**Basic Standard**	**Class**	**Comply**
1.1	Radiated radio frequency interference	30 MHz to 1 GHz	EN 55022	A	
1.2	Conducted radio frequency interference AC/DC Power supply	150 kHz to 30 MHz	EN 55022	A	

IMMUNITY OF THE EQUIPMENT (SUBSTATION ENVIRONMENT)					
No	**Test Name**	**Description**	**Basic Standard**	**Level**	**Comply**
2.1	ESD test	Contac/air discharge	IEC 61000-4-2	6 / 8 kV	
2.2	Radiated electromagnetic field	80 to 1000 MHz, 80% AM, 1 kHz modulated	IEC 61000-4-3	10 V/m	
2.3	Radiated electromagnetic field	1.0 to 2.5 GHz, 80% AM, 1kHz modulated	IEC 61000-4-3	10 V/m	
2.4	Fast transient test	AC/DC Power supply: all other ports	IEC 61000-4-4	4 kV 2 kV	
2.5	Surge test (1.2/50 µs)	<u>AC/DC Power supply:</u> Common Mode Differential Mode <u>DC Power supply 48 V:</u> Common Mode Differential Mode		 2.0 kV 1.0 kV 0.5 kV 0.5 kV	

		Signal terminals: Common Mode Differential Mode Telecommunication ports: Common Mode	IEC 61000-4-5	 2.0 kV 1.0 kV	
2.6	Conducted radio frequency interference	0.15 to 80 MHz, 80% AM, 1kHz modulated	IEC 61000-4-6	10 V/m (e.m.f)	
2.7	Power Frequency magnetic field	Continuous Short (1 to 3s)	IEC 61000-4-8	30 A/m 300 A/m	
2.8	Damped oscillatory waves	AC/DC Power supply: Common Mode Differential Mode Signal terminals: Common Mode Differential Mode Telecommunication ports: Common Mode 1MHz, 400 Hz repetition rate, 2s burst duration	 IEC 61000-4-12	 2.5 kV 1.25 kV 2.5 kV 1.25 kV 2.5 kV	
2.9	Conducted common mode disturbance	Frequency 50 Hz, continuous mode	IEC 61000-4-16	10 / 30 Vrms	

Tenderer shall provide all necessary information that deems to be necessary to complete the project in all respects.

SCHEDULE B: Interoperability Testing of the Multiplexer

FOR OFFICIAL USE ONLY: This section will be performed by a competent COT Technician, Engineer and BEC member/s.

A. EQUIPMENT TEST REPORT
SDH/PDH Multi-Service Multiplexer

Multiplexer Make & Model:

Station:

Equipment Serial No.:

B. BASIC EQUIPMENT

Distributions according to engineering drawings	☐ (Please tick)
Cabinet Protection / Earthing Bar	☐
Check cabinet heating, light, and AC outlet socket	☐

C. BASIC EQUIPMENT

C.1 Power Supply	Input towards chassis	-48 Vdc ±10%	ok ☐
Dual Power Feeder			n.a. ☐ ok ☐
Supply 1		ON/OFF	n.a. ☐ ok ☐
Supply 2		ON/OFF	n.a. ☐ ok ☐

C.2 Fan and Alarm Unit

C.2.1 Power Supply

Disconnect and reconnect the Fan power cable.

Control IF card: _____	Alarm	ON/OFF	n.a. ☐ ok ☐

C.2.2 External Alarm Output

Urgent Alarm	UA Relay contacts	ON/OFF	n.a. ☐ ok ☐
	UA Alarm LED on Control IF	ON/OFF	ok ☐
Non-urgent Alarm	NA Relay contacts	ON/OFF	n.a. ☐ ok ☐

	NA Alarm LED on Control IF	ON/OFF	ok ☐

C.2.3 External Alarm Input

Input 1	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 2	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 3	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 4	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 5	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 6	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 7	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 8	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 9	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 10	Alarm	ON/OFF	n.a. ☐ ok ☐
Input 11	PSU-1 Failure	ON/OFF	n.a. ☐ ok ☐
Input 12	PSU-2 Failure	ON/OFF	n.a. ☐ ok ☐

C.3 Control Module Redundancy

Control IF card: _____	Manual Switch-Over	active/standby	n.a. ☐ ok ☐

3.1 Ethernet Communication Channel

Configuration and Functionality according to the specification n.a. ☐ ok ☐

Alarms	**Check**		
Action	Result	Card LED	NE-Faults
1. Normal operation	No Card Alarms, no NE-Faults	☐	☐

2. Rx path cut	Slot …. : ☐ Slot …. : ☐ Traffic Alarm	☐	☐
Comments:			

D. TRANSMISSION MODULES

D.1 SDH Aggregate Unit: _____ **Slot:** _____

D.1.1 Transmission Unit Redundancy

SDH IF card: Manual Switch-Over active/standby n.a. ☐ ok ☐

Installed SFP Transceivers

Cage / Port	S-1.1	L-1.1	L-1.2	S-4.1	L-4.1	L-4.2	S-16.1	L-16.2	…….	…….	…….	……..
1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

D.1.2 Optical Transmission Power			**D.1.3 Optical Receiver Sensitivity**		
Type of SFP module	Level expected	Ok	Min. Level expected	Ok	Notes

☐ S-1.1 (λ=1310nm) ☐ L-1.1 (λ=1310nm) ☐ L-1.2 (λ=1550nm) ☐ S-4.1 (λ=1310nm) ☐ L-4.1 (λ=1310nm) ☐ L-4.2 (λ=1550nm) ☐ S-16.1 (λ=1310nm) ☐ L-16.1 (λ=1310nm) ☐ L-16.2 (λ=1550nm) ☐ …… ☐ …… ☐ ……	-15….-8 dBm -5…....0 dBm -5……0 dBm -15….-8 dBm -3…....2 dBm -3……2 dBm -5..…..0 dBm -2…....3 dBm -2……3 dBm …….. dBm ..…… dBm ..…… dBm	☐	-28 dBm -34 dBm -34 dBm -28 dBm -28 dBm -28 dBm -18 dBm -27 dBm -28 dBm …….. dBm ..…… dBm ..…… dBm	☐	

D.1.4 Ethernet Communication Channel

Configuration and functionality according to the specification n.a. ☐ ok ☐

D.1.5 Alarms	Check

Action	Result	Card LED	NE-Faults
1. Normal operation	No Card Alarms, no NE-Faults	☐	☐
2. Rx path cut	☐ P1 / ☐ P2 / ☐ P3 / ☐ P4 Traffic Alarm SDH Aggregate unit – Loss of Signal	☐	☐
Comments:			

D.1.6 SETS Selection algorithm

Priority table based ☐

Quality level based ☐

Clock Source				Test
Source	Priority	QL	Designation	Sync & Alarm Test
INTERNAL				☐
ESI-1				☐
SDH 1				☐
SDH 2				☐
SDH 3				☐
SDH 4				☐
SDH 5 (EQP)				☐
PDH-1				☐

PDH-2				☐
PDH-3				☐
PDH-4				☐

Comments:

E. TRIBUTARY MODULES

E.1 Ethernet over PDH Module: _____ **Slot:** _____

E.1.1 Communication Channel

Configuration and functionality according to the specification n.a. ☐ ok ☐

E.1.2 Alarms		**Check**	
Action	Result	Card LED	NE-Faults
1. Normal operation	No Card Alarms, No NE-Faults	☐	☐
2. Interrupt trunk	Traffic Alarm TDM Interface – Loss of Signal	☐	☐
3. Rx cut	Traffic Alarm Ethernet over PDH unit – Loss of Signal	☐	☐

Comments:

E.2 Power over Ethernet unit: _____ **Slot:** _____

E.2.1 Communication Channel

Configuration and functionality according to the specification ☐

E.2.2 Alarms		**Check**	
Action	Result	Card LED	NE-Faults
1. Normal operation	No Card Alarms, no NE-Faults	☐	☐
2. Interrupt trunk	Traffic Alarm Power of Ethernet – Loss of Signal	☐	☐

Comments:

E.3 Multiprotocol Serial Data Unit: _____ **Slot:** _____

E.3.1 Communication Channel

Configuration and functionality according to specification ☐

Configuration					**Testing**
Interface used	Type	Transmission	Data Rate	Data Signal Inversion	Loop in remote site
☐ Interface 1					☐
☐ Interface 2					☐
☐ Interface 3					☐
☐ Interface 4					☐

Comments:

F. TELE-PROTECTION MODULES

F.1 Tele-protection Interface unit: _____ **Slot:** _____

F.1.1 Tele-protection Trip Applications / F.1.2 Trip Transfer and Trip Extension Measurement

Cmd Input	SbU	Trip Voltage [Vdc]	Trans. Time [ms]	Prolong Time [ms]	Notes
1					
2					
3					
4					

F.1.3 Channel Addressing

Sub Unit	Tx Address	Rx Address
1		
2		

F.1.4 Alarm and Relay functionality		**Check**	
Action	Result	Card LED	NE-Faults
1. Normal operation	No Card Alarms, no NE-Faults	☐	☐
2. Loop Test	Cmd 1 ☐ / Cmd 2 ☐ / Cmd 3 ☐ / Cmd 4 ☐		
3. Traffic path cut	Traffic Alarm Trial Signal Failure	☐	☐
4. Relays Function	Aux-1 ☐ Aux-2 ☐		

Comments:

G. MANAGEMENT CHANNEL

G.1 ECC n.a. ☐

Connect the PC to the master station via a management interface ☐

Establish a connection to each station on the ECC network in turns ☐

H. SYNCHRONIZATION

H.1 PETS and PTP Selection algorithm

Priority table based ☐

Quality level based ☐

Clock Source					**Test**
Source	Priority	QL	PDH Clock Source Slot-Unit-Subunit	Designation	Sync & Alarm Test
INTERNAL					☐
ESI-1					☐
ESI-2					☐
PDH-1					☐
PDH-2					☐
PDH-3					☐
PDH-4					☐

Comments:

H.2 Clock Frequency n.a. ☐

Frequency of the clock output	Clock output 1	ok ☐
	Clock output 2	ok ☐

I. FINAL CHECK

I.1 Boot procedure

Check the single station boot procedure (switch off the power of one station) ok ☐

Check the network boot procedure (switch off the procedure of minimum two stations) n.a. ☐ ok ☐

I.2 Alarms

All alarms LED's off (tributary alarms and sync. alarms may occur) ok ☐

I.3 Multiplexer Configuration

Final configuration data saved ok ☐

I.4 Inventory data

Final inventory data saved ok ☐

I.5 Licensed features according to the engineering documentation

Check that the licensed features are according to the engineering document ok ☐

Comments:

J. ACCEPTANCE

Total Points Acquired:

Pending Items List

Issue	Description

Test Report Approved: Yes ☐ No ☐ **Exceptions Noted:** Yes ☐ No ☐

Name of Testing of responsible			
Signature and Date			
Company			

SCHEDULE C: Annexures for Functionality Scoring

Competency of Contractor's Staff (Information to be supplied with Tender)

The Tenderer intends using the following Technical Field Service Engineers who are deemed competent.

Name	Competency Certificate, Date of completion	CV's and Credentials attached Yes / No

Only names accompanied by CV's and Credentials will be considered at the evaluation stage for functionality scoring purposes.

SCHEDULE D1: Schedule of previous relevant experience

The following information must be provided by the tenderer at the time of tendering. Failure to provide this information shall result in the tender scoring 0 in the functionality for applicable criteria.

Details of the Tenderer's previous proven competency and experience in the execution of work of similar or equivalent nature to that described in this document.

PART A - PREVIOUS EXPERIENCE

Recent	Details	
1	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____

2	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____
3	**Brief Description of Contract:** _____ _____ _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____

	Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	(First name or Initials, and Surname) Telephone Number: _____
4	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____

If further space is required, the details can be provided as an attachment on a separate sheet with signed appointment and reference letter(s) in the company letterhead on Annexure B1. Attach signed completion certificates for project(s) successfully completed on Annexure B2.

Total years of related experience of the company: ……years

SCHEDULE D2: Schedule of previous relevant experience

The following information must be provided by the tenderer at the time of tendering. Failure to provide this information shall result in the tender scoring 0 in the functionality for applicable criteria.

Details of the Tenderer's previous proven competency and experience in the execution of work of similar or equivalent nature to that described in this document.

PART B - PREVIOUS EXPERIENCE

Recent	Details	
1	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____

2	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you:	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____

	R _____	
3	**Brief Description of Contract:** _____ _____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution) Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____
4	**Brief Description of Contract:** _____	Principal (Employer / Awarder Contract): _____ (Company / Institution)

	_____ _____ Starting Date: _____ End Date: _____ Total value of Contract awarded to you: **R** _____	Contact Person at Principal: _____ (First name or Initials, and Surname) Telephone Number: _____

If further space is required, the details can be provided as an attachment on a separate sheet with signed appointment and reference letter(s) in the company letterhead on Annexure B3. Attach signed completion certificates for project(s) successfully completed on Annexure B4.

Total years of related experience of the company: ……years

SCHEDULE E1: Schedule of Reference – Substation Projects

Company Name	Description of Projects	Period (Start – End dates)	Value of Contract

SCHEDULE E2: Schedule of Reference – Substation Projects

Company Name	Description of Projects	Period (Start – End dates)	Value of Contract

SCHEDULE F: The Schedule of Battery specifications.

No.	Description	Tenderer to Complete and submit documents (Annexure E)
1	Battery – Specification and dimensions	Item Submitted (Yes☐ /No☐) mark with x
2	Battery charge rates and duty cycles	Item Submitted (Yes☐ /No☐) mark with x
3	Battery warranty information	Item Submitted (Yes☐ /No☐) mark with x
4	Lithium battery pack drawing and dimensions	Item Submitted (Yes☐ /No☐) mark with x

SCHEDULE G: Drawings and samples to be provided on request to confirm compatibility with existing items.

No.	Description	Tenderer to complete and attach drawings (Annexure F)
1	Equipment drawings and dimension	Item Submitted (Yes☐ /No☐) mark with x
2	Interface drawings and dimensions	Item Submitted (Yes☐ /No☐) mark with x
		Item Submitted (Yes☐ /No☐)

3	Cabinet drawings and dimensions	mark with x
4	Cabinet accessories drawing and dimensions	Item Submitted (Yes☐ /No☐) mark with x
5	Typical connection diagrams	Item Submitted (Yes☐ /No☐) mark with x

ANNEXURE A: OEM Letter

ANNEXURE B1: Appointment Letter(s)

ANNEXURE B2: Completion Certificate(s)

ANNEXURE B3: Appointment Letter(s)

ANNEXURE B4: Completion Certificate(s)

ANNEXURE C1: Key Personnel Curriculum Vitae

ANNEXURE C2: Key Personnel Certified Qualifications and ECSA Registration Certificates

ANNEXURE D1: Letter for NMS extension and support

ANNEXURE D2: Letter of non-fibre-optic devices can be managed and routed remotely with proposed NMS

ANNEXURE E: Batteries Specifications

ANNEXURE F: Drawings and Dimensions of the proposed Multiplexer Equipment

MBD1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE CITY OF TSHWANE MUNICIPALITY					
BID NUMBER:	EED 20-2023/24	CLOSING DATE:	29 February 2024	CLOSING TIME:	10:00
DESCRIPTION	**TENDER FOR THE SUPPLY, SUPPORT, UPGRADING AND MAINTENANCE OF SUBSTATIONS MULTIPLEXERS AND NETWORK MANAGEMENT SYSTEM, AS AND WHEN REQUIRED FOR THE PERIOD OF (3) THREE**				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE
DEPOSITED IN THE BID BOX SITUATED AT
(STREET ADDRESS)

Tshwane House
Supply Chain Management
320 Madiba Street
Pretoria CBD
0002

SUPPLIER INFORMATION						
NAME OF BIDDER						
POSTAL ADDRESS						
STREET ADDRESS						
TELEPHONE NUMBER	CODE		NUMBER			
CELLPHONE NUMBER						
FACSIMILE NUMBER	CODE		NUMBER			
E-MAIL ADDRESS						
VAT REGISTRATION NUMBER						
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:		
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		☐ Yes ☐ No	

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]			
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID PRICE	R
SIGNATURE OF BIDDER	……	DATE	
CAPACITY UNDER WHICH THIS BID IS SIGNED			

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT	Supply Chain Management	CONTACT PERSON	Setshaba A. Mogane
CONTACT PERSON	Mulondi Rasekgala	TELEPHONE NUMBER	012 358 5749
TELEPHONE NUMBER	012 358 6636	FACSIMILE NUMBER	n/a
FACSIMILE NUMBER	n/a	EMAIL ADDRESS	setshabam@tshwane.gov.za
EMAIL ADDRESS	mulondin@tshwane.gov.za		

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION	
1.1	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2	**ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE**
1.3	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
2. TAX COMPLIANCE REQUIREMENTS	
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
2.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
2.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	YES ☐ NO ☐
3.2	DOES THE ENTITY HAVE A BRANCH IN THE RSA?	YES ☐ NO ☐
3.3	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	YES ☐ NO ☐
3.4	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	YES ☐ NO ☐
3.5	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	YES ☐ NO ☐

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE: ……

PRICING SCHEDULE: FIRM PRICES (PURCHASES)

NOTE: **ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder……..……	Bid Number ……..……
Closing Time ……	Closing Date ……

OFFER TO BE VALID FOR …..… DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)

- Required by: ……..……...
- At: ……..…….……..
  ……..….
- Brand and Model ……..
- Country of Origin ……..
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) ……..……
- Period required for delivery ……..……....
  *Delivery: Firm/Not firm
- Delivery basis ……..……....

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

* Delete if not applicable

PRICING SCHEDULE: NON-FIRM PRICES (PURCHASES)

NOTE: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder ……..	Bid number ……
Closing Time ……...	Closing Date ……

OFFER TO BE VALID FOR 90 DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)

- Required by: ……
- At: ……..…….
- Brand and model ……..……
- Country of origin ……..……
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) ……..
- Period required for delivery ……..……
- Delivery: *Firm/Not firm

** ”all applicable taxes” includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

* Delete if not applicable

PRICE ADJUSTMENTS

A. NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1 - V)Pt\left(D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

Pa = The new escalated price to be calculated.

(1-V) Pt = 85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**

D1, D2.. = Each factor of the bid price eg. labour, transport, clothing, footwear, etc. The total of the various factors D1,D2…etc. must add up to 100%.

R1t, R2t…… = Index figure obtained from new index (depends on the number of factors used).

R1o, R2o = Index figure at time of bidding.

VPt = 15% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

3. The following index/indices must be used to calculate your bid price:

Index……. Dated……. Index……. Dated……. Index……. Dated…….

Index……. Dated……. Index……. Dated……. Index……. Dated…….

4. FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

FACTOR (D1, D2 etc. eg. Labour, transport etc.)	PERCENTAGE OF BID PRICE

B. PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

1. Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		

2. Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD:	DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE	DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE

ADJUSTMENT PERIODS	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE
1st Adjustment	After 12 calendar months
2nd Adjustment	After 24 calendar months

NB: Unless prior approval has been obtained from Supply Chain Management, no adjustment in contract prices will be made

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state[1].

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name of bidder or his or her representative: ……

3.2 Identity Number: ……

3.3 Position occupied in the Company (director, trustee, hareholder[2]) ……

3.4 Company Registration Number: …….

3.5 Tax Reference Number: ……..

3.6 VAT Registration Number: ……..

3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8 Are you presently in the service of the state? **YES / NO**

3.8.1 If yes, furnish particulars. ……

……..

[1] MSCM Regulations: "in the service of the state" means to be –
(a) a member of –
(i) any municipal council;
(ii) any provincial legislature; or
(iii) the national Assembly or the national Council of provinces;
(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature.

[2] Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

3.9 Have you been in the service of the state for the past twelve months? **YES/NO**

3.9.1 If yes, furnish particulars. ……

……..

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.10.1 If yes, furnish particulars. ……...

……..

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.11.1 If yes, furnish particulars. ……

……..

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.12.1 If yes, furnish particulars. ……

……..

3.13 Are any spouse, child or parent of the company's directors trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.13.1 If yes, furnish particulars. ……

……..

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract. **YES / NO**

3.14.1 If yes, furnish particulars: ……

……

4. Full details of directors / trustees / members / shareholders.

Full Name	**Identity Number**	**State Employee Number**

…… ……..

Signature **Date**

…… ……..

Capacity **Name of Bidder**

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

1	Are you by law required to prepare annual financial statements for auditing?	*__YES / NO__
1.1	If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years. …… ……	
2	Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?	***YES / NO**
2.1	If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.	***YES / NO**
2.2	If yes, provide particulars. …… …… …… ……	
3	Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?	*__YES / NO__
3.1	If yes, furnish particulars …….. ……..	
4.1	Will any portion of goods or services be sourced from outside	*__YES / NO__

the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

4.1 If yes, furnish particulars

……..

……..

CERTIFICATION

I, THE UNDERSIGNED (NAME) ……. CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

…….. ……..
Signature Date

……..... …….
Position Name of Bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 **To be completed by the organ of state**

(*delete whichever is not applicable for this tender*).

a) The applicable preference point system for this tender is the 80/20 preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 **To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
TOTAL POINTS FOR PRICE AND SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

***Note to tenderers: The tenderer must indicate how they claim points for each preference point system.*)**

Specific goals	**80/20 preference point system**	**Number of points claimed (80/20 system)** **(To be completed by the tenderer)**
BB-BEE score of companies • Level 1 • Level 2 • Level 3 • Level 4 • Level 5 • Level 6 • Level 7 • Level 8 • Non-compliant	• 8 Points • 7 Points • 6 Points • 5 Points • 4 Points • 3 Points • 2 Points • 1 Point • 0 Points	
EME and/ or QSE	2 Points	
At least 51% of Women-owned companies	2 Points	
At least 51% owned companies by People with disability	2 Points	
At least 51% owned companies by Youth	2 Point	

Specific goals	80/20 preference point system	Number of points claimed (80/20 system) (To be completed by the tenderer)
Local Economic Participation • City of Tshwane • Gauteng • National	 4 Points 2 Points 1 Point	

N.B For points to be allocated as per above the tenderers will be required to submit proof of documentation as evidence for claims made. Any tenderer that does not submit evidence as stated in the bid document to claim applicable points will be allocated zero points.

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution, if deemed necessary.

…… **SIGNATURE(S) OF TENDERER(S)** **SURNAME AND NAME**: …… **DATE:** …… **ADDRESS**: …… …… ……

CONTRACT FORM: PURCHASE OF GOODS/WORKS

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to **CITY OF TSHWANE MUNICIPALITY** in accordance with the requirements and specifications stipulated in bid number **EED 20-2023/24** at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*

   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and

   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT)	……
CAPACITY	……
SIGNATURE	……
NAME OF FIRM	……
DATE	……

WITNESSES

1. ……

2. ……

DATE: ……

MBD 7.1

CONTRACT FORM: PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I ……..... in my capacity as ……... accept your bid under reference number …… dated …… for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	BRAND	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

	WITNESSES 1. …….. 2. …….. DATE: ……

CONTRACT FORM: RENDERING OF SERVICES

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SERVICE PROVIDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SERVICE PROVIDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

1. I hereby undertake to render services described in the attached bidding documents to (name of the institution)…… in accordance with the requirements and task directives / proposals specifications stipulated in Bid Number **EED 20-2023/24** at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the Purchaser during the validity period indicated and calculated from the closing date of the bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*

   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Filled in task directive/proposal;
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2022;
   - Declaration of interest;
   - Declaration of Bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and

   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the services specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

DATE ……

WITNESSES

1 ……

2 ……

DATE: ……..

MBD 7.2

CONTRACT FORM: RENDERING OF SERVICES

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I……. in my capacity as ……..…….. accept your bid under reference number …… dated…… for the rendering of services indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating service delivery instructions is forthcoming.

3. I undertake to make payment for the services rendered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice.

DESCRIPTION OF SERVICE	**PRICE (ALL APPLICABLE TAXES INCLUDED)**	**COMPLETION DATE**	**B-BBEE STATUS LEVEL OF CONTRIBUTION**

4. I confirm that I am duly authorised to sign this contract.

SIGNED AT …… ON ……

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1 ……
2 …..……

DATE: ……..

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;

b. been convicted for fraud or corruption during the past five years;

c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or

d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied). **The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐

4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..……..…… CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……... ……..
Signature Date

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid: **EED 20-2023/24**

TENDER FOR THE SUPPLY, SUPPORT, UPGRADING AND MAINTENANCE OF SUBSTATIONS MULTIPLEXERS AND NETWORK MANAGEMENT SYSTEM, AS AND WHEN REQUIRED FOR THE PERIOD OF (3) THREE

(Bid Number and Description)

in response to the invitation for the bid made by:

CITY OF TSHWANE MUNICIPALITY

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____that:
(Name of Bidder)

1. I have read and I understand the contents of this Certificate;

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

   (a) has been requested to submit a bid in response to this bid invitation;

   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

[3] Joint venture or consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;

   (b) geographical area where product or service will be rendered (market allocation)

   (c) methods, factors or formulas used to calculate prices;

   (d) the intention or decision to submit or not to submit, a bid;

   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or

   (f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

…… …….....
Signature Date

…… …….....
Position Name of Bidder

THE NATIONAL TREASURY

Republic of South Africa

GOVERNMENT PROCUREMENT

GENERAL CONDITIONS OF CONTRACT

July 2010

GENERAL CONDITIONS OF CONTRACT

July 2010

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- The General Conditions of Contract will form part of all bid documents and may not be amended.
- Special Conditions of Contract (SCC) relevant to a specific bid, should be compiled separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.

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General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1 “Closing time” means the date and hour specified in the bidding documents for the receipt of bids.

1.2 “Contract” means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 “Contract price” means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 “Country of origin” means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 “Day” means calendar day.

1.8 “Delivery” means delivery in compliance of the conditions of the contract or order.

1.9 “Delivery ex stock” means immediate delivery directly from stock actually on hand.

1.10 “Delivery into consignees store or to his site” means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 "GCC" means the General Conditions of Contract.

1.15 "Goods" means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 "Imported content" means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 "Local content" means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 "Project site," where applicable, means the place indicated in bidding documents.

1.21 "Purchaser" means the organization purchasing the goods.

1.22 "Republic" means the Republic of South Africa.

1.23 "SCC" means the Special Conditions of Contract.

1.24 "Services" means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 "Written" or "in writing" means handwritten in ink or any form of electronic or mechanical writing.

1. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid.

Where applicable a non-refundable fee for documents may be charged.

	3.2	With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za
4. Standards	4.1	The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.
5. Use of contract documents and information inspection.	5.1	The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
	5.2	The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.
	5.3	Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.
	5.4	The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.
6. Patent rights	6.1	The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.
7. Performance security	7.1	Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.
	7.2	The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.
	7.3	The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms: (a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or (b) a cashier's or certified cheque
	7.4	The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.
8. Inspections, tests and analyses	8.1	All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental services, services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

(b) in the event of termination of production of the spare parts:

(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the

final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without canceling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the Supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated

fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer / Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) the name and address of the supplier and / or person restricted by the purchaser;

(ii) the date of commencement of the restriction

(iii) the period of restriction; and

(iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or antidumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all

reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation

34. Prohibition of Restrictive practices

34.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is / are or a contractor(s) was / were involved in collusive bidding (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3 If a bidder(s) or contractor(s), has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

SERVICE LEVEL AGREEMENT

entered into between

THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY

(Hereafter referred to as the **"City"**)

Herein Represented by:

In his/ her capacity as: **The City Manager**

(Duly authorized hereto)

AND

……

(Hereafter referred to as the **"SERVICE PROVIDER"**)

Herein Represented by: **……..**

In his/ her capacity as:**……**

(Duly authorized hereto)

SERVICE LEVEL AGREEMENT

entered into between

THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY

a municipality as described in section 2 of the Local Government: Municipal Systems Act, 2000 and as contemplated in section 155 of the Constitution of the Republic of South Africa, 1996 as a category A municipality, or the Assignee, if applicable, herein represented by …… in his capacity as City Manager duly authorized thereto under and by virtue of a resolution passed on ……, and who by his/ her signature hereto warrants that he/she is properly authorized to sign this Agreement.

(Herein referred to as the "**CITY**")

AND

Service

Provider……..

Registration Number …….

Herein represented by …….., in his/ her capacity as ……. duly authorized thereto under and by virtue of a resolution of the Board passed on ……(DATE), a copy of which is annexed as Annexure **"B"**, and who by his signature hereto warrants that he is properly authorized to sign this Agreement

(Herein referred to as the "**SERVICE PROVIDER**")

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RECORDAL:

WHEREAS the City of Tshwane requires to appoint service providers for the Tender for the Supply, Support, Upgrading and Maintenance of Substations Fibre-Optic Multiplexer and Network Management System, as and when required for the Period of (3) Three years.

AND WHEREAS the City wishes to appoint …… as a service provider;

AND WHEREAS the service provider wishes to provide such services;

AND WHEREAS the service provider has indicated that it has the necessary expertise, skills and capabilities to provide the service;

NOW THEREFORE the Parties have agreed to enter into this Agreement, in terms of which ……(**SP**) shall supply, support, upgrading and maintenance the Substations Fibre-Optic Multiplexer and Network Management System at Electronics Systems Management Control room, in accordance with the terms and subject to the conditions of this Agreement:

1 DEFINITIONS

Unless otherwise expressly stated, or the context otherwise requires, the words and expressions listed below shall, when used in this Agreement, including this introduction, bear the meanings ascribed to them:

1.1 "**Agreement**" means this Service Level Agreement and shall include any annexures and/or schedules and/or attachments and/or appendices and/or any addenda hereto or incorporated herein by reference, as amended from time to time;

1.2 "**Business Day**" means any day from Monday to Friday excluding Public Holidays as defined in the Public Holidays Act 36 of 1994 ("Public Holidays Act") as amended from time to time;

1.3 "**Business Week**" means five consecutive Business Days, excluding Public Holidays as defined in the Public Holidays Act;

1.4 "**City**" means the City of Tshwane Metropolitan Municipality, a metropolitan municipality established in terms of section 12 of the Local Government: Municipal Structures Act 117 of 1998;

1.5 "**Contact Persons**" means persons identified by the Parties as persons who are responsible for the execution of the Agreement and whose names are set out in clause 34 below and who can be substituted in writing from time to time;

1.6 "**Contract Price**" shall mean the amount reflected as the contract price in clause 9 below;

1.7 "**Contract Period**" means the contract period as reflected on Annexure **"A"**;

1.8 "**Effective Date**" means notwithstanding the Signature Date, …….

1.9 **"GCC"** shall mean the General Conditions of Contracts as stated in the Government Procurement: General Conditions of Contract July 2010;

1.10 “**Goods**” shall mean the Services related goods to be procured by the City from time to time as sated in clause 8 below and the Appointment Letter attached herewith as Annexure **“A”**;

1.11 “**Intellectual Property**” means Patents, Designs, Know-How, Copyright and Trade Marks and all rights having equivalent or similar effect which may exist anywhere in the world, introduced and required by either Party to give effect to their obligations under this Agreement, owned in whole or in part by, or licensed to either Party prior to the Commencement Date or developed after the Commencement Date, and includes all further additions and improvements to the Intellectual Property, otherwise pursuant to this Agreement;

1.12 “**Month**” means a calendar month;

1.13 “**Parties**” means the City and Service Provider and “Party” means either of them as the context requires;

1.14 **“Order”** means an official written order issued for the supply of Goods and or Services under this Agreement;

1.15 “**Services**” means services to be provided by the Service Provider to the City as detailed in clause 7 below;

1.16 “**Service Provider**” means a company duly incorporated in accordance with the company laws of the Republic of South Africa with company registration number;

1.17 “**Signature Date**” means the date of signature of this Agreement by the Party signing last;

1.18 “**Subcontract**” means any contract or agreement or proposed contract between the Service Provider and any third party whereby that third party agrees to provide to the Service Provider the Services or any part thereof;

1.19 “**Subcontractor**” means the third party with whom the Service Provider enters into a Subcontract;

1.20 “**Tax Invoice**” means the document as required by section 20 of the Value Added Tax Act 89 of 1991, as amended from time to time; and

1.21 “**VAT**” means Value Added Tax as defined in terms of the Value Added Tax Act of 1991.

2 INTERPRETATION

2.1 Headings and sub-headings are inserted for information purposes only and shall not be used in the interpretation of this Agreement.

2.2 Unless the context clearly indicates a contrary intention, any word connoting:

2.2.1 any singular shall be deemed to include a reference to the plural and vice versa;

2.2.2 any one gender shall be deemed to include a reference to the other two genders; and

2.2.3 a natural person shall be deemed to include a reference to a legal or juristic person.

2.3 The expiry or termination of this Agreement shall not affect provisions of this Agreement which expressly provide that they will operate after any such expiry or termination of this Agreement. Provisions of necessity shall continue to have been effective after such expiry or termination of this Agreement, notwithstanding that the clauses themselves do not expressly provide for this.

2.4 The rule of interpretation that a written agreement shall be interpreted against the party responsible for the drafting or preparation of that Agreement shall not apply.

2.5 The provision of this Agreement shall be read in conjunction with the provisions of the Government Procurement General Conditions of Contracts (“GCC”) 2010 as if they are incorporated herein.

2.6 Where figures are referred to in numerals and in words and there is any conflict between the two, the words shall prevail.

2.7 Any reference to any legislation is a reference to such legislation as at the Signature Date and as amended or re-enacted, from time to time.

2.8 If any provision in a definition is a substantive provision conferring any rights or imposing any obligations on any party, then notwithstanding that, it is only in this interpretation clause, effect shall be given to it as if it were a substantive provision in this Agreement.

3 APPOINTMENT

The City hereby appoints the Service Provider, who accepts such appointment, as per the Appointment letter dated ……. attached herewith as Annexure **"A"** to provide the Services in accordance with the terms and subject to the conditions of this Agreement.

4 PURPOSE OF THE AGREEMENT

4.1 The Purpose of this Agreement is to:

4.1.1 formalize and regulate the working relationship between the Parties;

4.1.2 set out the roles and responsibilities of the Parties; and

4.1.3 define process and procedures to be followed by the Parties.

5 RELATIONSHIP

Nothing in this Agreement shall constitute, or be deemed to constitute a partnership or joint venture between the Parties. Furthermore the Service Provider acknowledges and agrees that its status under this Agreement is that of an independent service provider and its status shall in no way be deemed to be that of an agent or employee of the City, for any purpose whatsoever, and the Service Provider shall have no authority or power to bind the City or to contract in the name of the City, or create a liability against the City in any way or for any purpose.

6 DURATION

This Agreement shall commence on the Effective Date and shall subsist for a period of 3 (three) years, unless terminated earlier pursuant to clause 31 below.

7 CONTACT PERSON

7.1 The work to be performed by the Service Provider hereunder will be supervised by City's Contact Person.

7.2 The Parties shall notify each other, in writing from time to time, of the details of their nominated Contact Person.

7.3 The Contact Persons shall liaise and update each other on the progress of the Services rendered and shall endeavor to resolve and remedy any problems or disputes that may arise in relation to the Services.

7.4 Either Party may substitute a Contact Person at its discretion provided that each Party shall give the other Party reasonable notice of such substitution and will provide replacement employees of equivalent ability.

7.5 Without derogating from the aforegoing, should either Party replace a Contact Person for any reason whatsoever, it shall ensure, to the greatest extent possible in the circumstances, that the suitable period of hand-over and overlap takes place, at its cost, between the new and the encumbered Contact Person.

8 SCOPE OF GENERAL SERVICES

8.1 The Service Provider shall, for the duration of this Agreement, provide the Services in terms of the Appointment Letter and as outlined fully in the Scope of Work, including but not limited to:

8.1.1 Perform the Supply, Support, Upgrading and Maintenance of Substations Fibre-Optic Multiplexer and Network Management System, in the City of Tshwane at Electronics Systems Management Control Centre for the Period of Three years, as and when Required.

9 PRICE AND PAYMENT

9.1 The City shall pay to the Service Provider as stated in the Appointment Letter attached and or in terms of the Scope of Work attached herein as **Annexure "C"**.

9.2 All payments under this Agreement shall be made by electronic fund transfer or other forms of payment as the Parties may agree from time to time, upon receipt of valid and undisputed Tax Invoices and month-end statements together with the supporting documentation from the Service Provider, once the undisputed Tax Invoices or such portion of the Tax Invoices which are undisputed become due and payable.

9.3 All amounts and other sums payable in terms of this Agreement and Schedules hereto will be stipulated exclusive of VAT, unless expressly stated otherwise.

9.4 Unless otherwise provided in the Schedules, valid Tax Invoices shall be submitted together with a month-end statement. Payment against such month-end statement shall be made by The City within 30 (thirty) days after the date of receipt by The City of the Service Provider's statement together with the relevant valid and undisputed Tax Invoice(s) and supporting documentation, but in any event not later than 90 (ninety) days of receipt of such statement.

9.5 There shall be no interest levied on a Tax Invoice that is in dispute between the Parties.

9.6 The City shall pay the amount reflected on a Tax Invoice once the City's Contact Person has verified that the Services set out in a schedule have been rendered and the Tax Invoice amount has been approved by the City.

9.7 All Tax Invoices shall be addressed to the City' Contact Person.

9.8 All payments shall be transferred, by the City to the Service Provider electronically into the Service Provider's bank account, the details of which are set out below:

Bank: **…….**
Account type: **……..**
Account No: **……**
Branch No: **…….**

9.9 Failure to comply with the clauses above may result in late payment of the total amount of an invoice by the Service Provider to the City. The City shall not be liable for any costs or damages suffered by the Service Provider as a result of such late payment.

9.10 If the City fails to make payment in accordance with the Agreement or fails to comply with any provisions of any Order issued under this Agreement, the Service Provider reserves the right to cancel any undelivered portion of the Goods and/or to suspend the Services, and the City shall remain responsible for the completed and partly completed work up to the date of such cancellation.

10 PRICE RESTRUCTURING

10.1 The Service Provider shall be subject to a price review every year.

10.2 The City shall embark on a benchmarking exercise every 12 (twelve) months where the City shall benchmark the Service Provider's Contract Price against the prevailing market rates.

10.3 In the event it emerges that the Service Provider's charges in respect of the Contract Price and other charges under this Agreement are materially higher than the reasonable benchmark ascertained by the City or that the City can acquire similar Services of a like quality from another supplier at a total delivered cost that is lower than the total delivered cost of the Services acquired hereunder from the

Service Provider, the City shall have the right to notify the Service Provider of such total delivered cost and the Service Provider shall have an opportunity to adjust the Contract Price and any other charges hereunder, on such a basis as to result in the same total delivered cost to the City, within 30 (thirty) calendar days of such notice.

10.4 If the Service Provider fails to do so or cannot legally do so, The City may:

10.4.1 acquire the Services from such other supplier in which case the obligations, including, but not limited to, any purchase and sale requirements and/or commitments, if any, of the City and the Service Provider hereunder shall be reduced accordingly;

10.4.2 terminate this Agreement without any penalty, liability or further obligation; or

10.4.3 continue under this Agreement.

10.5 Within 30 (thirty) calendar days of a notice by the City or at any time the City so requests, the Service Provider shall certify in writing to the City that it is in compliance with this clause and shall provide all information that the City reasonably requests in order to verify such compliance.

11 SERVICE LEVELS

11.1 The Service Provider recognizes that the City has entered into this Agreement relying specifically on the Service Provider's representations regarding service levels including, *inter alia*:

11.1.1 capacity allocations in accordance with the Service to be provided;

11.1.2 all work to be performed and Services rendered under this Agreement shall comply with industry norms and best practice acceptable within the Services industry and shall be executed by the Service Provider to the total satisfaction of the City.

11.1.3 The Service Provider shall provide suitably qualified and trained employees to provide the Services to the City in terms of this Agreement, and shall allocate, in its discretion employee resources in accordance with the technical skill and knowledge required, provided that any exercise of such discretion by the Service Provider shall not negatively impact on the provision of the Services by the Service

Provider to the City, and shall allocate employees with the technical skill and knowledge onsite at the City at all times during normal working hours, if the City so requires.

11.1.4 Amongst others, the Service Provider shall comply with and provide the Services as set out in clause 7 above.

12 WITHHOLDING OF PERFORMANCE

The Service Provider may not under any circumstances, including, without limitation, non-payment by the City, withhold any Services from the City during the currency of this Agreement, unless it validly terminates this Agreement in terms of clause 30 below.

13 PENALTY

13.1 Should the Service Provider fail to comply with its obligations in terms of this Agreement, the City may impose a penalty on the Service Provider in terms of clause 13.3 below.

13.2 The City shall provide the Service Provider with a written notice requiring the Service Provider to remedy the default according to the priority criteria set in section 3 of the specification and restore the Multiplexer communication system in a properly functional state within 30 days from the date of notice.

13.3 Should the Service Provider fail to respond according to the priority criteria set in section 3 of the specification or restore the Multiplexer communication system in a properly functional state within 30 days from the date of notice, then the City shall be entitled, without prejudice to any alternative or additional right of action or remedy available to the City and without further notice, impose a penalty of 10% per job card. The City may also consider termination of the Agreement as stated in clause 31 of this Agreement once the maximum penalty amount related to delays has been reached.

13.4 Should there be a dispute as to whether the failure to deliver was caused by the City or was the Service Provider's fault such dispute shall be dealt with in accordance to clause 31 below.

14 ACCESS

14.1 The City shall allow the Service Provider reasonable access to its premises, provided that:

14.1.1 access is related to the Services to be provided by the Service Provider; and

14.1.2 the Service Provider adheres to all rules, regulations and instructions applicable at City's premises.

14.2 The Service Provider is required to notify City monthly of employees who are to provide Services at the Service Areas and/or Delivery Areas.

14.3 The City shall grant the Service Provider and/or its employees, referred in clause 14.2 above, access to its premises to perform its obligations in terms of this Agreement.

14.4 The Service Provider and its employees shall at all time when entering the premises and/or Service Areas and/or Delivery Areas of the City comply with all rules, laws, regulations and policies of the City.

15 DELIVERY OF GOODS

15.1 The Service Provider shall deliver the Goods on the Delivery Date.

15.2 Should the Service Provider be unable to deliver the Goods on the Delivery Date, the Service Provider shall inform the City of its inability to deliver the Goods, the reason thereof, and shall provide the City with a reasonable alternative Delivery Date which in any event shall not be more than 14 (fourteen) days from the original Delivery Date.

15.3 In the event that the Service Provider is unable to deliver the Goods on the Delivery Date 3 (three) times in a period of 6 (six) months, then the City shall be entitled to terminate this Agreement by giving the Service Provider 1 (one) month's written notice to terminate.

15.4 Upon delivery of the Goods by the Service Provider, the City's contact person shall sign the delivery document provided by the Service Provider as

acknowledgement of receipt of the Goods. Such acknowledgement of receipt shall not constitute an acceptance:

15.4.1 that the Goods were received in good condition;

15.4.2 that the Goods were free of any defects;

15.4.3 that the Goods were fit for the purpose for which they were purchased; and/or

15.4.4 of any terms and conditions of the delivery document.

15.5 In the event that the City notifies the Service Provider, within five (5) Business Days, that the Goods delivered are not in accordance with the order, the City shall be entitled to return the Goods to the Service Provider at the Service Provider's cost and the Service Provider shall deliver the replacement Goods ordered within five (5) Business Days of taking delivery of the defective Goods.

15.6 The Service Provider shall bear all risk of loss or damage to the Goods until they are delivered to the City's named place of destination, and transfer of ownership of the Goods shall pass from the Service Provider to the City only when all payments have been made in full.

16 DEFECTIVE GOODS

16.1 The Service Provider shall verify whether the Goods received are in order and without any defects.

16.2 In the event that the City realises that the Goods have any defect, the City shall inform the Service Provider in writing within 5 (five) days of becoming aware of the defect ("Notice of Defect").

16.3 Upon receipt of the Notice of Defect, the Service Provider shall immediately deliver replacement Goods to the City within 14 (fourteen) Business Days of receiving the Notice of Defect referred to in clause 16.2 above and replace the defective Goods.

16.4 The cost of returning and replacing the defective Goods shall be borne by the Service Provider.

16.5 The Service Provider shall be responsible for the replacement amount of any parts of the Goods that are to be replaced in terms of this Agreement.

17 AMENDMENT OR CANCELLATION OF PURCHASE ORDER

The City is entitled to cancel an order, reschedule delivery of the Goods or change the Delivery Area and Delivery Date to fourteen (14) days written notice to the Service Provider.

18 INSPECTION

18.1 The City may at any time inspect the Goods and/or Services levels of the Service Provider in terms of this Agreement.

18.2 If the City is, at any time, dissatisfied with the service levels then the City shall, within 7 (seven) days, notify the Service Provider in writing of the failure or default.

18.3 The Service Provider shall immediately upon receipt of written demand by the City, remedy such failure or default, within 7 (seven) Business Days from the date of receipt of the notice, free of charge.

18.4 Should the Service Provider fail to remedy the failure or default referred to above then the City shall have the right to impose penalties as provided for in clause 12 above or invoke the provisions of clauses and/or clause 30 below.

18.4.1 To enable the City to determine whether the Goods and/or Services rendered in terms of this Agreement are being complied with the Service Provider shall:

18.4.1.1 provide the City with such information as it may reasonably require;

18.4.1.2 allow the City to inspect and take copies of any records of the Service Provider relating to the Goods and/or Services, including all hardware, software, data, information, visuals, procedures, event logs, transaction logs, audit trails, books, records, contracts and correspondence;

18.4.1.3 allow the City or its authorised representatives to conduct interviews with any of the Service Provider’s employees, subject to reasonable notice being given to the Service Provider.

18.5 **Service Provider to Provide Reasonable Assistance**

18.5.1 Where any information is required for inspection in terms of this clause and the information is kept in a computer, the Service Provider shall give the City reasonable assistance required to facilitate inspection and obtain copies of the information in a visible and legible form or to inspect and check the operation of any computer and any associated apparatus or material that is or has been in use in connection with the keeping of the information.

18.5.2 Any information required to be provided to the City pursuant to this clause 18 shall be provided by the Service Provider, as the case may be in such form (including a form otherwise than in writing) as the City may reasonably specify.

18.5.3 The cost of any inspection contemplated in terms of this clause 18 shall be for the account of the City unless any material irregularity or failure on the part of the Service Provider is determined by City in the course of such inspection.

18.6 The inspection contemplated in this Agreement will be conducted:

18.6.1 during normal business hours;

18.6.2 save where the circumstances justify it, on reasonable notice to the Service Provider; with the minimum interference in the provision of the Goods and/or Services and the Service Provider’s other operations.

19 MAINTENANCE AND SUPPORT

The Maintenance contract of the Multiplexer Communication system on new parts shall commence after the warrantee period has lapsed on the new parts and will commence immediately on the existing parts of the Multiplexer Communication system.

20 TRAINING

If required, the Service Provider shall after delivery and installation of the Goods, and as part of Maintenance And Support, ensure that the City's nominated employees, from time to time, receive the required and necessary training relating to the nature, purpose and appropriate use of the Goods.

21 SERVICE PROVIDER'S WARRANTIES AND INDEMNITIES AND LIABILITIES

21.1 **Service Warranties**

21.1.1 The Service Provider warrants that in relation to each Service provided in terms of this Agreement:

21.1.1.1 it has full capacity and authority to enter into and perform this Agreement, and that this Agreement is executed by duly authorised representatives of the Service Provider;

21.1.1.2 it possesses or has access to the requisite knowledge, skill and experience to provide the Services in an expert manner;

21.1.1.3 it will discharge its obligations under this Agreement and any annexure, appendix or Schedule hereto with all due skill, care and diligence;

21.1.1.4 all work performed and Services rendered under this Agreement shall comply with prevailing practice, standards and specifications within the industry;

21.1.1.5 it will be solely responsible or the payment of remuneration and associated benefits, if any, of its Personnel and for withholding and remitting income tax for its Personnel in conformance with any applicable laws and regulations;

21.1.1.6 the use or possession by the City of any Materials will not subject the City to any claim for infringement of any Intellectual Property Rights of any third party;

21.1.1.7 with promptness and diligence and in a skilful manner and in accordance with the practices and professional standards of operations while performing Services and/or delivering Goods and/or similar to the Services and/or Goods;

21.1.1.8 which Services and/or Goods will in all aspects comply with industry norms and best practice to the satisfaction of the City with regard to materials and workmanship; ;

21.1.1.9 using and adopting any standards, processes and procedures required under this Agreement;

21.1.1.10 warranting that it shall employ suitably qualified and trained employees to provide the Services and/or Goods to the City and it shall allocate employees in accordance with the technical skill and knowledge required;

21.1.1.11 free from any defects in material and workmanship;

21.1.1.12 maintaining and causing to be maintained the highest standard of workmanship and care in undertaking the Services and/or processing the Goods;

21.1.1.13 maintaining and caused to be maintained the highest standard of care and diligence in providing the Services, maintenance and support;

21.1.1.14 ensuring that all applicable laws are observed;

21.1.1.15 without derogating from the generality of the aforegoing, strictly adhering to any or all laws, regulations and accepted procedures with regard to health, hygiene and the maintaining of the environment in the manufacture, packaging, labelling, identification, storage and transportation of the Goods.

21.1.1.16 guaranteeing that the Goods shall be in good working condition for the warranty and/ or maintenance period of the Goods, and that the Service Provider shall be responsible for the costs of repair of the Goods should the Goods require to be repaired to their normal use.

21.1.2 Defective workmanship or failure of the Goods and/or Services shall cease upon expiry of the period of maintenance, being the earlier of twelve (12) months after completion of the Services or eighteen (18) months from delivery of the Goods to the site. Such liability shall be in lieu of any liability implied by law and shall be limited to the repair or replacement, at the election of the Service Provider, of the defective portion of the Goods and/or Services, where after the Service Provider shall have no further liability of whatsoever nature towards the City.

21.2 **Indemnity**

21.2.1 The Service Provider hereby indemnifies the City against any claim which may be brought against the City by the Service Provider's personnel or a third party arising from the execution of this Agreement alternatively which arises against the City as a result of the Service Provider's breach of any of the provisions of this Agreement, provided that the City shall notify the Service Provider in writing within a reasonable time, and in any event not less than 14 (fourteen) Business days of the City becoming aware of any such claim to enable the Service Provider to take steps to contest it and shall provide the Service Provider with such reasonable assistance as may be necessary to enable the Service Provider to defend the claim to the extent only that it is in a position to render such assistance. The Service Provider may, within 5 (five) Business Days of receipt of written notice from the City aforesaid, elect in writing to contest such a claim in the name of the City and shall be entitled to control the proceedings in regard thereto, provided that the Service Provider indemnifies the City against all and any costs (including attorney and own client costs) which may be incurred by or awarded against the City as a consequence of the defence of the claim.

21.3 **Limitation of Liability**

21.3.1 Neither Party shall be liable to the other party for loss of use of any works, loss of profit, loss of contract or for any indirect or consequential loss or damages which may be suffered by the other party in connection with this Agreement.

21.3.2 Notwithstanding anything to the contrary contained or implied in the applicable conditions of contract, and in no event, whether as a result of breach of contract,

indemnity, warranty, delict (including negligence), strict liability, or any other cause arising, shall the Service Provider's total liability to the City, or its insurers, for any loss or damage arising out of, or resulting from an Order issued under this Agreement or from the performance or breach thereof, or from the Goods and/or Services furnished hereunder, exceed 100% of the specific Order value.

22 SERVICE PROVIDER'S PERSONNEL

22.1 Liability for Criminal Acts of Employees

The Service Provider shall be liable to the City for any loss that the City or any third party may suffer as a result of any theft, fraud or other criminal act of any employee of the Service Provider which arises within the course and scope of such employees' employment with the Service Provider.

22.2 Character of Employees

22.2.1 Due to the confidential nature of certain aspects of the Services and the position of trust which the Service Provider's employees will fulfil, the Service Provider hereby undertakes to use its best commercial endeavors to ensure that it only assigns to the City employees who are fit and proper persons and who display the highest standards of personal integrity and honesty and who have not, to their knowledge, being convicted of any crime.

22.2.2 The Service Provider shall, at its own cost, conduct all reasonable background checks into members of its employees prior to utilizing same to provide the Services in terms of this Agreement.

22.2.3 The City shall conduct all reasonable background checks into the Service Provider's employees from time to time, where it deems it necessary to do so.

23 STATUTORY AND EMPLOYMENT ISSUES

23.1 The Service Provider shall comply with all employment legislation

23.1.1 The Service Provider warrants that it has full knowledge of all relevant statutory, collective and other stipulations applicable to the relationship with its personnel and its relationship with the City. This includes, but is not limited to, the

Labour Relations Act, the Basic Conditions of Employment Act, 1977, the Employment Equity Act, 1998 and any other applicable employment legislation currently in force.

23.1.2 The Service Provider warrants further that it is not and will not in future be in contravention of any of the provisions of any such legislation and in the event of such contravention, the Service Provider shall immediately take all steps to remedy such contravention. If the City advises the Service Provider of any contravention of such legislation in writing, the Service Provider shall, within 10 (ten) days after receipt of such notice, take all steps necessary to remedy such contravention and shall keep the City informed regarding the steps taken and the implementation and the result thereof.

23.2 **No employment**

The Service Provider warrants that none of its personnel shall be regarded as employees of the City. The Service Provider shall assist to defend and bear all costs in the event that the City is required to defend a claim, whether civil or employment related, instituted against it by the Service Provider's personnel should the City defend the matter, the Service Provider hereby indemnifies the City against all and any costs (including attorney and own client costs) which may be incurred by or awarded against the City as a consequence of the defence of the claim.

23.3 **Occupational Health and Safety Act, 1993**

The Service Provider shall be responsible for ensuring compliance with all the provisions of the Occupational Health and Safety Act, 1993 and it indemnifies the City against any claim which may arise in respect of such Act by its personnel against the City.

24 SUB-CONTRACTING

24.1 The Service Provider may not Subcontract the whole of or any portion of the Services in terms of this Agreement to any third party without the prior written consent of the City;

24.2 In the event the Service Provider wishes to Subcontract the whole of or any portion of the Services in terms of this Agreement, it shall apply to the City in writing for consent to do so;

24.3 In its application, the Service Provider shall give the name of the Subcontractor, the Subcontractor's obligations, the proposed date of commencement of the Subcontract which shall include the fees payable to the Subcontractor, and a report of the background security check on the Subcontractor's suitability, financial and otherwise;

24.4 The City may, in its sole and absolute discretion, refuse consent to Subcontract. In the event the City approves the Subcontracting of the whole of or any portion of the Services in terms of this Agreement, then:

24.5 The Service Provider shall ensure that the Subcontractor's B-BBEE level is equal to or better than that of the Service Provider, their price is competitive, and they have the capacity to provide the Service;

24.6 such Subcontracting shall not absolve the Service Provider from responsibility for achieving the Service Levels or complying with its obligations in terms of this Agreement and the Service Provider hereby indemnifies and holds the City harmless against any loss, harm or damage which the City may suffer as a result of such Subcontracting;

24.7 the Service Provider shall at all times remain the sole point of contact for the City in respect of the acquisition of Services by the City; and

24.8 no such Subcontracting shall have any effect on the Contract Price and charges payable by the City to the Service Provider in terms of this Agreement.

25 CONFIDENTIALITY

25.1 The Service Provider acknowledge that all information relating to the City confidential business and technical information, data, documents or other information necessary or useful for the carrying on by the City of its business which shall include, but shall not be limited to operating procedures, quality control procedures, approximate operation personnel requirements, descriptions and trade names and

trademarks, know how, techniques, technology, information relating to clients, customers, suppliers, relevant authorities, copyright, trade secrets and all goodwill relating to the business and any other intellectual property rights, technical data and documents in whole or in part, used by the City in respect of its business; ("**Confidential Information**"), shall remain confidential and shall not be made known unless the City has given written consent to do so.

25.2 The information provided by the City in the context of this Agreement is Confidential Information and the Service Provider shall take all reasonable measures to keep the information confidential and will only use the information for the purpose for which it was provided.

25.3 The Service Provider undertakes not to disclose any such Confidential Information. However, there will be no obligation of confidentiality or restriction on use where:

25.3.1 the information is publicly available, or becomes publicly available otherwise than by action of the receiving Party; or

25.3.2 the information was already known to the receiving Party (as evidenced by its written records) prior to its receipt under this or any previous agreement between the Parties or their affiliates; or

25.3.3 The information was received from a third Party not in breach of an obligation of confidentiality.

26 INTELLECTUAL PROPERTY RIGHTS

26.1 All Intellectual Property Rights of the Service Provider and/or third-party vest in the Service Provider and/or third party, as appropriate.

26.2 All rights in the City name and logo remain the absolute property of the City.

26.3 The Service Provider warrants that no aspect of the Services provided in terms thereof will infringe any Patent, Design, Copyright, Trademark or trade secret or other proprietary right of any third party.

26.4 The Service Provider shall promptly notify the City, in writing, of any infringement or apparent or threatened infringement or any circumstances which may potentially give rise to an infringement, or any actions, claims or demands in relation to any Intellectual Property Rights.

26.5 In the event the City becomes aware of any such infringement, the Service Provider shall, at its cost, defend the City against any claim that the Services infringe any such third-party Intellectual Property Rights, provided that the City gives notice to the Service Provider of such claim and the Service Provider controls the defence thereof. The Service Provider further indemnifies the City against, and undertakes that it will pay all costs, damages and attorney fees, if any, finally awarded against the City in any action which is attributable to such claim and will reimburse the City with all costs reasonably incurred by the City in connection with any such action.

26.6 Should any claim be made against the City by any third party in terms of clause 26.1 above, the City shall give the Service Provider written notice thereof within 3 (three) days of becoming aware of such claim to enable the Service Provider to take steps to contest it.

26.7 Should any third party succeed in its claim for the infringement of any third-party proprietary rights, the Service Provider shall, at its discretion and within 30 (thirty) days of the Services having been found to infringe, at its own cost:

26.7.1 obtain for the City the right to continue using the subject of infringement or the parts thereof which constitute the infringement; or

26.7.2 replace the subject of infringement or the parts thereof which constitute the infringement with another product or service which does not infringe, and which is materially similar to the subject of infringement; or

26.7.3 alter the subject of infringement in such a way as to render it non-infringing while still in all respects operating in substantially the same manner as the subject of infringement; or

26.7.4 withdraw the subject of infringement.

27 FORCE MAJEURE

27.1 For the purposes hereof, Force Majeure shall mean civil strife, riots, insurrection, sabotage, national emergency, acts of war of public enemy, rationing of supplies, flood, storm, fire or any other like forces of nature beyond the reasonable control of the party claiming Force Majeure and comprehended in the terms thereof;

27.2 If Force Majeure causes delays in or failure or partial failure of performance by a Party of all or any of its obligations hereunder, this Agreement shall be suspended for the period agreed in writing between the Parties;

27.3 In the event of circumstances arising which the other Party believes that it constitutes a Force Majeure (“the Affected Party”) then such Affected Party shall send, within 5 (five) days from the interrupting circumstances, a written notice of the interrupting circumstances specifying the nature and date of commencement of the interrupting event to the other Party. The Parties shall agree, in writing, to suspend the implementation of this Agreement for a specific period (“Agreed Period”);

27.4 In the event that both Parties reasonably believe that the Affected Party shall be unable to continue to perform its obligations after the Agreed Period, then either Party shall be entitled to terminate this Agreement without further notice to the other Party;

27.5 The Party whose performance is interrupted by the interrupting circumstances shall be entitled, provided that such party shall gave notice to that effect with a written notice of the interrupting circumstances as provided above, to extend the period of this Agreement by a period equal to the time that its performance is so prevented.

28 CESSION

The Service Provider shall not be entitled to cede or assign or transfer in any other way and/or alienate its rights and obligations in terms of this Agreement without the prior written consent of the City.

29 CHANGE OF CONTROL / CIRCUMSTANCE

29.1 The Service Provider shall notify the City, in writing, of any change in the Service Provider's shareholding or membership or any change in the Service Provider's subsidiary companies or holding or its affiliates.

29.2 The Parties agree that should there be a change as envisaged in clause 29.1 above, the City shall have the opportunity to renegotiate the terms of this Agreement with the 3rd party.

29.3 The Service Provider shall further notify the City of any material changes or circumstance which might have led the City to appoint the Service Provider to Provide the Goods and/or Services. In the event that any material changes or circumstance occurs and the Service Provider fails to inform the City of such a change or circumstance, the Service Provider shall be deemed to have breached a material term of this Agreement and the City shall be entitled to cancel the Agreement on 1 (one) month's prior notice.

30 BREACH

30.1 Subject to clause 29.3 above, should either Party commit a breach of any term of this Agreement ("the Defaulting Party") then the affected party ("Aggrieved Party") shall be entitled to inform the Defaulting Party in writing to remedy such failure or default within 5 (five) Business Days and should the Defaulting Party fail to remedy the breach within 5 (five) Business Days after receipt of the notice the so Aggrieved Party shall be entitled, without prejudice to any of its rights under this Agreement or law to:

30.1.1 immediately terminate this Agreement without giving written notice and claim damages (which shall include legal costs on an attorney/client scale); or

30.1.2 request specific performance and claim damages (which shall include legal costs on an attorney/client scale); or

30.1.3 impose penalties as provided for in clause 12 above.

31 EARLY TERMINATION

The City shall have the right to terminate this Agreement by giving 30 (thirty) days' notice in writing to the Service Provider of its intention to terminate the Agreement.

32 DISPUTES

32.1 Save for clause 30 above or any other clause in this Agreement which provides for its own remedy, should any dispute arise between the Parties in respect of or pursuant to this Agreement, including, without limiting the generality of the aforegoing, any dispute relating to:

32.1.1 the interpretation of the Agreement;

32.1.2 the performance of any of the terms of the Agreement;

32.1.3 any of the parties' rights and obligations;

32.1.4 any procedure to be followed;

32.1.5 the termination or cancellation or breach of this Agreement; or

32.1.6 the rectification or repudiation of this Agreement; then any Party may give the other Party written notice of such dispute, in which event the provisions below shall apply.

32.2 Within 7 (seven) days of the declaration of such dispute, the Parties representatives or their nominated persons shall meet in the spirit of goodwill and endeavour to resolve the dispute, failing which (and without prejudice to any other alternative dispute resolution to which the Parties may agree, either prior to or concurrently with arbitration) the provisions of this clause 31 above shall apply.

32.3 If the Parties are unable to resolve the dispute within 14 (fourteen) days of the notice of the dispute (or such longer period as they may have agreed to in writing),

then either Party may, on written notice to the other Party, require that the dispute be submitted to and decided by arbitration, in terms of the Arbitration Act, 42 of 1965 of South Africa (“the Arbitration Act”).

32.4 The arbitration shall be held under the provisions of the Arbitration Act provided that the arbitration shall be:

32.4.1 at any place which the Parties agree, in writing, to be mutually convenient.

32.4.2 in accordance with such formalities and/or procedures as may be settled by the arbitrator and may be held in an informal and summary manner, on the basis that it shall not be necessary to observe or carry out the usual formalities of procedure, pleadings and/or discovery or respect rules of evidence.

32.5 If the arbitration is:

32.5.1 a legal matter, then the arbitrator shall be a practicing advocate or a practicing attorney of not less than 10 (ten) years' standing;

32.5.2 an accounting matter, then the arbitrator shall be a practicing-chartered accountant of not less than 10 (ten) years' standing;

32.5.3 any other matter, then the arbitrator shall be any independent person agreed upon between the parties.

32.6 Should the Parties fail to agree on an arbitrator within 14 (fourteen) days after the arbitration has been demanded, then the arbitrator shall be nominated at the request of either of the Parties, by the president for the time being of the Law Society of the Northern Provinces.

32.7 Should the Parties fail to agree whether the dispute is of a legal, accounting or other nature within 7 (seven) days after the arbitration has been demanded, then it shall be deemed to be a dispute of a legal nature.

32.8 The arbitrator may:

32.8.1 investigate or cause to be investigated any matter, fact or thing which he considers necessary or desirable in connection with the dispute and for that purpose,

shall have the widest powers of investigating all documents and records of any party having a bearing on the dispute;

32.8.2 interview and question under oath the parties of any of their representatives;

32.8.3 decide the dispute according to what he considers just and equitable in the circumstances; and

32.8.4 make such award, including an award for specific performance, damages or otherwise, as he in his discretion may deem fit and appropriate. The arbitration shall be held as quickly as possible after it is requested, with a view to it being completed within 30 (thirty) days after it has been so requested.

32.8.5 The arbitrator's decision and award shall be in writing with reasons and shall be final and binding upon the Parties.

32.8.6 The arbitrator's award may, on application by either Party to a court of competent jurisdiction and after due notice is given to the other Party, be made an order of court.

32.8.7 Notwithstanding the provisions of clauses 32.1, 32.2, 32.3, 32.4, 32.5, 32.6, 32.7 above, in the event of either Party having a claim against the other Party for a liquidated amount or an amount which arises from a liquid documents, or for an interdict or other urgent relief, then the other Party having such a claim shall be entitled to institute action therefore in a court of law rather than in terms of the above clauses, notwithstanding the fact that the other Party may dispute the claim.

32.8.8 The provisions of this clause 32 are severable from the rest of this Agreement and shall remain in effect even where this Agreement is terminated or cancelled for any reason.

33 LAWS AND JURISDICTION

33.1 This Agreement shall be governed by and interpreted according to the Law of the Republic.

33.2 Each Party submits to the exclusive jurisdiction of the South African courts in respect of any matter arising from or in connection with this Agreement including its

termination. Each Party further consents to the jurisdiction of the High Court of South Africa (North Gauteng High Court (Pretoria).

34 NOTICES AND COMMUNICATIONS

34.1 The Parties choose as their respective *domicilium citandi et executandi* (hereinafter referred to as the "*domicilium*") and for the delivery of any notices arising out of this Agreement or its termination or cancellation, whether in respect of court process, notices or other documents or communications of whatsoever nature (including the exercise of any option), the address set out below:

34.1.1 **THE CITY:**

Office of the City Manager
Tshwane House
2nd Floor, Block D
320 Madiba Street
Pretoria, 0001
P O Box 440
Pretoria, 0001
Fax: 086 214 9544
Attention:
Telephone:
Email:

34.1.2 **THE SERVICE PROVIDER:**

……..
……
……..
……
…….
Attention:
Telephone:
Fax:
Email:

34.2 Each Party shall be entitled from time to time, by written notice to the other Party, to vary its *domicilium* to any other address which is not a Post Office Box or a Poste Restante.

34.3 Any notice given and any payment made by any Party to another Party (hereinafter referred to as "the addressee") which:

34.3.1 is delivered by hand during normal business hours of the addressee at the addressee's *domicilium*, shall be deemed, until the contrary is proved by the addressee, to have been received by the addressee at the time of delivery;

34.3.2 is posted by prepaid registered post to the addressee at the addressee's *domicilium* shall be deemed, until the contrary is proved by the addressee, to have been received on the 7th (seventh) day after the date of posting.

34.3.3 is sent by email or facsimile machine shall be deemed, until the contrary is proven by the addressee, to have been received within 1 (one) hour of transmission where it is transmitted during business hours of the receiving instrument and at noon on the following business day (excluding Saturdays) where it is transmitted outside such business hours.

34.4 Any notice or communication required or permitted in terms of this Agreement shall be valid and effective only if in writing, but it shall be competent to give notice by facsimile.

34.5 Notwithstanding anything to the contrary in this Agreement a notice or communication actually received by one Party shall be an adequate notice or communication notwithstanding that it was not sent to or delivered at the chosen *domicilium citandi et executandi*.

35 GENERAL AND MISCELLANEOUS

35.1 SOLE RECORD OF AGREEMENT

This Agreement constitutes the sole record of the agreement between the Parties with regard to the subject matter hereof. No Party shall be bound by any express or implied term, representation, warranty, promise or the like not recorded herein.

35.2 NO AMENDMENT EXCEPT IN WRITING

No addition to, variation of, or agreed cancellation of, this Agreement shall be of any force or effect unless in writing and signed by or on behalf of the Parties. Any alleged waiver of this requirement must itself be reduced to writing and signed by the relevant Party to be of any effect.

35.3 WAIVERS

No relaxation or indulgence which any party may grant to any other shall constitute a waiver of the rights of that party and shall not preclude that party from exercising any rights which may have arisen in the past or which might arise in future.

35.4 SURVIVAL OF OBLIGATIONS

Any provision of this Agreement which contemplates performance or observance subsequent to any termination or expiration of this Agreement shall survive any termination or expiration of this Agreement and continue in full force and effect.

35.5 APPROVALS AND CONSENTS

An approval or consent given by a Party under this Agreement shall only be valid if in writing and shall not relieve the other party from responsibility for complying with the requirements of this Agreement nor shall it be construed as a waiver of any rights under this Agreement except as and to the extent otherwise expressly provided in such approval or consent, or elsewhere in this Agreement. Any alleged waiver of the requirement that the approval or consent must be in writing must itself be reduced to writing and signed by the relevant Party to be of any effect.

36 EXECUTION

36.1 This Agreement may be executed in several counterparts, which shall each be deemed an original, but all of which shall constitute one and the same instrument. A facsimile shall constitute a valid counterpart for all purposes hereunder.

36.2 The signatories to this Agreement by their signature warrant their authority to enter into this Agreement and the capacity of their principal, if signing in a representative capacity, to enter into this Agreement.

Signed at _____ on this _____day of _____ 20

_____

For and on behalf of **THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY**

Duly represented by ……..

City Manager

Signed at _____ on this _____day of _____ 20

_____

Duly represented by ……