

- **BID SPECIFICATION- APPOINTMENT OF A OF CONTRACTOR FOR THE SUPPLY, INSTALL, UPGRADE OF VoIP TELEPHONES WITH VOICE RECORDING SYSTEMS IN GAUTENG REGION.**



PASSENGER RAIL AGENCY OF SOUTH AFRICA

APPOINTMENT OF A OF CONTRACTOR FOR THE SUPPLY, INSTALL, UPGRADE OF VoIP TELEPHONES WITH VOICE RECORDING SYSTEMS IN GAUTENG REGION

Compiled by:

(Telecoms Department)

L Mogotsi

Checked by: Telecoms Manager

(Telecoms Department)

J. Shiburi 

Approved by: Acting Infra Manager

D. Mqadi

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1. INTRODUCTION

- 1.1** Telecommunications department requires the appointment of service providers to supply, install, upgrade of VoIP telephones and voice recording system in Gauteng region. The system has reached the end-of-life cycle, with all the systems hardware versions no longer supported by the Original Equipment Manufacturer (OEM). The Internet Protocol enabled Private Branch exchange operates in the servers as virtual machines with all the hardware servers, storage, fabric interconnectors Switches also no longer supported by the OEM. The system requires the total upgrade of both hardware and firmware. The system supports the Session Initiation Protocol (SIP) trunk for both outgoing and incoming calls. The supply and install system will create an active redundancy to the system which require an upgrade.

2. BACKGROUND INFORMATION

2.1 STATUS QUO

- 2.1.1.** Telecommunications departments in Gauteng region has experienced theft and vandalism on the high sites which delayed the implementation of the GSM-R systems. The department now require the supply, install, and upgrade on the existing Voice Over Internet Protocol (VoIP) Telephones and Voice Recording system for proper train operations.

2.2 PROBLEM STATEMENT

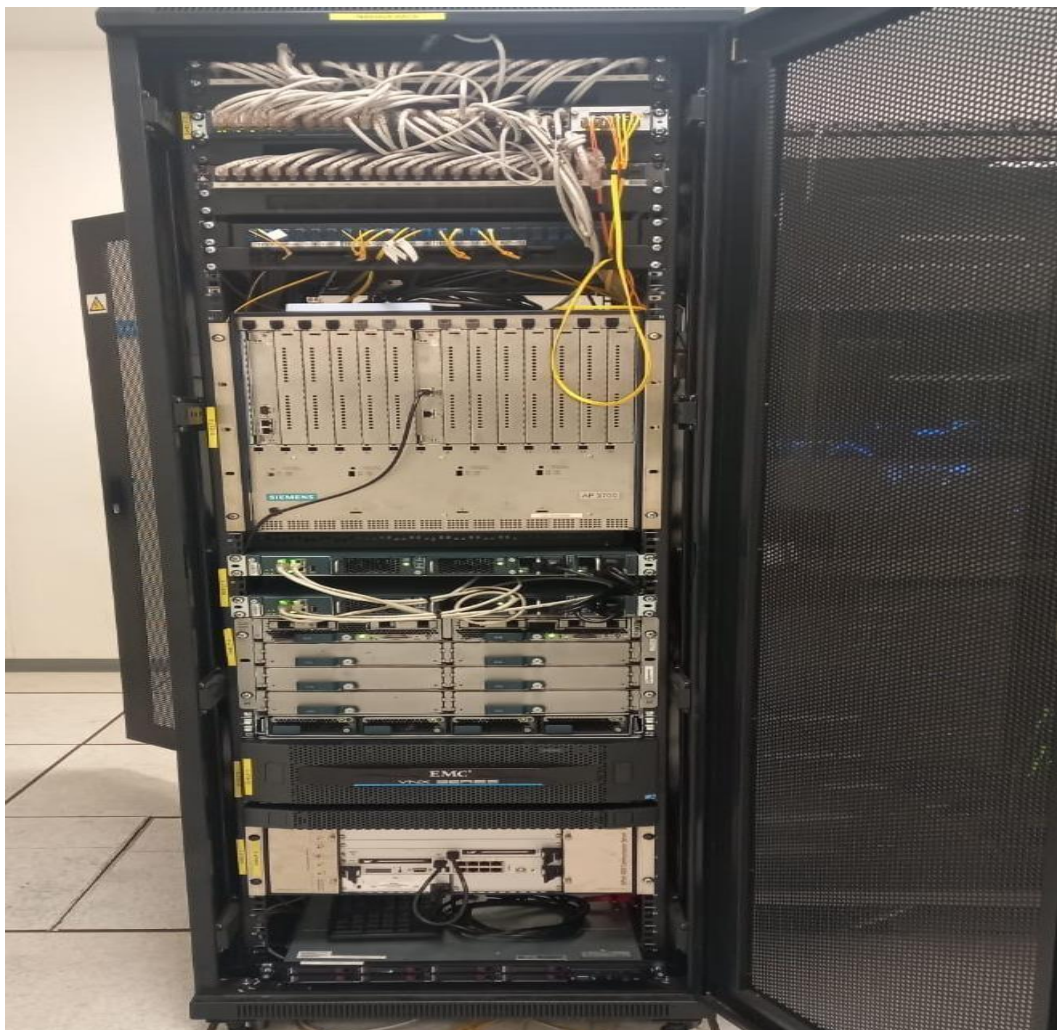
- 2.2.1** Due to the continuous system failure, it becomes difficult to replace the hardware of the same making and trains will be authorised without the recordings of all communications if an upgrade is not prioritised. The situation has an adverse effect on the safe authorisations and

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movement of trains. The recording of communications systems is a safety critical measure, in train operations environment and a key requirement for Railway Safety Regulator on issuing of operational license.

- 2.2.2** PRASA has deployed the VoIP telephones with the voice recording system at Gauteng Nerve Centre (GNC). The failure to upgrade the telephone system will result in system vulnerability and not complying with the Original Equipment Manufacturer in terms of safety. Whenever the system is encountered with technical challenges the Original Equipment Manufacturer will not be responsible.

2.3 PICTORIALS



2.3.1 Voice Recorder System - GNC

3. OBJECTIVE OF THE PROPOSED PROJECT

3.1 DESIRED OUTCOMES FOR CARRYING OUT THE PROPOSED PROJECT

- 3.1.1** The Objective of the project is to upgrade both hardware, firmware, and applications of the Internet Protocol enabled Private Branch Exchange (PBX) system in Gauteng Region, for an effective train operation.

3.2 PROJECT BENEFITS TO PRASA

- 3.2.1** To increase the availability and reliability of telephones systems, recordings systems and compliance which will result in effective operation of Metrorail trains and increase in revenue collections.

3.3 CURRENT MECHANISMS IN PLACE TO ADDRESS THE PROBLEM

- 3.3.1** NONE

4. SCOPE OF WORK AND AREAS OF FOCUS

4.1 SCOPE OF WORK FOR THE SUPPLY, INSTALL, UPGRADE OF VOICE OVER INTERNET PROTOCOL (VoIP) TELEPHONES AND VOICE RECORDING SYSTEMS

PART A - UPGRADE OF PABX SYSTEM AT THE GNC:

- 4.1.1** Upgrade of the Host servers which runs the virtual machines.
- 4.1.2** Upgrade of the Network Switches.
- 4.1.3** Upgrade of the storage system and all hardware requirements.
- 4.1.4** Provide twenty additional telephones handsets which support SIP and HFA
- 4.1.5** The upgrade shall be compatible to the old telephones handset which support both Session Initiation Protocol and Hi-Path Feature Access

- 4.1.6** Provide perpetual licences to all the systems without licenses
- 4.1.7** The two servers' machines shall run in the existing SIP trunks
- 4.1.8** Upgrade the virtual machine software applications to the latest version
- 4.1.9** Upgrade the dongle servers for voice recording applications licences
- 4.1.10** Upgrade the voice recording server applications.
- 4.1.11** The two servers shall all be active redundancy.
- 4.1.12** The recording systems shall have maximum local storage capacity of 10 tera Bytes.
- 4.1.13** The system shall be configured to back-up from extended PRASA ICT local storage and clouds.
- 4.1.14** Provide the user logon consoles for all the servers.
- 4.1.15** The phones shall record a maximum of 40 users at a time.
- 4.1.16** The system shall accommodate the maximum users of up to hundred thousand users as per the OEM.
- 4.1.17** Provide in depth technical training to a total number of 10 technical personnel provided by PRASA.
- 4.1.18** Provide software assurance for the next ten updates period.
- 4.1.19** Provide the hardware suitable for rail environment with a minimum of ten years to a maximum of fifteen years life cycle as prescribed by the OEM.
- 4.1.20** System configuration to interface with PRASA ICT network.
- 4.1.21** Provides nodes software updates for all existing equipments.
- 4.1.22** Supply and install a 3KW Inverter Charger with batteries for backup power.
- 4.1.23** Upgrade the Interface softwares for operation, configuration, and administration of the PABX and Storage system.
- 4.1.24** Update the Windows Server operating system to the latest compatible.
- 4.1.25** Supply and Delivery of Telephones Power Supply Type D plug - C5, in the absence POE switch

PART B - SUPPLY AND INSTALLATION PABX SYSTEM AT THE PTN CTC:

- 4.1.26** Supply and installation of a secondary voice recording server at PTA North.

- 4.1.27** Provide two servers to run the virtual machines for PTA north.
- 4.1.28** Supply and installation of the Host servers which runs the virtual machines.
- 4.1.29** Supply and installation of the network Switches
- 4.1.30** Supply and installation of all hardware requirements in line with the upgraded system.
- 4.1.31** The recording systems shall have maximum local storage capacity of 10 tera Bytes.
- 4.1.32** The Installation shall be compatible to the old telephones handset which support both Session Initiation Protocol (SIP) and Hi-Path Feature Access.
- 4.1.33** Provide perpetual licences to all the systems without licenses.
- 4.1.34** Configure the system in a PRASA ICT secondary SIP trunk.
- 4.1.35** The two servers' machines shall run in the secondary SIP trunks.
- 4.1.36** Supply and installation of the virtual machine software applications to the latest versions.
- 4.1.37** Supply and installation of the dongle for voice recording applications licences.
- 4.1.38** Supply and installation the voice recording application softwares.
- 4.1.39** Supply and install a 3KW Inverter Charger with batteries for backup power.
- 4.1.40** The two servers shall all be active for redundancy purpose.
- 4.1.41** The system shall be configured to back-up from extended PRASA ICT local storage and clouds.
- 4.1.42** Provide the user logon consoles for all the servers.
- 4.1.43** The recording system shall record a maximum of 40 users at a time.
- 4.1.44** The system shall accommodate the maximum users of up to hundred thousand users as per the OEM.
- 4.1.45** Provide high level technical support and software assurance for a period of 36 months.
- 4.1.46** Provide the hardware suitable for rail environment with a minimum of ten years to a maximum of fifteen years life cycle as prescribed by the OEM.

4.1.47 Supply and install the Windows Server operating system to the latest compatible.

4.1 TARGETED AREA BY THIS PROJECT

- i. Pretoria North CTC
- ii. Gauteng Nerve Centre

4.2 EXTENT AND COVERAGE OF THE PROPOSED PROJECT

Gauteng Region

4.3 OTHER RELATED PROJECTS

None

5. SPECIFICATION OF THE WORK OR PRODUCTS OR SERVICES REQUIRED

5.1 TECHNICAL SPECIFICATION FOR SUPPLY, INSTALL, UPGRADE OF VOICE OVER INTERNET PROTOCOL (VoIP) TELEPHONES AND VOICE RECORDING SYSTEMS

5.1.1 VOICE RECORDING APPLICATION SOFTWARE

- 5.1.1.1** Integrated recording solution for VoIP system.
- 5.1.1.2** Recording of up to 2000 concurrent channels per server.
- 5.1.1.3** Centralised active VoIP recording solution.
- 5.1.1.4** Compatible with Open Stage 15/20/40/60/80 and Open Scape Voice.
- 5.1.1.5** Available for Windows.
- 5.1.1.6** Software-only solution
- 5.1.1.7** Recording feature : Bulk, rules-based or record-on-demand.
 - : Threat call recording.
 - : DHCP support.
 - : Support of G.711, G.722 and G.729.
 - : Recording of up to 2000 calls simultaneously.
 - : Recording Planner
 - : Recording of encrypted calls.
 - : Call data compression.

- 5.1.1.8** VoIP recording as hosted service.
- 5.1.1.9** Search-and-replay: Browser and client server-based search and replay applications with flexible search criteria.
- 5.1.1.10** Flexible : Flexible, concurrent licensing concept.
: Application Programming Interface (API).
: Interfaces for voice recording system solution.
- 5.1.1.11** Archiving : DVD, RDX, USB devices, NAS.
: Bulk or selective
: Sequential, cascading and parallel.
- 5.1.1.12** Central Service Management.
- 5.1.1.13** Browser-based configuration and administration.
- 5.1.1.14** Modern software architecture.
- 5.1.1.15** Security
: Secure network and web connection.
: Fail safe features and fault-tolerant modes of operation.

5.1.2 DOUGLE USB LICENSE

- 5.1.2.1** Security: Secure communication Channel
- 5.1.2.2** Cryptographic Algorithms: AES 128-Bit Encryption
: Remote Update RSA Digital Signature.
: 64,000 Encryption Keys
- 5.1.2.3** Support Licensing Models : Perpetual.
- 5.1.2.4** Default Colour : Black
- 5.1.2.5** Connection Type : USB Type A
- 5.1.2.6** Lines Used : Power, Ground, 2 for Data.
- 5.1.2.7** Plastic Case Material : Lexan 500R.
- 5.1.2.8** Storage Temperature : 0°C to 70°C
- 5.1.2.9** Operating Temperature : 0°C to 70°C
- 5.1.2.10** Humidity Rating : 0 – 95%
- 5.1.2.11** Power Consumption – Operating/ Standby : 50mA/ < 0.5mA
- 5.1.2.12** Dimensions (Lx W x H) Mm : 40.5 x 16 x 8
- 5.1.2.13** Weight (g) : 4.8g

5.1.3 POWER SUPPLY AC/DC

5.1.3.1 AC/DC Adapter EU / Power Supply for IP Phone.

5.1.3.2 Input : 100-240VAC 50/60Hz, 600mA

5.1.3.3 Output: 38VDC/ 420Ma.

5.1.4 SERVER

5.1.4.1 Processors: 2X Second-generation intel Xeon Platinum processor 125W

5.1.4.2 Memory: 768 GB in 12X slots, 64GB Dimms 2666MHz/2933MHz

5.1.4.3 Security: TPM1.2/2.0 redundant PSUs, Front-access diagnostics via dedicated USB port.

5.1.4.4 Network Interface: 2X GbE ports+1X dedicated 1GbE management port.

5.1.4.5 Power: 2X hot-Swap/redundant 55W/750W 80 plus Platinum or 750 Plus Titanium.

5.1.4.6 Support: Microsoft Windows Server, SUSE, RED Hat, VMware

5.1.4.7 Warranty: 3 year customer replaceable unit and onsite service.

5.1.5 HANDSETS

5.1.5.1 Each VoIP telephone provides an integrated Ethernet port.

5.1.5.2 The grid is accessed via 10/100 Base-T or optionally via Gigabit Ethernet.

5.1.5.3 All phones support IEEE 802.3af Power over Ethernet.

5.1.5.4 Each model of VoIP telephones is available as a phone variant with the open standards for SIP voice communication or HFA = HiPath Feature Access.

5.1.5.5 Turrets supports in excess of 600 lines per user.

5.1.5.6 High resolution & contrast 10.4" touchscreen

5.1.5.7 No fan or hard drive for silent, low-energy operation

5.1.5.8 Up to four handsets and 24 speaker channels per turret

5.1.5.9 Redundant LAN ports (2) and USB v2.0 ports (6)

5.1.5.10 INTEL Atom N450 1.67GHz single core CPU

5.1.5.11 Display; Graphic display, 2 lines, monochrome (non-swivel)

- 5.1.5.12** Keys; Dialling keypad, 3 fixed function keys with red LEDs, 8 free-programmable keys with red LEDs, Key labelling via paper inserts, Control keys +/-, 3 keys for navigation
- 5.1.5.13** Acoustics; Hands free (full duplex), Audio Presence TM HD
- 5.1.5.14** Interfaces; Unified communication key modules
- 5.1.5.15** Wall-mountable; Can be mounted on the wall.
- 5.1.5.16** Up to 1000 personal entries with several numbers
- 5.1.5.17** Combination of contacts into groups
- 5.1.5.18** FCC Part 68/CS-03 (Technical Requirements for Connection of Terminal Equipment to the Telephone Network)
- 5.1.5.19** TIA/EIA-810A (Transmission Requirements for Narrowband VoIP and Voice over PCM Digital Wireline Telephones)
- 5.1.5.20** TBR8 (Telephony 3.1 kHz tele-services – attachment requirements for handset terminals)
- 5.1.5.21** Hearing aid capability (HAC) according to TIA/EIA-504A (Electronic Industries Association recommended standard RS-504 magnetic field intensity criteria for telephone compatibility with hearing aids)

5.2 TO BE PROVIDED BY THE CONTRACTOR

- 5.2.1** Site books (each in triplicate) to record All incidents as well as the progress of work during the occupation.
- 5.2.2** All instructions pertaining to the technical details of the work being performed at that time.
- 5.2.3** Upon appointment, the contractor shall supply machinery, equipment, material, labour and consumables, etc. necessary for the undertaking and completion of the works to satisfaction of the client.
- 5.2.4** The client will require conformance documentation for each item of material procured by the contractor for installation used in this contract prior to the installation.
- 5.2.5** Any damage caused to the property of PRASA will be for the contractor's account.

5.2.6 Before commencing construction in any area, the contractor shall verify the positions of services. Where any underground services are shown on the drawings, the contractor shall have the equipment available on site for as long as is necessary to detect and locate such services and, if so ordered, he or she shall excavate by hand to expose such services in areas and in a manner and at a time agreed upon with the Project manager.

5.2.7 Protection of cables- Before any excavations take place near identified service cables, the contractor shall contact the Project manager. The contractor shall advise the Project manager at least 7 days in advance of the actual date on which to excavate near any cable. The contractor shall not use mechanical equipment to excavate within 3m of the estimated position of identified cable and shall, if necessary, expose the cable by means of hand excavation carried out under proper supervision.

5.3 QUALITY ASSURANCE

5.3.1 Contractors shall submit descriptive literature consisting of detailed technical specifications, constructional details, and principal dimensions, together with clear illustrations of the material offered.

5.3.2 Contractors shall submit material type test certificates for material to be supplied and used in this contract. These shall be in English.

5.3.3 The Project Manager shall be notified timeously for inspection of material before it is delivered to site.

5.3.4 Testing and commissioning schedules shall be provided for all material provided under this contract.

5.4 GUARANTEES AND DEFECTS

5.4.1 The works shall be guaranteed for a period of 12 months commencing from the date of commissioning or hand over to PRASA whichever comes first.

5.4.2 The contractor shall be responsible for guarantees and maintenance-on-guarantees of the equipment, materials and labour.

- 5.4.3** The contractor shall rectify defects that may arise during the guarantee period within 7 days of being notified by PRASA.
- 5.4.4** Should the Contractor fail to comply with the requirements stipulated above, Metrorail shall be entitled to undertake the necessary repairs of work or effect replacement of defects apparatus or material and the contractor shall reimburse the client the total cost of such repair or replacement, including labour costs incurred in replacing defective apparatus or materials.
- 5.4.5** PRASA shall issue a completion certificate indicating the completion date.

5.5 GENERAL

- 5.5.1** Should any claim arise due to damage caused by any action of work by the Contractor to property of PRASA and his employees or any other person/s, the Contractor shall be held liable to settle such claims at his own cost.
- 5.5.2** The contractor shall provide transport, equipment, tools, consumables, supervision, protection, and labour necessary to successfully complete the contract.
- 5.5.3** The contractor to provide two teams for aerial optic fibre and underground optic fibre project.

5.6 SAFETY: HEALTH, SAFETY AND ENVIRONMENT

- 5.6.1** All work in this contract shall comply with the Occupational Safety Act No 85 of 1993, National Environmental management Act 107 of 1997 Act and construction regulation 2014. These items shall all be included in the tendered rates.
- 5.6.2** A copy of the act as well as an approved safety file shall be kept on site for the duration of the project.
- 5.6.3** The Contractor shall comply with all applicable legislation and PRASA's safety requirements adopted from time to time and instructed by the Project Manager. Such compliance shall be entirely at the contractor's cost and shall be deemed to have been allowed for in the rates or total prices in the contract.
- 5.6.4** The Contractor shall report all incidents in writing to the Project Manager. Any incident resulting in the death of or injury to any person on the works shall be

reported within 1 hour of its occurrence and any other incident shall be reported within 24 hours of its occurrence.

- 5.6.5** All personnel employed by the Contractor shall have undergone a Health and Safety Induction.
- 5.6.6** Permits to work (in line with Covid-19 regulations) shall be issued at the cost of the contractor to all personnel on that shall be signed and stamped by the authorized PRASA Official responsible for Risk Management.
- 5.6.7** The contractor shall ensure that all Covid 19 protocols are adhered to.
- 5.6.8** The Contractor shall make necessary arrangements for sanitation, water, and electricity at these relevant sites during the installation of the equipment.
- 5.6.9** The safety file will be approved only after all the requirements on the checklist are met. **WITS_LIB/RISK_MGT/SHE** File Checklist (version 3) is attached in this regard.
- 5.6.10** The contractor shall be responsible for the safety of personnel on site. The following shall also form part of the safety plan:
 - Transportation of equipment and personnel.
 - Transportation, storage, and handling of hazardous equipment
 - The site access certificate shall only be issued (to the successful bidder) after the evaluation and approval of the safety file.

5.7 PAYMENTS CERTIFICATES

- 5.7.1** On or about the fifteenth day of each month, the Employer shall make either a progress measurement or an estimate of the work done, including any duly authorised alteration, extra, addition or omission.
- 5.7.2** On or about the fifteenth day of each month, the Contractor shall submit to the Employer a detailed list of material which has been properly provided and brought on the Site by him for permanent incorporation in the Works but not yet incorporated, accompanied by a written declaration signed by the Contractor certifying that the said material has been brought on to the Site for the particular work and shall not be removed therefrom. The Employer shall check the list of material and place a valuation thereon.
- 5.7.3** Thereafter the Employer shall within 14 Business Days issue a certificate authorising payment ("Payment Certificate") of such sum of money as he

may consider represents the value of the work referred to in clause 5.7.1 hereof plus ninety per cent of the valuation placed on the material in terms of clause 5.7.2.

5.7.4 The Contractor shall be entitled to receive payment of the amount authorised in the Payment Certificate. Such payment shall be regarded as an open payment and both certificate and payment shall be subject to revision and adjustment in subsequent certificates by the Employer if at any time he is of the opinion that the certificate does not represent accurately –

5.7.4.1 the proportion or value of work completed, and/or

5.7.4.2 the quantity or value of material involved,

having regard to the remaining portion of the works still to be executed by the Contractor. If there is a need for such revision and adjustment, such revision and adjustment shall be reflected as such in subsequent certificates.

5.7.5 The Payment Certificate in respect of any work referred to in clause 5.7.1 hereof, or of any material referred to in clause 5.7.2 hereof, shall not imply acceptance of the work or of the material and shall not prejudice the right of the Employer to reject work or material not in accordance with the contract, nor the right of Employer to recover any amounts paid to the Contractor in respect of such rejected work or material.

5.7.6 Where disputes, arbitrations or claims have not been settled, the Employer shall, within six weeks after expiry of the maintenance period(s) or completion of the making good, whichever is the later, issue a certificate authorising payment of all money due for completed work and payment of all security as is then held by Employer, after deducting therefrom –

5.7.6.1 any money due by the Contractor to Employer;

5.7.6.2 an amount which, in the opinion of the Employer is sufficient to cover any pending or outstanding claims and any expenses likely to be incurred in connection therewith;

5.7.6.3 any money or portion thereof, at the discretion of the Employer, due for completed work for which rates have not

been mutually agreed upon between the Employer and the Contractor.

- 5.7.7** Further Payment Certificates may be issued in respect of money withheld in terms of clause 5.7.6.1 and 5.7.6.3 hereof as the outstanding claims are settled and agreement on rates is reached.
- 5.7.8** The Employer shall, within six weeks after the settlement of all disputes or arbitration awards or after expiry of the defects period and completion of the making good (defects liability), whichever is the later, submit for the approval of the Employer, a final certificate which, after approval by the latter, shall be issued, thereby certifying both the final completion of the Works and the amount due to the Contractor, after deducting any money then due by the Contractor to the Employer.
- 5.7.9** The Employer shall send the final Payment Certificate, after approval, to the Contractor who, by countersigning the final Payment Certificate, shall certify his acceptance of the amount shown due to him as being full and final payment.
- 5.7.10** Within 6 (six) weeks after the receipt of the Contractor's Final Approval Certificate, the Employer will remit to the Contractor the balance of all money so due under the contract in terms of the final certificate.
- 5.7.11** Where the Contractor fails to counter-sign the final Payment Certificate or has not disputed the correctness of such final certificate within 3 (three) months after its receipt by him, the Contractor shall be deemed to be in agreement with such final certificate and the Employer shall effect payment in terms thereof. Any claim, arising from the final certificate or in connection with the contract, which has not been lodged with the Employer within a period of 3 (three) months after receipt by the Contractor of the final certificate, shall not be considered or admitted by the Employer, and the Contractor accepts and acknowledges that, by his failure to lodge a fully detailed and motivated claim within the above stipulated period of 3 (three) months, he waives such claim and relieves the Employer from responsibility for or any obligation to consider such claim.
- 5.7.12** Neither the issue of the final Payment Certificate nor any payment made thereunder shall release the Contractor from any liability, whether arising under the contract or at common law, to indemnify the Employer against

and to reimburse it in respect of, any claim made or to be made against it by a third party for damage or loss sustained by such third party in consequence of any wrongful act or omission of the Contractor, his sub-contractors or his or their employees or agents.

5.8 BONDS AND GUARANTEES

5.8.1 Surety in the amount equal to ten percent of the contract price, as elected by the Contractor, shall be provided by the Contractor for the due and faithful performance by him in terms of the Contract. Such security shall be in the form of: -

5.8.1.1 Government or approved Municipal stocks in negotiable form, or

5.8.1.2 A deed of suretyship furnished by an approved bank, insurance or guarantee corporation in such form as may be prescribed by PRASA, provided however that the Project Manager may, upon written application by the Contractor, return to the Contractor the whole or part of such security held by PRASA when the retention money has reached an amount which the Project Manager in his sole discretion considers sufficient for the protection of PRASA. PRASA is entitled to hold all or portion of the security until the completion of the contract and expiry of the defects liability and maintenance period.

5.8.1.3 Ten percent of the value of the work completed, as reflected by the nett monthly amounts certified for payment, will be retained by PRASA for the due and proper fulfilment of the contract, until such retention money is sufficient, in the opinion of Project Manager, for the protection of PRASA. PRASA is entitled to hold all or portion of the retention money until the completion of the contract and the expiry of the maintenance period.

5.8.1.4 Retention money shall be 5 percent when the security referred to hereof is 10 percent, and 10 percent when the said security is 5 percent.

5.9 PROGRAMME

5.9.1 The Contractor shall deliver to the Employer as part of the documentation required before commencement with Works execution, an initial programme of carrying out the Works (hereafter known as the "Project

Plan”) in order to meet the Due Completion Date. Whenever the approved Project Plan no longer reflects that actual progress will meet the Due Completion Date, the Contractor shall deliver to the Employer an revised Project Plan.

5.9.2 The initial Project Plan and all subsequent revised Project Plan shall show and, when relevant, describe in statements, the entire scope of the work to be performed including but not limited to:

5.9.2.1 The Commencement Date, commencement of the Works;

5.9.2.2 the Completion Due Date, and the planned completion date;

5.9.2.3 the sequence, timing and resources for carrying out the Works;

5.9.2.4 the dates for Site accesses and possessions, approvals, instructions, inspections, tests and all information required to execute the Works;

5.9.2.5 The events influencing the execution of the Works;

5.9.2.6 other programming information set out in the Scope of Work; and

5.9.2.7 on revised Project Plan, the actual progress achieved for the various parts of the Works and the amounts paid.

5.9.3 In the event that the Contractor is not able to complete the Works in line with the Project Plan the Contractor shall submit the revised Project Plan to the Employer for approval indicating the changes to the initial Project Plan.

5.9.4 The Employer shall, within 7 (seven) Business Days after the Contractor has submitted revised Project Plan, approve such Project Plan or, giving his reasons, instruct the Contractor to amend it, failing which, the submitted Project Plan shall be deemed to be the approved Project Plan.

5.9.5 The submission to and approval by the Employer of such Project Plan or its revised Project Plan, or the delivery of any relevant particulars, shall not relieve the Contractor of any of his duties or responsibilities under the Contractor's Contract.

5.10 PRICING THE WORKS

- 5.10.1** The contractor is required to provide firm prices/ rates for material and labour for the duration of the contract.
- 5.10.2** The contract period shall be inclusive of the delivery and installation period as well as an additional period of at least one year starting from the date of acceptance by the client of the last unit.
- 5.10.3** The contractor shall make provision for the costs (direct or otherwise) associated with works on, over or adjacent to railway lines. The Contractor is advised to study the requirements of the SPK 7/1 and ensure that all works can be completed in accordance with these requirements.
- 5.10.4** The contract offer shall be based on the rates as indicated in the bill of quantities. The quantities shall be agreed during construction per section.

5.11 PENALTY FOR DELAY

- 5.11.1** If the Contractor fails to complete the Works to the extent which entitles him to receive a Certificate of Practical Completion, by the Due Completion Date, the Contractor shall be liable to the Employer for an amount calculated 0.3% of the Contract Price per delayed day, which shall be paid for every day which shall elapse between the Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum of 10% of the Contract Price.
- 5.11.2** The imposition of such penalty shall not relieve the Contractor from his obligation to complete the Works or from any of his obligations and liabilities under the Contract,
- 5.11.3** The Employer may set off or deduct from the fees due to the Contractor any penalty amounts due and owing by the Contractor in terms of clause 5.11.1.
- 5.11.4** If, before the issue of the Certificate of Practical Completion the whole of the Works, any part of the Works has been:
- 5.11.4.1** Certified by the Employer as complete in terms of a Certificate of Completion,
 - 5.11.4.2** Occupied or used by the Employer, his agents, employees or other contractors (not employed by the Contractor),

5.11.5 The penalty for delay shall be reduced by an amount which is determined by the Employer to be appropriate in the circumstances.

5.11.6 If the penalty payable by the Contractor has reached 10% of the Contract Price, then any subsequent breach shall become a material breach and the Employer shall be entitled to terminate the Contract with immediate.

5.12 COMMISSIONING TESTS AND COMPLETION

5.12.1 Designated PRASA personnel, in conjunction with the Contractor, shall carry out the final commissioning test. The Contractor shall carry out any remedial work, if necessary.

5.13 PROJECT SPECIAL CONDITIONS

CERTIFICATES, COMMISSIONING, HANDOVER AND TRAINING

5.13.1 CERTIFICATES

5.13.1.1 All Computer Network certificates.

5.13.1.2 Architecture drawings of structures.

5.13.1.3 ICASA Certificate

5.13.2 COMMISSIONING

5.13.2.1 Only trained and competent personal shall setup and commission all the systems.

5.13.2.2 All products manuals shall be supplied.

5.13.3 HANDOVER

5.13.3.1 Copies of operator's manual shall be supplied.

5.13.3.2 Complete as built drawings shall be supplied.

5.13.3.3 All products manuals shall be supplied.

5.13.3.4 Test and compliance certificate shall be supplied.

5.13.4 TRAINING AND DISPATCHING

5.13.4.1 The appointed service provider shall conduct 24/7 onsite training for a period of 1 months, to fully training the operators.

5.13.4.2 Training shall be conduct by a competent person, who has control room operational experience.

5.13.4.3 Provide in-depth technical training for technical support.

5.13.4.4 Compliance certificates

5.13.5 SCRAPPING OF MATERIALS

5.13.5.1 The contractor shall not remove any material belonging to PRASA out of the building.

5.13.6 THE FINAL DOCUMENTATION SHALL INCLUDE, BUT NOT BE LIMITED:

5.13.6.1 Schematic diagrams/As build

5.13.6.2 Test certificates and data.

5.13.6.3 OEM Manuals

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6 PART A: BILL OF QUANTITIES (BOQ)

ITEM NO	6.1 DESCRIPTION OF WORK FOR GNC UPGRADE	QUANTITIES	UNIT OF MEASURE	UNIT PRICE	TOTAL AMOUNT
1	Factory Testing	1	Sum	R	R
2	Supply 2 copies of complete "As build/ As installed" equipment manuals properly bound.	2	Each	R	R
3	Training	10	Each	R	R
4	Testing, commissioning, and handing over of the entire installation.	2	Each	R	R
5	Upgrade a storage system and all hardware requirements including a maximum local storage capacity of 10 tera Bytes.	1	Each	R	R
6	Upgrade of the Host servers which runs the virtual machines	1	Each	R	R
7	Upgrade of the Network Switches	1	Each	R	R
8	Upgrade all licences with perpetual licence to all the systems.	1	Sum	R	R
9	Upgrade the virtual machine software VMware applications to the latest version	1	Each	R	R
10	Upgrade the dongle hardware for voice recording.	1	Sum	R	R
11	Upgrade the voice recording applications softwares	1	Sum	R	R
12	Update the Windows/ Linux Server operating system to the latest compatible.	1	EACH	R	R

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13	Supply and install a 3KW Inverter Charger with batteries for backup power.	2	EACH	R	R
14	Supply and Delivery of VoIP Telephones.	20	EACH	R	R
15	Supply and Delivery of VoIP Telephones Power Supply	20	EACH	R	R
16	Network and system configuration	1	EACH	R	R
17	Provide software assurance for the next ten updates period	2	EACH	R	R
TOTAL					
VAT 15%					
GRAND TOTAL					

ITEM NO	6.2 DESCRIPTION OF WORK FOR PTA NORTH CTC	QUANTITIES	UNIT OF MEASURE	UNIT PRICE	TOTAL AMOUNT
1.	Supply, installation and Commissioning of the storage system and all hardware requirements with a maximum local storage capacity of 10 tera Bytes.	1	Sum	R	R
2.	Supply, installation, and Commissioning of the Host servers which runs the virtual machines	1	EACH	R	R
3.	Supply, installation, and Commissioning of the Network Switches	2	EACH	R	R
4.	Provide perpetual licences to all the systems	1	Sum	R	R
5.	Supply and installation of the virtual machine software VMware applications.	1	EACH	R	R
6.	Supply and installation of the dongle hardware for voice recording.	1			

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			EACH	R	R
7.	Supply and installation of the voice recording applications software's	1	EACH	R	R
8.	Supply and install the Windows/ Linux Server operating system to latest compatible.	1	EACH	R	R
9.	Supply and install a 3KW Inverter Charger with batteries for backup power.	1	EACH	R	R
10	Network and system configuration	1	EACH	R	R
11.	Supply and Installation of 43U 19INCH Rack Cabinet.	1	EACH	R	R
TOTAL					
VAT 15%					
GRAND TOTAL					

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7. FUNCTIONAL EVALUATION CRITERIA

NOTE: The Technical or Functionality criteria must be guided by the project scope of works and area of focus.

Table 7.1: Technical Scoring Methodology

CRITERIA	WEIGHT	SCORES
<p>Organizational Experience</p> <p><i>(N.B. Provide for each successfully completed project/s in the following sequence: Copy of an appointment letter/s (on a company letterhead): description of the project, Client name, Client contact.</i></p> <p><i>Furthermore, attach test certificate signed by client or letter from the client confirming successful completion of the project/stations.</i></p>	40	<p>Score will be based on successfully executed and completed similar projects in the installation and Upgrade of VoIP Telephone and Voice Recording Systems.</p> <p>0: Zero (0) Similar Projects/non-submission/incomplete submission</p> <p>1: 1 Similar project/stations = 8 points</p> <p>2: 2 Similar projects/stations = 16 points</p> <p>3: 3 Similar projects/stations = 28 points</p> <p>4: 4 Similar projects/stations = 34 points</p> <p>5: 5 and above Similar projects/stations = 40 points</p>

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<p>Key Personnel Experience (based on Submitted CVs) of Key Staff (use information from our evaluation)</p> <ul style="list-style-type: none"> • Computer System Engineer/ Support. with minimum of 3 years' experience on VoIP telephone systems. • VMware/Equivalent VoIP telephone system Certification. <p><i>(N.B. Provide copies of original qualifications and certificates of professional bodies. The copies must be certified by commissioner of oath. The date on the stamp shall be three months or less, before the closing date of the tender. If the qualification has been awarded in other language either than English, please provide translation in English)</i></p> <p><i>Evaluation will be done on all personnel groups and maximum points shall be obtained on all</i></p>	<p>30</p>	<p>Detailed CVs of the team members who will be used in completing the works. Years of experience of proposed personnel:</p> <p>1. Key personal</p> <ul style="list-style-type: none"> • Computer System Engineer/ Support. <p>0: No information provided/incomplete submission/non-compliance = 0 points</p> <p>1: Key personnel with less than 2 years related experience = 6 points</p> <p>2: Key personnel equal/ above 2 years but less than 3 years related experience = 15 points</p> <p>3: Key personnel equal/above 3 years but less than 4 years related experience = 21 points</p> <p>4: Key personnel equal/ above 4years but less than 5 years related experience = 25 points</p> <p>5: Key personnel equal/above 6 years related experience = 30 points</p>
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<p>Project program (Work plan)</p> <p><i>(N.B. Provide project schedule in MS projects that meets the client's timeline requirements and the schedule to cover the following key Milestones:</i></p> <ul style="list-style-type: none"> • <i>Completion of safety file</i> • <i>Site Establishment</i> • <i>Procurement of material and all services</i> • <i>Actual construction activities.</i> • <i>Final works completion</i> • <i>Maximum project Duration of four (4) Months</i> <p><i>The overall schedule should clearly indicate sequencing of activities with clear understanding of scope.</i></p>	<p>10</p>	<p>Score will be allocated for MS Project Schedule provided</p> <p>0: No information provided=0</p> <p>1: Inadequate/ unrelated project schedule provided = 2 points</p> <p>2: Project schedule provided but no detailed activities indicated =4 points</p> <p>3: Project schedule provided with activities indicated on the program aligned with the preferred duration of the project; = 7 points</p> <p>4: Project schedule provided with activities indicated on the program aligned with preferred duration of the project, showing the sequence of activities (i.e., Baseline and critical path) = 8 points</p> <p>5: Project schedule provided with activities indicated on the program aligned with the preferred duration of the project, showing the sequence of activities (i.e., Baseline and critical path), clear understanding of the scope of work and site challenges addressed =10 points</p>
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<p>Project Approach and Methodology</p> <p><i>(N.B. The project methodology must be in line with the scope of work. Identify the risks associated with the project activities and mitigation measures. Furthermore, clearly show risks and mitigation measures of working on the railway reserve)</i></p> <p><i>Elements:</i></p> <ul style="list-style-type: none"> • <i>Identification of risks and mitigation</i> • <i>Work breakdown of activities</i> • <i>Quality assurance</i> • <i>Health and safety</i> • <i>Security</i> 	<p>20</p>	<p>Score will be allocated as follows:</p> <p>0: No information provided</p> <p>1: 1 elements of the method statement = 4 points</p> <p>2: 2 elements of the method statement= 8 points 3:</p> <p>3elements of the method statement=14 points 4: 4</p> <p>elements of the method statement= 17 points</p> <p>5: 5 elements of the method statement= 20 points</p>
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NOTE: Minimum 70% are to be attained in each and every evaluation criterion stated above for a bidder to be evaluated further.

Stage 3: Pricing and BBBEE Pricing

A maximum of 80 points is allocated for price. The evaluation for price will be done based on the following formula:

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for price of tender under consideration

P_t = Rand value of tender under consideration

P_{\min} = Rand value of lowest acceptable tender

BBBEE Evaluation

The BBBEE component of evaluation is weighted at 20% of the evaluation criteria. Bidders will be awarded the following points based on the level of their BBBEE as per their BBBEE Certificate issued by an agency approved by SANAS:

B-BBEE Contribution Level	80:20 Preference System
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant	0