`

POLOKWANE MUNICIPALITY

BID NUMBER: PM79-24/25

TENDER DESCRIPTION:	**PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS**

NAME OF BIDDER: ……..

CSD NUMBER: ……..

CONTACT NUMBER ……

EMAIL ADDRESS: ……...

TOTAL BID AMOUNT: _____

Document Prepared by:

Polokwane Municipality

Corner Landdros Mare and Bodenstein Street

Polokwane

0699

CLOSING DATE: **27 June 2025 @ 10H00**

Documents must be deposited in the bid box not later than **10:00 on 27 June 2025** when bids will be opened in public.

Bidders must contact the following officials for any enquiries:

• Technical enquiries: Ms. Nomfundo Mashele: (015 290 2375) nomfundom@polokwane.gov.za

• Supply chain enquiries: Mr. Tiro Pilusa: (015 290 2148) tirop@polokwane.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. Polokwane Municipality does not bind itself to accept the lowest or any other bid in whole or in part.

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 and The Preferential Procurement Regulation, 2022 and related legislation, in terms of which provision is made for this policy

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1. If any pages have been removed from the bid document and have therefore not been submitted.

2. If the bid document is completed using a pencil. 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;

(b) 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

(c) 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 Polokwane Municipality supply chain management system.

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

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

“Polokwane Municipality is committed to maintaining the highest standards of honesty, integrity and ethical conduct and has adopted a zero tolerance to fraud and corruption. Thus, Polokwane municipality urges all stakeholders and potential service providers to exercise extreme caution and be vigilant of imposters in the name of the Polokwane Municipality.

Service Providers are reminded of the importance of verifying the authenticity of any requests for personal information and avoid engaging with unsolicited communications, particularly those involving financial matters or the promise of tenders and jobs. Any suspicious activity, including fraudulent calls or messages, should be reported immediately to the relevant authorities and the police for investigation. Polokwane Municipality does not request potential service providers to pay any gratification to individual in any way whatsoever in exchange for the appointment to render services for the Municipality.”

Signed by Bidder

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PART A
INVITATION TO BID
MBD1

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*NAME OF MUNICIPALITY/ MUNICIPAL ENTITY*)					
BID NUMBER:	**PM79-24/25**	CLOSING DATE:	**27 June 2025**	CLOSING TIME:	**10:00**
DESCRIPTION	**PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS**				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MUST BE DEPOSITED IN THE BID BOX SITUATED AT Polokwane Municipality, Civic Centre, corner Bodenstein and Landdros Mare Street not later than 10:00 on **27 June 2025**

An official and compulsory will not be applicable for this project
The Bid box is generally open 24 hours, 7 days a week.
Completed Bid document, fully priced and signed must be sealed in an envelope marked **"** Bid number and Bid description"
Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration.
Bids documents containing the Conditions of Bid and other requirements in terms of the Supply Chain Management Policy will be downloaded from e-tender Publication Portal at www.etenders.gov.za at no fee.

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:			
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]			ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES 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:**			

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DEPARTMENT	SCM	CONTACT PERSON	Ms. Nomfundo Mashele
CONTACT PERSON	Mr. Tiro Pilusa	TELEPHONE NUMBER	015 290 2375
TELEPHONE NUMBER	015 290 2148	FACSIMILE NUMBER	N/A
FACSIMILE NUMBER		E-MAIL ADDRESS	nomfundom@polokwane.gov.za
E-MAIL ADDRESS	tirop@polokwane.gov.za		

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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 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: ……...

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SCHEDULE OF CONTENTS

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BID NO: PM79-24/25

BID DESCRIPTIONS: PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS

DIRECTORATE: TRANSPORTATION SERVICES

BUSINESS UNIT: INTELLIGENT TRANSPORT SYSTEMS MODELLING

Bids are hereby invited for the **PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS**

Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration

THIS BID IS SUBJECT TO THE, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATION, 2022, AND THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

The Municipality shall adjudicate and award bids in accordance with preference points of 80/20-point system, 80 points for the price and 20 points for specific goals. Prospective bidders must accept that the bid will be adjudicated, according to the said legislation. Bids will remain valid for 90 (ninety) days. The Council also reserves the right to negotiate further conditions and requirements with the successful bidder

N.B: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE [AS DEFINED IN REGULATION 1 OF THE LOCAL GOVERNMENT: MUNICIPAL SUPPLY CHAINS MANAGEMENT REGULATIONS]

MS. THUSO NEMUGUMONI
MUNICIPAL MANAGER
CIVIC CENTRE
LANDDROS MARE STREET

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RESPONSIVENESS AND EVALUATION CRITERIA

POLOKWANE MUNICIPALITY WILL CONSIDER NO BID UNLESS ITS MEETS THE FOLLOWING RESPONSIVENESS CRITERIA

- The bid must be properly received in a sealed envelope clearly indicating the description of the service and the bid number for which the bid is submitted.

- The bid must be deposited in the relevant bid box as indicated on the notice of the bid on or before the closing date and time of the bid.
- A valid Central Supplier Database Number (CSD)

- Bid forms must be completed in full and each page of the bid initialed.

- Submission of a Joint Venture Agreement, where applicable, which has been properly signed by all parties.
- Proof of payment of municipal rates and taxes or letter from tribal authority or valid lease agreement must be attached.
- Complies with the requirements of the bid and technical specifications.

- Adheres to Pricing Instructions.
- Comply in full and observe the requirements of the Notice to Bidders
- Experience with similar work – demonstrate a track record of a projects of similar scope and size

EVALUATION OF BIDS

a) All bids received shall be evaluated in terms of the Supply Chain Management Regulations, Polokwane Municipality Supply Chain Management Policy (on request from Municipality), the
a) preferential procurement regulation, and other applicable legislations.

The Council reserves the right to accept all, some, or none of the bids submitted – either wholly or in part – and it is not obliged to accept the lowest bid.

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PLEASE NOTE

The Municipal Manager may reject the bid or quote of any person if that person or any of its directors has:

a) The person committed a corrupt or fraudulent act during the procurement process or in the execution of the contract, or

b) An official or other role player committed any corrupt or fraudulent act during the procurement process or in the execution of the contract that benefited that person.

c) Failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months;

d) Failed, during the last five years, to perform satisfactorily on a previous contract with the Polokwane Municipality or any other organ of State after written notice was given to that bidder that performance was unsatisfactory;

e) Abused the supply chain management system of the Municipality or have committed any improper conduct in relation to this system;

f) Been convicted of fraud or corruption during the past five years;

g) Willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or

h) 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) or has been listed on National Treasury's database as a person prohibited from doing business with public sector.

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FORM "A"

BID NO: PM79-24/25

I/We, the undersigned:

a) Bid to supply and deliver to Polokwane Municipality all or any of the supplies and to render all the articles, goods, materials, services or the like described both in this and the other Scheduled to this Contract;

b) Agree that we will be bound by the specifications, prices, terms and conditions stipulated in those Schedules attached to this bid document, regarding delivery and execution;

c) Further agree to be bound by those conditions, set out in Forms, MBD's,SBD's and the Annexures attached hereto, should this bid be accepted in whole or in part;

d) Confirm that this bid may only be accepted by the Polokwane Municipality by way of a duly authorized Letter of Acceptance; and,

e) Declare that, the relevant authorized person thereto will initial each page of the bid document and amendments.

f) Declare that all information provided in respect of the bidder as well as the bid documents submitted are true and correct.

g) Declare that documentary proof regarding aspects of the bid process or accidental thereto will, when required, be submitted to the satisfaction of the Municipality.

Signed at …….this …….. Day of …… (Year)

Signature of the Bidder: _____

Name of Bidder: _____

Professional Registration No, if any, attach proof)

_____

Address:_____

Date: _____

As Witness: **1.** _____

2. _____

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Particular of Sole Proprietors and partners in partnerships

Name	***Identity Number***	***Personal Income Tax Number***

(Attach of identity Document, if bidder is a Sole Proprietor and/or partners in partnership)

State in cases where the bidder is a Company, Corporation of Firm by what authority the person signing does so, whether by Articles of Association, Resolution, Power of Attorney or otherwise.

I/We the undersigned am/are authorized to enter into this contract of behalf of:

by virtue of _____

dated _____ a certified copy if which is attached to this bid.

Signature of authorized person:_____

Name of Firm: _____

Postal Address:_____

_____

Date: _____

As witness: 1. _____

2. _____

Please Note:

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The prices at which bids are prepared to supply the goods and materials or perform the services must be placed on the column on the Form provided for that purpose.

<u>Failure on the part of the bidder to sign the Form of Bid and initial each page of this bid document will result in a bid being disqualified.</u>

Bank account details of bidder:

Bank: _____

Branch: _____

Branch Code: _____

Accounting Number: _____

Type of Account: _____

PROOF THAT MUNICIPAL ACCOUNT IS PAID IN FULL TO BE ATTACHED (ARRANGEMENTS MADE WITH COUNCIL WILL BE TAKEN INTO CONSIDERATION).

NOTE: THE AUTHORIZED SIGNATORY MUST SIGN ANY ALTERATIONS TO THE BIDDER DOCUMENT IN FULL

ANY COMPLETION OF THE BIDDER DOCUMENT IN ERASABLE INK WILL NOT BE ACCEPTED

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BIDDING INFORMATION

Details of person responsible for bidding process

Name _____

Contact number_____

Address of office submitting bid_____

_____

Telephone_____

Fax no_____

E-mail address _____

VAT Registration Number _____

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AUTHORITY FOR SIGNATORY

Signatories for close corporation and companies shall conform their authority by attaching to this form a duly signed and dated copy of the relevant resolution of their members or their board of directors, as the case may be.

"By resolution of the board of directors passed on _____ 20____

Mr/Ms. _____

Has been duly authorized to sign all documents in connection with the bid for

Contract_____No_____

And any Contract, which may arise there from on behalf of

Signed on behalf of the company:

In his/her capacity as:

Date: _____

Signature of signatory

As witness: 1. _____

2. _____

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FORM "B"

GENERAL UNDERTAKINGS BY THE BIDDER

DEFINITION

1. **"Acceptable bid"** means any bid, which in all respects, complies with conditions of bid and specifications as set out in the bid document, including conditions as specified in the Preferential Procurement Regulation (of 2011).
2. "**Chairperson"** means the chairperson of the Polokwane Municipality Bid Adjudication Committee.
3. **"Municipal Manager"** means the Municipal Manager of the Municipality.
4. **Committee"** refers to the Bid Adjudication Committee.
5. **"Council"** refers to Polokwane Municipality.
6. **"Member"** means a member of the Bid Adjudication Committee.
7. **Service providers"** refers to the bidders who have been successful in being awarded Council contracts.
8. **SMMEs"**(Small, medium and Micro Enterprises) refers to separate and distinct business entities, including co- operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996.
9. **Contract"** refers to legally binding agreement between Polokwane Municipality and the service provider.
10. **Bid** "means a written offer in a prescribed or stipulated form in response to an invitation by the Municipality for the provision of services or goods.
11. **Contractor"** means any natural or legal person whose bid has been accepted by the Council.
12. **"Closing time"** means the date and hour specified in the bid documents for the receipt of bids.
13. **"Order"** means an official written order issued for the supply of goods or the rendering of a service in accordance of the accepted bid or price quotation.
14. **"Written" or "in writing,"** means hand written in ink or any form of mechanical writing in printed form.
15. "**Highest acceptable tender"** Means a tender that complies with all specifications and conditions of tender and that has the highest price compared to other tenders
16. **"Historically Disadvantaged Individual (HDI)"** means a South African Citizen (1) who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No 200 of 1993) ("the Interim Constitution"); and/or (2) Who is a female; and /or (3) Who has a disability; Provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be an HDI;
17. **"Lowest acceptable offer"** Means a tender that complies with all specifications and conditions of tender and that has lowest price compared to other tenders
18. "**Specific goals"** Means specific goals as contemplated in section 2(1)(d) of the Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation of programmes of the Reconstruction and Development Programme as published in Government Gazette No. 16085 dated 23 November 1994
19. **"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

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INTERPRETATION:

1. In this agreement clause headings are for convenience and shall not be used in its interpretation and, unless the context clearly indicates a contrary intention:
2. An expression which denotes:-
3. Any reference to any statute, regulation or other legislation or official policy shall be a reference to that statute, regulation or other legislation or national policy as at the signature date, and as amended or re-enacted from time to time;
4. When any number of day is prescribed, such shall be reckoned exclusively of the first and inclusively of the last day, unless the last day falls on a day which is not a business day, in which case the last day shall be the next succeeding day which is a business day;
5. Where any term is defined within a particular clause, other than the interpretation clause, that term shall bear the meaning ascribed to it in that clause wherever it is used in this agreement.

I/we hereby tender:

To supply all or any of the supplies and/or to render all or any of the services described in the attached documents {Forms, Schedule(s) and/or Annexure(s) to the Polokwane Municipality.

On the terms and conditions and accordance with the specifications stipulated in the bid documents (and which shall be taken as part of and incorporated into, this bid);

At the prices and on the terms regarding time for delivery and/or execution inserted therein.

I/we agree further that:

The offer herein shall remain binding upon me/us and open for acceptance by the Polokwane Municipality during the validity period indicated and calculated from the closing time of the bid.

This bid and its acceptance shall be subject to the terms and conditions contained in the Forms, Scheduled(s) and/or Annexure(s) attached hereto with which I am /we are fully acquitted.

Notwithstanding anything to the contrary in the Form(s), Schedule(s) and /or Annexure(s) attached hereto:

If I/we withdraw my/our bid within the period for which I/we have agreed that the bid shall remain open for acceptance, or fail to fulfill the contract when called upon to do so, the Polokwane Municipality may, without prejudice to its other rights, agree to the withdrawal of my/our tender or cancel the contract that may have been entered into between me/us and the Municipality;

In such event, I/we will then pay to the Municipality any additional expenses incurred by the Municipality for having either to accept any less favourable bid or, if new bids have to be invited, the additional expenditure incurred by the invitation of new bids and by the subsequent acceptance of any less favourable bid;

The Municipality shall also have the right in these circumstances, to recover such additional expenditure by set-off against monies which may be due or become due to me/us under this or any other bid or contract or against any guarantee or deposit that may have been furnished by me/us or on my/our behalf for the due fulfillment of this or any other bid or contract;

Pending the ascertainment of the amount of such additional expenditure the Municipality may retain such monies, guarantee or deposit as security for any loss the Municipality may sustain, as determined hereunder, by reason of my/our default.

Any legal proceedings arising from this bid may in all respects be launched or instituted against me/us and if/we hereby

undertake to satisfy fully any sentence or judgment which may be obtained against me/us as a result of such legal proceedings and I/we undertake to pay the Polokwane Municipality legal costs on an attorney and own client;

If my/our bid is accepted that acceptance may be communicate to me/us by letter or facsimiles and that proof of delivery of such acceptance to SA Post Office Ltd or the production of a document confirming that a fax has been sent, shall be treated as delivery to me/us.

The law of the Republic of South Africa shall govern the contract created by the acceptance to this tender.

I/we have satisfied myself/ourselves as to the correctness and validity of this tender, that the price(s) and rate(s) quoted cover all the work/items(s) specified in the tender documents and that the price(s) and rate(s) cover all my/our obligations under a resulting contract and that I/we accept that any mistakes regarding price(s) and calculations will be at my/our risk.

I/we accept full responsibility for the proper execution and conditions defaulting on me/us under this agreement as the principal(s) liable for the fulfillment of this contract.

I/we declare that I/we have participated /no participated in the submission of any other bid for the supplies/services described in the attached documents. If your answer here is yes, please state the names(s) of the other Bid(s) involved: _____

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FORM "C"

General Conditions of Contract

1 DEFINITION

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 goods 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 component 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 goods 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.

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1.18 "**Manufacture"** means the production of products in a factory using labour, materials, component 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 "Supplier" means the successful bidder who is awarded the contract to maintain and Administer the required and specified service(s) to the State.
1.26 "Tort" means in breach of contract.
1.27 "Turnkey" means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.
1.28 "Written" or "in writing" means hand-written in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), 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 goods, 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 nonrefundable fee for documents may be charged.
3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

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 GC Clause 5.1 shall remain the

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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.
6.2 When a supplier developed documentation / projects for the municipality / municipal entity, the intellectual, copy and patent rights or ownership of such documents or projects will vest in the municipality / municipal entity.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder 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.

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 goods to be produced or services to be rendered should at any stage be subject to inspections, tests and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or organization acting on behalf of the purchaser.
8.3 If there are no inspections 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 8.2and 8.3 show the goods 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 goods or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.
8.6 Goods 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 goods may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods 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 goods, which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods,

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purchase such goods 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 22 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 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, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods and arrangements for shipping and clearance obligations, shall be made by the supplier in accordance with the terms specified in the contract.

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.

12. Transportation

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

13. Incidental Services

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

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14. Spare parts

14.1 As specified, 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.
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 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, 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.
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.
16.3 Payment will be made in Rand unless otherwise stipulated.

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 or in the purchaser's request for bid validity extension, as the case may be.

18. Variation orders

18.1 In cases where the estimated value of the envisaged changes in purchase does not vary more than 15% of the total value of the original contract, the contractor may be instructed to

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deliver the goods or render the services as such. In cases of measurable quantities, the contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

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 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 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 goods are required, or the supplier's services are not readily available. 21.4 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 22.2 without the application of penalties.
21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase goods 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, sum calculated on the delivered price of the delayed goods or unperformed 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

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(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 o service 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 associate 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 supplier as having no objection and proceed with the restriction.

23.5. Any restriction imposed on any person by the purchaser will, at the discretion of the purchaser, 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 purchaser 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. Antidumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping 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 supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to goods 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

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such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, 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 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 for goods delivered and / or services rendered according to the prescripts of the contract.

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;

(a) 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

(b) 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.

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.

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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 SARS must have certified that the tax matters of the preferred bidder are in order.
32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

33. Transfer of contracts

33.1 The contractor shall not abandon, transfer, cede assign or sublet a contract or part thereof without the written permission of the purchaser

34. Amendment of contracts

34.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

35. Prohibition of restrictive practices

35.1 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.
35.2 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 section 59 of the Competition Act No 89 0f 1998.
35.3 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.

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FORM "D"

GENERAL PROCEDURES

1 General Directives

2.1 The following general procedures contained in this document have been laid down by the Council and are applicable to all bids, orders and contracts, unless otherwise approved by the Council prior to the invitation of the bids.

2.2 Where applicable, special conditions or procedures are also laid down by the Council to cover specific supplies or services.

2.3 Where such special conditions or procedures are in conflict with the general conditions and procedures, the special conditions or procedures shall apply.

2.4 The bidder shall satisfy himself/herself with the conditions and circumstances of the bid. By bidding, the bidder shall deem to have satisfied himself/herself as to all the conditions and circumstances of the bid.

2.5 Formal contract are concluded with the contractors only where this requirement is stated in the bid invitation.

2.6 All bids with regard to the bidding of a service e.g. materials, cleaning services; professional services, etc. shall be subject to the negotiation of a Service Level agreement between the successful contractor and the Municipality. The acceptance of this Service Level Agreement is subject to the approval by the Council of the Municipality.

2.7 The written acceptance of bid shall be posted to the bidder or contractor concerned by registered or certified mail.

2 Issuing of bid documents

On the date that the advertisement appears in the Municipality's Tender Bulletin, and or media, prospective bidders may request copies of the tender documentation.

The Supply Chain Management Unit will keep a register and potential bidders should sign for receipt of the bid documentation. If a fee is payable, an official receipt must be issued before the bid document is handed to the bidder.

No bid responses from any bidder should be accepted if sent via the Internet, e-mail or fax.

Only the Supply Chain Management Unit will have direct communication between the potential bidders and will facilitate all communication between potential bidders and the Municipality with regard to any advertised bid. No line function staff should be allowed to communicate with potential bidders without the approval by the Manager: Supply Chain Management Unit.

The Supply Chain Management Unit will only consider request for the extension of the closing dates of advertised bid if the postponed date can be advertised in the media used to advertise before the original closing date. The closing time may be postponed only if all potential bidders can be advised of the postponed time, in writing, before the original closing time.

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The decision to extend the closing date or time rests with the Manager: Supply Chain Management Unit, who must ensure compliance with all relevant rules and regulations and must confirm prior to the action being taken.

3 **Payment of bid documents**

Bids documents containing the Conditions of Bid and other requirements in terms of the Supply Chain Management Policy will be downloaded from e-tender Publication Portal at www.etenders.gov.za at no fee.

4 Public Invitation for competitive bids

The following are procedures for the invitation of competitive bids:

4.1 Invitation to prospective providers to submit bids must be by means of a public advertisement in the national treasury publication portal www.etenders.gov.za, the website of the municipality or any other appropriate ways (which may include an advertisement in Polokwane Municipality Notice board)

5 Public advertisement must contain the following:

The closure date for the submission of bids, which may not be less than 30 days in the case of transactions over R10 million (Vat included), or which are of a long term nature, or 14 days in any other case, from the date on which the advertisement is placed in a newspaper; subject to (iii) below; and

6 Accounting officer may determine a closure date for the submission of bids which is less than the 30 or 14 days requirement, but only if such shorter period can be justified on the grounds of urgency or emergency or any exceptional case where it is impractical or impossible to follow the official procurement process.

7 Bids submitted must be sealed.

8 The following information must appear in any advertisement:

- Bid number;
- Description of the requirements;
- The place where the bid documents can be obtained;
- The date, time and venue where site inspection/briefing session will be (if applicable);
- Closing date and time;
- The fee applicable that must be paid before the bid documents will be issued; and
- The name and telephone numbers of the contact person for any enquiries

9 **Site meetings of briefing sessions (if applicable)**

A fully explanatory site inspection must be conducted before the close of the bids to ensure that the bidders understand the scope of the project and that they can comply with the conditions and requirements.

It should be a condition that prospective bidders attend a site inspection and non-attendance should invalidate a bid, where a site inspection/briefing session is applicable.

10 Handling of bids submitted in response to public invitation

10.1 **Closing of bids**

All bids will close at **10H00** on a date as stipulated on the advertisement, which must be reflected in the bid document.

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Bids are late if they are received at the address indicated in the tender documents after the closing date and time.

A late bid should not be admitted for consideration and where practical should be returned unopened to the bidder accompanied by explanation.

10.2 Opening of bids

Bids are opened in public as soon as possible after the closure in the presence of the Manager: Supply Chain Management or his/her delegate.

The official opening the bids should in each case read out the name of the bidder and the amount of the bid.

The bid should be stamped with the official stamp of the Municipality and endorsed with the signatures of the person opening it and of the person in whose presence it was opened.

Bids should be recorded in a register kept for that purpose.

10.3 Validity Period of the bids

The validity periods should not exceed 90 (ninety) days and is calculated from the date of bid closure endorsed on the front cover of the bid document.

Should the validity period expires on a Saturday, Sunday or Public holiday, the bid must remain valid and open for acceptance until the closure on the following working date.

10.4 Consideration of bids

- The Council takes all bids duly admitted into consideration.
- The Council reserves the right to accept the lowest or any bid received.
- The decision by the Municipality regarding the awarding of a contract must be final and binding

10.5Evaluation of bids

The following are criteria against which all bids responses will be evaluated:

11 Compliance with bid conditions

12 Meeting technical specifications and comply with bid conditions;

13 Financial ability to execute the contract; and

(i) The number of points scored for achieving specific goals objectives and points scored for price.

14 Evaluation of bids on functionality and price

14.1 All bids received will be evaluated on functionality and price.

15 The conditions of bid may stipulate that a bidder must score a specified minimum number of points for functionality to qualify for further evaluation.

I. The number of points scored for achieving specific goals objectives must be calculated separately and must be added to the points scored for price.

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II. Only bid with the highest number of points will be selected.

16 Acceptance of bids

Successful bidders must be notified at least by registered post of the acceptance of their bids, but that acceptance however, will only take effect after completion of the prescribed contract form.

The successful service provider will be required to sign the service level agreement.

Unsuccessful bids should not be returned to bidders, but should be placed on record for audit purposes.

A register or records should be kept of all bids accepted

17 Publication of bids results

The particulars of the successful bidders should be published in the Municipality's Tender Bulletin, website as well as the newspaper on which the bid was advertised.

18 Cancellation and re-invitation of bids

I. In the event that in the application of the 80/20 preference point system as stipulated in the bid documents, all bids received exceed the estimated Rand Value of R50 000 000.00, the bid invitation must be cancelled. If one or more of the acceptable bid(s) received are within the R50 000 000.00 threshold, all bids received must be evaluated on the 80/20 preference point system

II. In the event that, in the application of the 90/10 preference point system as stipulated in the bid documents, all bids received are equal to or below R50 000 000.00, the bid must be cancelled. If one or more of the acceptable bid(s) received are above the R50 million threshold, all bids received must be evaluated on the 90/10 preference point system

If a bid was cancelled as indicated above, the correct preference point system must be stipulated in the bid documents of the re-invited bid.

Municipal Manager may, prior to the award of a bid, cancel the bid if:
Due to changed circumstances, there is no longer a need for the services, works or goods requested.
Municipal Manager must ensure that only goods, services or works that are required to fulfil the needs of the institution are procured. Or

Funds are no longer available to cover the total envisaged expenditure.
Municipal Manager must ensure that the budgetary provisions exist prior to inviting bids: or

No acceptable bids are received (If all bids received are rejected, the institution must review the reasons justifying the rejection and consider making revisions to the specific conditions of contract, design and specifications, scope of the contract, or a combination of these, before inviting new bids)

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. **FORM" E"**

BID NUMBER: PM79-24/25

BID DESCRIPTION: PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS

SPECIAL CONDITIONS OF CONTRACT

The Bidders equipment Shall be built to the following standards:

Standard	**Title**
ISO 24014-1:2007	Public transport - Interoperable fare management system - Part 1: Architecture
ISO/IEC 14443-1:2008	Identification cards - Contactless integrated circuit cards - Proximity cards - Part 1: Physical characteristics
ISO/IEC 14443-2:2001	Identification cards - Contactless integrated circuit(s) cards - Proximitycards – Part 2: Radio frequency power and signal interface
ISO/IEC 14443-3:2001	Identification cards - Contactless integrated circuit(s) cards - Proximitycards - Part 3: Initialization and anti-collision
ISO/IEC 14443-4:2008	Identification cards - Contactless integrated circuit cards - Proximity cards - Part 4: Transmission protocol
ISO/IEC 7810:2003	Identification cards -- Physical characteristics
ISO/IEC 18092	This standard covers Near Field Communication (NFC) technology, which is increasingly used for mobile ticketing
BSI BS EN 1545-1	Identification card systems — Surface transport applications — Part 1: Elementary data types, general code lists and general data elements
BSI BS EN 1545-2	Identification card systems Surface transport applications Part 2: Transport and travel payment-related data elements and code lists
EMV Standards	Standards and specifications managed and enhanced by EMVCo, which cover elements such as general physical characteristics of terminals, the terminal card interface, including the contactless interface for initiating payment transactions, transaction processing, data management and data security
CIPURSE	An open security standard for transit fare collection systems
VDV-KA	A German standard for interoperable fare management systems
National Department of Transport – R511	Regulations Relating to Integrated Fare Systems, 2011 (Government Notice R511 in Government Gazette 3463 of 17 June 2011)

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PCI DSS	The PCI Data Security Standard represents a common set of industry tools and measurements to help ensure the safe handling of sensitive information. This is the set of requirements set forth by the Payment Card Industry Security Standards Council (PCI-SSC), against which compliance is measured.
ISO 7001:2007	Graphical symbols – Public information symbols
ISO 22727:2007	Graphical symbols – Creation and design of public information symbols – Requirements

N.B* The DR (Disaster Recovery) should be on cloud platforms hosted preferably by either AWS, Telkom or any recognized organizations with Offices representation in Polokwane Municipal area.

N.B* SANRAL ABT (Account-Based Ticketing) Compliance Certification is mandatory as the primary mode of fare payment and access to Leeto La Polokwane is through SANRAL ABT CiPurse compliant fare media, complying with the NDoT AFC Regulations.**

N.B The Cloud Data centre should have on top of the firewall an Anti-Virus protection, and the Backoffice should have that protection too including a VPN with limited access to only a few LLP approved engineers (technical people)**

N.B* The Contractor shall maintain the equipment to the specifications of the OEM and report any obsolete devices, and after the period of 3years all equipment shall be handed over to the Municipality, including all Software Licences in good order. This will also be in accordance with the FIDIC contractual governance, Design Built Operate Maintain**

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FORM "F"

BID NUMBER: PM79-24/25: PROVISION OF THE AUTOMATIC FARE COLLECTION SYSTEM (AFC) FOR THE POLOKWANE IRPTS FOR PERIOD OF THREE (3) YEARS

1. DURATION OF THE PROJECT

The duration of the project will be three (03) years after the signing of the service level agreement

2. DETAILED SPECIFICATIONS:

1.1 Purpose

This document serves to specify the statement of work, and services to be provided by the Contractor for the Design, Supply, Implementation, Warranty, Operation, Maintenance and Transfer of the Automatic Fare Collection System (AFCS) for a Period of Three (3) years, for the Polokwane Local Municipality (PLM) tender number **PM79-24/25** to be determined by municipal Procurement

1.2 Scope

This document covers the intended approach to the acquisition of the AFCS through a Design, Build, Operate, Maintain and Transfer (DBOMT) contract (the Contract) as well as the anticipated major components and their functional, performance, physical, interface and operational requirements and thus constitutes the Employer's Requirements and the Operation Management Requirements contemplated in the FIDIC Conditions of Contract for Design, Build and Operate Projects.

The Contractor shall be responsible for the Design, Build, Operation, Maintenance and Transfer in compliance with the Employers' Requirements of the AFCS and the integration into the IRPTS.

This document is not a design specification but sets out the PLM requirements for the AFCS as input to the Tenderer's design of the proposed solution.

1.3 Definitions

Ref	Term	Definition
1.3.1	City Bus Fleet	The fleet of Trunk-Extension and Midi buses is yet to be implemented as part of the IRPTS.
1.3.2	Trunk-Extension Bus	Bus with right-hand doors to service Trunk stations and left-hand doors to service curb-side Feeder stops. Capacity 80.
1.3.3	Midi-bus	Bus with left-hand curbside doors to service Feeder stops. Capacity 50.
1.3.4	Feeder Taxis	A fleet of mini-bus taxis serving as feeders to the IRPTS.
1.3.5	Complimentary routes	Trunk extension and feeder routes.

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1.3.6	Trunk-Extension Routes	Routes which are adjacent to the trunk corridor and will be serviced by trunk-extension buses as an extension to the trunk corridor service on occasion
1.3.7	Kiosk	Attended ticket sales point.
1.3.8	Wi-Fi	Any wireless local area network products that are based on the Institute of Electrical and Electronics Engineers (IEEE) 802.11 standards.

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1.4 Abbreviations

REF. No.	ABBREVIATION	DESCRIPTION
1.4.1	AC	Alternating Current
1.4.2	ACL	Access Control List
1.4.3	AES	Advanced Encryption Standard
1.4.4	AFC	Automatic Fare Collection
1.4.5	AFCS	Automatic Fare Collection System
1.4.6	AFCCS	Automatic Fare Collection Central System
1.4.7	BEU	Balance Enquiry Unit
1.4.8	BIOS	Basic Input/Output System
1.4.9	BOP	Bus on-board plant
1.4.10	C	Comply (when applicable to compliance statement)
1.4.11	CBD	Central Business District
1.4.12	CC	Comply Conditionally (when applicable to compliance statement)
1.4.13	CCC	Central Control Centre
1.4.15	CCTV	Closed Circuit Television
1.4.16	CFI	Customer Furnished Item
1.4.17	COC	Certificate Of Compliance
1.4.18	COTS	Commercial Off-The-Shelf
1.4.19	DBMS	Database Management System
1.4.20	DC	Direct Current
1.4.21	DNP	Defects Notification Period
1.4.22	DRC	Disaster Recovery Centre
1.4.23	PLM	Polokwane Local Municipality
1.4.24	EMV	Eurocard, Mastercard, VISA
1.4.25	POD	Plant Operating Data
1.4.26	F #	Feeder route number
1.4.27	FAT	Factory Acceptance Test
1.4.28	FIPS	Federal Information Processing Standard
1.4.29	FO	Fibre Optic

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1.4.30	GPS	Global Positioning System
1.4.31	GUI	Graphical User Interface
1.4.32	IAT	Inspection Acceptance Test
1.4.33	ICT	Information Communications Technology
1.4.34	IEC	International Electro technical Committee
1.4.35	IO	Input / Output
1.4.36	IRPTN	Integrated Rapid Public Transport Network
1.4.37	IRPTS	Integrated Rapid Public Transport System
1.4.38	IS	Information Systems
1.4.39	ISO	International Standards Organisation

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REF. No.	ABBREVIATION	DESCRIPTION
1.4.40	IT	Information Technology
1.4.41	KVM	Keyboard Video and Mouse
1.4.42	LAN	Local Area Network
1.4.43	LRU	Line Replacement Unit
1.4.44	MAN	Metropolitan Area Network
1.4.45	MCBF	Mean Cycles Between Failures
1.4.46	MIOS	Minimum Interoperability Standards for Information Systems in Government
1.4.47	MTBF	Mean Time Between Failures
1.4.48	NC	No Comply (when applicable to compliance statement)
1.4.49	NDOT	National Department of Transport
1.4.50	NVR	Network Video Recorder
1.4.51	OEM	Original Equipment Manufacturer (Equipment is referenced in this document as Plant in accordance with FIDIC definitions)
1.4.52	OHSA	Occupational Health and Safety Act
1.4.53	OS	Operating System
1.4.54	OSP	Operations Service Period
1.4.55	PCI DSS	Payment Card Industry Data Security Standard
1.4.56	PIA	Polokwane International Airport
1.4.57	PID	Passenger Information Display
1.4.58	PIRPTS	Polokwane Integrated Rapid Public Transport System
1.4.59	PLM	Polokwane Local Municipality
1.4.60	POPIA	Protection of Personal Information Act 4 (2013)
1.4.61	PPS	Pre-production Sample
1.4.62	PVU	Portable Verification Unit
1.4.63	RMS	Root Mean Square
1.4.64	SANS	South African National Standards
1.4.65	SAT	Site Acceptance Test
1.4.66	SCS	Station Control Server
1.4.67	SIT	Site Integration Test
1.4.68	SLA	Service level Agreement

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1.4.69	SMS	Short Message Service
1.4.70	SOAP	Simple Object Access Protocol
1.4.71	SOP	Standard Operating Procedures
1.4.72	TBD	To Be Determined
1.4.73	TE #	Trunk Extension number
1.4.74	TMC	Traffic Management Centre
1.4.75	TOM	Ticket Office Machine
1.4.76	TVM	Ticket Vending Machine
1.4.77	UPS	Uninterruptable Power Supply
1.4.78	UV	Ultra-Violet

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REF. No.	ABBREVIATION	DESCRIPTION
1.4.79	V	Voltage
1.4.80	WAN	Wide Area Network

1.5 List of Applicable Standards and Specifications

1.5.1 Open Standards in the AFCS.

The AFCS shall comply with and apply open standards defined by Minimum Interoperability Standards (MIOS) for Government Information Systems Revision 5.0 (or the latest version). These and other standards are relevant to the development, production, operation and interoperability of the AFCS System with third parties.

It is the Contractor's responsibility to ensure that any updates to these standards are adhered to, and the Contractor shall provide certificates to prove that the design and final AFCS comply with the applicable standards.

The Tenderer shall provide a list of all standards to which the proposed solution will comply as part of the tender submission, including but not limited to the following;

Table C3 1: AFCS Open Standards

Standard	Title
ISO 24014-1:2007	Public transport - Interoperable fare management system - Part 1: Architecture
ISO/IEC 14443-1:2008	Identification cards - Contactless integrated circuit cards - Proximity cards - Part 1: Physical characteristics
ISO/IEC 14443-2:2001	Identification cards - Contactless integrated circuit(s) cards - Proximitycards – Part 2: Radio frequency power and signal interface
ISO/IEC 14443-3:2001	Identification cards - Contactless integrated circuit(s) cards - Proximitycards - Part 3: Initialization and anti-collision
ISO/IEC 14443-4:2008	Identification cards - Contactless integrated circuit cards - Proximity cards - Part 4: Transmission protocol
ISO/IEC 7810:2003	Identification cards -- Physical characteristics
ISO/IEC 18092	This standard covers Near Field Communication (NFC) technology, which is increasingly used for mobile ticketing
BSI BS EN 1545-1	Identification card systems — Surface transport applications — Part 1: Elementary data types, general code lists and general data elements

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BSI BS EN 1545-2	Identification card systems Surface transport applications Part 2: Transport and travel payment-related data elements and code lists
EMV Standards	Standards and specifications managed and enhanced by EMVCo, which cover elements such as general physical characteristics of terminals, the terminal card interface, including the contactless interface for initiating payment transactions, transaction processing, data management and data security
CIPURSE	An open security standard for transit fare collection systems
VDV-KA	A German standard for interoperable fare management systems
National Department of Transport – R511	Regulations Relating to Integrated Fare Systems, 2011 (Government Notice R511 in Government Gazette 3463 of 17 June 2011)
PCI DSS	The PCI Data Security Standard represents a common set of industry tools and measurements to help ensure the safe handling of sensitive information. This is the set of requirements set forth by the Payment Card Industry Security Standards Council (PCI-SSC), against which compliance is measured.
ISO 7001:2007	Graphical symbols – Public information symbols

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Standard	Title
ISO 22727:2007	Graphical symbols – Creation and design of public information symbols – Requirements

1.5.2 Standards applicable for installation and implementation of the AFCS.

The contractor shall ensure during the installation, implementation, maintenance, and operation of the AFCS that, at a minimum, the occupational health and safety standards listed below, as amended from time to time, are adhered to and implemented. In addition, the Contractor shall adhere to the Employer's applicable information technology policies and standards.

Table C3 2: INSTALLATION AND IMPLEMENTATION STANDARDS

Standard	Title
SANS 10142-1 2009 Edition 1.7	The Wiring of the premises
OHSA Act (No.85 of 1993)	The Occupational Health and Safety Act aims to provide for the health and safety of persons at work and for the health and safety of persons in connection with the activities of persons at work and to establish an advisory council for occupational health and safety.
OHS Section 14	General Duties of Employees
ISO 9000	Quality management standards

1.6 IRPTS Background

The Public Transport Strategy, approved by the cabinet in 2007, targeted the Metropolitan Municipalities as well as four large cities, including Polokwane, for the implementation of Integrated Rapid Public Transport Networks.

As a result, The Polokwane Local Municipality (PLM) has implemented its Integrated Rapid Public Transport System (IRPTS), using a phased approach. Phase 1A has been completed, and it will be followed by the implementation of Phase 1B, which is essentially a Bus Rapid Transit System (BRT) comprising a dedicated trunk corridor, trunk extensions and feeder bus routes linking Ramongwana, Komape, Bloodriver and Seshego/Moletji in the Northwest to the Polokwane Central Business District (CBD) and Mankweng in the East.

The primary trunk corridor is to be serviced by trunk buses, which shall also cover adjacent complementary trunk extensions and some feeder routes. Other feeder routes will be serviced by dedicated feeder bus services. Trunk stations situated along the trunk corridor will provide commuter handling services to trunk buses witha view to reduce dwell time as well as ticket sales functionality. Feeder and Trunk extension routes shall be provided with bus stops at locations indicated and further elaborated in the Employers Requirements. Dedicated mini-bus taxis may also provide a feeder service to the network, but this is currently beyond the scope of this tender.

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An IRPTS control centre or Transport Management Centre (TMC) is located at the Peter Mokaba Stadium, and a central Depot located to the Southwest of Seshego will provide a facility for the parking of the bus fleet and the associated infrastructure required for the maintenance, operations and administration thereof.

The IRPTS bus routes and site locations are further elaborated in the site data section Part C4 of this tender document.

The IRPTS includes *inter alia*, an Automatic Public Transport Management System (APTMS) and an Automatic Fare Collection System (AFCS), the latter being the subject of this tender and which will thus be further elaborated upon below. A data communication network will form part of the IRPTS infrastructure to facilitate communication within and between sub-systems.

The above is a description of the full IPRTS ultimately envisaged for the PLM, however due to ongoing efforts to address funding challenges and improve feasibility through inter alia scope and cost reduction, the network design remains live and will almost certainly undergo further change during the project life cycle.

1.6.1 IRPTS implementation phases

Due to funding and other constraints, the implementation of the IRPTS and, thus, the AFCS is planned to occur in multiple phases, the first of which is the subject of this tender inquiry, referred to as Phase 1A, which was launched in October 2021. The Phases are proceeding at the sole discretion of the Employer and could be accelerated to increase to address the Polokwane economic commuter needs.

Further details of the IRPTS roll-out, route, and site location mapping are contained in part C4 of the tender document.

1.6.1.1 Phase *1A*

This phase includes one (1) trunk station, namely T7, located on General Joubert Street between Thabo Mbeki Street and Grobler Street in the CBD and along the primary trunk corridor located from Seshego to the Polokwane CBD as depicted in Figure 1.

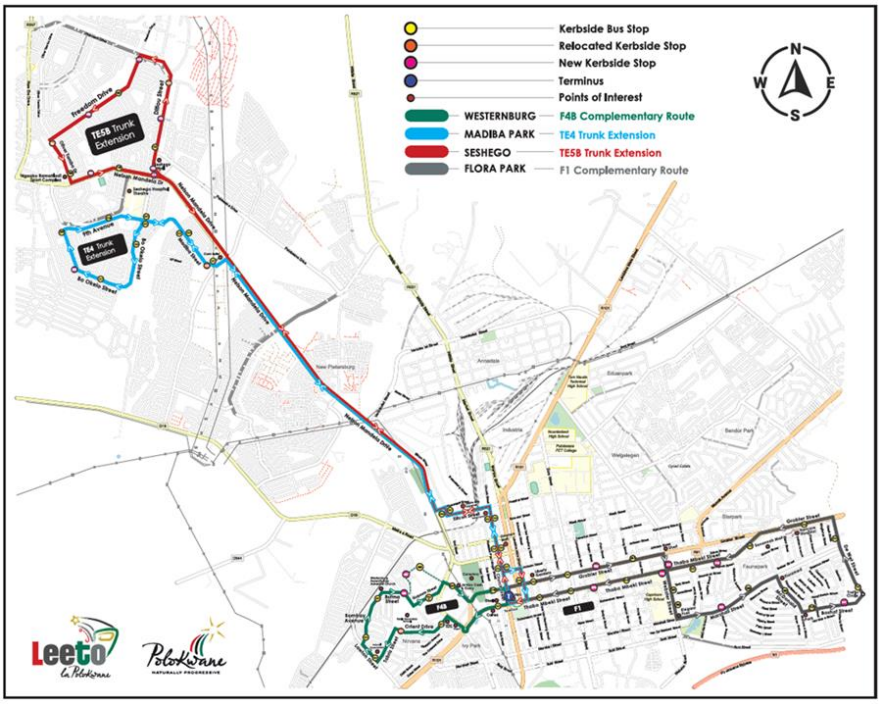

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Figure 1

Route Code	Origin - Destination	Number of Bus Stops
TE4	**Seshego (Madiba Park) - CBD**	**20**
TE5B	**Seshego (Seshego Circle)- CBD**	**26**
F1	**CBD and surrounding Suburbs**	**26**
F4	**Nirvana - CBD**	**14**

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Four (4) trunk extension routes will be linked to the Seshego end of the trunk route, namely TE5a, TE5b, TE4 and TE6, servicing the Moletji and Seshego areas. There will be three (3) feeder routes, namely F1, F4a, and F4b, linked to the CBD station servicing the Westernburg, Flora Park, and Bendor areas and extendingto the Mall of the North.

The service will include twenty-one (21) Trunk-Extension buses with curbside access as well as fifteen (15) Midi-buses as the base scope for this bid.

1.6.1.2 **Future *Phases***

The scope of the remaining phases is yet to be determined. However, Section C4 will provide the Bidder with a general idea of the potential full scope of work. Notethat the Employer makes no commitment to proceeding any further than Phase 1A, nor to the full scope of the IRPTS.

Trunk Route and Trunk Extensions

Phase 1B will also operate along the trunk (T) route that starts in the CBD at the corner of General Joubert Street and Thabo Mbeki Street and ends at the corner of Nelson Mandela Drive and Ditlou Street in Seshego (next to the Seshego Traffic Circle Mall). It is planned that the trunk route will be extended further west along Nelson Mandela Drive to the traffic circle at the intersection with New Era Drive, thereafter, extending northwards along New Era Drive. for the current Phase 1 A route network.

Five trunk extensions are planned as part of the Phase 1B Network, and these routes are summarised in the table below.

1.7 Automated Fare Collection System Review

Figure C3 1: Level 4 Clearing and Settlement

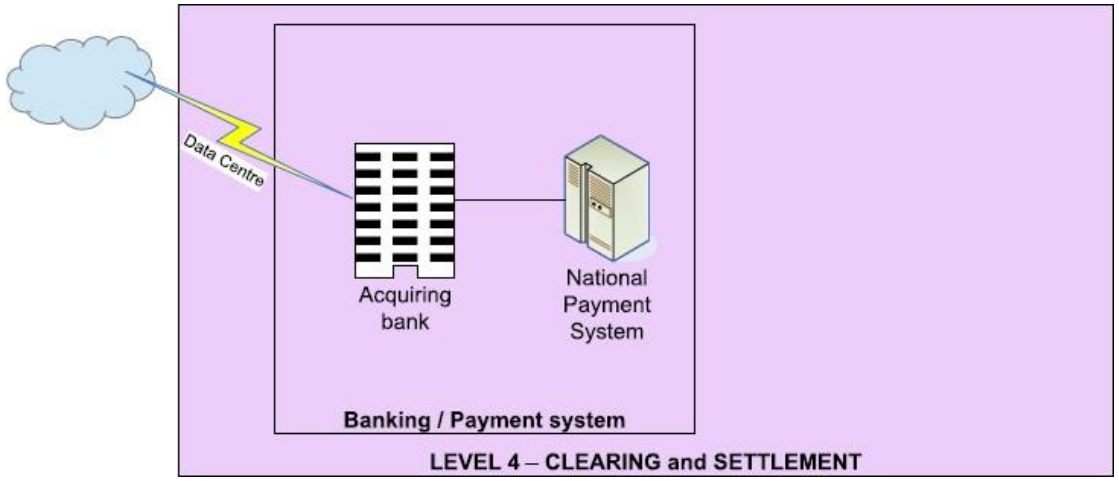


Figure C3 2: Level 3 Central System

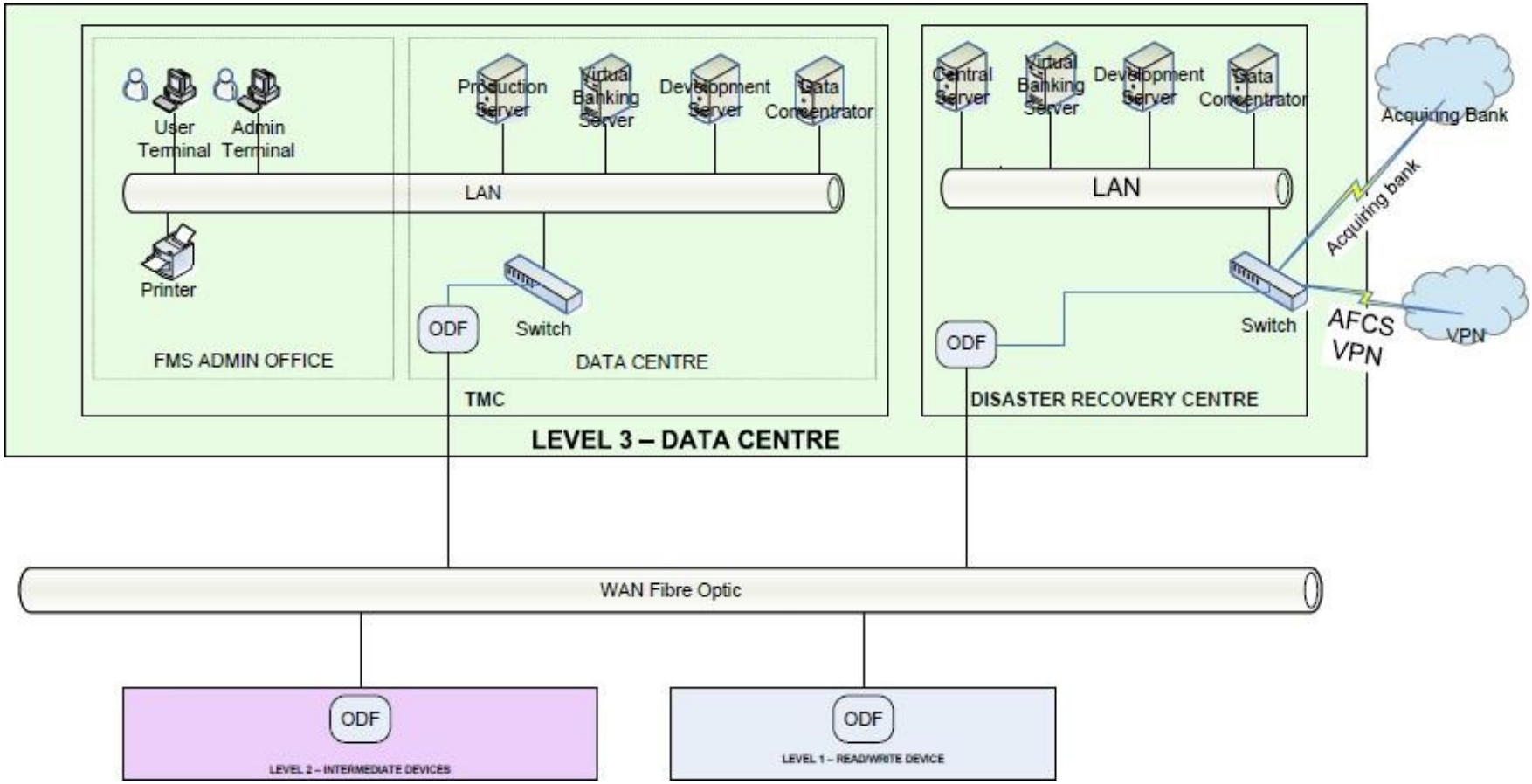


Figure C3 3: Level 2 Intermediate Devices - Depot

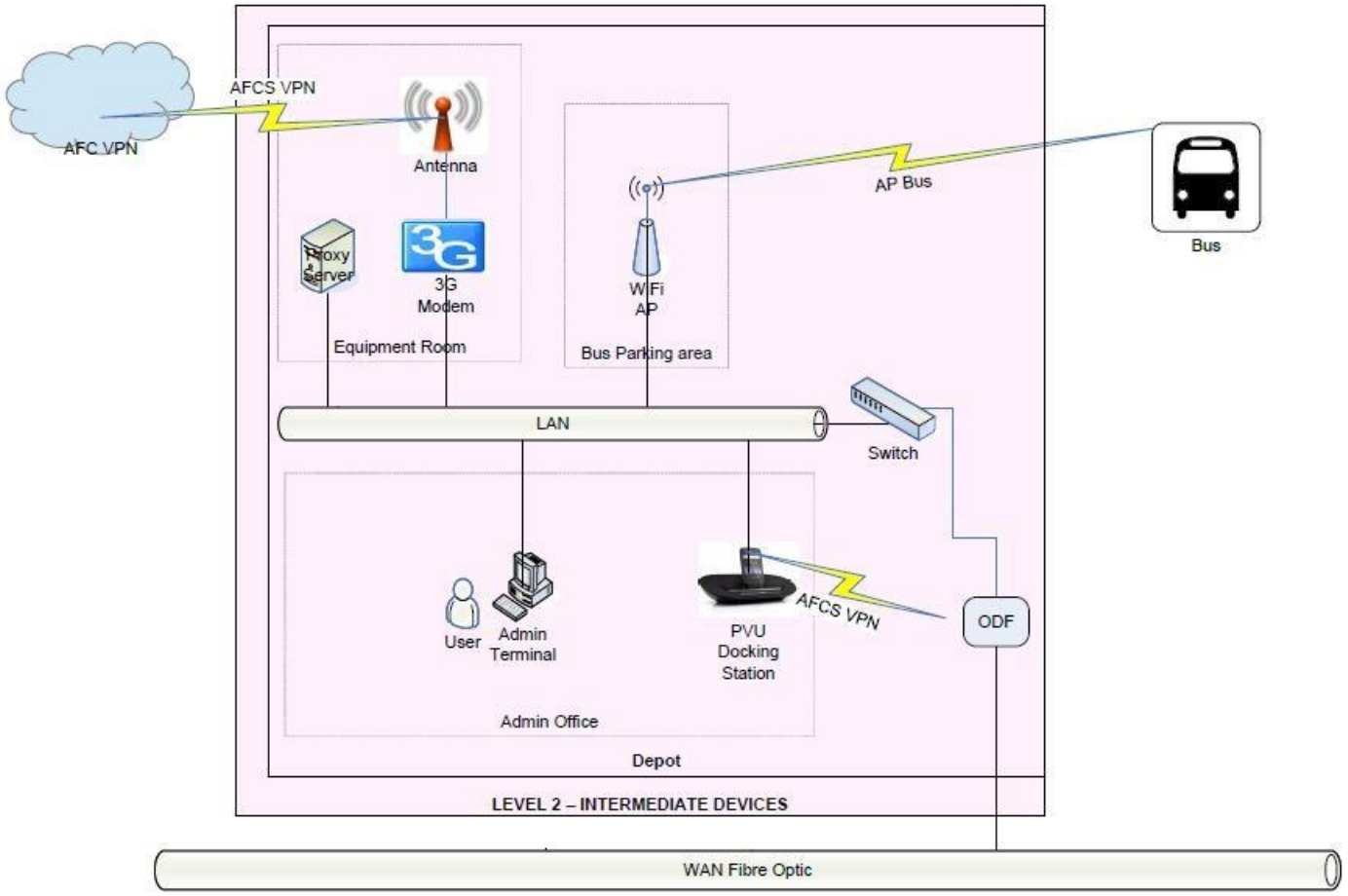


Figure C3 4: Level 1 Trunks Station

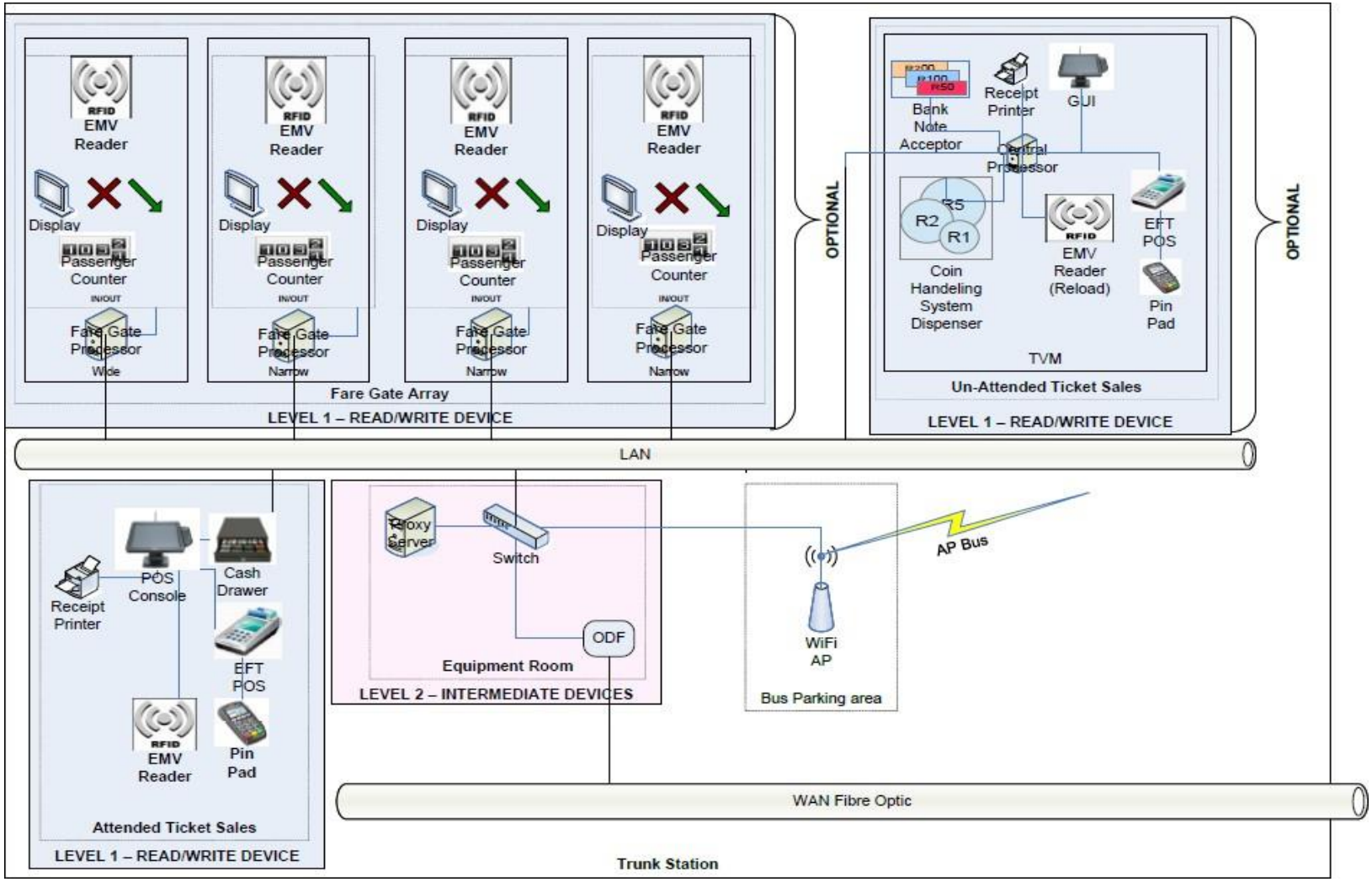
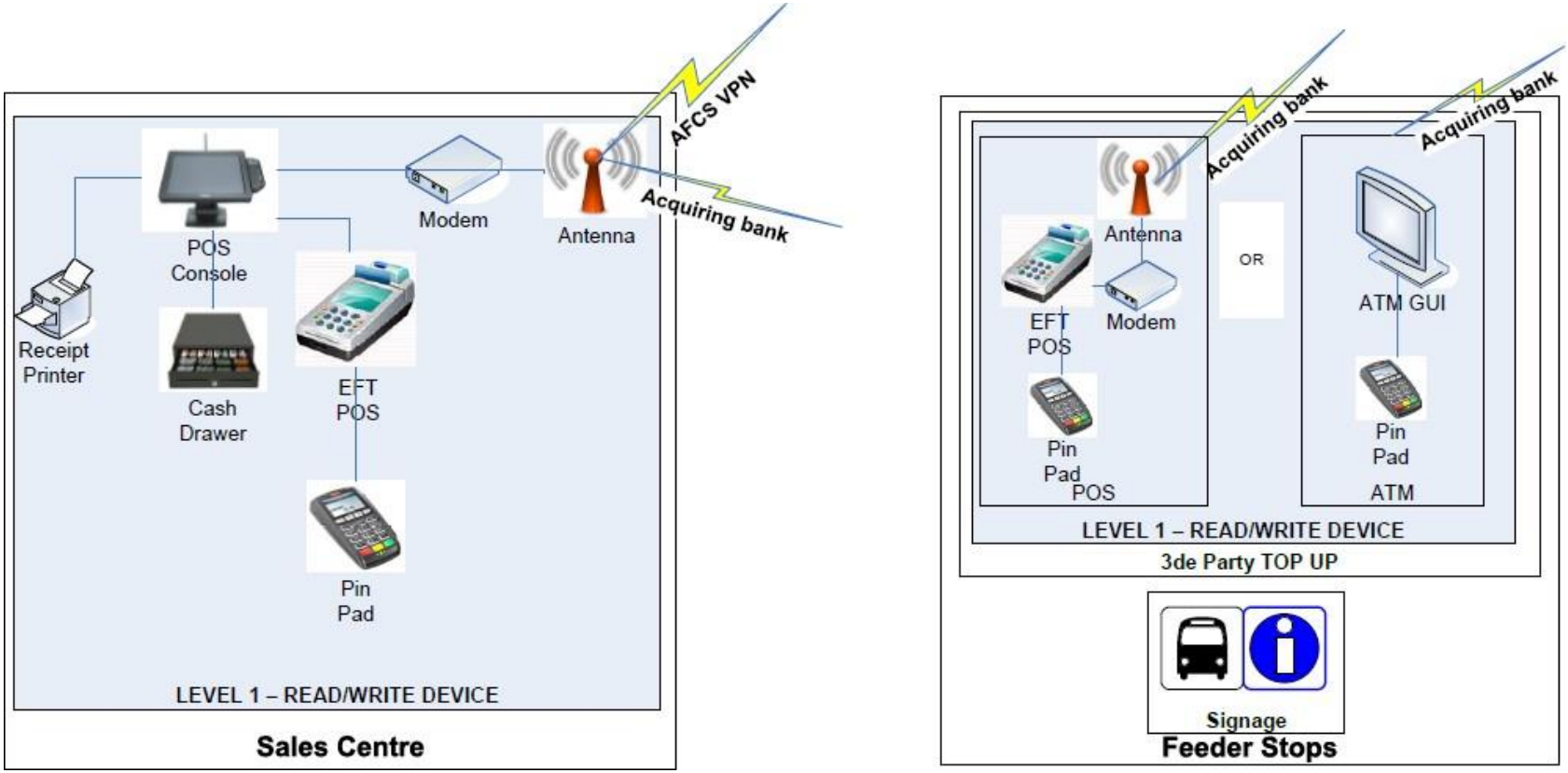


Figure C3 5: Level 1 Read/Write Devices - Sales Centres and Feeder Stops



1.7.1 Objectives

The AFCS system to be implemented is aimed at achieving the following key objectives;

- Interoperability, which will be an open-loop payment system using debit/credit cards as direct payment options
- Safe and secure transactions
- Social inclusivity: various travel ticketing allowed under NDoT regulations e.g Cipurse card , QR-Code and ABT(should this be considered necessary and debit /credit cards, should be usable
- Commercial inclusivity
- Commercial sustainability
- Regulatory compliance
- Mobility in the form of an App where QR-Code can be bought
- Environmental sustainability

The tenderer is to develop the proposed solution with due cognizance to the above.

1.7.2 Description

As required by the National Department of Transport (NDOT), under regulation R511(gazetted in June 2011), all Automatic Fare Collection Systems (AFCS) in public transport systems are to make use of a contactless, bank-issued, EMV-compliant transit card, the requirements of which are further elaborated in the Regulation and its applicable and referenced documents as referred to under Section 2.4 below. This does not exclude new technologies, that are also included in the amendments to the regulation.

1.7.2.1 Level 0 – Fare media

A bank-issued EMV smart card with contactless and contact interfaces, which is NDOT R511 compliant, will be used as a multi-trip transit and low-value retail bank card and will be branded for the IRPTS.

The first issue of a smart card will be free of charge, provided the recipient's identity number is linked to the card number. Alternatively, infrequent travellers can purchasea smart card and receive a refund if the smart card is returned undamaged. The travelling should be such that even commuters from outside Polokwane can use the transit mode, i.e. interoperable travelling payments or once-off journeys throughout the system

Provision is made for single tickets by loading the value of a single trip product on the smart card. Receipts can be printed on request for the single trip when the value is loaded for the single trip product. Concession cards will be available for passengers whose profiles meet specific requirements, e.g. pensioners, students and the disabled. A staff profile will be created for the issuance of staff transit cards; however, staff access and driver cards will not form part of the AFCS.

Travel Payment methods:

- QR-Code paper tickets.
- CiPurse Fare media for registered commuters.
- Debit/ Credit Cards Payments.
- ABT is optional.

1.7.2.2 **Level 1 – Read/Write devices**

These NdoT certified transit card validation devices will provide contactless and (or) contact interfaces with the fare media. The validation devices will be able to read and write to Fare media with the NDOT R511 data structure. The contactless interface will be used for trip verification, validation, and authorisation. While the contact interface (on POS equipment) will be for the product and value load. These devices will be in buses or mobile fare evasion inspection devices, stations, distributed sites, and equipment. These devices must have at least 4 SAM slots to cater for.

A TCP/IP Network will form the main communication infrastructure between the data centre and distributed fixed locations where AFCS devices are situated. Fibre optics will be the main WAN medium. Switches at distributed locations will serve as interfaces to the LANs and WANs. AP clusters should be installed along LLP centers where all passing buses can easily communicate with the back end.

Wireless networks will also be utilised, such as Wi-Fi and 4G+/5G, for communication between buses and depot equipment and POS and Payment System, respectively, and all the routers will have two SIM slots to alternate between providers where one's reception is weak.

All devices will be such that all transactions are securely transmitted and processed and provide enough storage to prevent the loss of data in the event of a loss of communication. In addition, the devices shall also store transactions for sufficient time to perform a back-office recovery in the event of back-office failure. This period shall be configurable for each device and updated via EOD.

1.7.2.2.1 **Trunk stations**

1.7.2.2.1.1 Ticket sales

The Trunk station will provide an attended pre-boarding ticket sales function at whichnew cards may be purchased and/or reloaded. As an additional option, trunk stations may also provide for future unattended pre-boarding ticket sales through Ticket Vending Machines (TVM).

1.7.2.2.1.2 Ticket Office Machine (TOM)

The TOM sales equipment will connect to the Data Centre via LAN and WAN. POS equipment will connect to the Payment System via a bank-preferred communications device (router) or VPN network. The TOM consists of a Graphical User Interface (GUI), input device, cash drawer, POS devices, and

receipt printer to be operated by the Ticket Sales attendant to load, reload and Top Up fare media and capture Customer details.

1.7.2.2.1.3 Ticket Vending Machine (TVM)

No provision for any ticket vending machines at Trunk stations for Phase 1A has been made. However, Trunk stations may be fitted with TVMs at the employer's sole discretion to allow for a self-help ticket sales function. The Tenderer must provide a system that can accommodate TVMs in the future so that TVMs can be added by using a back office configuration setup.

The Tenderer must provide a costing for the implementation of TVM's that will cover all aspects; Design, build, operate, maintain and training in order to provide the Employer with the necessary information to make an informed decision to implement or not the full requirements of the TVM can be found in 2.4.13.2 Ticket Vending Machine (TVM)

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1.7.2.2.1.4 Fare gates

The fare gates will permit access to patrons with a minimum balance on their cards and will permit exit to patrons with a check-in transaction which has occurred within the maximum trip duration (system configurable) or a system configurable minimum time for change of mind.

- **Entry Validation at Station Gates**: Commuters will first validate their fare at the station gate when entering the paid area. These gates will be equipped with validation devices capable of reading debit/credit cards, Cipurse cards, and QR codes. This initial validation ensures that the commuter has a valid fare before boarding the bus.
- **On-Board Validation**: Once on the bus, commuters will need to validate their fare again. This on-board validation will calculate the fare amount based on the direction of travel and the distance covered. Since there are no exit validators on the bus, the system relies on the initial entry validation and the on-board validation to determine the correct fare.
- **Fare Calculation**: The AFC system will use the data from both the station gate and the on-board validators to calculate the total fare. This approach ensures that the fare is accurately calculated based on the commuter's journey.
- **Payment Methods**: The validation devices at the station gates and on the buses will support multiple payment methods, including debit/credit cards, Cipurse cards, and QR codes. This flexibility allows commuters to choose their preferred payment method, enhancing convenience and accessibility.
- **System Requirements**: The AFC system needs to be robust and capable of handling multiple validation points, ensuring seamless communication between the station gates and the on-board validators. It must also be secure to protect commuter data and prevent fraud.

1.7.2.2.1.5 Sales Centers

Sales centres may be established at major nodes such as the Mall of the North and Moletji, where Fare media may be collected, registered, purchased, or reloaded. The precise demand for this will be determined based on actual commuter demand and commercial viability. Sales centres will have the same equipment as the ticket sales at trunk stations; however, the connection to the data centre might be via a VPN over ADSL, APs, or an equivalent mobile network.

1.7.2.3 Feeder stops

1.7.2.3.1 Ticket sales

3rd Party ticket sales points are to be established at merchant and/or bank ATM infrastructure, en route and within a maximum 1000 m radius from feeder/trunk extension stops where feasible. The contractor needs to evaluate several additional factors to determine which centres can be valuable for ticket sales beyond just considering alighting and boarding information for QR-code ticketing and Cipurse loads. Analysing commuter demographics can reveal areas with a high population of daily travellers, students, and professionals who are likely to purchase tickets. Centres located near key locations such as business districts, educational institutions, and major attractions tend to attract more foot traffic. Additionally, partnerships with local businesses can enhance visibility and convenience. Considering event and seasonal factors can also highlight centres that experience spikes in commuter traffic during specific times. By integrating these factors, the contractor can identify and prioritise centres that are most effective for ticket sales, ensuring a more efficient and user-friendly LLP AFC system

The 3rd party ticket sales points will utilise their own communications infrastructure. The POS devices will be updated through the participating bank.

1.7.2.3.2 Mobile Kiosk

Using vehicles as mobile kiosks for ticket sales can be highly effective in dynamic areas such as schools and malls. These mobile kiosks can conveniently serve commuters in locations with fluctuating foot traffic, ensuring accessibility and flexibility in ticket purchasing. However, to secure the revenue collected from these mobile kiosks, it is essential to implement Polokwane's cash-in-transit (CIT) service here too. This service will ensure that the collected funds are safely transported and deposited, minimising the risk of theft or loss. Combining these kiosks' mobility with robust security measures can enhance the efficiency and safety of our ticket sales operations in high-traffic areas.

1.7.2.3.3 Signage

AFCS infrastructure located at the feeder/trunk extension stops will be limited to finding signage that identifies the location of the nearest ticket-selling point, hours of business, etc. At 3rd Party ticket-selling point locations, the vendor must display contemporary Fare rates and bus schedules.

1.7.2.4 Trunk Buses

1.7.2.4.1 Card validator

Trunk buses will provide platform-level boarding and alighting at trunk stations via side doors. The contractor should have a robust system that will allow validation at the fare gates as described above. As trunk buses will also be servicing complimentary feeder routes, ticket validation equipment will also be required at curbside doors. Fare evasion inspectors shall be planned for the system and drivers should focus only on driving and reporting any equipment failures on the bus.

The AFC system shall be able to implement various fares to accommodate all commuters fairly. An effective Automated Fare Collection (AFC) system should be sophisticated yet user-friendly, accommodating various needs to enhance ridership. It should offer concessions and reduced payments during off-peak hours for pensioners, helping to reduce the morning rush and attract elderly commuters.

Additionally, the system should support event payment transactions to boost ridership during special occasions.

The card validator will have the capability to communicate with the central server by utilising 4G/5G (N.B. with 2 SIM slots for redundancy) and Wi-Fi. The mobile and Wi-Fi must be configured as standalone or as a combination where one serves as a failover. This scenario will only apply when an AP is present and not driving on open roads far from LLP communications infrastructure.

The card validators will have the capability to process and store transactions on board while not connected to the central server. Transactions stored on the validator shall be sent to the Back office as soon as a network connection is established. The sending of stored transactions shall be a background process which will not interrupt concurrent ticket validation.

In the case where the above fails. The backend monitoring system must flag validators that fail to send information to the back office. This differentiation helps identify whether the issue is due to unsuccessful data transfer or communication failure, as these two problems are often confused and can lead to data incompleteness. Additionally, data mirroring can be implemented before the device completely freezes

The validators will provide a user interface to inform the customer and the bus driver of the transaction status.

1.7.2.4.2 Portable Verification Devices (PVUs)

Transit card inspectors will be present on selected buses and will use PVUs to perform contactless spot checks on commuter cards and QR-Code-based paper tickets. A penalty regime, which will determine what happens in each case, will be applied to defaulters, either in the form of spot fines or by adding the card to a blacklist, which will not allow re-use before payment is made in the case of cards.

The PVU will connect to the Data Centre just like the validation devices on the bus, with the only difference being that it is handheld. All three types of interfaces must be available on the device and must have the ability to be configuredfor use. The GSM and Wi-Fi interfaces shall operate in a fail-over configuration in such a way that if no Wi-Fi coverage is available, GSM will connect. The Contractor shall be responsible for the registration of an APN, the supply of SIM cards and the associated data charges.

1.7.2.4.3 Passenger Counting

A passenger counting device will be installed on the buses at each entrance to count the passengers for fare evasion detection and demand distribution planning. The contractor shall provide for the collection of counting and location data as well as the analytics thereof in the system software in conjunction with the PTMS counting.

1.7.2.4.4 Communication

The verification device will have a network communication unit (embedded or installed and linked) to enable transactions, events and configuration data exchange directly with the central server and/or via the Depot equipment.

1.7.2.5 **Midi-bus(T.B.D)**

1.7.2.5.1 Card validator

Midi-buses will require the same or similar on-board equipment as the trunk buses tofacilitate ticket validation upon boarding and/or alighting. Fare evasion reduction will be limited to driver intervention. The card validators will have the same capability as the validator specified.

1.7.2.6 **Level 2 – Intermediate server**

1.7.2.6.1 Depot

The Bus Depot, in this case, the Layover facility, will serve as a dispatch centre for buses until the depot construction is completed and a docking site for PVUs for recharge and data exchange. This may also serve as a data exchange point between the buses and the central system.

1.7.2.6.2 Proxy server

The proxy server will serve as an intermediate server performing functions such as downloading Equipment Operation Data (EOD) and collecting transaction data from buses. T Their numbers will be from 21 to 60.

1.7.2.6.3 Administration Terminal Interface

An interface shall be provided through which a terminal, such as a desktop or laptop, can be connected to perform maintenance and administration activities. The terminal must be able to log in remotely to on-bus equipment on which general system status information can be viewed and maintenance activities be conducted and connected to the back office.

1.7.2.6.4 Communication

A Wi-Fi access point (AP) may be provided as an interface with the bus's Wi-Fi units for transferring transaction data and EOD to the Data Centre (or via a proxy server). A Local Area Network (LAN), including the Wi-Fi AP, will provide for the interconnection of Depot equipment and devices via a Depot network switch, which also interfaces to the WAN for connectivity to the Data Centre.

1.7.2.7 **Level 3 – Data Centre**

1.7.2.7.1 Central server(s) These can be cloud-based or hosted by a reputable organisation that will provide better data security.

A virtualized central server cluster will be provided to manage, process and store transactions, system configuration data and applications, as well as provide central administration, banking reconciliation and settlement and data exchange interfaces with other potential participants. This will form part of the TMC and willalso provide a development server for changing and testing system configurations, parameters, etc, in a QA environment.

The AFCS software GUI will be web enabled, allowing authorized users to access the AFCS through web browsers on their desktops and mobile devices, to various access levels and rights to perform system administration, management and reporting. The installation of client applications on terminals is discouraged.

1.7.2.7.2 Disaster Recovery Centre

The DRC will be a mirrored version of the central system for redundancy, located on a remote site yet to be identified, preferably on a cloud-based system like Amazon Web Services (AWS), where IT system security is prime. However, any other cloud systems should be investigated for quality of service and pricing.

1.7.2.7.3 Administration terminals

1.7.2.3.1.1 Fixed terminals

Two terminals shall be located at the TMC 9 (which can also be referred to by CCC at Peter Mokaba stadium) for AFCS systems administration, management, and reporting, respectively.

1.7.2.3.1.2 Remote terminals

The system must allow remote users to connect to the AFC system through a secure VPN.

1.7.2.8 **Level 4 – Banking/payment system**

1.7.2.8.1 Card issuing and acquiring

The EMV card will be issued by a participating bank, which will also perform the acquiring function and process card loading, reconciliation and settlement via a banking Virtual Private Network (VPN). Further:

Steps for reconciling and settlement on the AFC Server:

1. **Transaction Capture**: When a commuter uses a Cipurse card, scans a QR code, or makes a debit card payment, the AFC system captures the transaction details. This includes information such as the fare amount, time, and location of the transaction.

2. **Data Transmission**: The captured transaction data is transmitted to the back office in real-time or in batches, depending on the system's configuration. This ensures that all payment information is collected and stored centrally.
3. **Validation and Authentication**: The back-office system validates and authenticates each transaction to ensure its legitimacy. For debit card payments, this might involve communicating with the bank to confirm the transaction.
4. **Reconciliation**: The AFC system reconciles the transactions by matching the captured data with the expected revenue. This process helps identify any discrepancies, such as failed transactions or communication errors.
5. **Settlement**: The system initiates the settlement process once the transactions are reconciled. This involves transferring the funds from the commuter's bank account to the transit authority's account for debit card payments. For Cipurse cards and QR code payments, the system updates the balance on the card or account accordingly.
6. **Reporting and Auditing**: The AFC system generates detailed reports on all transactions, which can be used for auditing purposes. This ensures transparency and helps identify any issues that need to be addressed.

1.7.2.9 Loading

It is anticipated that the present ABT loading points will be increased and merchants will be given prepaid loading amounts to increase the options.. For the QR-code generation and ABT Cipurce card loading, this is how the process shall function:

- Retailers and local businesses will use Point-of-Sale (POS) devices equipped with NFC readers for Cipurse cards and QR code scanners to process payments and load value onto Cipurse cards or generate QR codes for ticketing.
- When commuters load value onto their Cipurse card or purchase a QR code, the POS device captures the transaction details, including the amount, time, and location. These devices are connected to the AFC system via the internet or a secure network, transmitting transaction data in real-time or in batches to the AFC server.
- The AFC server processes this data, updating the commuter's account balance for Cipurse cards or validating the QR code for use.
- The system then reconciles the transactions by matching the data from the POS devices with the expected revenue and initiates the settlement process, transferring funds from the retailer's account to the transit authority's account.
- Finally, the AFC server generates detailed reports on all transactions for auditing and monitoring purposes, ensuring transparency and accuracy in the fare collection process

1.7.3 AFCS Implementation Phases

The AFCS Contract includes the design, supply, implementation, operation, warrantyand transfer of the AFCS required for the initial first phase, Phase 1A. The initial AFCS shall be scalable to allow for the possible implementation of subsequent phases. Further, the system shall have the following functionalities to address the previous weaknesses:

The proposed AFC shall offer an open-loop, interoperable fare collection system, bringing significant advantages over the previous system. This new approach involves replacing existing equipment with a system capable of handling QR codes, debit/credit cards, and Cipurse cards.

1. **Open-Loop Functionality and Interoperability**: The key benefit of an open-loop system is its interoperability, allowing commuters to use various payment methods seamlessly across different transit networks. Debit and credit card payments enhance this functionality, enabling users to pay directly with their bank cards without needing a separate transit card. This simplifies the payment process and attracts more users who prefer using their existing cards.
2. **QR Codes for Occasional Users and Visitors**: QR codes will be used for paper ticketing, catering to occasional users and visitors who may not have a registered transit card. This flexibility ensures that everyone, including tourists and infrequent riders, can easily access the transit system without needing to purchase a dedicated card.
3. **Cipurse Cards for Registered Users**: Cipurse cards will serve registered users, particularly those with concession cards, however unanimous cards will also be made available for those commuters not willing to be registered. These cards will store concession information, allowing the back-office system to automatically apply the appropriate fare discounts. This ensures that eligible users, such as students, seniors, or low-income individuals, receive the benefits they are entitled to without any hassle.
4. **Enhanced User Experience**: The system will offer a more user-friendly experience by integrating these various payment methods. Commuters can choose the payment option that best suits their needs: a one-time QR code, a convenient debit/credit card, or a personalised Cipurse card with concessions.

The implementation of the AFCS is to be logically integrated and coordinated with the overall IRPTS phasing. The decision to proceed with any phases subsequent to Phase 1A will be entirely at the discretion of the Employer, and the Contractor will not be entitled to claim for any losses or damages of any nature in connection therewith. Should the Employer opt to proceed with any or all subsequent phases, the operation of the completed phase/s of the AFC system should not be disturbed during the implementation of the new phases.

The Tenderer will be required to develop an implementation plan for review and approval by the Employer, which will accommodate the seamless implementation of the various phases and any updates/changes to the existing system which the increased scope of the AFCS may necessitate.

The desired schedule for the implementation of the AFCS provides targeted dates for completion but will be dependent on the Tenderer's development and production schedule, as well as the need for the provision of inputs to the IRPTN infrastructure and bus construction teams and their resultant construction schedules.

The infrastructure and bus fleet will be constructed by other contractors and manufacturers appointed by the Employer, respectively, and the AFCS contractor will be required to cooperate and exchange relevant technical and scheduling data required for the smooth implementation and integration of the IRPTS.

In addition to the above, the Employer will provide network infrastructure as a customer-furnished item (CFI) and will install and commission such equipment to a state of readiness for the installation of the Contractors plant. This will require close cooperation between the Contractor and the 3rd party, who will be responsible for implementing and maintaining such equipment during operations.

1.7.3.4 Phase 1A

During this phase, the AFCS central system and DRC are to be established, with due consideration of scalability to accommodate the future phases of the IRPTS. Similarly, the AFCS software development is to be performed in the context of the complete system requirement, i.e. future additional stations with Fare gates, TVMs and TOMs, routes, business rules, etc, in all phases, eliminating or limiting the need for redevelopment in subsequent phases.

The banking payment solution and associated reconciliation and settlement processes are to be re-established in this phase to provide for future phases without needing amendment or further certification. The Depot is to be implemented to provide data transfer capacity for the current and future bus fleet volume.

An attended ticket sales function is to be established at the trunk station, supplemented by two or more strategically located, interim (Mobile Kiosk) and potentially permanent sales centres to accommodate the demand surge anticipated upon expansion of the IRPTS. The precise location of the sales centre is yet to be established but should be considered to be located in the area of Seshego and Mall of the North, respectively.

The fixed ticket sales points are to be supplemented by the use of the banking merchant and ATM infrastructure for the loading of EMV cards otherwise at retail and small businesses in suitable areas. The feeder and trunk extension bus stop signage associated with the sales infrastructure also needs to be implemented.

Twenty-one (21) buses, fifteen (15) midi-buses and 20-60 taxis are to be fitted with suitableon-board validation and passenger counting equipment, and PVUs are to be provided for the inspectors. The Employer will provide the fibre optic network communications backbone, with designated communication ports provided in a network switch on each site.

1.7.3.5 Future Phases

Future phases are yet to be determined; see C4 for the full scope as envisaged.

1.7.4 Scope Summary Phase 1A

Media
- NDOT compliant bank issued contactless smart card

Ticket sales
- Attended sales points at trunk station in CBD, Mall of the North & Seshego
- Top ups at ATM's
- 3rd party sales points where viable
- No vending machines

Ticket validation
- On board validators at trunk and curb side doors for buses and taxis
- No fare gates
- Flat fare selectable for predefined route
- Passenger counting for fare evasion audits

Ticket verification
- Portable validation units
- Inspectors on buses
- Penalty regime

Data acquisition
- WIFI access point at bus depot
- On-board WIFI routers on buses and taxis for data exchange at depots

Back office
- Central servers and admin terminals at TMC
- Disaster recovery centres

Clearing and settlement
- Acquiring bank with operational NDOT card implementation

Operations
- AFC manager
- Technical manager
- System administrator
- Status monitor
- Financial manager
- Station / sales centre supervisor
- Ticket sales clerks
- Inspectors
- Maintenance technicians
- Combine/share functions where possible

Procurement
- Design, Build, Operate, Maintain, Transfer FIDIC gold book contract
- 3 years of operation following completion of phase 1C
- Alternative offers from tenderers

The following table summarises the scope of the AFCS implementation per phase;

Table C3 3: AFCS implementation per phase

LEVEL	ITEM	Phase 1A		Future Phases (see C4)	
0	Fare Media	12,000		T.B.D	
1	Trunk Stations with Ticket Sales	T7		T.B.D	
	Total	1			
	Trunk Stations Without TicketSales	0		T.B.D	
	Total	0			
	Trunk Stations with Fare Gates	0		T.B.D	
	Total	0			
	BOP	Midi	Trunk	Feeder	Trunk
		0	30		
	Total	36			
	Feeder Stop Signage	79		T.B.D	

	3rd Party Cardloading	**TBD**		
	Sales centres	**2**	TBD	
	Depot PVU	**5**	T.B.D	
2	**Depot Intermediateservices**	**1**	0	0
3	**Data Centre /TMC**	**1**	0	0
	Disaster Recovery Centre	**1**	0	0
4	**Banking PaymentSystem**	**1**	0	0

2. PROJECT REQUIREMENTS

2.1 Project Approach

The AFCS project implementation intends to follow a baseline management approach, in which the project life cycle will be staged, with each stage requiring various baseline inputs to proceed and, in turn, providing various baselines as outputs to complete associated milestones.

The dependence on these baseline inputs does not imply that activities may not be performed in parallel. However, the purpose of the baseline management approach is to reduce technical risk, and planning should, therefore, be performed with due consideration to this risk.

Notwithstanding the procedural requirements of the Contract under Part C1, an overview of this process is presented in the table below, with preliminary cardinal dates. The tenderer is to use these to develop a preliminary high-level project programme to be submitted as part of the tender response in returnable documents RDC 21 and .

Notwithstanding the above, the Contractor will be required to submit a complete and comprehensive project programme in accordance with the requirements of the Contract under Part C1. The following dates are indicative, with the exception of the targeted cardinal contract award and route taking over dates, as well as the subsequent Defects Notification Period (DNP) and maintenance dates.

The remaining dates are for guidance purposes and may be subject to change, depending on the constraints applicable to the Tenderer, infrastructure contractors, 3rd parties like the bus manufacturers and any external issues affecting the LLP service which are outside the scope of this tender.

Table C3 4: PROJECT STAGES

2.2 Project Milestones

Shaded dates in the milestone schedule above are cardinal dates for the Tenderer to construct the proposed project program. The remaining dates are indicative and may change subject to the contractor's activity schedule as well as interdependence with other contractors.

Table C3 5: PROJECT MILESTONES(sample)

MLSTN. No.	MILESTONE DESCRIPTION	ANTICIPATED COMPLETION DATE
0	Proposal	TBA
1	Contracting	TBA
2	Final Design	TBA
3a	Factory Acceptance Test	TBA
3b	Pre-Production Sample	TBA
4	Development and qualification	TBA
5	Installation, Operation and Maintenance Documentation	TBA
6	Production – Phase 1A	TBA
7	Installation – Phase 1A	TBA
8	Commissioning (Go live) – Phase 1A	TBA
9	Post-commissioning – Phase 1A	TBA
10	Defects Notification Period – Phase 1A	TBA
11	Maintenance – Phase 1A	TBA
12	Operation - Phase 1A	TBA
13	System Transfer	TBA

NB* (TBA):To Be Announced After Appointment

Notwithstanding the requirement for the submission of the Contractors' programme in the conditions of contract, the tenderer is required to submit an indicative project schedule at least to the level of each of the above milestones, based on the assumption that the site infrastructure and buses are ready as and when required under returnable document. Dependence is to be clearly indicated, and the programme should be accompanied by a narrative clarifying these where required.

2.3 Statement of Work

2.3.1 General

The Contractor shall be responsible for the design, supply, implementation, warranty, maintenance, operation and transfer of the AFCS and its fitness forpurpose, as well as the necessary provision of interface information required for integration with other IRPTS stakeholders as well as specifications for customer furnished items (CFI) where applicable.

2.3.2 Proposal stage

Notwithstanding the instructions to Tenderers contained in this tender inquiry, the tenderer shall propose the AFCS solution per the stated requirements. Alternative offers are encouraged and may be made once these requirements are satisfied.

- The Tenderer must confirm or qualify compliance to these requirements by means of a compliance statement in which each and every requirement must be cross referenced and responded to with comply (C), no comply (NC) or comply conditionally (CC) and includedin returnable document.
- In the event of conditional compliance, the Tenderer must clearly qualify the condition, failing which it will be assumed that the Tendereris either fully compliant or not compliant at all to the specific requirement, at the discretion of PLM.
- The Tenderer is to provide details of the proposed solution and thefunctionalities and products forming the solution as appropriate in returnable documents

Ref. No.	Deliverable Document	Description
FD1	System Design Description – Final Updated	Descriptive information and technicalspecifications for all plants are included in the proposal, including a description of the overall system functionality.
FD2	System Functional Description – Final Updated	Description of all system functions and sub-system components at the Line Replaceable Unit level, including use cases, process flow, principle or operations.
FD3	System Architecture – Final Updated	A schematic diagram and narrative showing allsystem components and interfaces.
FD4	Block diagrams – FinalUpdated	Block diagrams of each major system componentto LRU level.
FD5	Item list – Final Updated	List of all items to be supplied by the contractor under the contract, including part number, description, quantity and unit of measure.
FD6	Hardware documentation – Final Updated	Product specifications, general arrangement drawings, functional and performance specifications, packaging and shipping requirements.
FD7	Cable plan – FinalUpdated	Cable and wiring specifications for interconnection between plant and termination points, labelling conventions and structure.
FD8	Drawings – Final Updated	Diagrams and schematics are required in order to clarify any of the above to ensure a full understanding of the contractor's proposed design.

FD9	Software Description – Final Updated	Functional description of software, modules, sub-system in which to be installed and interfacesinternal and external.
FD10	Software User Documentation	User interface descriptions, screen flows, menu functions, etc.
FD11	Interface Control Document – Updated	Preliminary HW & SW interface specification for distribution to other stakeholders.
FD12	Applicable standards – Final Updated	A list of standards to which the system and components will comply is an updated version of what was submitted in the bid.
FD13	Spares list - Final	Updated spares list as included in the initial tender submission.10%
FD14	Operator manuals – draft	Preliminary manuals for initial review.
FD15	Maintenance manuals -draft	Preliminary manuals for initial review.
FD16	Inspection and test plan	The test plan includes the FAT, PPS, IAT, SAT, and SIT systems, which may be subject to revision before execution.
FD17	Business rules - Final	As documented during joint development sessions.
FD18	Final Design Review	Keep a record of Minutes of Final Design Review meetings and Responses to Final Design proposals. Indicate and incorporate agreed changes in the Final design. This shall include lists of deficiencies and agreed corrective actions.
FD19	Final Design Approval Certificate	A certificate confirming acceptance of the contractor's final design and approval to proceed with the next stage.

- The Tenderer must demonstrate an understanding of the AFCS requirements and objectives in the above responses and must also provide a list of reference sites which have been implemented by theTenderer using the proposed major equipment components in returnable document.

- At least one of the reference sites should include an EMV-based contactless card solution that is fully compliant with the NDOT R511. In this regard, the Tenderer may rely on a reference site of one of themembers of its consortium or of a sub-contractor, and this is to be included in the returnable document as well as a list of current users of the systems.
- Returnable documents are listed under Part T2 of this tender inquiry and instructions for completion.

2.3.3 Final design stage

The purpose of the final design is to finalise the design of the solutionaccepted in the Contractor's proposal, to begin with system development and qualification activities.

- The final design will, therefore, be conducted to a standard which is suitable for the AFCS software development, hardware manufacturingand/or procurement, installation and site requirements, test and acceptance plans, as well as interface specifications enabling the provision of ancillary interfaces, services, facilities and CFIs by others.
- The final design of the AFCS will proceed immediately upon thesignature of the DBOM Contract.
- The final design will also include the finalisation of the AFCS business rules on the basis of the signed DBOM Contract, by the Contractor in conjunction with the Employer's technical team.

- The Contractor is therefore cautioned not to proceed with the final design aspects which are dependent upon the completion of the business rules, as no claims will be entertained for sunken costs which may result. Such dependencies are to be clearly shown in theContractors programme.
- The Contractor will be required to produce the following document deliverables as a minimum, or as may be required in addition in orderto fulfil the requirements of the Contract, for joint review by the Employer's technical team, the approval of which will not relieve the Contractor of any obligations under the contract and the purpose of which will be to demonstrate complete compliance of the design to specified requirements;

The Contractor may have existing standard documentation which covers the above deliverables as part of one or several documents. The Contractor shall then provide a cross-reference table that shows which of the standard documents contains the information related to the deliverables above.

2.3.4 Development and Qualification Stage

- The purpose of this stage will be to develop the necessary software and hardware per the detailed and approved final design, to assemble a representative AFCS system, inclusive of at least one representative sample of each major component of the system in a factory environment.
- The purpose of the above system shall be two-fold;

2.3.5 Factory Acceptance Testing (FAT)

The FAT shall be performed to demonstrate compliance of the system with all functional, performance, and technical requirements, including the integration of the existing AFCS when necessary.

- The above testing shall be conducted in accordance with a test plan to be developed by the contractor and submitted for review and approval of the Employer's technical team in advance of the testing, which shall enable the testing of the system for compliance to all requirements; functional, physical, performance and business rules.
- The Contractor will be responsible for providing all testing facilities, equipment, plant, etc., required for the successful execution of the tests at the contractor's expense.
- Where such compliance cannot be proven in this environment (e.g. compliance standards), certificates are to be obtained from applicable authorities, certifying compliance.
- The results of all tests, together with supporting certificates of compliance, are to be captured in a test book, which will include a deficiency or non-compliance list to be rectified by the contractor by a mutually agreed date.
- The Contractor will invite the Employer's representatives to attend a second test session during which the rectified deficiencies are to be proven and cleared from the list if compliant.
- The Tenderer is to specify the location and anticipated duration of the testing in order for the Employer to make the appropriate budgetary provision and logistic arrangements to attend the testing.

  The approval of the factory acceptance test results will permit the Contractor to proceed with the implementation of the system, subject to the approval of the pre-production samples for production.

The Contractor will be required to produce the following document deliverables as a minimum, or as may be required in addition in order to fulfil the requirements of the Contract, for joint review by the Employer's technical team, the approval of which will not relieve the Contractor of any obligations under the contract.

Ref. No.	Deliverable	Description
FAT1	Factory Acceptance Test Plan	Detailed approach to FAT as derived from theInspection and Test Plan (FD16).
FAT2	Factory Acceptance Test Book	Compilation of test results.
FAT3	Test certificates	3rd party test certificates.
FAT4	FAT review	Keep a record of Minutes of FAT Review meetings and Responses to FAT's. Indicate and incorporate agreed changes in final FAT. This shall include lists of deficiencies and agreed corrective actions
FAT5	FAT approval certificate	A certificate confirming acceptance of thecontractor's FAT and approval to proceed with the system implementation, subject to PPS approval.

2.3.6 Pre-production sample (PPS) inspection

The representative samples of each major component of the AFCS forming the subject of the FAT will be inspected for compliance with the final design specifications in fit, form and function against predetermined checklists to be developed by the Contractor, jointly reviewed and approved by the Employer's authorised representative in advance of the testing.

Where such compliance cannot be proven in this environment (e.g. standards compliance), certificates are to be obtained from applicable authorities or manufacturers, certifying compliance.

- Where, modifications to previously certified plant and/or software are implemented which invalidate such certification; the plant and/or software must be recertified.
- The Contractor will be responsible for providing all testing facilities, equipment, plant, etc., required for the successful execution of the tests at the contractor's expense.
- The Contractor will be responsible for providing all testing facilities, equipment, plant, etc., required for the successful execution of the tests at the contractor's expense.
- The inspection may be performed together with the FAT session with due consideration to time and cost economy. However, the results will be captured in a separate report.
- The results of all tests and supporting certificates of compliance are to be captured in a test book, which will include a deficiency or non-compliance list to be rectified by the Contractor by an agreed date.
- The Contractor will invite the Employer's representatives to attend a second inspection session during which the rectified deficiencies are to be demonstrated and cleared from the list if compliant. This may again be scheduled to occur together with the rectification of the FAT deficiencies for the purposes of the economy.

- The approval of the test results will permit the Contractor to proceed with the production of units for delivery to the site and subsequent implementation.
- The Tenderer is to specify the location and anticipated duration of the testing so that the Employer can make the appropriate budgetary provision to attend the testing.
- Pre-production document deliverables
- The Contractor will be required to produce the following document deliverables as a minimum, or as may be required in addition in order to fulfil the requirements of the Contract, for joint review by the Employer's technical team, the approval of which will not relieve the Contractor of any obligations under the Contract.

Ref. No.	Deliverable	Description
PPS1	Pre-production sample test plan	Detailed approach to PPS as derived from the Inspection and Test Plan (FD16)
PPS2	Pre-production sample test book	Compilation of test results.
PPS3	Test certificates	3rd party test certificates
PPS4	PPS review	Keep a record of Minutes of PPS Review meetings and Responses to PPS tests. Indicate and incorporate agreed changes in final PPS tests. This shall include lists of deficiencies and agreed corrective actions.
PPS5	PPS approval certificate	A certificate confirming acceptance of the contractor's PPS and approval to proceed with the system procurement and manufacture.

Items that will be supplied 'stock standard' and will therefore not be customised for this application in any way and have been historically produced by the Contractor may be excluded from this requirement. However, the Tenderer must clearly identify these items in the bid response.

2.3.7 Installation, operation and maintenance documentation stage

2.3.7.1 Installation documentation

- The Contractor shall provide documentation, including site layouts, detailing the installation requirements and methods for the hardware and software forming the AFCS and integrated AFCS. This documentation shall be subjected to joint review and approval by the Employer's technical team.
- The installation documentation shall form the basis of method statements, which the Contractor will provide before beginning installation work on each site for technical, activity and safety coordination.

2.3.8 Operations documentation

2.3.8.1 Operation Plan

- The Tenderer shall provide a preliminary operational plan as part of the returnable documents .
- The Contractor shall update the operations Plan during the design stage for the AFCS to ensure the efficient operations of the AFCS during the operational stage of the project.
- The Operational Plan is to include inter alia;

a) Operations overview.

b) Organisation diagram.

c) Interfaces with other organizations and their function.

d) Operational Facilities with location and contact information.

e) Staffing with roles and responsibilities.

f) Human resource management.

g) Standard Operating Procedures (SOPs).

2.3.9 Operations Manual

Notwithstanding the requirement for the Contractor to operate the system, the Contractor shall provide operator manuals for the AFCS, which will comprise a summary system-level manual referencing individual sub-system manuals, which will provide sufficient instructive information to enable the non-technical staff to operate the AFCS with the intended function and performance.

These manuals will also form the basis for operational staff training. These manuals are to include inter alia;

- A general overview of the system and its functions andfeatures.
- Diagrams or illustrations clearly showing the above.
- Clear indication of the location and interfaces of the sub-system in the context of the overall system.
- Detailed description of the functions, features and controlinterfaces of the sub-system.
- Detailed step-by-step procedures for the full operation of thesystem/sub-system in all modes of operation.
- Troubleshooting and problem diagnosis at first-line level.
- Fault reporting procedures.

2.3.10 Maintenance Plan

The Tenderer shall provide a preliminary maintenance plan as part ofthe returnable documents. The Contractor shall provide a maintenance plan for the AFCS to ensure its efficient maintenance during the operationalstage of the project. The Maintenance Plan is to include inter alia;

- Maintenance overview.
- Organisation diagram.

- Interfaces with other organisations and their function.
- Maintenance Facilities with location and contact information.
- Staffing with roles and responsibility.
- Human Resource management.
- Standard Operating procedures.
- Asset replacement schedule.
- Spares supply.

2.3.11 Maintenance manuals

Notwithstanding the requirement for the Contractor to perform the maintenance of the system, the Contractor shall provide maintenance manuals, which will provide the technical staff with full insight into the maintenance requirements of the AFCS.

- Overall system
- Sub-systems
- Major component equipment items
- Line replaceable unit (LRU) level.

These manuals are to include inter alia;

- A detailed system description
- Block and schematic diagrams supporting the above
- Reference to technical drawings and wiring diagrams supporting the above.
- Preventative maintenance procedures in step-by-step detail, as well as frequency of such activities applicable to software and hardware and any tools and materials required.
- Corrective maintenance procedures in step-by-step detail for troubleshooting, fault diagnosis, repair and replacement to LRU level.

2.3.12 Installation, Operational and Maintenance Deliverable documents

The Contractor will be required to produce the following document deliverables as aminimum, or as may be required in addition in order to fulfil the requirements of the Contract, for joint review by the Employer's technical team, the approval of which will not relieve the contractor of any obligations under the Contract;

Ref. No.	Deliverable Documents	Description
IOM1	Operational Plan	Updated Operational and Maintenance Plan as included in the initial tender submission.
IOM2	Operator manuals - Final	Operator manuals for the entire system.
IOM3	Maintenance manuals -Final	Maintenance manuals for the entire system.
IOM4	Training manuals - Final	Training manuals for operations and maintenance.
IOM5	Training instructors manuals	Manuals will be used for training operators and maintenance staff in the future.
IOM6	Installation instructions	Generic installation instructions for hardware and software.
IOM7	Method statements	A generic method statement for the implementation of the system of each site configuration, which may be adapted prior to approval to proceed with work. This will include safety risk analysis, etc.
IOM8	Site installation drawings	Generic site installation drawings, which will form thebasis of as-built drawings.
IOM9	Cable schedules	Site-specific cable schedules will form the basisof as-built drawings.
IOM10	Document reviews	Keep record of Minutes of Document Review meetingsand Responses to Document Reviews. Indicate and incorporate agreed changes in final Documents. Thisshall include lists of deficiencies and agreed corrective actions.
IOM11	Final approveddocuments	Documents signed off for use in implementation.

2.3.13 Production stage

The successful completion and approval of the FAT and PPS will trigger the start of production of the AFCS hardware and software components fordelivery to the site and subsequent implementation. In the case of non-customised, proven equipment items, these may be approved for production prior to the completion of the FAT.

- The Employer reserves the right to identify Commercially Off The Shelf (COTS) items as Customer Furnished Items (CFI's) during the Contracting stage and to procure these under a state procurement contract, in which case the Contract Price will be adjusted on the basis ofthe rates offered in Part C2 – Pricing Schedule.
- The Contractor will be responsible for the management of the manufacturing process and for ensuring compliance of the Goods to approved specifications in accordance with the Contractor accepted quality management plan as proposed in returnable tender documents, and as further elaborated and finalised in the preliminary and final design stages.
- The Employer reserves the right, in accordance with the terms and conditions of the Contract, to inspect and witness tests during the production process.
- The Contractor will be responsible for the maintenance and archiving of quality documentation, which will provide traceability from delivery of materials for production to in-process quality control, non-conformances,concessions, test certificates, etc.

- The Contractor will produce such documentation upon demand.
- Each major plant component is to be clearly and indelibly serialised to the LRU level, supported by a certificate listing the serial numbers of LRUs contained within the assembled unit and certifying compliance with specifications.
- The Contractor is to implement a system configuration control process, whereby the serial numbers of any units replaced after delivery, as well as the version numbers of software and firmware, are to be captured andupdated on a continuous basis.
- The Contractor is to propose a process for approval of the Employer'sauthorised representative, which will provide a contemporary and historical record of the location of all major plants, sub-components and LRUs.
- The Contractor will be responsible for the appropriate packaging of theplant units for delivery and interim storage until installation and acceptance on site.

The Contractor shall provide details of the proposed packaging to the Employer for approval as part of the final design.

2.3.5.1 Production Deliverable Documents

The Contractor will be required to produce the following document deliverables as aminimum, or as may be required, in addition to fulfilling the requirements of the Contract, the acceptance and/or approval of which will not relieve the Contractor of any obligations under the Contract.

Ref. No.	Deliverable	Description
PRD1	Plant conformance certificates	Proof of conformance of all items shipped and delivered to the contractor's store.
PRD2	System configuration record	A record of all parts and serialnumbers, parent and child.
PRD3	Software certificates	Software conformancecertificates.
PRD4	Software licenses	Polokwane Local Municipality requires all software licenses for the legitimate use of the software.

2.3.6 Installation stage

The Contractor will be responsible for the delivery to site of all Goods forming part of the AFCS with the exception of the items provided by others and/or CFI's as detailed under the interface sections included in the technical requirements.

- As part of the final design deliverables, the Contractor is required to provide final interface requirements for the infrastructure and bus construction teams in order for the requisite site preparation activities to be performed prior to installation.
- Notwithstanding the installation documentation provided by the Contractor, a method statement for each site (including each bus configuration) is to be provided which shall detail the scope of work to be performed, works area, safety and security risks, access routes, materials, plant and equipment to be used, storage areas, potential impacts on adjacent systems and activities, etc.
- The Employer's representative shall review and approve the method statement before any site work begins.

- When the requisite site interfaces have been prepared, the Contractorwill be called to inspect and accept the site as ready for installation, or to raise deficiencies to be rectified.
- Once the Contractor accepts that the site is ready, is in possession of an approved method statement and is in compliance with site access procedures which may be implemented by the Employer or its contractors with overall possession of the site, from time to time, work may proceed on site.
- The Contractor will be responsible for the maintenance of safety standards applicable to the execution of the work in accordance with the Occupational Health and Safety Act no. 85 of 1993 (as amended), OHS Act 14 and the general safety rules implemented on-site by the Employeror the prime contractor with overall possession of the site.
- To the above end, the Contractor is reminded to keep a site diary,access control and attendance register and will be required to report on safety incidents and risks.
- The Contractor shall take cognisance of the fact that the stations and buses in particular, constitute public facilities and that all cables and materials installed in these facilities may not pose a hazard to the public, particularly with regard to fire and smoke emissions, and are therefore required to be low smoke, zero halogen and flame retardant.
- The above is to be considered in the final design process, and the Contractor will be required to certify that the system and components forming the AFCS supplied are inherently safe for use within such a public facility, thus indemnifying PLM in this regard.
- Notwithstanding the above, all cabling shall comply with SANS 10142 regulating the wiring of premises.
- All cables (origin and destination), termination points, circuit breakers, network ports and sockets are to be labelled in accordance with a system-wide labelling convention, to be proposed, reviewed and approved by the Employer.
- Once the Contractor has installed the plant, which shall include mounting, fastening, connections and terminations, the Contractor shall notify the Employer that the plant is ready for inspection.
- The inspection will be conducted with the plant in a powered-down state, in accordance with a test sheet showing the results of agreed tests,visual inspections, cable continuity, etc.
- The Contractor shall be responsible for ensuring that an electrical Certificate of Compliance (COC) for the electrical installations performed on each site is obtained from the party responsible.
- The Installation Acceptance Test (IAT) sheets are to be developed by the Contractor and jointly reviewed and approved by the Employer prior to use.
- Once the IAT is successfully conducted and approved by the Employer's authorised representative, the Contractor will be entitled to partial payment for the Goods in accordance with the contract.

Note: The Contractor may not power up the plant until the IAT has been signed by the Employer.

2.3.6.1 Installation stage Deliverable documents

The Contractor will be required to produce the following document deliverables as aminimum, or as may be required in addition to fulfilling the requirements of the contract. the acceptance and/or approval of which will not relieve the Contractor ofany obligations under the Contract.

Ref. No.	Deliverable	Description
INS1	Site installation drawings	Drawings of plant installations,building interfaces, wiring schematics, DB layouts, etc.
INS2	Site installation documents	Site instructions

INS3	Method statement	Approved methods statements as derived from the IOM, which may be modified to suit the specific site.
INS4	Installation acceptance test certificate	Approved test results permitting contractor to proceed with power up.
INS5	Electrical certificate of compliance	COC permitting use of powercircuits.
INS6	Site attendance register	As maintained during installationby the contractor.
INS7	Site diary with photographic records	As maintained before, during andafter installation by the contractor.

2.3.7 Commissioning

The installed and powered Works are to be tested and accepted onsite by means of a two-staged testing process;

- The first stage will be System Acceptance Testing (SAT), which will include the testing of each major plant component on a site or bus, in a stand-alone mode.
- The Contractor shall develop a SAT test plan for joint review and approval by the Employers authorised representative.
- The purpose of the SAT shall be to test the functions and features of the installed units on site, without full integration with the remainder of the system.
- The Contractor shall be responsible for the creation of software applications or routines which may be required to facilitate this.
- As the implementation of the system requires portions of the works to continue functioning under operational conditions, the SAT of a portion of the system, e.g. as each station or bus is completed, shall not interfere with the parts of the system which are already taken over and in operation.
- The results of the SAT shall be captured in a SAT test book per site, with sections covering each sub-system.
- The successful completion of the SAT following the correction of any identified deficiencies will allow approval by the Employers Authorised Representative.
- The successful completion and approval of the SAT will allow the second stage of testing and acceptance to proceed.
- The second stage will involve System Integration testing (SIT) in which the site and/or bus will be linked to the rest of the system.
- The Contractor is to develop and submit a SIT test plan for joint review and approval of the Employer's authorised representative.
- Again, as the implementation of the system requires portions of the works to continue functioning under operational conditions, the SIT of a portion of the system, e.g. as each station, bus or route is completed, shall not interfere with the parts of the system which are already taken over and in operation.
- The Contractor shall, therefore, provide a system test environment in which a range of test media may be used across a variety of origin and destination stations and across routes and buses, in which all system functionality and rules may be comprehensively tested without contaminating the operational environment.

- All costs, including but not limited to banking fees, related to the above, shall be provided at the Contractor's expense.

The results of the SIT shall be captured in an SIT test book per site. The successful completion of the SIT following the correction of any identified deficiencies will allow approval by the Employer's authorised representative, after which the system or portion thereof shall be operation-ready.

2.3.8 Training

2.3.8.1 Operator training

Prior to the operation of the AFCS or portions thereof, the Contractor will provide training to the Contractor's and Employer's staff, who will be responsible for the operation of the system.

- The Contractor shall ensure that the operational staff receives periodic training throughout the operational service period to maintain competency.
- The operations manuals developed by the Contractor will form the basis of the training. However, the Contractor will be required to develop presentations, videos, and/or other media and materials necessary for the comprehensive training of operational staff, which will include training facilitators' guides to enable future staff training by the Employer.
- The Contractor shall prepare a training programme with materials for the joint review and approval of the Employer's authorised representative.
- The Contractor will provide a suitable venue for training personnel and provide up to 10 attendees from the Employer per training session.
- Training will comprise a theoretical and practical component.
- The training course will include testing attendees and the Contractor's written confirmation that each attendee is competent in operating the system/sub-system or equipment items and providing further training to other operators.
- The Contractor shall provide for training sessions as follows, and the Tenderer shall provide details of the approach, duration, content and intended outcomes of the proposed training in returnable document;

The above shall include first-line maintenance tasks to be performed by operators.

2.3.8.2 Maintenance training

Before taking over the works or plant or portions thereof for operation, the Contractor will provide training to the following staff performing maintenance on the system.

  - Contractor's staff.
  - Employer's staff.
  - Employers' facilities management contractor staff.

- The Contractor shall ensure that the maintenance staff receives periodic training throughout the operational service period to maintain competency.

- The purpose of this training will be to provide technical staff with in-depth knowledge in the maintenance of all aspects of the system to manage the maintenance performance by the Contractor and Employer, respectively.
- The maintenance manuals developed by the Contractor will form the basis of the training. However, the Contractor will be required to develop presentations, videos, and/or other media and materials necessary for the comprehensive training of maintenance staff, which will include training facilitators' guides to enable future staff training by the Employer.
- The Contractor shall prepare a training programme with materials for the joint review and approval of the Employer's authorised representative.
- The Contractor will provide a suitable venue for the training of personnel.
- Training will comprise a theoretical and practical component.
- The training course will include the testing of attendees and the Contractor's written confirmation that each attendee is competent in the maintenance of the system/sub-system or equipment items.

The Contractor shall provide for training sessions as follows and the Tenderer shall provide details of the approach, duration, content and intended outcomes of the proposed training to be included in returnable document.

2.3.9 Trial operation

Upon completion of the testing, acceptance and training, the system shall be operated in a test environment for a period of 2 months prior to going live.

- During the trial operation, the Contractor shall provide operating staff in accordance with the operational service plan, as well as additional supporting resources if required in order to assist with the transition to the live environment and the Tenderer is to detail a cost-effective proposal in this regard to be included in returnable document.
- The above resources will assist operational staff and passengers with the transition of the AFCS to the live environment and shall assist in resolving teething problems, in conjunction with the maintenance personnel where appropriate.

2.3.9.1 Trial stage Deliverable documents

The Contractor will be required to produce the following document deliverables as aminimum, or as may be required in addition in order to fulfil the requirements of the Contract, the acceptance and/or approval of which will not relieve the Contractor of any obligations under the Contract.

Ref. No.	Deliverable	Description
COM1	SAT test plan	Detailed approach to SAT as derived from the Inspectionand Test Plan (FD16)
COM2	SAT test books	Compilation of test results.
COM3	SIT test plan	Detailed approach to SIT as derived from the Inspectionand Test Plan
COM4	SIT test books	Compilation of test results.
COM5	Training materials	As per IOM

COM6	Training programme	Programme approved by COP.
COM7	Certificates of competency	Results of training to beprovided by contractor
COM8	Trial run test plan	Detailed approach to trial runas derived from the Inspection and Test Plan
COM9	Operation ready certificate.	As issued by the engineer for portions of the work or the whole.
COM10	Taking over certificates.	As issued by the Engineer forportions or the whole of the works.

2.3.10 Post-commissioning stage

The purpose of the post-commissioning stage will be to consolidate andupdate all test certificates and supporting documentation, specifications,operations and maintenance manuals, drawings, diagrams and layouts, to as-built status.

- These activities have been specifically included in a separate stage so as to form a specific milestone for delivery, thus accentuating the importance thereof to the PLM.
- Notwithstanding the project change control procedures specified in the project management plan, once these documents have been submitted to the Employer by the Contractor and accepted, no further changes to the AFCS or portion thereof in operation may be altered without following an agreed change management process.

2.3.10.1 Post Commissioning Deliverable documents

- The Contractor will be required to produce the following document deliverables as a minimum, or as may be required, in addition to fulfilling the Contract's requirements, the acceptance and/or approval of which will not relieve the Contractor of any obligations under the Contract.

Ref. No.	Deliverable	Description
PCM1	Test results	All test results for the portion of the works in question are compiled in a history file.
PCM2	Certifications	All certifications, specific tothe portion of the works or system-wide, are added to the history file.
PCM3	As-built drawings	Updated and approved as-built drawings for the portion of the work in hard copy and CAD format.
PCM4	Asset Register	Contemporary Asset Register

2.3.11 Warranty

Notwithstanding the obligations of the Contractor under the contract during the defects notification period (DNP), the Contractor shall warrant all materials, plant, and workmanship, including hardware, software and all other project deliverables, for a period of 2 years from the date of issuance of the associated commissioning certificates.

- The Contractor will repair or replace any item which fails to perform as specified in the contract and technical documents or in accordance with its fitness for purpose.
- All associated costs of plant, equipment, labour, shipping and all ancillary costs shall be borne by the Contractor and is deemed to be included in the warranty line item in the cost schedules unless malicious damage has occurred.
- The system configuration control process initiated during the production stage is to be maintained until the completion of the maintenance contract and shall be used to track the repairs and replacement of the hardware parts as well as the repair, updating or modification of software during the life cycle of the AFCS in the form of a live Asset register.
- The above process will include marking such repairs as warranty or non-warranty-related.
- The Contractor shall ensure that OEM warranty agreements are extended where necessary in order to meet the contracted warranty period.
- The Tenderer shall submit a schedule as part of the tender document, indicating the warranty period for each major component of the system under returnable document where appropriate.
- Where LRU warranties differ within a major component, this is to be detailed and, in any event, may not be less than 2 years from the date of readiness for operation.
- The time for repair under warranty shall not exceed the maintenance restore turn-around times.

2.3.11.1 Warranty Deliverable documents

The Contractor will be required to produce the following document deliverables as a minimum, or as may be required in addition in order to fulfil the requirements of the Contract, the acceptance and/or approval of which will not relieve the contractor of any obligations under the Contract;

Ref. No.	Deliverable	Description
WTY1	Warranty schedule	List of items with warranty start andend dates
WTY2	As-built system configuration document	System asset, part and serial numbers, software versions, and locations.
WTY3	Monthly warrantyrepair report	List of all warranty faults and repairdetails.
WTY4	Monthly system configuration statusreport	An Update of WTY2 will be based on any approved changes to the system.

2.3.12 Operation Service Period

The Contractor shall operate the AFCS on behalf of the Employer for a period of 3 years following the issuance of the Commissioning Certificate for Phase 1A. The PLM reserves the right to extend this period entirely at its discretion to accommodate any new phases. The Service will comprise AFCS Operations and Maintenance which are further described below.

2.3.12.1 The operating times

The AFCS shall be operated as follows:

- Weekdays between 05:00 and 19:00
- Saturdays between 05:00 and 19:00
- Sundays and Public Holidays between 05:00 and 19:00

NB. These operational hours may be adjusted subject to demand and operational needs as determined by the Employer.

2.3.12.2 Branding and Corporate Identity

The public will see the Contractor as an extension of the PLM and will, therefore, abide by the IPRTS branding / corporate identity specifications, which will be applied to staff attire, all equipment, and printed materials in the public view.

As the corporate identity specification is currently a work in progress, Tenderers areto make provision for the above as part of the equipment supply, as well as in the supply of uniforms to their own specifications and in sufficient quantities to ensure that staff are always presentable and that uniforms are in good order. The Tendereris to provide a proposed uniform specification upon which their pricing is based and will be expected to incorporate the reasonable requirements of the CI specification to the uniform within the tendered price. The above will also apply to technical staff's personal protective equipment.

The Contractor will be required to present a high-quality image of the IPRTS to the public regarding behaviour and appearance. Therefore, the Contractor is to select staff with the appropriate presentation, educational and skills profiles, and a high degree of integrity and ethical conduct. The requisite screening is, therefore, to be performed before employment.

The service is to be provided in the commuter’s choice of any of the following languages: English, Afrikaans, Northern Sotho, Tsonga or Venda.

2.3.12.3 Marketing

The PLM will be solely responsible for marketing all aspects of the IRPTS. The Contractor may not publicise the IRPTS or the Contractor’s participation thereinin any way, including but not limited to media interviews, editorials, photographs, articles, etc., without the express written approval of the Employer.

The Contractor may be called upon to support and participate in marketing campaigns.

2.3.12.4 Operational Service Functions

2.3.12.4.1 Administration

The AFC administration will include amongst others the following functions:

- Management and coordination of all AFCS equipment,resources and activities.
- Participation in and reporting to the PLM steering committee.
- Performance monitoring and corrective actions.
- Training and human resource development.

2.3.12.4.2 Operations

Level 0 – Ticket media

- Card stock management.
- Card stock storage and security.
- Card issuing.
- Damaged/lost card reconstruction and replacement
- Card production and branding.

Level 1 – Read / Write Devices

Trunk station operation

A. Station supervision

a) A supervisor may be responsible for more than one station, but must be accessible to station staff and the public at all times in the event of an issue

b) Ensure that shifts are started, closed and handed over correctly and according to approved procedure

c) Ensure that required reports and registers are completed and appropriately distributed

d) Ensure that the station facility is operating correctly and that any faults are reported and rectified

e) Manage the cash collection activity

f) Manage keys

B. Attended ticket sales

a) Ensure that correct fare products and rules are downloaded to sales equipment and implemented correctly.

b) A transit card sales transaction shall not exceed 2 minutes in duration.

c) A transit card loading transaction shall not exceed 0.75 minutes in duration.

d) The TOM will assist the ticket sales clerk by means of a software application in the provision of IRPTS bus schedules,fare structures and products to the extent that appropriate advice may be given to commuters.

- Travel routes and cost for specific origin/destination.
- Comparison between products to achieve value for money in transit product purchases.
- Provide general information regarding the location andservice hours of alternative sales/loading points.
- troubleshooting commuter fare/card-related issues, can be done efficiently by staff with back-office access not on a TOM.

e) Cash collection and deposit in PLM account Cash collection is to occur daily, excluding weekends and public holidays. This action shall forthwith lie in the responsibility of the City's appointed CIT company.

f) Provide daily reports and reconciliation of cash sales vs deposits AFC Back office application will generate this information from data collected.

g) Generate daily sales reports

h) Manage card stock levels and replenishment such that cards are always available for purchase

i) Verify and ensure that transactions are transferred to the central database. The Back-office monitoring system should perform these routinely at a specified time, and any device that was not contacted should be retried after a specified period.

C. Unattended ticket sales

This function is optional and will be applicable if TVM's are implemented and the PLM can decide to appoint any contractor of their choice for this function with the condition it will easily integrate with the present AFC system seamlessly;

a) Ensure that correct fare products and rules are downloaded to the TVM and implemented correctly

b) Cash collection and deposit in PLM account Cash collection is to occur daily, excluding weekends and public holidays.

c) Provide daily reports and reconciliation of cash sales vs deposits .

d) Generate daily sales reports; if linked properly with the AFC back office, the AFC application for all reports will report on this one, too.

e) Manage card stock levels and replenishment such that cards are always available for purchase

f) Verify and ensure that transactions are transferred to the central data base managing issuing and return of inspector's PVUs.

D. Ticket sales centres

a) The Contractor shall be responsible for the supervision ofstaff.

b) Have the same functionality as per Attended ticket sales.

E. 3rd Party Sales points

a) Ensure implementation of IRPTS Sales point identification branding.

b) Ensure that correct fare products and rules are downloadedto sales equipment and implemented at scheduled time.

c) Verify and ensure transaction transfers to central system.

d) Generate 3rd party sales reports.

e) Provide support and ensure 3rd party performance.

F. Buses & Midi-buses

a) Verify and ensure transaction transfers to the central system.

b) Generate daily bus reports

c) Report and verify rectification of bus on-board equipment faults.

d) Perform on-board card inspection service using a PVU.

Level 2 – Depot

A. Depot administration

a) Systems administration to verify and ensure the transferringof transaction from buses to the central database

b) Ensure that correct fare products and rules are downloadedto bus on board equipment

c) Report and verify rectification of bus on board equipmentfaults

d) Generate daily bus transaction reports

e) Managing issuing and return of inspector's PVUs.

Level 3 - Back-office administration

a) Systems administration

b) Implementation of new fares, products, business rules, etc.

c) Generation of reports

d) Responses to specific queries, investigations and associateddata

e) Asset management and fault reporting administration

f) Ensure Back-up and Restore functionality

g) Remote equipment management

h) The back-office operation will include the DRC.

Level 4 – Payment system

a) Payment reconciliation, including loads using cash and cardpayments, as well as usage this will also be performed by the CIT company.

b) Payment reconciliation and settlement to PLM account.

c) Card issuing.

d) Card acquiring.

e) Ensure continuous compliance with Bank and Payment Industry standards.

2.3.12.4.3 Maintenance

The Tenderer is to provide the maintenance plan in returnable document as part of the tender submission, which will meet the following requirements as a minimum;

- The Contractor is to provide a maintenance service, as part of the Contract for the duration of the Operational Service Period.
- The maintenance of the AFCS will be activated upon issuance of the relevant Commissioning Certificate
- The maintenance of the AFCS will end on the same date, 3 years from the date of the phase 1A an 1B Commissioning Certificate.
- The Contractor will be responsible for the provision of all resources; staff, materials, consumables, labour, tools and special tools, and anything else required in order to provide the maintenance service.
- The scope of the maintenance includes all systems levels (0-4) as described in the system overview
- The Contractor shall provide monthly reports or information as required, regarding maintenance status including but not limited to, fault rectification statistics, warranty repairs, out of warranty repairs, spares stock levels, spares repair and replenishment status and asset replacement, to an agreed reporting format.
- The Maintenance Module will be operated by the Contractor at Data Centre this shall include the receiving and capturing of fault reports and corrective action taken. A CMMS system generating Job cards shall be used, and calculating the performance of technicians will be linked to KPI under SLA.

2.3.12.4.4 Preventative maintenance

This will include routine maintenance activities required in order to preserve the life of the AFCS whilst promoting and achieving the desired availability of an overall 99.5% for the AFCS.

- The Tenderer is to provide a provisional preventative maintenance(PM) activity list as part of the maintenance plan , whichis to be further defined during the final design stage.
- The list is to clearly identify any activities such as cleaning, which are to be conducted by the Employers facilities management contractor as first line maintenance.
- Preventative maintenance activities may not disturb operations, and the Tenderer must, therefore, identify which activities are to be conducted outside of operating hours (including weekends).
- The maintenance manual contains a preventative maintenance section detailing the procedures, tools, materials, consumables, etc. required to perform these activities.

2.3.12.4.5 Corrective maintenance

Corrective maintenance (CM) will occur at the following maintenance levels;

Level A – First Line

This will be performed by the Contractor's operational staff, based on troubleshooting procedures detailed in the maintenance manuals and will be distinguished by not requiring any hand tools for its performance.

Level B – Second Line

The Contractor's maintenance staff will perform this and will include thereplacement of Line Replace Units (LRU), with minimal service interruption.

The Contractor will ensure that in the event of an LRU replacement no transactional data is lost, and the Contractor will provide for procedures in the maintenance manual for data recovery and transfer to the central server whereapplicable.

Level C – Workshop repair

Workshop repairs below LRU level conducted by the Contractor.

Level D – OEM repair

Repairs below LRU level conducted by the OEM on behalf of the Contractor.

2.3.12.4.6 Spares supply

The Tenderer is to provide a provisional spares list (priced as provided for in the pricing schedule) from the provisional LRU list, detailing quantities anticipated for the maintenance period, per annum, based on the original equipment manufacturer (OEM's) stated mean time between failures (MTBF) and mean cycles between failures (MCBF) in order to meet the specified system availability and repair times.

- The spares list will be developed from the LRU list as provided in the Tender submission and further elaborated during the preliminary and final design stage.
- In addition to spares, the Tenderer shall provide a list of software license renewals and asset replacements that will be required for the period of the operation, together with costs, where applicable.
- The Employer will only pay for asset replacement in accordance with the Contract.
- The spares list and quantities are to be further defined during the preliminary and final design stages, with part numbers and OEM details.
- The Contractor will be solely responsible for the provision of all spare parts required during the Operational Service Period and associated costs, unless the spares are required as a result of malicious damage to plant.
- Spares shall be available so as to ensure the desired system availability of 99.5%.

2.3.12.5 Performance management

2.3.12.5.1 Operation

The measurement of the Contractor's performance of its obligations under the Contract shall be conducted by the Auditing Body as contemplated under clause of the FIDIC contract, as a penalty and incentive regime, will be applied for failing to meet or exceed agreed performance thresholds.

These performance measures are ultimately linked to the contribution to the achievement of the key objectives of the AFCS, and particular attention is drawn to FIDIC clause 13.2, in terms of which the Contractor is encouraged to submit proposals for improvements to the AFCS and operation toward promoting improved performance, efficiency and effectiveness.

a) Safe and secure transactions

The Contractor is to ensure that no breaches of system security occur, and that any attempted breaches are detected and appropriate interventions implemented. In the event of a breach the Employer shall recover damages under the Contract. Although not yet in force, the Contractor is to comply with the requirements for the lawful processing of personal information under the Protection of Personal Information Act (POPIA).

b) Fraud

The Contractor is to ensure that fraudulent activity is limited and where such fraud occurs, that it is identified, reported and addressed before significant losses occur. The Contractor will be liable for a penalty of R10,000.00 plus costs for each proven instance of fraud discovered by the Employer which the Contractor has not reported within one week of occurrence.

c) Fare Evasion Inspection and Detection

The Contractor shall ensure that Inspectors perform routine inspections on buses and taxis in accordance with an agreed bus inspection schedule.

1. The Inspector shall tap on each bus being inspected with his transit card.
2. A minimum of 50% of passengers on a bus shall be inspected for the duration of the inspector's journey, to be verified against the Bus Validators' passenger counting systems' passenger counts.
3. The PVU shall keep a log of all cards inspected with the status of the card and cards that were issued penalties. The inspection log shall be dated and stamped for each inspection. The log file must be uploaded to the back office for reporting purposes. The log file must also be viewed on the PVU.

In the event of the successful detection of fare evasion and the issuance of a penalty, the Contractor will be entitled to 50% of the penalty collected. Due to procurement policy constraints, the Contractor shall not be paid for this but will be entitled to set off against any performance penalties due.

d) Commercial inclusivity

The Contractor is to demonstrate contributions to agreed socio-economic development targets in employment, sub-contracting and supply contracts. A penalty of 10% of the amount below the target, measured on the basis of a 3-month aggregate.

e) Ticket Sales Function

The Contractor shall ensure the smooth running of card sales and ticket verification functions so as to limit commuter dwell time. The average processing time of card sales and loading transactions will be measured on a monthly basis, and the Contractor will be charged a penalty equal to the average % over the prescribed processing time of the ticket sales clerks' monthly rate. The Employer shall perform the measurement together with the Contractor atrandom locations using CCTV footage or physical inspections.

f) Environmental sustainability

The Contractor shall be responsible for adherence to the regulations, statutes and bylaws relating to health, safety and environment and shall submit to annual compliance audits by the Auditing Body. The Contractor shall be liable for any costs and damages related to non-compliance and will implement the recommendations of the Auditing Body at its own cost, save where such recommendations are proven to constitute a contract variation as contemplated under clause 13 of the FIDIC contract.

2.3.13.5.1 Maintenance

a) Availability

The desired AFCS availability is targeted at an overall 99.5%.

b) Response and Repair Times

Severity	Response time	Restoration Time
Minor	24 hrs	32 hrs
Major	4 hrs	8 hrs
Critical	2 hrs	4 hrs
Catastrophic	1 hrs	72 hrs

c) Failure Severity Categories

The following severity levels are defined for the purpose of failure, categorizing to define response and repair times, which will ensure the efficient and continuous operation of the AFCS with minimum disruption and inconvenience in service.

i. Minor
   - A failure which has no significant effect on system functionality and/or loss of revenue.

ii. Major
   - A failure which results in a significant loss in system functionality and/or loss ofrevenue.

iii. Critical
   - A failure which threatens the overall system functionality

iv. Catastrophic
   - A complete loss of system functionality.

d) Performance Damages

The following damages will be due by the Contractor in accordance with the provisions of FIDIC clause 10.7 (b).

The Contractor will pay a monthly penalty of R 5,000 per 1% below the targeted availability. Availability is to be calculated on a monthly basis using the following formula.

$$\text{Availability} = \frac{\sum WTa}{\sum WTp}$$

Where;

- WTa = Actual working time of equipment/plant.
- WTp = Planned working time equipment/plant.

The actual working time of the plant is to be calculated based on the time of reporting a fault (excluding minor category faults) until the fault is closed in the maintenance records. Alternatively, the contractor may include a system-based calculation as part of the maintenance management module of the AFCS supplied clause 3.4.14.1.14.e) of the Technical Requirements.

A penalty per hour delay in the applicable response and restore times will be charged to the Contractor for each corrective maintenance repair.

Severity Category	Response Delay	Restore Delay
Minor	R 500.00	R 500.00
Major	R 1,000.00	R 1,000.00
Critical	R 5,000.00	R 5,000.00
Catastrophic	R 10,000.00	R 10,000.00

The application of performance damages will be at the Employer's discretion, and failure to do so shall not be considered a waiver of the Employer's rights. All these numbers can only be captured on a CMMS system, which the employer representative must evaluate to accept its precision or KPA functionalities

2.3.13.6 Resources

2.3.13.6.1 General

It is the Contractor's sole responsibility to provide the requisite human resources,sub-contractors, tools, equipment, materials, consumables and any other resources required for the operation of the AFCS in accordance with the employer requirements and indeed, the entire Contract.

The Tenderer is to provide an Operation and Maintenance Plan as part of the solution proposal to be described in returnable document, which shall include an organigram showing each resource, including sub-contractors, their roles and responsibilities and reporting lines.

These resources and their quantities are to be listed in response, including costs under section C2 of the tender document.

2.3.13.6.2 Key Human Resources / Functions

As a minimum, the following key resources are to be employed toward performing the desired operational functions (note that it is not envisaged that all resources will be loaded full-time, and the contractor may consider the combination of certain key resources in one resource that is suitably competent).

a) AFCS Manager

The AFCS manager shall perform the role of the Contractor's Representative as contemplated in clause 4.3 of the FIDIC contract and shall be the primary interface between the Contractor and the Employer to manage and coordinate the Contract during the Operations Period.

b) Technical Manager

The technical manager shall be a suitably qualified, skilled and experienced engineer or equivalent, with an in-depth knowledge of all aspects of the AFCS, and is to be available for the management and implementation of any changes, enhancements, troubleshooting, root cause analysis and maintenance during theOperations Period.

c) Financial Manager

The financial manager shall be a suitably qualified, skilled and experienced accountant, and will be responsible for financial reporting, reconciliation, settlements and investigations and resolution of anomalies and queries.

d) Systems Administrator / Information manager

The systems administrator shall be a suitably qualified, skilled and experienced information technology systems engineer, and will be responsible for ensuring the continued operation of the AFCS as an information system, primarily by the administration of the back office and data centre as well as the extraction and analysis of data and reports from the AFCS, in conjunction with the Contractor's and Employer's domain experts and upon the request of the Employer's Representative or in the fulfilment of its contractual obligations.. This resource is to be permanently based at the TMC during normal working hours.

e) Status monitor

The AFCS status monitor shall be a suitably trained, qualified, skilled and experienced computer operator, and will be responsible for the monitoring of the AFCS asset management and status monitoring and control terminal. These resources will be permanently based at the TMC (during IRPTS operational hours) and will receive, process, action, monitor and close-out fault reports and change equipment modes and states to suit operational conditions in accordancewith approved Standard Operating Procedures (SOPs).

f) Supervisors

Supervisors shall be suitably trained, qualified, skilled and experienced in the supervision of ticket sales staff and in dealing with the public, as well as reportingon incidents and decision making within the bounds of their mandates. The supervisors shall be responsible for the management of trunk stations and sales centres. These resources may be shared across multiple sites but must be in attendance during the operational hours of the IRPTS service.

g) Ticket sales clerks

Ticket sales clerks shall be suitably trained, qualified, skilled and experienced in dealing with the public and performing a sales function. The clerk will be responsible for processing card sales, loading and providing travel and product information to commuters as the face of the IRPTS. Clerks will be stationed at trunk stations and sales centres during operational and normal working hours respectively.

h) Ticket inspectors

Ticket inspectors shall be suitably trained, qualified, skilled and experienced in dealing with the public, and in particular, shall possess a high degree of integrity and the necessary personality and physical attributes required for the enforcement of the IRPTS fare regime, including the issuing of penalties in accordance with agreed SOPs.

i) Maintenance technicians

Maintenance technicians shall be suitably trained, qualified, skilled andexperienced in the performance of corrective and preventative maintenance activities as further elaborated under section 3.3.13.5.3 Maintenance.

2.3.13.6.3 Facilities

Notwithstanding FIDIC clauses 4.10 and 4.19, the Employer shall provide office accommodation of staff in the TMC, Trunk stations and Sales Centres as per 3.3.13.6.2 including electricity, water and ablution free of charge exclusively for the purposes of this Contract. The Contractor shall be responsible for the provision of their own facilities such asOffices, workshops and conference facilities other than those specified above.

2.3.13.6.4 Deliverables

The Contractor will be required to produce the following document deliverables as a minimum, or as may be required in addition in order to fulfil the requirements of the Contract, the acceptance and/or approval of which will not relieve the Contractor of any obligations under the Contract;

Ref. No.	Deliverable	Description
OPS1	Monthly Operational report	Summary of reports to be provided under operational scope of work.
OPS2	Operational Performance report	Summary of performance reports as provided under operational scope of work.
MNT1	Monthly maintenance report	PM activities conducted as well as CM with status.
MNT2	Maintenance Performance report	Repair response times, turnaround times and systemavailability.
MNT3	Monthly system configuration status report	Update of WTY2 based on any approved changes to the system.

2.3.13.6.5 Transfer

The Contractor must ensure that the issuing bank contract can be ceded or transferred to PLM when operations are transferred to PLM, and a bank letter confirming this is to be included in the bid submission.

- The process of Transfer shall begin at least 1 year prior to the Contract Completion Date with a joint inspection as contemplated in FIDC clause 11.8. at this time, the Employer may opt to maintain the status quo and extend the Contractor's operating period by 12 years. The Bidder is to provide the costs of this extended period as an optionin the price schedule.
- In the event that the Employer opts to take transfer of the system for operation during the 6-month period prior to the Contract Completion Date, the Contractor shall provide complete training to the Employer's staff as required.
- There shall be a two-month period of joint operation by the Contractor and Employer prior to the Contract Completion Date.
- The Employer shall, at its sole discretion, have the right to take over the employment of the Contractor's staff as part of the transfer. To this end, the Contractor shall ensure that this commitment is communicated to and agreed by the Employee as part of the initial employment contract.

The Employer shall take over the Contractor's employees at the same rate of remuneration and benefits, provided that these are visible in the price schedule.

2.4 SYSTEM REQUIREMENTS

The purpose of this section is to provide the AFCS technical requirements for the design, build, operations, and maintenance of the AFCS for the PLM.

2.4.1 System Description

The proposed AFCS concept is formed around meeting the stated goals and objectives and with due consideration to the applicable resource and stakeholder constraints. The system over-view clause 1.7 depicts the typical AFCS concept to be designed, built, operated and maintained by the Contractor.

The information contained in the diagram is not prescriptive for design purposes but is intended as a guideline to the Tenderer.

The Tenderer is to provide a similar diagram in the tender response for the proposed solution. It is also important that Part C4 – Site Data is reviewed for further back ground in terms of the requirements set forth, in order to ensure compatibility and integration with the AFCS, and with due consideration to value for money to the PLM. The major components or sub-systems of the AFCS are as follows:

2.4.1.1 **Level 0 – Media**

- Ticketing Media

2.4.1.2 **Level 1 – Read/Write Devices**

- Ticketing Media.
- Ticket Sales Points.
    - Ticket Office Machine (TOM)
    - Ticket Vending Machine (TVM) - optional

- Sales Centres.
  - Ticket Sales – Ticket Office Machine (TOM)

- Feeder Stops.
  - 3rd Party Top Up Facilities
  - Signage

- Truck Buses and Midi Buses
  - Bus onboard devices

Depot

- Portable Validator Unit (PVU) Inspection devices

2.4.1.3 Level 2 – Intermediate Services

- Depot (T.B.D).
  - Wi-Fi Access Point (if required)
  - Proxy server (if required)

2.4.1.4 Level 3 – Data Centre

- Central System (CS)
- Disaster and Recovery (DRC)
- Administration Terminals

2.4.1.5 Level 4 - Banking Payment System

2.4.2 General Environmental Specifications

The system and plant shall be designed to continue operating under the following environmental conditions without reducing the operating life span of the plant.

- Ambient Operating Temperature: -5□C to +50□C. This specification maybe depreciated if the operating environments are controlled to values which will not exceed the device's operating temperatures.
- Storage Temperature: -20□C to +70□C
- Relative non-condensing Humidity: 0% to 90%
- Shock 30g for milliseconds and up to 5g sustained
- Operating vibration: 1,5g RMS, 5-150 Hz
- Solid objects and moisture protection for indoor inside plant rooms shall be a minimum of IP 3X
- Solid objects and moisture protection for outdoor / public areas shall be a minimum of IP44
- Equipment shall withstand Ultraviolet (UV) exposure in the place of installation to have a minimum life expectancy of 10 years.

2.4.3 General Electrical and Installation specifications

The system and equipment shall be designed, supplied and installed with thefollowing specifications;

- All units shall comply with generally accepted Electrical Safety Standards such as IEC 60950, SANS 60950, SANS 62515, SANS 60335-2, SANS 62040-1, SANS 61010-1, etc
- All equipment shall comply with the Electromagnetic Compatibility (EMC) regulation for RSA, 46 of .2010 (Introduces immunity requirements), which include the following standards: CISPR, IEC (IEC 61000 series) and ETSI.
- All radio and telecommunication equipment or terminals shall be approved by the Electronic Communications Act, No 36 of 2005 (ECA).
- Equipment that requires direct current shall have polarity reversal protection.
- All cables that are subject to vibration and movement shall be of a multi-strand type.
- All cables shall be labelled using an industry-accepted labelling method according to the approved labelling plan contained in the cabling plan. Information on the cable labels shall include inter alia the following;
    a) The name of the company that installed the system cable.
    b) Origin and destination.
    c) Cable type identifier.
    d) Cable number.
- At all termination points enough slack shall be left for at least 3 reconnections to be made (approximately 30 cm).
- The Contractor shall, on request of the Employer, produce the proof of certification.
- Notwithstanding the above, the Employer reserves the right to request recertification in the event of modifications to equipment or deviation from OEM installation instructions.

- The Contractor shall record all equipment within the AFCS to LRU level in an asset register and keep it updated for the duration of the Contract. Information captured in the asset register shall include inter alia the following:
    a) Serial number
    b) Description
    c) Part number
    d) Location: the CMMS system shall have an asset movement module to update locations
    e) Modification status
    f) Date of installation
    g) Software description and revision, etc.

During the Operational Service Period, the above may be performed viathe IRPTS asset/maintenance management tool, however the Contractor will remain responsible for the integrity of contemporary system configuration data.

2.4.4 General Interface Requirements

Mains and Backup Power

- All plants used at permanently fixed locations shall utilize 220-240V AC, 50 Hz power from a mains dedicated distribution board (DB) located in the site equipment room to be provided by others.
- The Contractor shall supply, install and maintain dedicated AFCS power distribution boards for the distribution of Mains power to AFCS related plants.
- The distribution board shall be of adequate size to accommodate future expansion with regard to fare gates on the Trunk station.
- The Contractor shall supply, install and maintain appropriate circuit breakers and surge protection in the AFCS DB.
- The Contractor shall supply, install and maintain cabling between the plant, AFCS socket arrays, AFCS DBs and power DBs for the AFCS at their respective locations.
- All plant power socket arrays shall be earthed via a common station equipment earth bar provided by others and located in the site equipment room.
- The Employer will provide all mains power cable containment according to the Contractor's specified requirements in the Final design stage. Cable containment does not include enclosures such as DB boards etc. These shall be supplied and installed by the Contractor.
- The Contractor shall provide power budgets for plant to the Employer for the provisioning of mains and backup power to the whole IRPTN in the Final Design stage.
- The Contractor shall ensure that the Plant does not rely on pure sine wave generated mains power for proper operation.

2.4.5 General Communications System

The plant shall interface with the site AFCS LAN and AFCS WAN via a network switch located in the station equipment room. The switches shall be supplied, installed and maintained by the Employer.

- The Employer will supply, install and maintain the WAN network cables between the relevant sites and the network switches. The Contractor must liaise with the Employer and authorised assigns to ensure that the AFCS subsystems integrate with the communications backbone.
- The Employer will supply, install and maintain all network cable containment according to the Contractor's specified requirements up to the LAN ports of the network switch.
- The Contractor shall supply, install and maintain AFCS LAN network cabling between plant, and network switches.
- The contractor is responsible for providing network requirements for the final design to enable successful AFCS implementation. The AFCS network shall allow for any IP address ranges that the Employer may specify.
- The Contractor shall ensure that the network requirements comply with the MIOS.
- The Contractor shall supply, install and maintain all plant that forms part of AFCS LANs, BOP, Banking Networks, Sales Centres and 3rd Party sales points, which includes inter alia ADSL, GSM, Wi-Fi, etc.

The Contractor is responsible for ensuring the communication channel to the bank complies with banking industry standards and is appropriatelycertified.

Level 0 - Fare Media- Smart Cards

The Fare Media transit travel authorisation shall be as defined by the NDOT Regulation No. R.511.

- A single ticket solution as per clause 1.7.2.1 par 2 and 3 is to be implemented on the EMV transit card.
- The processing order of value shall first be Product (points) value and then purse value.
- Test cards to be used for the testing and setup of the AFC plant, such as TOM, PVUs, Card Readers, and payment devices, shall be visually distinguishable from the production card.
- The Contractor shall provide all required test cards free of charge.
- All Fare media shall be configured under the strictest control and by authorised staff only.
- The Contractor shall be responsible for the full certification of fare media and the entire system at the Contractor's expense. Including but not limited to EMV, NDOT, MIOS, Payment Cards Industry (PCI) etc.
- The Contractor must, via the issuing bank supply the Fare Media. However PLM will supply the branding and graphic designs that theissuing bank must print on the fare media. Any Fare Media design proofs supplied by the issuing bank or Contractor, must be approved by Employer before production.
- Additional charges to the artwork designs might be required in the future and these shall be supplied without increasing the cards unit price.
- All personalised information will be stored on the Fare Media as defined by the NDOT AFC Data structure as well as on the Back End (AFCS CS).
- The first issue of a smart card will be free of charge, provided the recipient's identity number is linked to the card number. Alternatively infrequent travellers (single trip users) can purchase a smart card and receive a refund if the smart card is undamaged. Fare Media shall be available at Sales points, selected Trunk Stations and Sales drives. Single trip users will be advised to use the QR-Code paper ticket or their Debit and credit cards
- Passengers will be able to reload Fare Media at Sales points, Selected Trunk stations, ATM and 3rd party outlets with approved Pay points.

- Passengers will be able to reload any Fare Media type (personalised, Concession or anonymous) at Sales points and selected Trunk stations, subject to any AFCS business rules such as expiration dates, etc.
- The process for buying Fare Media with concessions must include the verification of the concession status and personal identification.
- All fare media shall be available without delay.

The expected life of Fare media under normal usage conditions shall be more than 5 years. Fare media that fails prior to the 5-year period shallbe replaced free of charge. If there are sufficient proof that Fare media was maliciously damaged, the passenger shall replace the fare media at their own expense at a nominal fee.

Level 1 EMV Read/Write devices

General requirements

All successful payment transactions at EMV Read/Write devices shall besubmitted to the acquiring bank for processing. All Fare media processing devices shall be capable of processing the following fare media:

1. PLM Fare card, which is ABT Cirpurse and NDoT certified
2. ABT Cipurse fare media
3. Debit / Credit card direct payments
4. QR-Code generated by the Backoffice linked device
5. Other NDOT R511 compliant transit cards

The acquiring bank shall credit the proceeds from the AFCS payments tothe employer's bank account within 24 hours of the transaction.

2.4.6 Trunk Station

Ticket Sales

- Selected Trunk Station as per Table 3 AFCS implementation per phase shall be provided with an attended ticket sales facility to the public using TOMs as per clause 2.4.13.1.
- The attended ticket sales facility shall service the unpaid area of the stationvia a secure ticket sales window.

2.4.7 Fare Gates

Fare gates at the station are already installed and ready to be commissioned. The Tenderer must ensure that the proposed AFCS can accommodate fare gates in the future with the requirements set out below without a new deployment of system software, the software must allow for fare gates to be added and configured without rebuilding and compiling the system software and it must not influence the operational system negatively or interrupt operations.

If adopted, the fare gates will initially be used to control access to the station concourse for people in possession of valid travel tickets. Depending on the future development of the IRPTS and the evolution of the business rules, this may change to the primary means of travel validation.

2.4.7.1 Functional requirements

The fare gates shall provide a secure and vandal-resistant barrier between all trunk stations' paid and unpaid areas. The fare gate shall possess EMV-certified fare media processing devices/card readers.

The fare media processing devices shall be capable of processing thefollowing fare media:

- All NDOT R511 compliant transit cards
- QR-Codes paper tickets
- ABT Cipurse cards
- Bank Debit/Credit Cards
- The card readers employed on the fare gates shall be NFCcompatible.

The fare gates shall permit entry to passengers to the paid areas who possess a valid travel fare, by presenting fare mediato the validation device. Valid fare means a minimum balance of value or points, which the business rules will determine. This will not be a complete transaction but merely a check to permit entry, as the transaction will be performed on the bus BOP.

The fare gates shall permit exit to passengers to the unpaid areaswho possess a valid travel fare or who have entered through the gate within the free exit time limit, by presenting fare media to the validation device. Valid fare means a record of a bus check-in which has occurred within the maximum transfer time, which will be determined by the business rules. This will not be a transaction but merely a check to permit exit in the event that the check-in is present. Alternatively, a transaction will be performed equal to the maximum trip cost. In the event that there is insufficient value or pointson the fare media, credit points will be written to the card, which must be settled before the patron will be allowed back into the system.

- The fare media processing device shall provide a visual and audio signal, confirming that valid or invalid fare is present on the faremedia.
- The fare gates shall limit passage to a single entry/exit per valid ticket.
- The fare gates shall deny entry/exit to passengers to the paid / unpaid areas, respectively, when using blacklisted/blocked media.
- The fare gate fare media processing unit shall capture and store all transaction (valid and invalid) data, including but not limited to:
    a) Media serial number/Token number.
    b) Date and time.
    c) Transaction type.
    d) Origin/device ID.
    e) Transaction amount.

The fare gate media processing unit shall store the transaction data locally and transfer the data to the central system over the datanetwork. The data shall only be deleted from the fare gate when receipt acknowledgement is received from the back office. The data transfer shall be a background process which will not prevent the concurrent validation of newly presented cards. Data transfer must be real time or system configurable to transfer on a regular basis (at least every 5 min), such that the data is available for statements or mini statements on the TOM.

The fare gate shall generate fault alarms to the Line Replaceable Unit (LRU) level. The fault alarm trigger time shall be system configurable. Alarms to be generated include, inter alia the following:

a) Loss of communication

b) Card reader out of service

c) Gate stuck or obstructed

- The fare gate shall generate audible intrusion alarms in the event of access to maintenance and service doors and transfer a signal to the status monitoring terminal for display on the GUI.
- Fault and event alarms shall be passed on to the status monitoring terminal and will be displayed on the graphical user interface (GUI) over the data network.
- The fare gate shall store event data locally in the event of LAN failure until such time as communication is restored.
- The fare gate barrier shall be capable of opening under passenger crush/stampede conditions.
- The fare gate barrier shall open if there is a general power failure.
- The fare gates shall possess a general emergency function which,
- when activated, will open all barriers. This function must be implemented using a hardwired resettable push button and an emergency override in the controlling GUI of the fare gates.
- Fare gates shall be safe for use for the intended purpose, which will include children, the frail, pregnant and the elderly.
- Each fare gate shall display the direction of the traffic flow and when the gate is closed, using universally recognised symbols.
- Fare gate status and mode shall be controllable primarily from a local computer GUI over the LAN. The fare gates shall also be able to be controlled remotely (Central system). This functionality shall also form part of the TOM deployment. The GUI shall be able to perform the following controlling or mode selection functions.

  a) Passage closed/open.

  b) Emergency

  c) Passage in

  d) Passage out

  e) Passage bi-directional

  f) Passage override

- The control computer is to graphically represent the station fare gate array footprint and its orientation within the station concourse, particularly the paid and unpaid sides of the barrier.
- The fare gate shall retain full transactional functionality in off-line mode.
- The fare gate shall be available in a wide passage (swing gate) version to accommodate universal access.
- The fare gate shall be equipped with lightning and surge protection devices.

2.4.8 Performance requirements

The fare gate shall accommodate a passenger throughput of at least 20 people per minute, including ticket processing time.

- Replacement of any LRU shall take no longer than 30 minutes.
- The fare gate processor shall be capable of retaining at least 96 operational hours of transaction data, including all events.
- The fare gate processor shall possess sufficient memory to accommodate a minimum of 5,000 blacklisted/blocked cards, which, when depleted, will delete records on a first-in-first-out basis.
- Blacklisted/blocked cards shall otherwise be removed under the following conditions;
    a) When the card is captured from the passenger.
    b) When a lost card is retrieved.
    c) When a period (configurable parameter) of time has passed.
    d) The fare gate should have a minimum useful life span of 15 years. This will depend on the availability of spares, and whether the manufacturer still supports the gate version

2.4.9 Physical requirements

The fare gate will be of the 3-arm waist-high turnstile type.

- The fare gate shall be constructed from vandal-resistant materials with due consideration to the environmental conditions.
- Flammable materials shall be flame-resistant and retardant and shallnot produce harmful or toxic fumes or gases in the event of a fire.
- Robust locking mechanisms with unit-specific keys shall secure access panels and doors.
- The fare gates shall have a minimum IP 32 rating.
- The fare gates shall be designed according to universal ergonomic standards, including the positioning of passenger displays and prompts.
- Notwithstanding the requirements of ergonomic standards, theminimum fare gate passage widths shall be 500mm and 915mm for narrow and wide passages, respectively.

  Notwithstanding the Contractor's responsibility to provide a secure barrier, the overall height of the fare gate barrier shall not be less than1,100mm from floor level.

2.4.10 Interface requirements

In addition to the Emergency push button, the fare gate shall provide an input to interface with a station fire alarm panel dry contacts outputto activate the Emergency mode in the event of a fire alarm. The alarm panel shall be located in the station equipment room.

- The Contractor shall supply and install the cabling between the gates and the fire panel.
- The fare gates shall utilize 220-240V AC power from a dedicated IFMS distribution board (DB) located in the station equipment room.
- The Contractor shall supply and install the cabling between the gates and the power DB as well as an appropriate circuit breaker per passage.

- The Contractor shall be responsible for providing the necessary transformers and power supplies required to power the fare gates.
- Fare gates shall be earthed via a common station equipment earth bar located in the station equipment room.
- The fare gates shall interface with the station LAN via a network switch located in the station equipment room, with a port provided for each fare gate passage.
- The Contractor will supply and install the network cables between the fare gates and the network switch.
- The fare gates will be controllable via a GUI on the admin terminal from the TMC or an authenticated remote access terminal as required.
- The fare gate mode, status, condition and alarms are to be displayedon the GUI.

2.4.11 Sales Centre

Sales Centres - Ticket Office Machine (TOM)

The selected Sales Centres as per clause 1.7.2.2.2 and implemented as per Table 3 AFCS implementation per phase shall be provided with TOMs as per clause.

- The TOM shall provide attended ticket sales. TOM is a device to the public.
- The TOM shall service public, via a secure ticket sales window.
- The TOM shall interface with the Data Centre and Payment systemvia ADSL, GSM, PLM network or other type of network. If it iseconomically feasible a PLM fibre optic network shall be provided.
- The TOM shall provide the sales' clerk with information such as travel schedules, fare tables, comparative cost per route (origin/destination) vs various products to achieve value for money, card status etc.
- The TOM shall be equipped with a receipt printer to print report and mini statements.
- The Contractor shall supply, install, operate and maintain all network devices other than the PLM Fibre optic WAN network.
- The Contractor is required to provide the failover routers and associated cabling, which will be located at an agreed position within the Sales Centre.
- Cable containment will be provided between the TOM and the power, earth and data termination points by others, to the Contractor's requirement. The Contractor shall provide the applicable requirements for cable containment.
- All connected TOMs shall be synchronized in 5minutes intervals, among themselves so that information on all transactions are present, and 10minutes uploading of date to the back office. All TOMs shall be full independent computers not terminals

2.4.12 Feeder Stops

3rd Party Top up facilities

It is required that a fare media top-up load point footprint is established at locations in close proximity of feeder bus stops. The targeted maximum distance from anybus stop to the nearest top-up point is 1000m

with due consideration to achieving value for money. The Contractor is to design, build, implement, operate and maintain the top-up load point network services, limiting capital investment and operating costs.

The table below indicate the various Stop points on each route with GPS coordinates and the implementation phase. The Tenderer's are required to complete the table to indicate which stops are to be provided with Top up facilities. The following information is required:

a) A Unique Identifier to identify each Top up facility

b) The GPS coordinates of the Facility

c) The distance from the Facility to the indicated stop

Take note that stops on the various routes are at the same locations and (or) in proximity of each other. A column is provided indicating the shared locations and proximity stops. For evaluation purposes, the following method shall be used to score the responsein the table:

*Score = (Qty Top up sites / Qty Stops) * average Distance Top up Site to Stop*,Where:

Average Distance Top up Site to Stop = Sum of Distances for each Top-up Site / Qty Top up sites.

TRUNK EXTENSION ROUTES					
Route TE5					
Implementation phase	**1A**	**GPS (LONG, LAT)**			
QTY Stops	7	Qty TopUp Sites	0	Average Distance Stop to TopUp Site	0
Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare media TopUp Site ID	Fare media TopUp Site GPS Coordinates	Distance from Stop to TopUp site
TE5-1	29.398061,-23.850322				0
TE5-2	29.400011,-23.840973				
TE5-3	29.392357,-23.842531				
TE5-4	29.386790,-23.840920				
TE5-5	29.391791,-23.835955				
TE5-6	29.382671,-23.848603				
TE5-7	29.385227,-23.854357				

Route TE6					
Implementation phase	**1A**	**GPS (LONG, LAT)**			
QTY Stops	10	Qty TopUp Sites	0	Average Distance Stop to TopUp Site	0
Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare media TopUp Site ID	Fare media TopUp Site GPS Coordinates	Distance from Stop to TopUp site
TE6-1a	29.376576,-23.829225				0
TE6-1b	29.377026,-23.829367				
TE6-2	29.361819,-23.836142				
TE6-3	29.345666,-23.839948				
TE6-4	29.339391,-23.84104				
TE6-5	29.351798,-23.838746				
TE6-6	29.354139,-23.847207				
TE6-7	29.361695,-23.854234				
TE6-8	29.369785,-23.852941				
TE6-9	29.376356,-23.853661				

Route TE7

Implementation phase	**FUTURE PHASE**	**GPS (LONG, LAT)**			
QTY Stops	9	Qty TopUp Sites	0	Average Distance Stop to TopUp Site	0
Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare media TopUp	Fare media TopUp Site GPS Coordinates	Distance from Stop to

			Site ID		TopUp site
TE7-1	29.367424,-23.817684				0
TE7-2	29.362421,-23.821266				
TE7-3a	29.352925,-23.824387				
TE7-3b	29.352788,-23.824340				
TE7-4a	29.347674,-23.828388				
TE7-4b	29.347667,-23.828209				
TE7-5	29.337620,-23.831966				
TE7-6	29.362789,-23.827084				
TE7-7	29.367464,-23.831022				

FEEDER ROUTES					
Route F2a					
Implementation phase	**FUTURE PHASE**	**GPS (LONG, LAT)**			
QTY Stops	14	Qty TopUp Sites	0	Average distance Stop to TopUp Site	0

Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare Media TopUp Site ID	Fare media TopUp Site GPS coordinates	Distance from Stop to TopUp site
F2a-0	29.447852,-23.903115				0
F2a-1	29.454543,-23.901665				
F2a-2	29.458065,-23.896897	F6b-9			
F2a-3	29.467477,23.894451	F6b-8			

F2a-4	29.473384,-23.892186				
F2a-5	29.478992,-23.888872				
F2a-6	29.48466,-23.884575				
F2a-7	29.491852,-23.889578	F2b-11, F2b-6			
F2a-8	29.483809,-23.896192	F2b-12, F2b-5			
F2a-9	29.475772,-23.902361	F2b-13, F2b-4			
F2a-10	29.47195,-23.901213	F2b-14			
F2a-11	29.46514,-23.902111	F2b-15			
F2a-12	29.458319,-23.903474	F2b-16			
F2a-13	29.449118,-23.905319	F4-2, F6b-11, F6a-13, F6c-11			

Route F2b					
Implementation phase	**FUTURE PHASE**	**GPS (LONG, LAT)**			
QTY Stops	18	Qty TopUp Sites	0	Average Distance Stop to TopUp Site	0
Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare media TopUp Site ID	Fare media TopUp Site GPS Coordinates	Distance from Stop to TopUp site
F2b-0	29.449467,-23.909719	F1-0, F3-0, S-0			0
F2b-1	29.453788,-23.90887	F1-1, F3-1,			
F2b-2	29.458158,-23.908	F1-2, F3-2			
F2b-3	29.468184,-23.906012	F1-3			
F2b-4	29.476265,-23.90209	F2b-13, F2a-9			
F2b-5	29.484116,-23.895646	F2b-12, F2a-8			
F2b-6	29.492475,-23.888791	F2b-11, F2a-7			
F2b-7	29.500704,-23.882114	F2b-10			
F2b-8	29.510208,-23.875808	F2b-9			
F2b-9	29.511897,-23.874944	F2b-8			
F2b-10	29.500677,-23.882421	F2b-7			
F2b-11	29.491778,-23.889625	F2a-7, F2b-6			

F2b-12	29.483831,-23.896167	F2a-8, F2b-5			
F2b-13	29.475726,-23.902363	F2a-9, F2b-4			
F2b-14	29.471948,-23.901217	F2a-10			
F2b-15	29.465109,-23.90214	F2a-11			
F2b-16	29.45832,-23.903471	F2a-12			
F2b-17	29.449106,-23.905319	F2a-13, F6a-13, F6b-11, F6c-11, F4-1			

Route F4					
Implementation phase	**1A**	**GPS (LONG, LAT)**			
QTY Stops	13	Qty TopUp Sites	0	Average Distance Stop to TopUp Site	0
Stop Code	GPS (LONG, LAT)	Same Stop, Close proximity Stops	Fare media TopUpSite ID	Fare media TopUp Site GPSCoordinates	Distance from Stop to TopUp site
F4-0	29.447878,-23.903123	F2a-0			0
F4-1	29.449106,-23.905321	F2a-13, F2b-17, F6b-11, F6c-11			
F4-2	29.443464,-23.906449				
F4-3	29.441191,-23.908434				
F4-4	29.436291,-23.907160				
F4-5	29.435781,-23.911488				
F4-6	29.435293,-23.915843				
F4-7	29.430582,-23.919543				
F4-8	29.428685,-23.91756				
F4-9	29.427212,-23.911777				
F4-10	29.428472,--23.908507				
F4-11	29.430387,-23.904485				
F4-12	29.442775,-23.904123				

- The top up facility equipment shall perform the following functions;Loading of transit products and value.
- Capture and store load transaction records, containing inter alia thefollowing:
    a. Transaction Date and Time
    b. Top-up site Identifier or merchant code
    c. Transaction ID
    d. Value loaded
    e. Product or small purse value topped up.
- The sales equipment shall be able to receive updated fare productsand rules and implement it at the scheduled time.
- Transfer Product top-up transactions records to the AFCS Back office via the Payment system for financial reporting and reconciliation purposes, and customer query resolution or provide clearing and settlement reports.
- Issue receipts for each transaction to the card holder.
- Settle Product top-up transactions within 24 hours. Preferably much sooner as the commuter might not be allowed on the bus.
- The Contractor can propose any types of terminals to be used at 3rd party facilities which may include merchant POS, ATM etc.
- The 3rd party terminals shall not form part of the Operational Service period. It shall be the Contractors participating acquiring banks responsibility to supply, install and maintain these devices

2.4.13 Signage

Signage are to be designed, build, installed and maintained at eachFeeder stop listed above.

- The Contractor shall submit the Signage design for approval by the Employer during the Preliminary and Final design stages.
- The Signage shall convey the locations of 3rd Party top up facilitiesclosest to each stop.
- The Signage shall contain inter alia the following information:
    a) Vendor or institution name
    b) Type of Top up facility – POS, Sales Centre, Ticket Sales or ATM.
    c) Address, directions and distance to facility
    d) GPS Coordinates
    e) Operating hours
- The Signage at stops shall be UV resistant to withstand at least three year's direct sun exposure. The legibility shall not diminish in this period.
- The Signage shall be rigid.
- The Signage shall have a low trade or resell value.

- The signage shall be easily replaceable without causing damage to the supporting structure.
- The following Signage shall be provided at 3rd Party top-up facilities:
    a) Fare rates
    b) Bus schedules.
- The Signage shall be placed at an appropriate place visible to customers.
- The Contractor shall be responsible for the design, printing and distribution of the Signage media to 3rd Party top-up facilities.
- The Contractor shall submit the design for approval by the Employer during the Final design stage.
- The Employer shall provide the Fare rates and Bus schedules.

2.4.13.2 Trunk & Midi Buses

Trunk buses will serve both Trunk and Feeder stops. Due to the dual nature of the Trunk buses, they need to accommodate the boarding and alighting at a curb-side feeder door and Trunk door.

- These buses will not perform ticket sales.
- The busses will not have physical access control other than the bus doors.
- It shall require the associated Bus Onboard plant (BOP) as per clause
- 2.4.13.3 to be supplied, installed and maintained by the Contractor.
- The BOP to be installed is as per Table 3 AFCS implementation per phase
- .
- The Contractor shall liaise with the coach builder for the correct placements and mounting provisions for antennae and other BOP components.
- The Contractor shall provide a power budget to the Employer/Coach builder as per clause 2.3.3.2 FD11.
- Cableways and containment shall be provided by others
- The Contractor shall provide the detailed installation documents and liaise with the Coach builder to ensure safe and secure installation of BOP's. Details shall include fastening methods, placement position, Safety calculations etc. Any arrangement made by the Contractor with the Coach Builder or any other contractor to perform installation services, shall not relieve the Contractor of responsibility for the compliance and performance of the BOP.
- The Contractor shall ensure that there is no interference with other systems and the efficient operation of the BOP's
- Ticket Inspectors shall perform scheduled on-board verification of fare media and the identification of fare evasion on buses.
- Fare media verification shall be performed by means of Portable Verification Units (PVU) as per clause 0 portable Validator devices.

2.4.14 Ticket sales

The Trunk station will provide an attended pre-boarding ticket salesfunction at which new cards may be purchased and/or reloaded. Ticket Inspectors shall change PVU and batteries at the Depot. This functionality, including configurations, shall only be performed by a technician. PVUs and batteries shall be stored and recharged in docking stations located at the Depot.

2.4.15 Level 2 Intermediate services

Depot

A bus depot is envisaged as per clause 1.7.2.3.4, the location of which is in Seshego as per Figure 1 and as per Table 3 AFCS implementation per phase .

- The Plant employed at the Depot will serve as an intermediate level between Fare media Read/Write devices and the Data Centre, providing local storage and processing capabilities.
- The AFCS system on the depot shall have the ability to transfer and relay transaction data, such as tap on events, Equipment Operating data (EOD), logs, etc., to the AFCS CS.
- The AFCS system on the Depot shall have a Wi-Fi Access Point for BOP Wi-Fi stations to transfer data wirelessly and EOD to and from buses entering the Depot precinct for the purpose of further data transfer, exchange and processing.
- The Depot shall have a proxy server to receive and store BOP/ software updates and Equipment Operating Data (EOD) from the Data Centre and manage and perform BOP Updates and download them to individual or all BOP via the Wi-Fi network.
- The Depot shall have an Administration terminal to provide for the following:
    a) The issuing of PVUs to inspectors and logging usage againstinspectors
    b) To perform maintenance activities
    c) Monitor Wi-Fi connections and performance
- The Depot shall house the PVUs, batteries and docking stations.

- The AFCS plant on the depot shall be able to operate during power failures to ensure error-free transfer and storage of data such that implementation of schedule changes, Fare prices, etc, are not influenced and that AFCS system operations are not severely disrupted.
- The Contractor shall perform Wi-Fi signal analyses to determine optimal antenna positioning, signal strength adjustment and channel selection to deploy a Wi-Fi system that is free of interference from other sources.
- All AFCS equipment shall be authenticated and transactions encrypted according to IT security standards and regulations. No unauthorised equipment shall be allowed to communicate, intercept or change information on the communication networks.
- The Contractor shall be responsible for the design, supply, installation, integration, maintenance and operation of the Wireless network on buses and the depot. The Contractor shall be responsible for the provision of all infrastructures, such as power cables, data cables, mounting poles, brackets, etc, for the wireless network. The Contractor shall also provide cable containment (data and power) for the wireless network that extends beyond the buildings.
- The Contractor shall provide Cable containment requirements with regard to the provision of requisite cable containment within buildings and parking areas.

- The Contractor shall be responsible for the design, supply, installation, integration, maintenance and operation of the LAN for all AFCS equipment on the depot. The Contractor shall also be responsible for providing requirements with regard to the provision of requisite cable containment.
- A switch interfacing the fibre optic wide area network (WAN) to the depot AFCS LAN will be provided by the contractor to establish a communication link between the AFCS SC, DRC, and depot. The switch shall be located in an equipment room. The Contractor shall be responsible for providing requirements regarding the provision of the requisite cable containment and the network architecture to be implemented if a fibre optic network is to be implemented.
- If fibre optic WAN is not implemented, the Contractor shall be responsible for the design supply, installation, maintenance and operation of alternative WAN connection to the Data Centre by means of GSM, ADSL, radio link, etc. The Contractor shall be responsible for any and all monthly subscriptions, renewal fees etc that relate to the implementation of the WAN connection.
- The Contractor shall be responsible for the design, supply, installation, maintenance and operation of any mobile network required to establish a connection to the Payment system.
- The Contractor shall provide a complete power budget for all AFCS plants on the Depot and make it available to the PLM Engineer to arrange for the provision of the services. It shall include the *inter alia* the load of each major component (maximums, normal and idle), the type of power and total power consumption.
- It is the responsibility of the Contractor to provide requirements in termsof all the aspects required for the successful installation of equipmenton the Depots infrastructure that shall ensure the proper and efficient operation of the AFCS. It includes the positioning of equipment, dimensions, and the physical interfaces required to perform the installations.
- The Contractor shall ensure that the Depot Wi-Fi APs have enough users and bandwidth to allow all busses fitted with AFCS on-boardplant in the parking area to communicate with the Depot proxy server and equipment. If this is not practically possible or feasible, the Contractor shall propose a method to ensure that all uploads anddownloads can be accomplished within one period of non-operating hours.
- The Contractor shall ensure that only buses BOP and AFCS-related plants may connect to the Wi-Fi network.
- The Administration terminal shall only be accessible by authorised and authenticated AFCS staff.

2.4.16 Level 3 - Central System (CS) and Disaster Recovery Centre (DRC)

The data system must comply with the MIOS for Information Systemsin Government.

- The data centre or central system will perform the primary management function of the AFCS system and will be located at the TMC.
- The data centre will comprise servers and administration terminals with network interfaces allowing communication with the various sub-systems of the AFCS and with external parties such as banking institutions and other participating transport operators.
- The primary function of the CS is to provide data capture, authorisation, authentication, processing, storage, and management units for the AFCS.
- All transactions shall be stored for a minimum period of Five years.
- Software license keys shall be treated as confidential, and the management of license keys shall be held by the system administrator only.

- Agreements between PLM and third parties shall govern the sharing of information. Data may be shared through the use of an optional Data Concentrator.
- Shall be able to change and add business rules, fare structure and AFCS plant configuration data without recompiling or reinstalling applications.
- Provide for the configuration and version control for all software (OS, applications, firmware and fare media products) under an Industry accepted version control system, which shall state at least the following:
    - Status such as development, testing (alpha, beta, SAT, FAT etc.), release. 2.4.9.4.5.2 The developer, product name, product description, build number, purpose,
    - interfaces, dependencies, versions and revisions and dates for each change in status.
    - Certification requirements and the verification of certification.
- Have the capability to publish interfaces to enable others toimplement additional functionality and features.
- Perform Fare transactions reconciliation, which shall include *inter alia* the following:
    a) Will calculate daily total revenues and generate reports.
    b) Will prepare batches for settlement by bank according to banking standards
- Provide fraud and error detection in the system, which shall include *inter alia* the following:
    a) The collection system will detect and control fraud related to the use of fare media.
    b) Ensure that period product value is spent (zero balance) before activation of next period product.

    This will be in line with the Fare Structure and business rules.
    c) Ensure that no negative balances occur on the cash portion of Fare media. (A negative balance on the transit portion shall be allowable in accordance with the final business rules).
    d) Report and disable Fare Media that are reported stolen or damaged and update validation equipment with blacklisted cards
    e) Manage and distribute card blacklists.
- Provide status monitoring and reporting, which shall include *inter alia* the following:
    a) The status of all equipment in the AFCS shall be monitored.
    b) AFCS plant with problems shall generate alarms that need to be acknowledged by an operator.
    c) Maintenance activities resulting from alarms shall be recorded in amaintenance module.
    d) The time to respond and resolve the error or alarm shall be captured and compared with the Service Level Agreement for the purpose of performance monitoring.
    e) The AFCS shall ensure that equipment status update intervals for the AFCS CS will assist in meeting operational service period requirements.
- Provide Maintenance Management, which shall include inter alia the following:
    a) The update of the Asset Register, which shall include the part no., serial no., Description, Location and operational status.
    b) The ability to schedule preventive maintenance activities according to OEM’s specifications and recommendations.

c) provide the estimated time for maintenance activities and works authorisation, capture actual activity time, and compare with Service Levels and report.

d) Shall provide for the capture and logging of all emergency maintenanceactivities. All activities shall be monitored, compared with service levels, and reported.

e) Shall provide the calculation of MTBF, MCBF, and system availability of all equipment and compare it with suppliers' specifications. Discrepancies shall be reported for corrective actions.

f) All AFCS plants shall be monitored and have status indicators. This includes spares that are in-store (Serviceable, Repairable, unserviceable and disposable).

g) The maintenance management module shall be able to generate reports on the status.

h) The maintenance management module shall be able to perform root cause analysis.

i) Shall be able to update the Asset register with changes.All changes shall be logged for audit purposes

j) All maintenance history data shall be kept for a minimum of ten years.

Provide for Security management as per MIOS and *inter alia* the following:

a) The security system must permit the administration of user and device accessto the system and data according.

b) All user activities must be logged for audit purposes.

c) A facility to change the password and generate new passwords for forgotten passwords is required.

d) Data transmission from unauthorised equipment must be ignored and reported as an alarm.

e) The security shall include antivirus programs and programs (Firewalls) that will protect the AFCS central control from viruses, malware, adware and any other malicious software.

f) All information must be protected against loss, modification and/or unauthorized disclosure while stored or in transmission.

g) Close collaboration between the AFCS Contractor and the Employer is required for the establishment of a secure network; information such as ports (physical and logical), authentication schemes, MAC address filtering, IP address allocations, IP address allocation schemes etc., need to be documented and communicated.

- Provide a facility to design and generate additional reports which may be required from time to time.
- Have export utilities to export information both manually and automatically, so that data from the AFCS CS may be analysed by other database managers.
- Provide transactional data to be exported into a data warehouse managed by the Employer.
- The disaster recovery centre (DRC) is essentially a mirrored version of the AFCS central server which will automatically take over the function of the central server in the event of failure. The role of the CS and DRC shall be interchangeable, but at no time will both systems perform the same role simultaneously. Care should be taken to accommodate ransomware attack possibility because if both systems are mirrored, the recovery time might just take too long: please use the following backup method. There is an option for time-lapsed mirroring between a production server and a recovery server. This approach, often referred to as asynchronous replication or delayed mirroring, involves periodically copying data from the production server to the recovery server at set intervals. This method provides a buffer period, which can be crucial in scenarios like ransomware attacks.
- The CS and the DRC shall have the same functional and technical requirements with the exception to the location.

- The default priority for the AFCS shall be the CS Server first and then DRC Server.
- All central system hardware and software at the AFC Control Centre shall be located, operated and maintained at the designated TMC equipment room.
- All DRC hardware and software will be located at the designated equipment room at the DRC site, yet to be identified.
- Operations of the AFCS shall not be influenced or disrupted when implementing and testing subsequent phases until ready for operation.
- The Graphical User Interface (GUI) Applications for managing the AFCS shall be implemented as web services, web pages or web servers which can be opened by any web browser. This eliminates the burden of installing applications on workstations and reduces the maintenance cost
- The Tenderer shall list all applications that are not web-enabled, such as Operating system configuration applications, Relational Database management Systems (RDBMS), utilities, other configuration utilities, etc, as part of returnable documents.
- The AFCS CS Server Date and Time settings shall synchronise with a time server, and all other equipment in the existing AFCS shall synchronise their Date and Time settings with the AFCS CS Server. The Employer may provide a time server to which all Plant must be synchronised. When all this fails the contractor should be ready to synchronize the system through the Global time, otherwise AFC will show multiple undefined errors when various devices are out of synchronization
- The data centre is envisaged to comprise the following primary elements:

a) Central Server: The central server contains the primary AFCS database and applications as well as the system parameters, data security and authentication management, and equipment operating data (EOD).

b) Development Server: A development server will provide an environment for the development and testing of system software enhancements and parameter changes without contaminating the operational environment.

c) Banking Server: A virtual banking server/s (could also be physicaldepending on the specific bank and if required at all) provides a secure banking interface for the processing of PLM/bank transactions andreconciliations.

d) Data Concentrator (Not included in current scope of supply): A data concentrator will accommodate a filtered version or versions of the AFCS database which may be accessed by authorized participants to the AFCS such as other transport operators for the purposes of transaction reconciliation and settlement where appropriate, and in terms of data sharing agreements.

e) Administration and Development Terminal: The AFCS administration terminal provides a user interface to the AFCS back-end as well as to field equipment by linking to the central server via the TMC AFCS LAN.

f) User/Monitoring Terminal: This terminal provides a user interface for the extraction of reports, conducting of data analysis, audits, Event monitoring etc. from the AFCS, and may be in the form of a dedicated local or a general remote terminal.

g) The AFCS CS application or services shall administer information of transactions undertaken on the AFCS;

h) Collect AFCS data pertaining to the usage of the IRPTN to generate reports for planning and changes as well as integrating with the PLM financial system where required.

i) Collect AFCS data pertaining to the loading of cards.

j) Store all personalised Fare Media information as defined by the NDOT AFC Data structure in a database.

k) The Tenderer shall provide a list of standard reports, content and format as part of the solution proposal. As a minimum the following reports must be provided:

i Sales Centres Reports

- Cash declaration
- Transit sales per point of sale
- Sales report per cashier
- Sales report per location
- Consolidated transit sales report
- Transit product and Value sales per Sales Centre operator
- Transit product and Value sales summary per location
- Transaction exception report (comparison between transactions processed on the kiosk versus bank system)

ii 3rd Party and SANRAL Top-up sites

- Daily Product load or Top-ups per site
- Daily Product load or Top-up summary.

iii Usage (on buses) Reports

- Summary of passengers per route
- Devices not updated to BackOffice (Devices not seen)
- Origin/destination analysis report
- Route inspectors report
- Daily inspectors report
- Bus reconciliation report (all transactions processed on a particular bus)
- Depot (total all buses) revenue by date
- Depot (total all buses) revenue by route
- Summary revenue report by fare type (Transit product / Value)

iv Card report

- Transaction details at Card level – showing card activation date, load and Top-up history (including locations), card usage history, balance of trips or value etc.

- The Contractor shall supply all equipment specifications and software specifications (including integration and installation) as part of the design documentation for approval.
- The Contractor will collaborate with other contractors and stakeholders to provide and obtain information necessary for the implementation of the AFCS.
- The Contractor shall be responsible for the supply, installation, maintenance and operations of the Hardware, Operating system, software middleware etc.

- All hardware servers shall be of industry standard, reliable and operationally proven.
- All Servers shall be provided with screen, mouse and keyboard. Where more than one physical server is utilised a KVM shall be supplied.
- Servers shall be able to be managed remotely with appropriate secure login and authentication.
- The servers shall be scalable to accommodate the City Fleet andPhases to be implemented.

- The Contractor shall ensure that with server deployment the following redundancy options are addressed, specified and implemented:
- Power supply redundancy in the form of DC and AC. For AC redundancy, a minimum of two UPSs shall be provided and connected to the redundant server PSUs.
- The UPSs shall be connected to an electrical distribution board and be protected with the necessary surge protection.
- For DC redundancy, the server shall be supplied with a dual redundant PSU, which shall be hot-swappable.
- Fan mode redundancy: failure of fans shall trigger alarm events to the AFC operator for acknowledgement, and the number of fans left in the system shall not place the server at risk of overheating.

a) IO Module redundancy

b) Network connection redundancy.

c) Management module redundancy.

d) Hard disk redundancy with hot swap.

The scheme used shall be indicated by the Contractor. These redundancy options might be different from server type to server type and there may be different configuration options for implementation. It is the contractor's responsibility to indicate to what level the server deployment will be implemented regarding redundancy.

Preference shall be given to operating systems that can be proven to be adhering to the industry standard, meet the performance criteria, are maintained and supported and comply with the open standards specifications.

- The AFCS CS Servers shall interface with the AFCS CS WAN and LANvia a network switch located in the AFCS CS Sever rack, with ports provided for the AFCS CS Severs.
- The Contractor will supply and install the LAN network cables between the AFCS CS Severs and the network switches.
- The Employer shall be responsible for the fibre optic network design and management. The Contractor shall provide all network requirements to the Employer to ensure the proper integration and implementation of the AFCS.
- The AFCS CS Servers will be controllable from:

a) The administration workstation

b) The operator workstation

c) Rackmount Keyboard, mouse and Screen.

d) Remotely.

- The Contractor shall be responsible for supplying, installing, configuring and maintaining any additional network equipment required to connect to the banking network, such as GSM modems, antennas, VPN, APN, etc.
- The Contractor shall liaise with the Employer regarding installation locations for GSM equipment and adhere to any special requirements set for installations at the TMC facility.

2.4.10 Central Control Workstations

Two workstations shall be supplied as part of the AFCS CS and not at the DRC. The workstations shall be located at the TMC in an AFCS office. The function of the workstations is for an operator and/or an administrator. The Contractor shall provide requirements with regard to the workstations.

- The requirements of the office in terms of layout, size and furniture need to be specified by the Contractor and supplied by the Employer.
- No distinction shall be made between the two workstations in terms of their functionality; both shall have the maximum functionality, and the function shall only be determined by the user login and user access rights.
- The workstations shall be provided by the Contractor with a network interface that will be connected to a network point by means of patch leads, which will connect to the AFCS CS LAN.
- The workstations shall be provided with UPSs in case of power failure. The UPS shall provide power for a minimum period of one hour for each workstation. The UPSs shall be supplied and installedby the Employer.
- The operator shall perform inter alia the following:

    a) Have a GUI that reports alarm events and needs to be acknowledged.

    b) Perform administrative maintenance activities such as the capture of fault reports not generated by the system, the reporting of fault reports to the appropriate department, maintenance follow up and status updates.

    c) Check system status.

    d) Send and receive e-mails.

- The administrator shall perform inter alia the following:

    a) Have a GUI that reports alarm events and that need to beacknowledged.

    b) Perform administrative maintenance activities such as the capture of fault reports not generated by the system, the reporting of fault reports to the appropriate department, maintenance follow up and status updates.

    c) Check system status

    d) Perform database management tasks such as repair, compacting etc.

    e) Perform configuration functions of applications and upload system parameters, set fare structures exporting data, check version control, install applications, set ACLs, etc.

f) Check equipment statuses, perform diagnostics, and download system parameters files.

g) Send and receive e-mails

- Both workstations shall interface to the AFCS CS LAN and the rest of the AFCS. The Contractor shall provide Network requirements to the Employer.
- Both workstations shall have screens, keyboards and mouse for input.
- At least one colour printer shall be supplied for printing status reports etc.
- Network cable containment shall be provided by others and the Contractor shall provide the requirements for cable containment.
- The Contractor shall supply, install and maintain the terminal's LAN network cabling and terminations.

2.4.11 Fare Concessions

Fare Concessions are Fare Product offerings that allow for discounted or specialtravel fares. The following typical concessions are anticipated:

a) Pensioners

b) People with Disabilities

c) Scholars

d) Students

e) The unemployed

f) Staff

- The AFCS must allow for the creation of concessions and other than those mentioned above in the future.
- Concession profiles shall be easily configurable by changing parameters and without the need for hard coding. These parameters will be identified during the development of the business rules.
- Personalised concessions shall be issued at attended ticket sales points only
- All concessions shall be personalised and information captured shall include inter alia the following:

  a) South African National ID number

  b) Name and Surname

  c) Expiration dates. When the expiration date is reached the card shall be blocked (prevent access) until unblocked by re verifying and extending expiration dates by sales attendant. For the disabled, the South African Social Security Agency disability grant duration may be used.

  d) Age shall be determined from ID etc.

- The AFCS shall perform an ID validation against previously issued concession cards to prevent multiple issuances.
- Concessions shall also include a ‘no travel’ condition. This might apply to Staff and Driver cards to allow access to AFCS components and for log-on and log-off purposes. Exception reports shall be generated in theevent of illegal use.
- Concessions shall be configurable for any route or combination thereof.

- Concession shall be able to be configured for any rate withpredetermined limits as per business rules and EMV requirements
- Concessions shall be configurable to be valid for any day, week or month. For example, scholars are only allowed to travel Mondays to Fridays, excluding public holidays.
- The administration and configuration shall be performed at the administration or ticket sales workstation or remotely with a valid login.
- Concession data shall be stored on the AFCS CS and be made available to all attended ticket sales points
- Invalid data input (according to business rules) shall prevent the issue of concessions such as an age younger than 60 for pensioners, No Name and Surname, etc. Such parameters will be established during the development of the business rules.
- Fare Media. Personalised information shall be stored on the Fare Media as defined by the NDOT data structure.

- Concession data, data structure, data definitions, business rules, etc. shall be stored on the AFCS CS.

Any changes, additions and removals of concessions on TOMs or CS shall be updated in real-time and downloaded immediately to other ticket sales points.

2.4.12 Level 4 – Banking Payment System

The Contractor shall include a bank to be the issuing and acquiring bank for the AFCS. All responsibility shall be borne by the Contractor toimplement the AFCS and its payment subsystem which shall be secure and comply with the banking requirements.

- The PLM banking service provider is currently Standard Bank.
- The associated bank forms an integral part of the AFCS and the Contractor's role to design, build, supply, install, commission, maintain and operate the AFCS and therefore the associated bank shall not be seen as a separate entity but part of the contracted solution.
- The Contractor shall supply, install, commission, operate and maintain all network plants required to establish a connection to the acquiring bank and National Payment System, such as GSM modems and antennas.
- The Contractor shall ensure that all sites listed in the Pricing Schedules are provided with the necessary network plant to ensure connectionsfor the payment system. This includes:

    a) Stations (Sales Centres)

    b) Sales Centres

    c) AFCS CS

    d) DRC

    e) Fare media sales drives

    f) Third-party Ticket Sales Agents (Top-Up sites)

- The Contractor shall design a payment, reconciliation and settlement plan which indicates the accounts that need to be created and setup to allow for payment settlement and the efficient operation of the AFCS, as well as the process flow. This should be simple to understand by non-financial / banking people.
- The Contractor will be required to integrate the above with the PLM financial management system.
- The Contractor shall stipulate the detailed cost pertaining to the accounts, and Fare Media, it shall include inter alia the following;
    a) Accounts registration and administration fees
    b) Acquiring, Clearing and settlements fees (percentages andexpected totals)
    c) Activation of Fare Media
    d) Loading of product or small purse value on Fare media
    e) Top up of Fare Media
- Payment terminals conducting online transactions shall be connected to the issuing banks network in order to process passenger-initiated transactions and to forward it to the National Payment System for clearing and settlement.
- Passengers shall be issued with printed receipts for all online paymenttransactions. Only one printer per pay point shall be allowed.
- The AFCS shall process online payments through the AFCS issuingbank network to:
    a) Activate Fare Media
    b) Load Fare Media with products.
    c) Load stored value on Fare Media.
    d) Top up of Fare Media.
- Fare Media Validators shall be connected (directly or indirectly) through the PLM Network to the AFCS CS. The AFCS CS shall process all transit transactions and submit valid payment transactions for clearing and settlement through the AFCS issuing bank network connected to the AFCS CS.
- All transaction transmissions shall be secure (only authenticated devices and encrypted transmission) and where applicable comply with the standards of the Payment Cards Industry (PCI-DSS). It is the Contractor's responsibility to obtain the relevant certifications.
- All transactions originating at all terminals and validators in the AFCS shall be collated and stored at the AFCS CS.
- Payment transaction reconciliation shall be done on a daily, weekly and monthly basis and reports shall be generated by the AFCS CS indicating the status. The status shall include inter alia the following;
    a. Transmittal receipts
    b. Clearing and settlement reports
    c. Exception reports
    d. Accounts status reports (for each individual account)
- The Contractor will be responsible for any shortages that occur between the transactions records in the AFCS and the settlement of these transactions into the nominated account.
- Any invalid or fraudulent transactions will be for the account of the AFCS operator

- All Bank Issued MasterCard PayPass and Visa PayWave payment cards must be accepted as transit payment at validators, this must include prepaid cards and credit cards.
- Cash payments for Fare Media, Fare media activation, product load and Top up shall be captured in the AFCS. The Municipality shall be responsible for the cash collection and the depositing of payments into a nominated account using a CIT company. Any losses incurred in respect of cash handling shall be carried by the contractor.
- The Payment system equipment shall be available for use during operating hours.
- The acquiring bank shall credit the proceeds from the AFCS payments to the Employers bank account within 24 hours of the transaction.
- Replacement of any LRU shall take no longer than 30 minutes.
- The Payment system plant should have a minimum useful life span of 10 years.
- The Payment system equipment shall be fixed permanent installations.
- The Payment system equipment shall be designed to combat vandalism, theft, impact and high intensity of use.
- The Payment system plant shall be constructed from vandal resistant materials with due consideration to the corrosive and humid environment.
- The Payment system plant shall be designed according to universal ergonomic standards, including the GUI displays and prompts.
- The Payment system plant GUI must be visible under low lighting conditions.
- The Payment system plant and design shall be certified to the relevant standards such as the NDOT R511, and applicable Banking Standards.
- The Contractor shall supply and install all cabling and plant for the Payment system which includes inter alia the following:

    a) Mains power cable

    b) Circuit breakers

    c) Network cables

    d) Inter connect cables (USB cable, Co-axial cable etc.)

    e) Antenna’s

    f) PIN Pad

    g) Payment terminal

    h) Power supplies

    i) Modem

- The Contractor shall provide cable containment requirements to the Employer for Payment system at stations.
- The Contractor shall provide the dimensions required for passing a PIN Pad or Payment terminal underneath the secure window as part of the Final design stage.
- The Payment system plant shall be earthed via a common equipment earth bar located in stations or depot plant rooms if so required by the installation specifications of the manufacturer of the equipment.

- The contractor shall indicate if the payment system plant on stations needs to be interfaced with the PLM network to establish communication tothe CCS, DRC or payment gateway at CCS. If communications to the CCS and DRC are required, the contractor is required to provide requirements to the Employer to provide LAN ports on the station's local network switches located in the plant rooms.
- The Contractor shall be responsible for the supply, install and maintenance of Payment system plant at Top up Sites. It is the contractor's responsibility to ensure that sufficient network coverage is provided at identified Top Up sites.
- The Payment system plant for fare media sales drives that needs to establish a connection to the acquiring bank and National Payment System shall be equipped with GSM equipment to establish the connection. The plant shall be supplied and installed by the Contractor.
- Cable containment will be provided for the Payment system plant only on stations and depots by others, to the Contractor's specification.

2.4.13 System Components Requirements

2.4.13..1 Ticket Office Machine (TOM) requirements

- The TOM shall only be operated by authorised and authenticated staff.
- The TOM shall facilitate the registration of the PLM Fare cards and sale of single trip QR-Code cards. Including the generation of QR codes
- The TOM must be capable of managing refunds for single-trip QR-Code cards.
- The TOM shall facilitate the reloading of cash purse value, transit value (points) or transit products onto the PLM Fare media card.
- The TOM shall accommodate purchases using cash and all major bank credit and debit cards including but not limited to MasterCard and VISA, for payment.
- The TOM shall communicate with the banking institutions and Data Centre via a dual redundant network connection, which may include the PLM network, GSM, ADSL or other radio links.
- The TOM shall facilitate the viewing of the PLM fare media card status;
    a) Card validity
    b) Card cash balance
    c) Card transit product balance
    d) Transactions since the last reload
    e) Concessions
- The TOM shall facilitate the viewing of single-trip ticket validity.
- The TOM shall be capable of accepting other future NDOT R511 compliant transit cards for value/product loading and status viewing without hardware modification.
- The TOM shall provide a GUI through which transaction information may be viewed and operator actions may be entered.
- The TOM shall not allow users to delete or alter committed transactions.

- The TOM shall include a passenger information display which will provide transaction information to the passenger during the transaction process.
- The TOM GUI menu will include inter alia;
    a) Operator logs on and off
    b) Activation of ABT Cipurse card
    c) Choice of ABT card or single trip QR-Code
    d) Choice of status view or sales transactions
    e) Option to view fare tables
    f) Product/value selection
    g) Origin/destination selection
    h) Display of transaction value
    i) Choice of cash or card payment
    j) Choice of receipt or not
    k) Printing of shift and other reports, etc.

- The TOM shall print transaction receipts as well as status summaries on demand, selectable from the GUI.
- The TOM shall provide a cash drawer from which cash received and change required from cash transactions in notes and coins may be stored and issued, respectively, which is provided by the CIT company only.
- The TOM shall include an ultra-violet light for the visual verification of bank notes. CIT drawer will do that.
- The TOM will provide for the tracking of the cash balance in the cash drawer and will provide the following related reports on demand.
    a) Start of shift
    b) End of shift
    c) Sales report
    d) cash sales
    e) card sales

- The data displayed on the TOM screen, such as fares, origin/destination, etc., shall be configurable in the form of editable parameters from the central system and downloadable to individual or all TOMs via the PLM network or other networks that might be implemented forming connections to the Data Centre and Payment System.
- Notwithstanding the above, any software updates and upgrades shall be downloadable to individual or all TOMs via a network connected to the Data Centre and Payment System. Access to any upgrade and update functionality shall be protected by authorization and authentication processes.
- The TOM processing unit shall capture and store all transaction data required for back office reconciliation and device management.

- The TOM processing unit shall store the transaction data locally and transfer the data to the Data Centre. The data shall only be deleted from the TOM when receipt acknowledgement is received from the Data Centre that transaction data has been authenticated and transmission verified.
- The TOM shall generate fault alarms to line replaceable unit (LRU) level.
- In addition to fault alarms, the TOM will generate early warning alarms of low stock levels for printer paper and display this on the TOM GUI.
- Fault, event and stock level alarms shall be passed on to the Data Centre and will be stored and displayed on a GUI.
- Notwithstanding that the TOM will be provided with a station standby power supply, the TOM shall have an uninterruptible power supply or battery back-up, which in the event of complete power failure, will support the completion of the current transaction before beginning a safe shut-down procedure automatically.
- In the event of a complete power failure, the TOM is to recover full functionality automatically once power is restored.
- TOM status and mode shall be controllable from a central computerGUI over the LAN or WAN including the following;
    a) Closed for use
    b) Open for use
    c) Remote Interrogation
- The Data Centre Admin Terminal or Monitoring Terminal is to graphically represent the station TOM and indicate the current status such as alarms and warnings to LRU level.
- Only authorised and authenticated staff shall be able to change modes and acknowledge alarms.
- Log event shall be stored for mode changes, which shall include, inter alia, Logged on user, date and time, and change state.
- The TOM shall retain full transactional functionality in PLM network off- line mode.
- The maximum transaction time for any complete transaction shall not exceed 40 seconds utilising a trained operator.
- Replacement of any LRU shall take no longer than 30 minutes.
- The TOM processor shall be capable of retaining at least 96 operational hours of transaction data, including all events.
- The TOM processor shall possess sufficient memory to accommodate 5000 blacklisted/blocked cards, which, when used, will delete records on a first in first out basis.
- Blacklisted/blocked cards shall otherwise be removed under the following conditions:
    a) When the card is captured from the passenger
    b) When a lost card is retrieved
    c) When a period (configurable parameter) of time has passed
- The TOM should have a minimum useful life span of 5 years.
- The TOM shall be desktop mounted.

- The TOM must service the sales windows efficiently and with full functionality. Particular attention is drawn to the passenger interface in this regard, including PIN entries and PID visibility.
- The TOM shall be designed to combat vandalism, theft and high intensity of use.
- The TOM shall be constructed from vandal-resistant materials with due consideration to the corrosive and humid environment.
- Flammable materials shall be flame-resistant and retardant and shall not produce harmful or toxic fumes or gases in the event of a fire.
- Cash draws shall be secured by robust locking mechanisms.
- The TOM shall be designed according to universal ergonomic
- standards, including the positioning of passenger displays and prompts and maintenance activities.
- The GUI must be visible under general office lighting conditions.
- The Contractor will supply, install and maintain all cables between the
- TOM peripheral devices.
- The Contractor is required to provide the GSM modem and associated cabling, which will be located at an agreed position within the site equipment room.
- In the event that GSM coverage is inadequate within the site equipment room, the Contractor will be responsible for providing a suitable external antenna with a mounting bracket and associated cabling.
- The Contractor will be responsible for performing GSM coverage tests as soon as the station superstructure is complete so as to establish a suitable antenna mounting point and to provide the building contractor with cabling containment requirements in order to minimise potential rework.

2.4.13..2 Ticket Vending Machine (TVM)

The TVM shall provide an unattended, automatic ticket reloading facilityto the public.

- TVMs will be installed on trunk stations or sales centres, where the passenger demand on the attended sales kiosk, exceeds its service capacity. Alternatively at 3rd party sales locations where a manned kiosk is not financially viable and there is no alternative infrastructure such as an ATM.
- The TVMs shall be installed in the unpaid area of the station.
- The fare media processing devices shall be capable of processing the following fare media:
    a) PLM Fare cards, which are compliant, Mastercard Certified and NDoT certified.
    b) NDOT R511-compliant transit cards.
- The TVM shall facilitate the reloading of value or transit products onto the PLM Fare cards or EMV and NDoT-R511 compliant transit cards.
- The TVM shall accept South African Bank notes as follows:
    a) The current R 10, R 20, R 50, R 100 and R 200 notes in all orientations
    b) Up to 3 series of the above notes at any one time
    c) The Tenderer shall include the upgrading of note sets in the maintenance cost.
    d) The TVM is not required to issue a change; however, it should provide the functionality to elect to issue a change to the Stored Value portion of the ABT card or to print a receipt, which may be redeemed at an attended ticket sales point if needed.

- The tenderer shall offer an additional option which shall include note and coin payments with coins only change.

  The notes and coins to be handled are as follows:

    a) Coins
        - The current R 5, R 2, R 1 & 50c coins.
    b) Bank Notes
        - The current R 10, R 20, R 50, R 100 and R 200 notes in allorientations
        - Up to 3 series of the above notes at any one time
        - The Tenderer shall include the upgrading of note sets in themaintenance cost.

- The TVM shall accept all major bank credit and debit cards, including but not limited to MasterCard and VISA, for payment.
- The TVM may communicate with the banking institutions via a dual redundant network connection, which could include the PLM network and/or via a GSM modem.
- The TVM shall facilitate the selectable viewing of each of the following aspects of the PLM card status;
    a) Card validity
    b) Card cash balance

c) Card transit product balance

d) Transaction history

- The TVM shall facilitate the viewing of single trip ticket validity.
- The TVM shall be capable of accepting other NDOT R511 compliant transit cards for status viewing.
- The TVM shall provide a GUI in the form of a touch screen through which transaction information may be viewed and user actions may be entered.
- The TVM shall offer a selectable option of English or Sepedi for Polokwane as user languages on the initial screen.
- The TVM shall offer selectable audio announcements of prompts, menu selections and transaction results for the visually impaired.
- The TVM software shall be configurable to add new text message files without the need for hard coding.
- The TVM GUI menu will include inter alia;

    a) Prompts to guide the user throughout the transactional process

    b) Choice of language

    c) Choice of audio prompts and confirmations

    d) Choice of ABT card or single trip QR-Code ticket

    e) Choice of status or sales transactions

    f) Option to view fare tables

    g) Product/value selection

    h) Origin/destination selection

    i) Display of transaction value

    j) Choice of cash or card payment

    k) Choice of receipt or not

- The TVM shall print transaction receipts as well as status summaries on demand, selectable from the GUI.
- In addition to the receipts, the printer shall print reports for cash stock levels on demand and upon replenishment.
- The TVM shall have an internal user management interface for maintenance and operations activities.
- The data displayed on the TVM screen, such as fares, origin/destination, etc., shall be configurable in the form of editable parameters from the central system and downloadable to individual arrays or all TVMs via the PLM network.
- Notwithstanding the above, any software updates and upgrades shall be downloadable to individual arrays or all TVMs via the PLM network.
- The TVM processing unit shall capture and store all transaction data required for back-office reconciliation and device management.
- The TVM processing unit shall store the transaction data locally and transfer the data to the station controller at a configurable frequency via the local area network (LAN). The data shall only be deleted

from the TVM when receipt acknowledgement is received from the station controller of authenticated, error free and verified transmission.

- The TVM shall generate fault alarms to line replaceable unit (LRU) level.
- In addition to fault alarms, the TVM will generate early warning alarms of low stock levels for printer paper, cash storage devices.
- The TVM shall generate audible intrusion alarms in the event of unauthorised access to maintenance and service doors as well as transferring a signal to the TMC security terminal.
- Internal access to the TVM shall require the use of a biometric reader, for maintenance and operational purposes.
- The successful use of the biometric reader will suppress the intrusion alarm.
- Fault, event and stock level alarms shall be passed on to the station controller and will be displayed on the graphical user interface (GUI) over the station LAN.
- The TVM shall store event data in the event of LAN failure until such time as communication is restored.
- Notwithstanding that the TVM will be provided with a station standby power supply, the TVM shall have an uninterruptible power supply, which in the event of complete power failure, will support the completion of the current transaction before immediately beginning a safe shut-down procedure automatically.
- In the event of a complete power failure, the TVM is to recover full functionality automatically once power is restored.
- TVMs shall be safe for use for the intended purpose, by inter alia children, the frail, pregnant and the elderly.
- The TVMs shall have on-screen as well as fixed signage and decals with instructions for use as well as indicating the location of physical interfaces such as slots, keypads, collection trays, etc., using universally recognised symbols.
- The above signage and decals shall be in compliance with the PLM corporate identity specifications but will, in any event, require approval prior to implementation.
- TVM status and mode shall be controllable from a station control computer GUI or the Back Office over the LAN/WAN including the following;

    a) Closed for use

    b) Open for use

- The TVM touch screen shall display the above status to the public.
- The control computer is to graphically represent the station TVM array footprint (if multiple TVMs are installed) and its orientation within the station concourse, particularly the paid and unpaid sides of the barrier.
- The TVM shall retain full transactional functionality in offline mode.
- The TVM shall be designed with a view to low maintenance requirements.

2.4.13..3 Performance requirements

- The maximum transaction time for any complete transaction shall notexceed 40 seconds.
- The banknote acceptance device will allow the escrow of up to 15 banknotes in a single transaction.
- The banknote box will have a storage capacity of at least 1000 bills.
- Replacement of any LRU shall take no longer than 60 minutes.
- The TVM processor shall be capable of retaining at least 48 hours of transaction data, including all events.
- The TVM processor shall possess sufficient memory to accommodate a minimum of 5,000 blacklisted cards, which, when depleted, will delete records on a first-in-first-out basis.
- Blacklisted cards shall otherwise be removed under the following conditions;
    a) When the card is captured from the passenger
    b) When a lost card is retrieved
    c) When a period (configurable parameter) of time has passed
- The TVM should have a minimum useful life span of 10 years.
- The TVM shall have a maximum start up cycle time from power off state of 5 minutes.
- The TVM and any of its components shall comply with electromagnetic compatibility standards.

2.4.13..4 Physical requirements

- The TVM shall be designed to combat vandalism and theft as well as the ingress of vermin.
- The TVM shall be constructed from vandal-resistant materials with due consideration to the corrosive and humid environment.
- Flammable materials shall be flame-resistant and retardant and shall not produce harmful or toxic fumes or gases in the event of a fire.
- Access panels and doors shall be secured by robust locking mechanisms with unit specific keys in addition to the biometric access reader.
- The TVMs shall have a minimum IP 32 rating and be adequately ventilated to maintain an operating temperature within product-specific limits without compromising security.
- The TVM shall be designed according to universal ergonomic standards, including the positioning of passenger displays and prompts and maintenance activities.
- The GUI must be visible under any lighting conditions.
- The TVM annunciations must be audible to the user during peakpassenger traffic conditions within the station.
- Notwithstanding the ergonomic requirements, the overall dimensionsof the TVM may not exceed;
    a) Height – 1,800 mm
    b) Width – 900 mm
    c) Depth – 700 mm
- The TVM shall not exceed 600kg when fully stocked (including coin handling).

2.4.13..5 Interface requirements

- The TVM shall accept 220-240V AC power from a dedicated IFMS distribution board (DB) located in the station equipment room, to be provided by others.
- The Contractor shall supply and install the cabling between the TVM/s and the power DB as well as an appropriate circuit breaker and surge protection per TVM.
- The Contractor shall be responsible for providing the necessary transformers and power supplies required for powering the TVMs.
- The TVM shall be earthed via a common station equipment earth bar (provided by others) located in the station equipment room.
- The TVM shall interface with the station LAN via a network switch located in the station equipment room, with a port provided (by others) for each TVM.
- The Contractor will supply and install the network cables between the TVM and the network switch.
- The Contractor is required to provide the GSM modem and associated cabling, which will be located at an agreed position within the station equipment room.
- In the event that GSM coverage is inadequate within the station equipment room, the Contractor will be responsible to provide a suitable external antenna with mounting bracket and associated cabling.
- The Contractor will be responsible for performing GSM coverage tests as soon as the station superstructure is complete so as to establish a suitable antenna mounting point and to provide the building contractor with cabling containment requirements in order to minimise potential rework
- The TVM will be controllable via a GUI on the TOM from the TMC oran authenticated remote access terminal as required
- The TVM mode, status, stock level, condition and alarms are to be displayed on the station controller GUI.
- Cable containment will be provided between the TVM and the power, earth and data by others, to the Contractor's requirement.

2.4.13.3 Bus on-board Plant (BOP) Validator

The BOP shall provide an unattended ticket verification facility to the travellers on buses and Midi-busses at Feeder and Feeder Extension stops and Trunk stations.

- The BOP ticket verification function shall provide for the processing of the following fare media;
    a) Other NDOT R511-compliant transit cards
    b) QR-code paper tickets
    c) MasterCard PayPass and Visa PayWave payment cards
- The BOP must provide for the following fare rule options;
    a. various fare options

    The route selection shall either be made automatically as part of the bus driver's "on-duty" tag or manually by the driver entering the route ID via a user interface.
- The BOP must be able to provide for other fare rules without the need to replace any hardware. Optional fare rules include inter alia the following;

a) Distance based

b) Zone based

- Passenger Counting is very important
- The Tenderer is to provide the costing for the implementation of a passenger counting device as specified below to detect fare evasion. The implementation of the passenger counting device will be at the solediscretion of the Employer. The BOP shall provide for the counting of passengers boarding and alighting the bus. The counting shall be stored after each stop in a record containing *inter alia* location (GPS coordinates), date and time, total passengers on the bus, boarding count and alighting count.
- The BOP(Validation device) shall have dual network connection functionality. A Wi-Fi station shall automatically make a network connection to the Depot/station Wi-Fi Access Point when in range and a mobile connection (4G/5G). The functionality must be configurable to allow the usage of either of the two or both at the same time where one can be set as a failover.
- With a flat fare option implementation, only checking-in of boarding passengers shall be required.
- The BOP(Validation Device) shall include a passenger information display which will provide transaction information to the passenger during the transaction process, which will include confirmation of a successful/failed transaction and remaining transit value.
- The use of EMV transit cards for travel shall be in an offline mode.
- The BOP (Validation Device) processing unit shall capture and store all transaction and event data required for back-office reconciliation and device management.
- The BOP (Validation Device) processing unit shall store the transaction data locally and transfer the data to the Depot controller when within range of the Depot WiFi Access Point or if configured over the 3G mobile network. The transfer of stored transaction shall be a background process which shall not interfere with the processing of Tap in events. The transfer of stored transactions shall be continuous or set to be transferred at regular intervals that are configurable. The data shall only be deleted from the BOE(Validation device) when receipt acknowledgement is received from the Depot controller or CS that transaction data was received error free and authenticated from an authorised device.
- The BOP shall be able to receive software updates and upgrades, downloaded to individual or all BOPs via the Depot Wi-Fi network.
- The BOP shall be able to receive and store Equipment Operational Data (EOD) such as Fare rates and fare rules, downloaded to individual or all BOPs via the Depot Wi-Fi network.
- The BOP shall be able to store and process at least two sets of EODs, one current and one for future activation.
- The BOP shall be able to implement the valid EOD. Expired EODs may be removed.
- The BOP shall generate fault alarms to line replaceable unit (LRU) level.
- Fault and event alarms shall be stored locally and passed on to the Depot controller when connected to the communications network.
- In the event that communication cannot be restored due to a fault on the BOE, it shall be possible to recover the transactions, fault and event logs from non-volatile memory.
- The above shall include the completion of data transfer in the event that the bus is powered down in the Depot before data transfer is complete.
- In the event of a complete power failure, the BOP is to recover full functionality automatically once power is restored.

- The BOP shall be provided with a nominal 12Vdc or 24V dc power supply, from the bus power distribution unit and a termination point to be provided by others.
- The Bus power supply may vary between 0Vdc – 35Vdc. All BOPs shall have the capability to withstand such variances.
- Notwithstanding that the BOP will be provided with 12Vdc and 24Vdc from the bus power distribution unit, the BOP shall have an uninterruptible power supply unit typically in the form of a battery backup, which in the event of complete power failure, will support the completion of the current transaction before beginning a safe shut-down procedure automatically.
- The Contractor shall supply and install the cabling between the BOP and the power termination point as well as an appropriate power rail to accommodate all components of the BOP requiring power.
- The BOP power ground rail shall be earthed at the closest fastening point on the chassis or a point identified by the bus manufacturer.
- The Contractor shall provide a power budget for all BOP devices.
- The BOP shall be provided with an on-board battery backed up real
- time clock (RTC), which will not lose count under power loss conditions. The RTC shall be updated (synchronised) on a regular basis (minimum once a day) with a centralised time server (provided by others).
- All transactions shall use the RTC's data as a reference. The data that shall be provided by the RTC includes year, month, day, hour, minute, seconds and tenth of a second.
- The BOP shall be provided with a system check at start-up and the reporting of errors via a GUI.
- Part of the above check shall include verifying that the last RTC synchronisation is not older than 24 hours, in which event synchronisation must occur prior to clearing the error message and processing any transactions.
- The maximum transaction time (contactless Fare Media transaction) for any complete transaction shall not exceed 500 milliseconds per product or EMV purse transaction.
- Replacement of any LRU shall take no longer than 30 minutes.
- The BOP processor shall be capable of retaining at least 60 operational hours of transaction data, including all events.
- The BOP processor shall possess sufficient memory to accommodate 5000 blacklisted/blocked cards, which, when used, will delete records on a first-in, first-out basis.
- Blacklisted/blocked cards shall otherwise be removed when an updated list is received from the Depot server or CS.
- The BOP should have a minimum useful life span of 5 years.
- The BOP shall be mounted in such a position as to allow easy flow of passengers.
- The BOP shall be secured and shall not become loose or damaged due to vibrations on the bus frame or structure.
- The BOP shall not have any sharp or hard corners that might endanger passengers.
- The BOP shall be protected with over current devices which shall not have a rated value of more than 2.1 the maximum operating current supply.
- BOP cables shall have higher current carrying capability than the current protection provided, and the insulation shall not deform, change characteristics or burn under current fault conditions.

- All BOP connectors shall be such that it can be secured with fasteners or self-locking mechanisms (Screw on, bayonets or friction locking). Non-locking push-in connectors are not acceptable.
- The BOP shall be designed to combat vandalism, theft, vibration and high intensity of use.
- Particular care must be taken in the design of equipment and mountings to cater for continuous vibration during operation.
- The BOP shall be constructed from vandal-resistant materials with due consideration to corrosive and humid environments and high storage and operational temperatures.
- Materials used shall be flame-resistant and retardant and shall not produce harmful or toxic fumes or gases in the event of a fire.
- All cables and cable entries shall be hidden from unauthorised access; it shall not present any danger to the driver or passenger.
- All cables shall be stranded and not solid core.
- The BOP shall be designed according to universal ergonomic standards, including the positioning of passenger displays and prompts and maintenance activities.
- The BOP must be visible under general travelling lighting conditions.
- Displays shall be of a matt finish to prevent glare.
- The Contractor will supply and install the cables between the BOP and other related equipment.
- If the system design includes the provision of GSM/GPRS infrastructure, the Contractor is required to supply, install, integrate and maintain the GSM/GPRS modem, associated plant and cabling, which will be located at an agreed position on the Feeder bus or Midi-bus. The GSM shall provide for an interface to the AFCS.
- Where parts of the network may include the PLM Network, the Contractor shall provide requirements and cooperate with the Employer for the Network implementation.
- Cable containment will be provided between the BOP and the power, earth and data termination points by others, to the Contractor’s requirements.
- The Contractor shall supply, install, integrate and maintain a Wi-Fi station on the applicable buses to connect to the Wi-Fi Access Points at the depots.
- The Contractor shall ensure the proper and efficient connection on the Wi-Fi connection by selecting unoccupied channels.

2.4.13.4 Portable Verification Unit (PVU)

- The PVU will possess its own rechargeable power source in a form of a docking station which shall be located at the depot and be connected to the AFCS network.
- The PVU shall read the fare media and display the following *inter alia*, on a display screen;
    a) Card Number
    b) Card status
    c) Last transaction details
    d) Type of product or value
    e) Remaining value / trips
    f) Trip status
- The PVU will have a fare shortfall calculation function based ondestination input by the operator.
- The PVU will have an alarm indicating when a Trip is not in progress
- The display screen shall be visible in poor lighting conditions.
- The PVU shall download black list updates wirelessly from the PLM network when within coverage.
- All communication between PVU's and SCS shall be such that no filesare deleted or removed until the transfer of files have been authenticated and verified to be correct with no transmission errors.
- The PVU shall be able to receive software updates and upgrades downloaded to individual or all equipment via from the central server.
- Software updates to the PVU shall only be able when logged in as Administrator.
- PVU shall be provided with theft prevention technology to ensure that devices not used in the system are disabled for any use.
- The PVU shall store event / transaction data for later uploading to the central server and continue to operate in a standalone mode in the absence of network connectivity to the AFCS central server.
- The PVU shall upload transactions to the central server wirelessly when within network coverage.
- In the event that the network connection is interrupted during the download, the process shall begin again when connectivity is restored.
- The PVU shall provide a visual and audio alarm in the event of low power.
- The PVU shall automatically and safely shut down in the event of low power.
- The PVU shall be dockable and supplied with a charging station.
- The PVU shall automatically reboot at a configurable time (after hours) and frequency.
- The PVU shall provide for user Login and Logout.
- All Transactions shall be logged with a reference to the current user.
- The PVU battery power supply shall be capable of supporting use for
- a period of operational hours allowing for one replacement of a backup battery.
- The PVU may be supplied with software that controls the power usage of antennas, displays and other peripherals under user-selectable conditions to reach the operating hour's target.
- Replacement of any LRU shall take no longer than 5 minutes. 2.4.13.4.23 The PVU shall be capable of retaining at least 96 hours of transaction
- data, including all events.

- The PVU processor shall possess sufficient memory to accommodate 5000 blacklisted cards.
- The PVU should have a minimum useful life span of 5 years. 2.4.13.4.26 The PVU and Batteries shall be fully charged within a maximum time
- duration not exceeding the non-operating hours.
- Battery capacity shall be monitored and replaced when charge cycle time exceeds the non-operating hours period.
- The PVU shall be held in one hand.
- The PVU shall be designed to combat vandalism, theft, dropping and high intensity of use.
- The PVU shall be constructed from vandal-resistant materials with due consideration to the corrosive and humid environment.
- The PVU shall be provided with a holster that can be worn around the neck when the PVU is not in use.
- The PVU shall be designed according to universal ergonomic standards, including the GUI displays and prompts.
- The GUI must be visible under low-lighting conditions.
- The PVU will connect to the Data Centre by means of a mobile network. It is the Contractors responsibility to supply, install and maintain all plants to implement and integrate the PVU successfully into the AFCS, this might include inter alia;
    a) SIM card registration
    b) APN registration
    c) Mobile data usage
- The PVU and Batteries shall be charged in the PVU docking station.
- The PVU docking station shall interface with the Depot LAN.
- The contractor shall supply, install and maintain the cables of the PVU docking stations.
- Cable containment will be provided between the PVU docking station and the power, earth and data termination points by others, to the Contractor’s specification.
- PVU shall be able to inspect the validity of the QR-Code ticket.

PART C4: SITE INFORMATION

PART C4: SITE DATA

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1. BACKGROUND

The Public Transport Strategy approved by Cabinet in 2007 has two thrusts namely Accelerated Modal Upgrading and Integrated Rapid Public Transport Systems (IRPTS). Apart from the Metropolitan municipalities, four large cities including Polokwane were also mandated to implement high quality integrated public transport services or so-called IRPTS.

IRPTS typically consist of a main corridor or trunk with trunk extensions or feeders that feed into the main corridor. The main corridor can be a rail or road based mass transit system or a combination of both. Rail based mass transit can include heavy or light rail while road based mass transit includes BRT or IRT (Bus Rapid Transit or Integrated Rapid Transit).

The preferred option for Leeto La Polokwane Integrated Rapid Public Transport System (IRPTS) includes a trunk with segregated bus lanes on Church Street and Nelson Mandela Drive. Church Street will in future be converted to a public transport mall where no private vehicles will be allowed. A multi-module IRT station in General Joubert Street will provide sufficient capacity for the high passenger demand.

In addition to the 3 trunk stations in the CBD, there will also be stations in Hospital Street at the bus rank, in Nelson Mandela Drive at the industrial area and the Seshego circle as well as at the end of the trunk in Moletji, making up a total of 7 trunk stations.

Apart from the trunk line, the system also incorporates 10 trunk extensions into the residential areas of Seshego and Perskebult. In these residential areas passengers will board at bus stops which are spaced at approximately 1 km intervals, keeping walking distances to approximately 500m.

In the CBD, feeders running on 6 routes will distribute passengers from the trunk stations' final destinations such as the industrial areas, regional shopping centres, the hospital and surrounding residential areas. Passengers from Seshego / Moletji on route to further destinations such as Turfloop, Mokopane or Lebowakgomo will transfer in the CBD to other modes such as taxis and buses which will continue to operate on existing routes.

The Department of Transport's vision for implementing IRPTNs places particular emphasis on walking and cycling as important feeders to public transport. The ease and convenience with which non-motorised transport (NMT) users can access the public transport system will promote and enhance the usage of both modes at the same time. NMT access and its integration with public transport is therefore an important component of the proposed system. Apart from walkways and other NMT infrastructure, other infrastructure components of the system include the depot, control centre and the new intermodal transfer facility.

The control centre is to be established at the Peter Mokaba stadium, whilst the depot will be located in Seshego on the vacant land west of New Era Drive Street and south of Komape Street (as indicated in Figure 6: Location of Depot Site).

The implementation plan allows for a phased implementation of the system in order to accommodate possible budget limitations during the implementation phase.

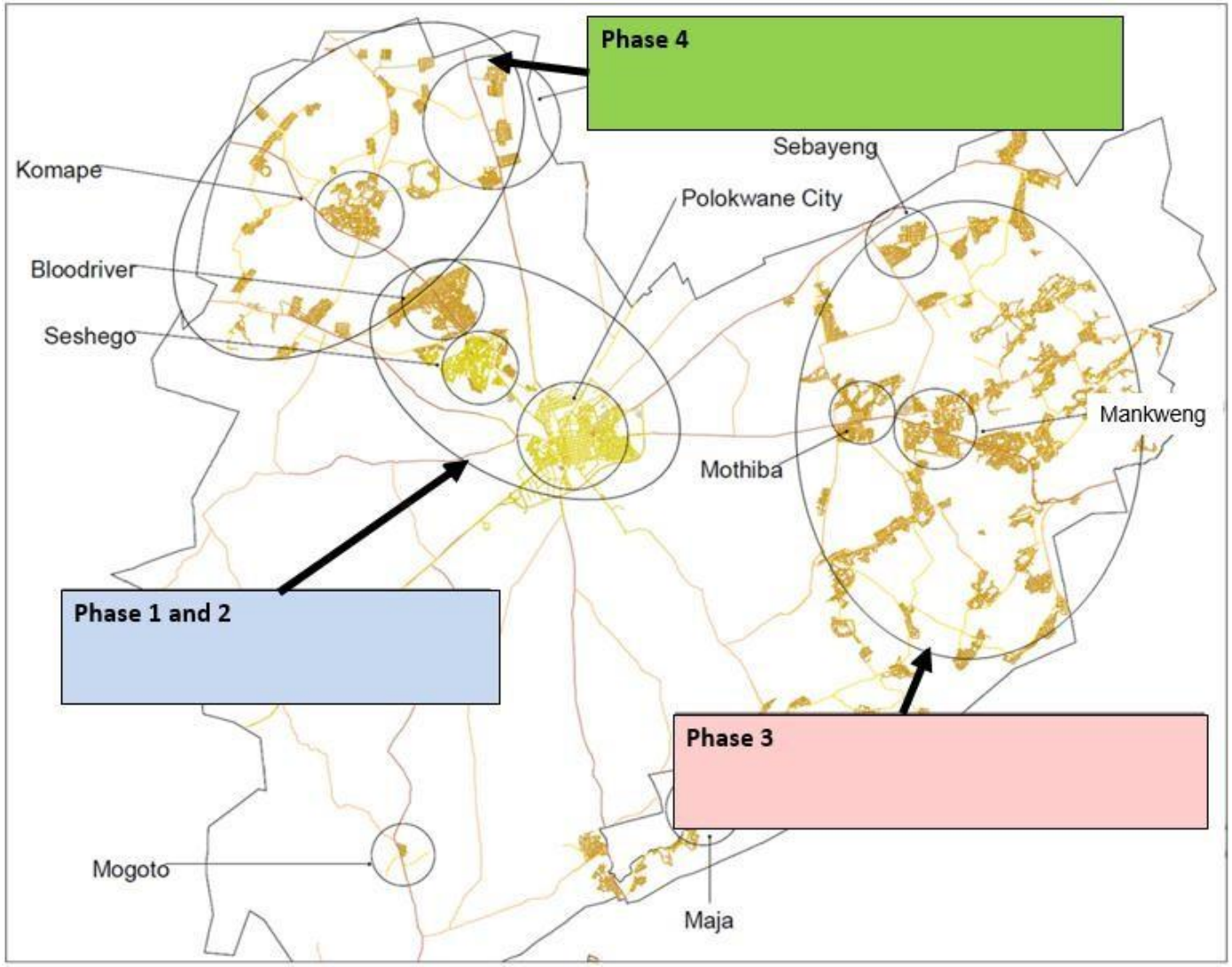
Phase 1A which is referred to as the go-live phase, will extend only up to the Seshego circle and will include one trunk station; T7 on General Joubert Street between Thabo Mbeki Street and Grobler Street.

Extensive community engagement was initiated in October 2014 and the anticipated roll out of services communicated to all stakeholders was July 2016. Constraints in Polokwane's budget allocation of the Public Transport Infrastructure Grant prevented the

City from building the full gamut of dedicated public transport infrastructure planned to support Leeto La Polokwane by July 2016.

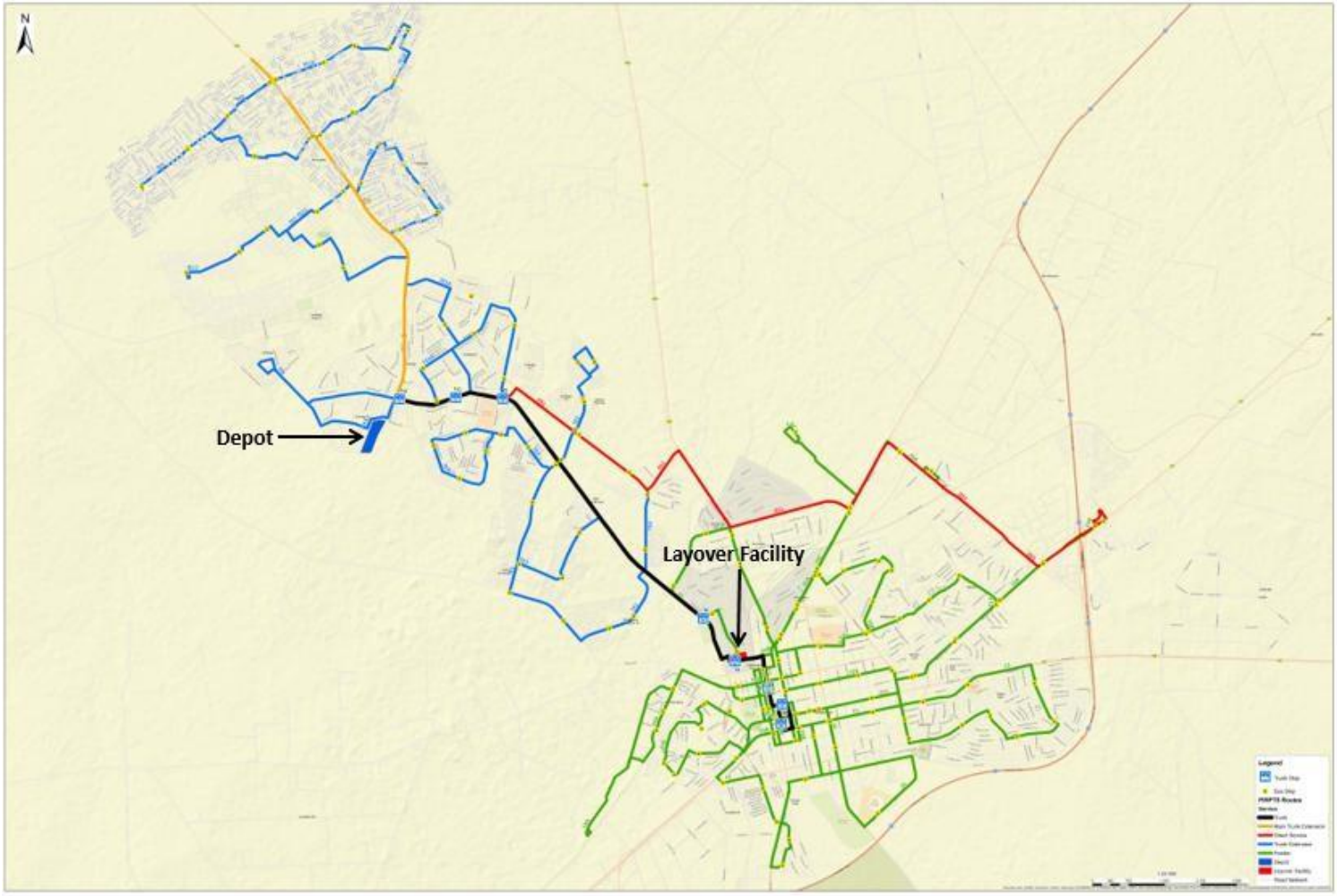
However, the Municipality is committed to phasing in public transport services as promised, while continuing to implement supporting infrastructure in subsequent years. This first phase of Leeto La Polokwane is Phase 1A which is planned to be launched in October 2018.

Figure 1: High level PIRPTS Routes and Phases



C4.2 IRPTS ROUTES

Figure 2: Routes to be included in phases 1A, 1B and 2.



The following are the routes to be implemented per phase;

Table C4 1: Routes to be implemented in phases

ROUTE ID	TYPE	PHASE 1A	PHASE 1B	PHASE 2
Trunk Route				
T	Trunk	√		
Trunk Extension Routes				
TE1	Trunk Ext.		√	
TE2	Trunk Ext.		√	
TE3	Trunk Ext.		√	
TE4	Trunk Ext.	√		
TE5a and TE5b	Trunk Ext.	√		
TE6	Trunk Ext.	√		
TE7	Trunk Ext.			√
TE8	Trunk Ext.			√
TE9	Trunk Ext.			√
TE10	Trunk Ext.			√
Feeder Routes				
F1	Feeder	√		
F2	Feeder		√	
F3	Feeder		√	
F4a and F4b	Feeder	√		
F5	Feeder		√	
F6	Feeder		√	
Direct Service Routes				
DS1	Direct Service		√	
Stadium Service				
S1	Stadium Service		√	

The following are the sites to be implemented per phase;

Table C4 2: Sites to be implemented in phases

SITE ID	TYPE	FUNCTION	PHASE 1A	PHASE 1B	PHASE 2
TMC	Control centre	Control Centre & Disaster Recovery	√		
DRC	Disaster Recovery Centre	Disaster Recovery & Control Centre	√		
DP	Depot	Up and Down load to buses. PVU Docking	√		
PIA	Polokwane International Airport	Sales Centre		√	
T1	Trunk station	Bus Service & Sales Centre		√	
T2	Trunk station	Bus Service & Sales Centre		√	

SITE ID	TYPE	FUNCTION	PHASE 1A	PHASE 1B	PHASE 2
T3	Trunk station	Bus Service		√	
T4	Trunk station	Bus Service & Sales Centre		√	
T5	Trunk station	Bus Service		√	
T6	Trunk station	Bus Service		√	
T7	Trunk station	Bus Service & Sales Centre	√		

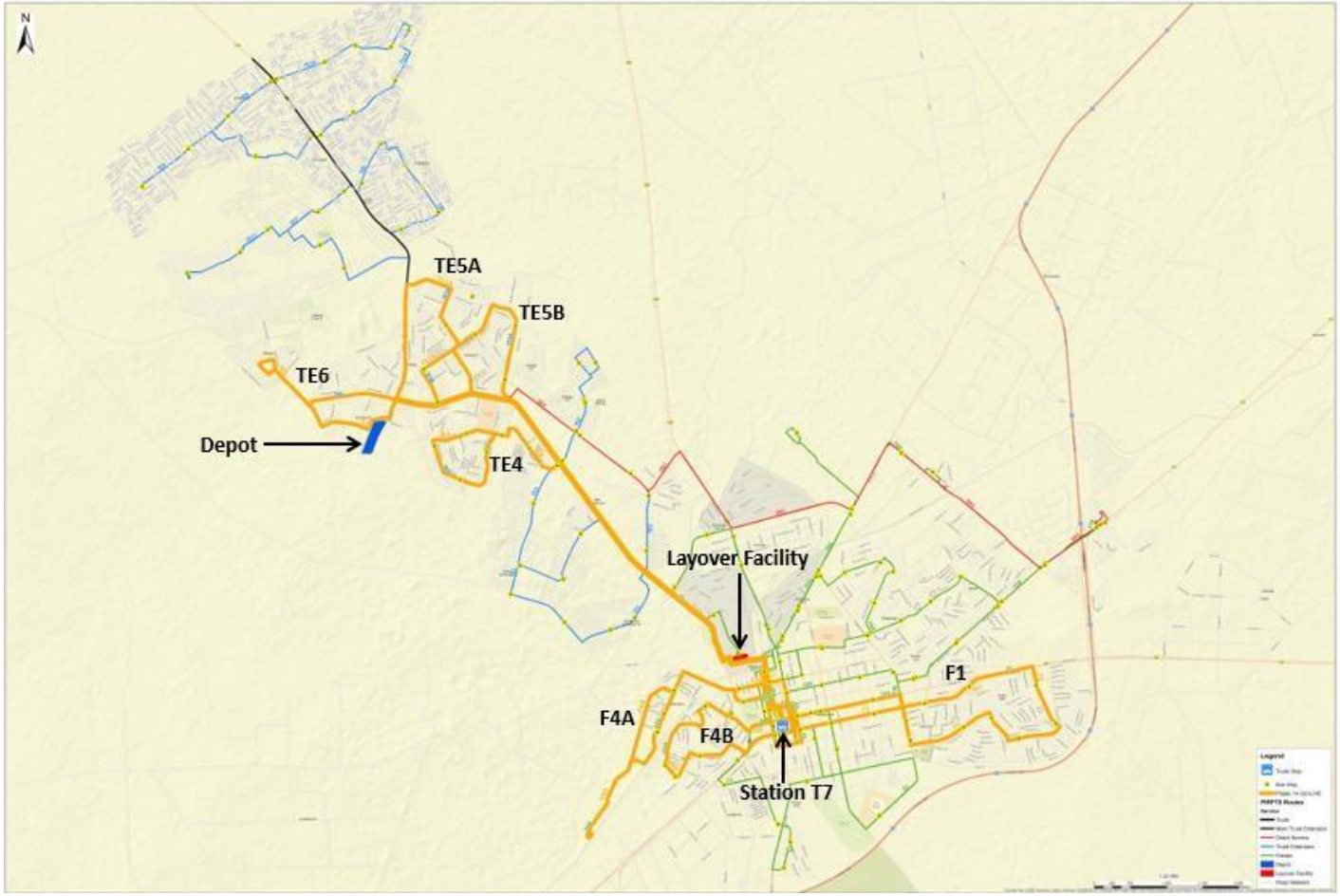
The following are the vehicles to be implemented per phase;

Table C4 3: Vehicles to be implemented in phases

TYPE	QUANTITY TOTAL	QUANTITY PHASE 1A	QUANTITY PHASE 1B	QUANTITY PHASE 2
Trunk-Extension: 80 capacity buses	T.B.D	30	T.B.D	T.B.D
Feeder Taxis	T.B.D	0	T.B.D	T.B.D

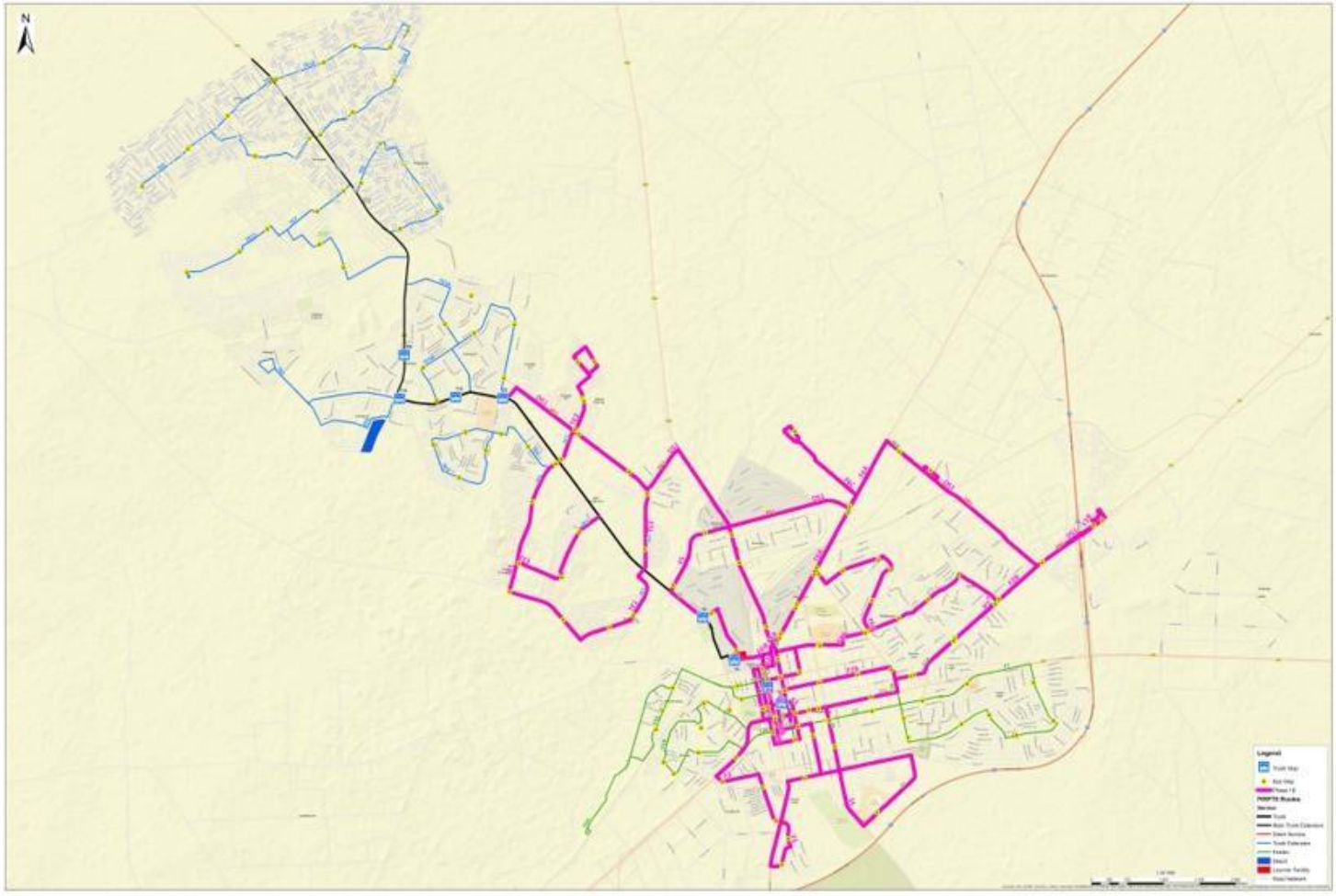
PHASE 1A ROUTE MAP

Figure 3: Phase 1A Stops, Routes and Stations



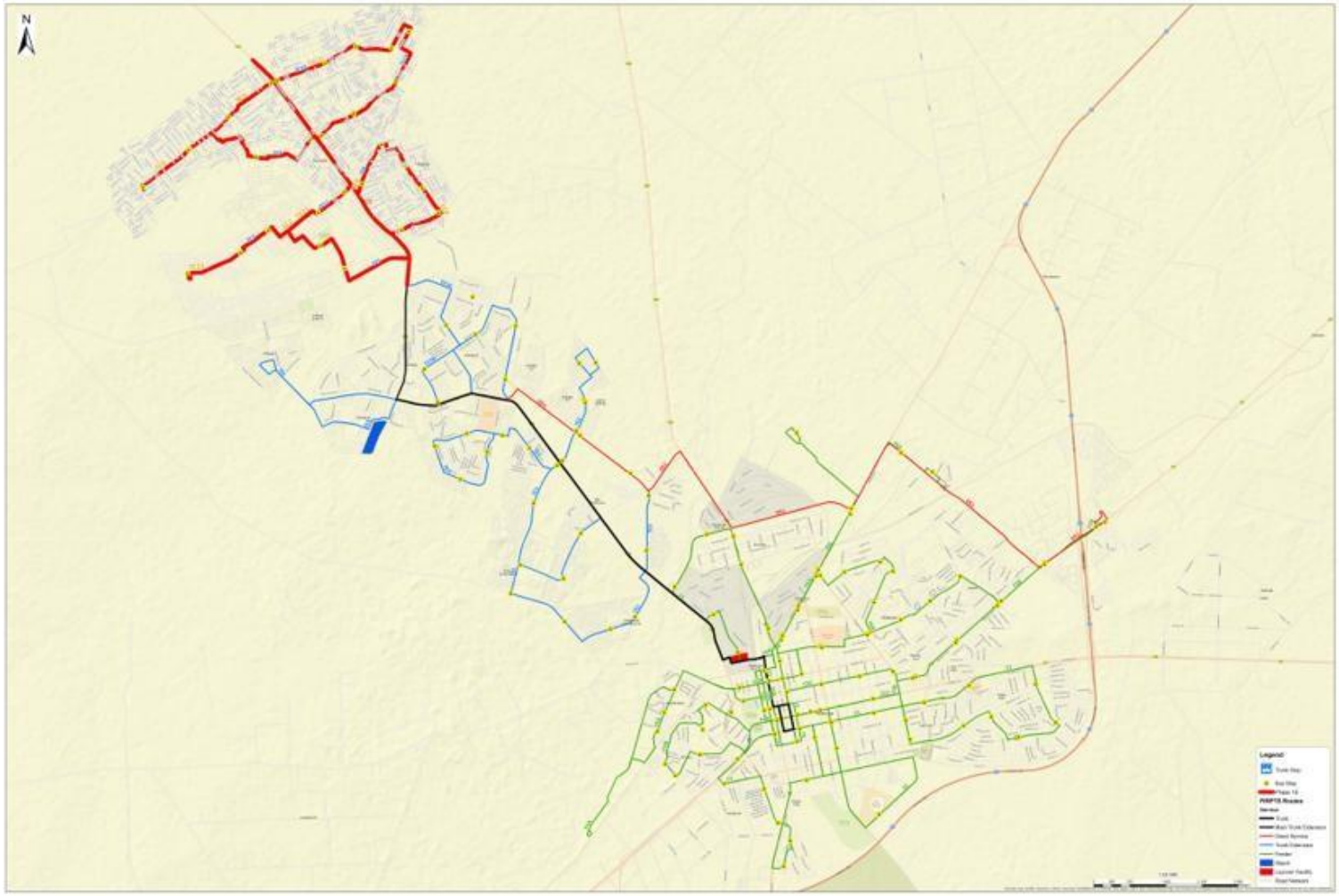
PHASE 1B ROUTE MAP

Figure 4: Phase 1B Stops, Routes and Stations



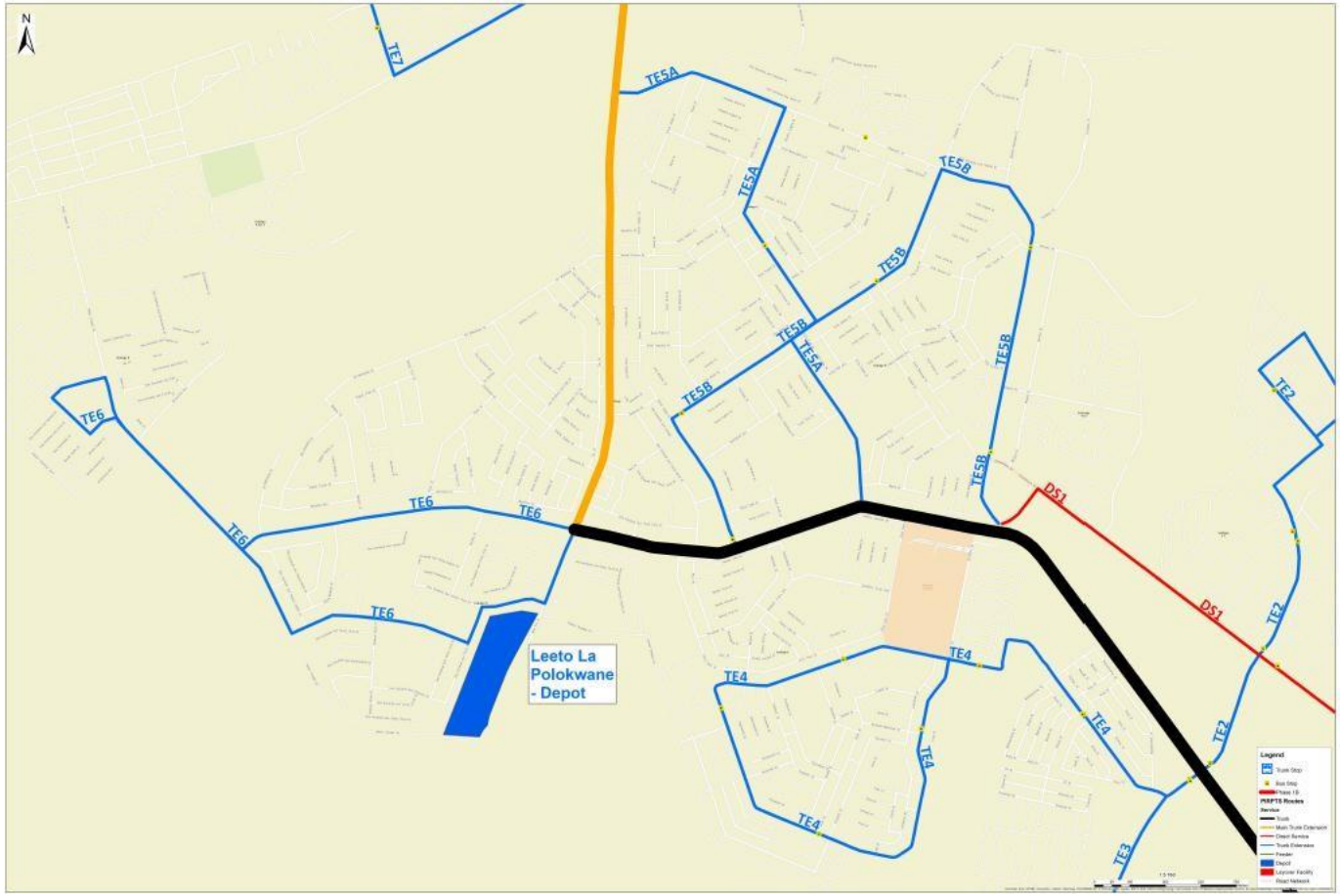
PHASE 2 ROUTE MAP

Figure 5: Phase 2 Stops, Routes and Stations



DEPOT SITES

Figure 6: Location of Depot Site



C4.5 GENERIC STATION LAYOUT DRAWINGS

The following generic station layout drawings are attached, which are subject to change. Tenderers are to rely on the quantities contained within the price schedules rather than what is displayed on the drawings.

TITLE	DRAWING No.

3. PRICING SCHEDULE

C2.3.1 SUMMARY OF COST CARRIED FORWARD FROM PROCEEDING SCHEDULES						
COST TABLE REFERENCE	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**PHASE IA AMOUNT**	**PHASE 1B AMOUNT**
C2.3.1.1	General Items-Design Build	C1 + C3		System wide		
C2.3.1.3	Final design Stage	C3 -2.3.3		System wide		
C2.3.1.4	Development and Qualification	C3 -2.3.4		System wide		
C2.3.1.5	Installation, Operation and maintenance Documentation Stage	C3 -2.3.5		System wide		
C2.3.1.6	Production Stage	C3 -2.3.6		System wide		
C2.3.1.7	Installation Stage	C3 -2.3.7		System wide		
C2.3.1.8	Commissioning Stage	C3 - 2.3.8,9,10		System wide		
C2.3.1.9	Post- Commissioning Stage	C3 - 2.3.11,12		System wide		
C2.3.1.10	General Items-Operation Service Period	C1 -2.3.13		System wide		
C2.3.1.11	Operations Service Period	C3-2.3.13		System wide		
	SUB-TOTAL					
	PROVISIONAL CONTINGENCY AT 10% OF THE ABOVE SUB-TOTAL					
	SUB-TOTAL INCLUDING CONTINGENCY PROVISION					
	PROVISIONAL ESCALATION AT 30% OF THE ABOVE SUB-TOTAL					
	SUB-TOTAL (EXC. VAT, INCLUDING ESCALATION AND CONTINGENCY PROVISION					
	VAT @ 15%					

	TOTAL (INCL. VAT)					

C2.3.1.1 General Items- design build					Phases 1A & 1B		
REF.No	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1	Tenderer to specify any general items not already included in the schedule below(lines may be added if necessary)		Care should be taken not to duplicate costs across schedules. Apart from these specified general items other rates are deemed to be inclusive	Specify Unit	Specify Qty		
Input 2	All insurances	C1-12(19)		Month	12		
Input 3	Project contract management and administration	C1+ C3,2		Month	12		
Input 4	Health and safety obligations	C1+ C3		Month	12		
Input 5	quality assurances	C1+ C3		Month	12		
Input 6	Rights of way and facilities	C1+ C3		Month	12		
Input 7	Environmental Protection	C1+ C3		Month	12		
Input 8	Site Security	C1+ C3		Month	12		
Input 9	Staff accommodation subsistence and travel	C1+ C3		Month	12		
Input 10	Office & Workshop accommodation	C1+ C3	This refer to facilities specifically used for the project, all other operational requirements of the contract are deemed to be covered in the overheads included in the various unit rates	Month	12		
Input 11	Provision of full performance security as specified Part C1	C1		Lump Sum	1		
Input 12	Certification of equipment as specified in Part C3	C1+C3	Cost of certifications including banking EMV certification where applicable	Lump Sum	1		
Input 13	Dispute Adjudication board	C1		Month	12		
Input 14	Software licences	C3 2.6		Lump Sum	1		

Input 15							
Input 16							
Input 17							
SUB-TOTAL EXCL. VAT (Tenderer to check that added items are all included in the sum formula)							

C2.3.1.3 Final Design					**PHASE 1A&1B**		
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1	System wide	C3-2.3.3	All-inclusive cost of all FD related activities and deliverables, including provision/scalability for all future phases in phase 1A & 1B	Complete system	1		
SUB-TOTAL EXCL. VAT (Tenderer to Chack that added items are all included in the sum formula)							

C2.3.1.4 Development and Qualification					PHASE 1A & 1B		
REF. No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1	System-wide development activities	C3-2.3.4	Cost of all D&B related activities and deliverables, excluding the FAT and PPS, including all software modules, licenses etc. not specified in other modules	Complete system	1		
Input 2	Factory Acceptance Test	C3-2.3.4.2.1	All-inclusive cost of all FAT related activities and deliverables	Complete system	1		
Input 3	Pre-Production Sample Inspection	C3-2.3.4.2.2	All-inclusive cost of all PPS related activities and deliverables	Complete system	1		
SUB-TOTAL ECL.VAT (Tenderer too check that added items are all included in the sum formula)							

C2.3.1.5 Installation, operation and maintenance documentation					PHASE 1A & 1B		
REF. No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1	Installation documentation	C3-2.3.5.1	All-inclusive cost of all related activities and deliverables in phases 1A & 1B	Complete system	1		
Input 2	Operations documentation	C3-2.3.5.2	All-inclusive cost of all related activities and deliverables in phases 1A & 1B	Complete system	1		
SUB-TOTAL ECL.VAT (Tenderer too check that added items are all included in the sum formula)							

C2.3.1.6 Production					Phases 1A & 1B		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.1	Contactless bank Transit Cards	C3-2.3.6 +C3-2.4.6	Supply Cards to NDoT specifications and branded to IRPTS standard, including logistics and issuing costs	Each	Specify Qty		
	LEVEL 1-READ/WRITE DEVICES						
	Trunk Station systems						
C2.3.2.2.1	Station with attended ticket sales	C3-1.7.2.2.1.2	Carried forward	Complete	1		
	Sales center						
C2.3.2.4.1	Card and QR-Code Paper ticket sales Center	C3-1.7.2.2.1.2		Complete	8		
	On-board equipment						
C2.3.2.5.1	Trunk Buses	C3-1.7.2.2.4		Complete	30		
C2.3.2.6.1	Midi Buses	C3-1.7.2.2.5		Complete	0		
	Taxis			Complete	0		

	Trunk Feeder stops						
C2.3.2.7.1	Wayfinding signage	Ce-1.7.2.2.3.2		Complete	67		
C2.3.2.8.1-Input	3rd Party Loading Points	C3-1.7.2.2.3.1		Complete	8		
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.1	Depot system	C3-1.7.2.3.1		Complete	0		
C2.3.2.9.1	PUVs= docking stations	C3-1.7.2.2.4.2		Complete	5		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
C2.3.2.12.1	Central System	C3-1.7.2.4.1			1		
	Disaster recovery center						
C2.3.2.11.1	Disaster recovery center	C3-1.7.2.4.2		Complete	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
C2.3.2.13.1	Banking Payment System	C3-1.7.2.5		Complete	1		
Input 17							

Phase 1A & 1B

C2.3.1.6 Installation					Phases 1A & 1B		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.2	Contactless ABT Transit Cards	C3-2.3.7 +C3-2.4.6		Each	15000		
	LEVEL 1-READ/WRITE DEVICES						
	Trunk Station systems						
C2.3.2.2.2	Station with attended card and QR-code paper ticket sales	C3-2.3.7 +2.4.7.2		Complete	1		
	Sales center						
C2.3.2.4.1	Card and QR-Code Paper ticket sales Center	C3-1.7.2.2.1.2		Complete	8		
	On-board equipment						
C2.3.2.52	**Trunk Buses**	C3-2.3.7 +2.4.7.6		Complete	30		
C2.3.2.6.2	Midi Buses	C3-2.3.7 +2.4.7.6		Complete	0		
	Taxis			Complete	0		
	Trunk Feeder stops						
C2.3.2.7.2	Wayfinding signage	C3-2.3.7 +2.4.7.5.2		Complete	67		
C2.3.2.8.2-Input	3rd Party Loading Points	C3-2.3.7 +2.4.7.5.1		Complete			
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.2	Depot system	C3-2.3.7 + 2.4.8.1		Complete	1		
C2.3.2.9.2	PUVs docking stations	C3-2.3.7 +2.4.8.1.7		Complete	5		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
	Central System						

C2.3.2.12.2	Central System	C3-2.3.7 +2.4.9					
	Disaster recovery center						
C2.3.2.11.2	Disaster recovery center	C3-2.3.7 + 2.4.9		Complete	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
	Banking Payment System						
C2.3.2.13.2	Banking Payment System	C3-2.3.7 +2.4.12		Complete	1		
							Phase 1A & 1B

C2.3.1.7 Commissioning					Phases 1A & 1B		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.3	Contactless ABT Transit Cards	C3-2.3.8,9,10 +C3-2.4.6		Each	15000		
	LEVEL 1-READ/WRITE DEVICES						
	Trunk Station systems						
C2.3.2.2.3	Station with attended card and QR-code paper ticket sales	C3-2.3.8,9,10 +2.4.7.2		Complete	1		
	Sales center						
C2.3.2.4.3	Card and QR-Code Paper ticket sales Center	C3-2.3.8,9,10 + 2.4.7.4		Complete	8		
	On-board equipment						
C2.3.2.5.3	Trunk Buses	C3-2.3.8,9,10 +2.4.7.6		Complete	30		
C2.3.2.6.3	Midi Buses	C3-2.3.8,9,10 +2.4.7.6		Complete	0		
	Taxis			Complete	0		
	Trunk Feeder stops						
C2.3.2.7.3	Wayfinding signage	C3-2.3.8,9,10 +2.4.7.5.2		Complete	67		
C2.3.2.8.3-Input	3rd Party Loading Points	C3-2.3.8,9,10 +2.4.7.5.1		Complete			
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.3	Depot system	C3-2.3.8,9,10 + 2.4.8.1		Complete	1		

C2.3.2.9.4	PUVs= docking stations	C3-2.3.8,9,10 +2.4.8.1.7		Complete	5		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
	Central System						
C2.3.2.12.2	Central System	C3-2.3.8,9,10 +2.4.9					
	Disaster recovery center						
C2.3.2.11.2	Disaster recovery center	C3-2.3.8,9,10 + 2.4.9		Complete	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
	Banking Payment System						
C2.3.2.13.2	Banking Payment System	C3-2.3.8,9,10 +2.4.12		Complete	1		
							Phase 1A & 1B

C2.3.1.8 Post-Commissioning					Phases 1A & 1B		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.4	Contactless ABT Transit Cards	C3-2.3.11 +C3-2.4.6		Each	15000		
	LEVEL 1-READ/WRITE DEVICES						
	Trunk Station systems						
C2.3.2.2.4	Station with attended card and QR-code paper ticket sales	C3-2.3.8 +2.4.7.2		Complete	1		
	Sales center						
C2.3.2.4.4	Card and QR-Code Paper ticket sales Center	C3-2.3.8 + 2.4.7.4		Complete	8		
	On-board equipment						
C2.3.2.5.4	Trunk Buses	C3-2.3.8+2.4.7.6		Complete	30		
C2.3.2.6.4	Midi Buses	C3-2.3.8 +2.4.7.6		Complete	0		
	Taxis			Complete	0		
	Trunk Feeder stops						
C2.3.2.7.4	Wayfinding signage	C3-2.3.8 +2.4.7.5.2		Complete	67		
C2.3.2.8.4-Input	3rd Party Loading Points	C3-2.3.8 +2.4.7.5.1		Complete			
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.4	Depot system	C3-2.3.8 + 2.4.8.1		Complete	1		

C2.3.2.9.4	PUVs& docking stations	C3-2.3.8 +2.4.8.1.7		Complete	5		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
	Central System						
C2.3.2.12.4	Central System	C3-2.3.8 +2.4.9					
	Disaster recovery center						
C2.3.2.11.4	Disaster recovery center	C3-2.3.8 + 2.4.9		Complete	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
	Banking Payment System						
C2.3.2.13.4	Banking Payment System	C3-2.3.8 +2.4.12		Complete	1		
							Phase 1A & 1B

C2.3.1.1 General Items- Operational service period					Phases 1A & 1B		
REF.No	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1	Tenderer to specify any general items not already included in the schedule below (lines may be added if necessary)		Care should be taken not to duplicate costs across schedules. Apart from these specified general items other rates are deemed to be inclusive	Specify Unit	Specify Qty		
Input 2	All insurances	C1		Month	36		
Input 3	Project contract management and administration	C1+ C3		Month	36		
Input 4	Health and safety obligations	C1+ C3		Month	36		
Input 5	Quality assurances	C1+ C3		Month	36		
Input 6	Rights of way and facilities	C1+ C3		Month	36		
Input 7	Environmental Protection	C1+ C3		Month	36		
Input 8	Staff accommodation subsistence and travel	C1+ C3	Where applicable is anticipated that the operator will use locally based operational staff wherever possible	Month	36		

Input 9	Office & Workshop accommodation	C1+ C3	This refer to facilities specifically used for the project, all other operational requirements of the contract are deemed to be covered in the overheads included in the various unit rates	Month	36		
Input 10	Provision of full performance security as specified Part C1	C1		Lump Sum	1		
Input 11	Dispute Adjudication board	C1		Month	36		
Input 12	Independent Compliance auditor	C1		Month	36		
SUB-TOTAL EXCL. VAT (Tenderer to check that added items are all included in the sum formula)							

C2.3.1.111 Operational Service Period					**PHASE 1A&1B**		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
C2.3.1.11.1	Operation	C3-2.3.13.4.2		Month	36		
C2.3.1.11.2	Maintenance	C3-2.3.13.4.3		Month	36		
C2.3.1.11.3	Banking fees	C3-2.3.13 + 2.4.12.8		Month	36		
Input 1	Asset replacement	C3-2.3.13.4.3.4	As detailed in asset replacement schedule	OSP	1		

C2.3.1.11.1 Operation					**Phases 1A & 1B**		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**OSP**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.5	Contactless ABT Transit Cards	C3-2.3.13.4.2.1		36	4000		
	LEVEL 1-READ/WRITE DEVICES						
	Trunk Station systems						
C2.3.2.2.5	Station with attended ticket sales	C3-2.3.13.4.2.2.I	Carried forward	36	1		

	Sales center						
C2.3.2.4.5	Card and QR-Code Paper ticket sales Center	C3-2.3.13.4.2.2.II		36	8		
	On-board equipment						
C2.3.2.5.5	Trunk Buses	C3-2.3.13.4.2.2.IV		36	30		
C2.3.2.6.5	Midi Buses	C3-2.3.13.4.2.2.IV		36	0		
	Taxis			36	0		
	Trunk Feeder stops						
C2.3.2.7.5	Wayfinding signage	C3-2.3.13.4.2.2.III		36	67		
C2.3.2.8.5-Input 1	3rd Party Loading Points	C3-2.3.13.4.2.2.III		36			
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.5	Depot system	C3-2.3.13.4.2.3		36	1		
C2.3.2.9.5	PUVs= docking stations	C3-2.3.13.4.2.3		36	0		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
C2.3.2.12.5	Central System	C3-2.3.13.4.2.4					
	Disaster recovery center						
C2.3.2.11.5	Disaster recovery center	C3-2.3.13.4.2.4		36	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
C2.3.2.13.5	Banking Payment System	C3-2.3.13.4.2.5		36	1		

Phase 1A & 1B

C2.3.1.10.2 Maintenance					**Phases 1A & 1B**		
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**OSP**	**QTY**	**RATE**	**TOTAL**
	LEVEL 0-FARE MEDIA						
C2.3.2.1.6	Contactless ABT Transit Cards	C3-2.3.13.4.3		36	4000		
	LEVEL 1-READ/WRITE DEVICES						

	Trunk Station systems						
C2.3.2.2.6	Station with attended ticket sales	C3-2.3.13.4.3		36	1		
	Sales center						
C2.3.2.4.6	Card and QR-Code Paper ticket sales Center	C3-2.3.13.4.3		36	8		
	On-board equipment						
C2.3.2.5.6	Trunk Buses	C3-2.3.13.4.3		36	30		
C2.3.2.6.6	Midi Buses	C3-2.3.13.4.3		36	0		
	Taxis			36	0		
	Trunk Feeder stops						
C2.3.2.7.6	Wayfinding signage	C3-2.3.13.4.3		36	67		
C2.3.2.8.6-Input 1	3rd Party Loading Points	C3-2.3.13.4.3		36			
	LEVEL 2-DATA COLLECTION & STORAGE						
	Depot System						
C2.3.2.10.6	Depot system	C3-2.3.13.4.3		36	1		
C2.3.2.9.6	PUVs= docking stations	C3-2.3.13.4.3		36	5		
	LEVEL 2DATA CENTER & DISASTER RECOVERY						
C2.3.2.12.6	Central System	C3-2.3.13.4.3					
	Disaster recovery center						
C2.3.2.11.6	Disaster recovery center	C3-2.3.13.4.3		36	1		
	LEVEL 4-BANKING PAYMENT SYSTEM						
C2.3.2.13.6	Banking Payment System	C3-2.3.13.4.3		36	1		

Phase 1A & 1B

C2.3.1.11.3 COST OF BANKING TRANSACTION FEES					PHASE 1A & 1B				
REF. No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**APPROX.ANNUAL REVENUE (ZAR)**	**YEARS OF Ops**	**ESTIMATED No. OF LOADS(<R100)**	**RATE**	**TOTAL**
Input 1	Banking transaction fees- transit loads	C3-2.3.4	Amount carried forward if a % of transit load value is to be charged	Projected annual sales	R46 235 520.00	3	1 633 520.00		
Input 2	Banking transit fees- transit loads	C3-2.3.4.2.1	Amount to be carried forward if a flat fee is to be charged per transit load	Projected annual sales	R46 235 520.00	3	1 633 520.00		
SUB-TOTAL ECL.VAT (Tenderer too check that added items are all included in the sum formula)					**Enter 'F' or % for type of flat or percentage-based fee to be applied**				
The Tenderer must complete the above as part of the offer, however the tenderer may submit a separate schedule with different revenue level values and associated fee rates should these enhance the offer by being of benefit to the Employer, e.g. if the Tenderer is able to offer a rate change for revenue level which falls between those that are provided above									
The above quantities are approximates and cannot therefore be guaranteed									

C2.3.2.1 COST OF FARE MEDIA

C2.3.2.1.1 3rd PARTY LOADING POINTS WITH TICKET SALES CONFIGURATION_ PRODUCTION COST							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	ABT Transit Cards	C3-2.3.6+C3-2.4.6	Supply of Cards to NDoT specifications & branded to IRPTS standard, including logistics and issuing costs maximum order quantity for pricing purposes	EACH	1		
Input 1.2	Non-bank Issued Cipurse cards		Supply of Cards to NDoT specifications & branded to IRPTS standard, including logistics and issuing costs maximum order quantity for pricing purposes	EACH	0		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.1.2 3rd PARTY LOADING POINTS WITH TICKET SALES CONFIGURATION_INSTALLATION							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	Installation in the system	C3-2.3.7+C3-2.4.6	Not applicable, tenderer to insert items on request	EACH			
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.1.3 3rd PARTY LOADING POINTS WITH TICKET SALES CONFIGURATION -COMMISSIONING

REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 3.1	Pre-Testing	C3-2.3.8+C3-2.4.6	Not applicable, tenderer to insert items on request	EACH	1		
Input 3.2	System Acceptance Test	C3-2.3.8+C3-2.4.6	Not applicable, tenderer to insert items on request	EACH	1		
Input 3.3	System integration test	C3-2.3.8+C3-2.4.6	Not applicable, tenderer to insert items on request	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2 COST OF TRUNK STATION WITH TICKET SALES PRODUCTION<COMMISSIONING< POS-COMMISSIONING AND MAINTENANCE

C2.3.2.2.1 TRUNK STATION WITH TICKET SALES CONFIGURATION-PRODUCTION COST

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Ticket Office Machines	C3-2.3.6+C3-2.4.13.1	Complete point of sale device with peripherals	EACH	1		
Input 1.2	Power Cable	C3-2.3.6+C3-2.4.4	To contractor's specification, including termination accessories	meter	100		
Input 1.3	Earth cable	C3-2.3.6+C3-2.4.4	To contractor's specification, including termination accessories	meter	100		
Input 1.4	Data Cable	C3-2.3.6+C3-2.4.5	To contractor's specification, including termination accessories	meter	100		
Input 1.5	Signal Cable	C3-2.3.6+C3-2.4.5	To contractor's specification, including termination accessories	meter	100		
Input 1.6	Power accessories	C3-2.3.6+C3-2.4.4	Circuit breaker, surge protection, etc..	Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2.2- TRUNK STATION WITH TICKET SALES CONFIGURATION-INSTALLATION

REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	Ticket Office Machines	C3-2.3.7 + 2.4.13.1 T2 R004	Complete point of sale device with peripherals	EACH	1		
Input 2.2	Power Cable	C3-2.3.7 + 2.4.4	To contractor's specification, including termination accessories	meter	100		
Input 2.3	Earth cable	C3-2.3.7 + 2.4.4	To contractor's specification, including termination accessories	meter	100		
Input 2.4	Data Cable	C3-2.3.7 + 2.4.5	To contractor's specification, including termination accessories	meter	100		
Input 2.5	Signal Cable	C3-2.3.7 + 2.4.5	To contractor's specification, including termination accessories	meter	100		
Input 2.6	Power accessories	C3-2.3.7 + 2.4.4	Circuit breaker, surge protection, etc.	Lot	1		
Input 2.7	UAT-TOM	C3-2.3.7 + 2.4.13.1 T2 R004	Inspection Acceptance testing including certificates and test documentation	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2.3 TRUNK STATION WITH TICKET SALES CONFIGURATION- COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre Testing TOM	C3-2.3.8+C3-2.4.13.1	Internal testing in preparation for SIT &SAT	EACH	1		
Input 3.2	SAT-TOM	C3-2.3.9+2.4.6.2.1	Systems Acceptance testing with Employer	EACH	1		
Input 3.3	SIT-TOM	C3-2.3.9+2.4.6.2.1	Systems integration testing with Employer	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2.4. TRUNK STATION POINTS WITH TICKET SALES CONFIGURATION-POST-COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated Test Book	C3-2.3.9		EACH	1		
Input 4.2	As-Built documentation	C3-2.3.9		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2.5 TRUNK STATION POINTS WITH TICKET SALES CONFIGURATION -OPERATION							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	Trunk station with attended ticket sales function	C3-2.3.9 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.2.6 TRUNK STATION POINTS WITH TICKET SALES CONFIGURATION -MAINTENANCE							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	Trunk Station AFCS equipment with peripherals	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools,	Monthly	1		

			equipment, consumables, training, Sub-contracts					
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)								

C2.3.2.4.1 SALES CENTER-PRODUCTION COST							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	Ticket Office Machine	C3-2.3.6	Complete TOM with Peripherals	Each	2		
Input 1.2	QR-Code Generating Machine		Complete with Peripherals & Connectivity	Each	1		
Input 1.3	QR -Code Printer		Complete with Peripherals	Each	1		
Input 1.4	Network Interface	C3-2.3.6	Router as backup & Switch	Each	1		
Input 1.5	Power cable	C3-2.3.6	As per equipment specifications	Meter	50		
Input 1.6	Earth Cable	C3-2.3.6	As per equipment specifications	Meter	50		
Input 1.7	Data cable	C3-2.3.6	As per equipment specifications	Meter	50		
Input 1.8	Accessories	C3-2.3.6	All in the DB	Lot	1		
Input 1.9	Power Accessories	C3-2.3.6	CB, Surge Protection	Lot	1		
Input 1.10	Distribution Board	C3-2.3.6	Power DB for AFCs	Each	1		
Input 1.11	UPS or Portable Generator			Each	1		
Input 1.12	CIT Drawer Safe (Contract)			Lot	1		
SUB-TOTAL (EXCL VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.4.2 SALES CENTER-INSTALLATION COST							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**

Input 2.1	Ticket Office Machine	C3-2.3.7	Complete TOM with Peripherals	Each	2		
Input 2.2	QR-Code Generating Machine		Complete with Peripherals & Connectivity	Each	1		
Input 2.3	QR -Code Printer		Complete with Peripherals	Each	1		
Input 2.4	Network Interface	C3-2.3.7	Router as backup & Switch	Each	1		
Input 2.5	Power cable	C3-2.3.7	As per equipment specifications	Meter	50		
Input 2.6	Earth Cable	C3-2.3.7	As per equipment specifications	Meter	50		
Input 2.7	Data cable	C3-2.3.7	As per equipment specifications	Meter	50		
Input 2.8	Accessories	C3-2.3.7	All in the DB	Lot	1		
Input 2.9	Power Accessories	C3-2.3.7	CB, Surge Protection	Lot	1		
Input 2.10	Distribution Board	C3-2.3.7	Power DB for AFCs	Each	1		
Input 2.11	UPS or Portable Generator			Each	1		
Input 2.12	CIT Drawer Safe (Contract)			Lot	1		
Input 2.13	IAT	C3-2.3.7	Inspection Acceptance Testing including certificates and test documentation				
SUB-TOTAL (EXCL VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.4.3 SALES CENTER- COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre Testing TOM	C3-2.3.8	Internal testing in preparation for SIT &SAT	EACH	1		
Input 3.2	SAT-TOM	C3-2.3.8	Systems Acceptance testing with Employer	EACH	1		
Input 3.3	SIT-TOM	C3-2.3.8	Systems integration testing with Employer	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.4.4 SALES CENTER-POST -COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**

Input 4.1	Consolidated Test Book	C3-2.3.11		EACH	1		
Input 4.2	As-Built documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.4.5 SALES CENTER WITH TICKET SALES CONFIGURATION -OPERATION							
REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 5.1	All AFCS Equipment operation	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.4.6 SALES CENTER WITH TICKET SALES CONFIGURATION -MAINTENANCE							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	All AFCS equipment maintenance	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5 COST OF BUS ON-BOARD EQUIPMENT PRODUCTION, INSTALLATION,COMMISSIONING, POST-COMMISSIONING AND MAINTENANACE FOR TRUNK BUSES AFCS							

C2.3.2.5.1 ON-BOARD EQUIPMENT FOR TRUNK BUS- PRODUCTION COST							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	Processor	C3-2.3.6		EACH	1		
Input 1.2	Ticket Validation Device (QR-Codes, Credit/Debit, Cipurse cards)	C3-2.3.6	If there will be two entrances an option of Entrance and exit Validation devices will be considered, and this will be communicated to the contractor	EACH	1		
Input 1.3	Passenger Counting Device	C3-2.3.6		EACH	1		
Input 1.4	Power Interface Relay	C3-2.3.6		EACH	1		
Input 1.5	Wireless Communications (at least 2 SIM-cards) System	C3-2.3.6		EACH	1		

Input 1.6	GPS	C3-2.3.6	Possible 2 GPS locators, one on the Validation device the other on the Passenger counter if these are separate devices	EACH	1		
Input 1.7	Power Cables	C3-2.3.6	Provisional 10 m	Meter	10		
Input 1.8	Installation devices	C3-2.3.6					
Input 1.9	Communications cables	C3-2.3.6	Provisional 10 m	Meter	10		
Input 1.10	Embedded LNB on GPS/GSM Antenna	C3-2.3.6		Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5.2 ON-BOARD EQUIPMENT A TRUNK BUS-INSTALLATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	Installation	C3-2.3.7	Installation activities prior to IAT	EACH	1		
Input 2.2	Installation Acceptance Test	C3-2.3.7	Includes IAT with Employer	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5.3ON-BOARD FOR TRUNK BUS- COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre Testing TOM	C3-2.3.8	Internal testing in preparation for SIT &SAT	EACH	1		
Input 3.2	SAT-TOM	C3-2.3.8	Systems Acceptance testing with Employer including all relevant activities	EACH	1		

Input 3.3	SIT-TOM	C3-2.3.8	Systems Acceptance testing with Employer including all relevant activities	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5.4 ON-BOARD FOR TRUNK BUS- POST COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated Test Book	C3-2.3.11		EACH	1		
Input 4.2	As-Built documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5.5 ON-BOARD FOR TRUNK BUS- OPERATION							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	All AFCS Equipment operation	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.5.6 ON BOARD EQUIPMENT FOR A TRUNK BUS -MAINTENANCE							
REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 6.1	All AFCS equipment maintenance	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6 COST OF BUS ON-BOARD EQUIPMENT PRODUCTION,INSTALLATION,COMMISSIONING,POST-COMMISSIONING AND MAINTENANACE FOR MIDI BUSES AFCS

C2.3.2.6.1 ON-BOARD EQUIPMENT FOR MIDI BUS- PRODUCTION COST

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Processor	C3-2.3.6		EACH	1		
Input 1.2	Ticket Validation Device (QR-Codes, Credit/Debit, Cipurse cards)	C3-2.3.6	If there will be two entrances an option of Entrance and exit Validation devices will be considered, and this will be communicated to the contractor	EACH	1		
Input 1.3	Passenger Counting Device	C3-2.3.6		EACH	1		
Input 1.4	Power Interface Relay	C3-2.3.6		EACH	1		
Input 1.5	Wireless Communications (at least 2 SIM-cards) System	C3-2.3.6		EACH	1		

Input 1.6	GPS	C3-2.3.6	Possible 2 GPS locators, one on the Validation device the other on the Passenger counter if these are separate devices	EACH	1		
Input 1.7	Power Cables	C3-2.3.6	Provisional 10 m	Meter	10		
Input 1.8	Installation devices	C3-2.3.6					
Input 1.9	Communications cables	C3-2.3.6	Provisional 10 m	Meter	10		
Input 1.10	Embedded LNB on GPS/GSM Antenna	C3-2.3.6		Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6.2 ON-BOARD EQUIPMENT A MIDI BUS-INSTALLATION

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	Installation	C3-2.3.7	Installation activities prior to IAT	EACH	1		
Input 2.2	Installation Acceptance Test	C3-2.3.7	Includes IAT with Employer	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6.3 ON-BOARD FOR MIDI BUS- COMMISSIONING

REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 3.1	Pre Testing TOM	C3-2.3.8	Internal testing in preparation for SIT &SAT	EACH	0		
Input 3.2	SAT-TOM	C3-2.3.8	Systems Acceptance testing with Employer including all relevant activities	EACH	0		

Input 3.3	SIT-TOM	C3-2.3.8	Systems Acceptance testing with Employer including all relevant activities	EACH	0		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6.4 ON-BOARD FOR MIDI BUS- POST COMMISSIONING							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated Test Book	C3-2.3.11		EACH	0		
Input 4.2	As-Built documentation	C3-2.3.11		Lot	0		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6.5 ON-BOARD FOR MIDI BUS- OPERATION							
REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 5.1	BOE	C3-2.3.13 T2	Not applicable unless tenderer deems necessary(elaborate)	Monthly	0		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.6.6 ON BOARD EQUIPMENT FOR A MIDI BUS -MAINTENANCE							
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	BOE Maintenance	C3-2.3.13 T2	All const of staff, supervision, uniforms, materials, tools, equipment, consumables, training, Sub-contracts	Monthly	0		

SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)	

C2.3.2.7 COST OF TRUNK EXTENSION/ FEEDER STOP SIGNAGE PRODUCTION, INSTALLATION,COMMISSIONING,POST-COMMISSIONING AND MAINTENANACE

C2.3.2.7.1 TRUNK EXTENSION/ FEEDER STOPWITHOUT TICKET SALES CONFIGURATION - PRODUCTION COST							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	Way finding Signage	C3-2.3.6	Specific to each stop	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.2 TRUNK EXTENSION/ FEEDER STOPWITHOUT TICKET SALES CONFIGURATION - INSTALLATION							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	IAT Signage	C3-2.3.7	Inspection acceptance test including certification and documentation	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.3 TRUNK EXTENSION/ FEEDER STOPWITHOUT TICKET SALES CONFIGURATION - COMMISSIONING							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	Wayfinding Signage	C3-2.3.7	Not applicable unless tenderer deem necessary	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.4 TRUNK EXTENSION/FEEDER WITHOUT TICKET SALES CONFIGURATION -POST COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated test book	C3-2.3.11		EACH	1		

Input 4.2	As build documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.5 TRUNK EXTENSION/FEEDER WITHOUT TICKET SALES CONFIGURATION -OPERATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	Wayfinding Signage	C3-2.3.13 T2	Not applicable unless tenderer deems necessary (elaborate)	EACH	1		
Input 5.2				Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.6 TRUNK EXTENSION/FEEDER WITHOUT TICKET SALES CONFIGURATION -MAINTENANACE							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	Wayfinding signage	C3-2.3.13 T2	All-inclusive cost of staff, supervision PPE, tools, equipment, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.8 3RD PARTY LOADING POINTS

C2.3.2.8.1 3RD PARTY LOADING POINTST - PRODUCTION COSTS							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**

Input 1.1	Identification branding signage	C3-2.3.6	Branded load point ID + bus fares and schedules	EACH	1		
Input 1.2	Other	C3-2.3.6	Tenderer to add items not identified above but necessary				
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.7.2 3RD PARTY LOADING POINTST - INSTALLATION

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	Signage	C3-2.3.7	Inspection acceptance test including certification and documentation	EACH	1		
Input 2.2	POS/TOM (portable loading station)						
Input 2.3	Installation acceptance test						
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.8.3 3RD PARTY LOADING POINTS - COMMISSIONING

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 3.1	Pre-testing	C3-2.3.8	Internal testing Prior to SAT	EACH	1		

Input 3.2	System Acceptance Test	C3-2.3.8	Includes all preparation activities required to complete SAT	EACH	1		
Input 3.3	System Integration Test	C3-2.3.8	Includes all preparation activities required to complete SAT	EACH	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.8.4 3RD PARTY LOADING POINTS - POST COMMISSIONING							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 4.1	Pre-testing	C3-2.3.8	Internal testing Prior to SAT	EACH	1		
Input 4.2	System Acceptance Test	C3-2.3.8	Includes all preparation activities required to complete SAT	EACH	1		
Input 4.3	System Integration Test	C3-2.3.8	Includes all preparation activities required to complete SAT	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.8.5 3RD PARTY LOADING POINTS WITH SALES TICKET CONFIGURATION - OPERATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	3rd party sales function	C3-2.313 T2	All-inclusive cost of staff supervision, uniforms, material, consumables, training, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.8.6 3RD PARTY LOADING POINTS WITH SALES TICKET CONFIGURATION - OPERATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**

Input 5.1	All AFC equipment preventative and corrective maintenance	C3-2.313 T2	All-inclusive staff cost, PPE, tools etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)								

C2.3.2.9 PORTABLE VALIDATION UNIT

C2.3.2.9.1 PVU - PRODUCTION COSTS

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Portable Validation Unit	C3-2.3.6	Complete	EACH	1		
Input 1.2	Replacement Battery Pack	C3-2.3.6	Complete	EACH	2		
Input 1.3	Docking Station	C3-2.3.6	Complete	EACH	1		
Input 1.4	Neck Holster	C3-2.3.6	Complete	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.9.2 PVU - INSTALLATION COSTS							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 2.1	Portable Validation Unit	C3-2.3.7	Complete	EACH	1		
Input 2.2	Replacement Battery Pack		Complete	EACH	2		
Input 2.3	Docking Station		Complete	EACH	1		
Input 2.4	Neck Holster		Complete	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.9.3 PVU - COMMISSIONING COSTS							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 3.1	Pre Test -PVU	C3-2.3.8	Complete	EACH	1		
Input 2.2	SAT-PVU	C3-2.3.8	Complete	EACH	1		
Input 2.3	SIT-PVU	C3-2.3.8	Complete	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.9.4 PVU- POST - COMMISSIONING

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 4.1	Consolidated book	C3-2.3.11		EACH	1		
Input 4.2	As-build documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.9.5 PVU- OPERATION							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 5.1	PVU operation/ Inspection function	C3-2.3.13 T2		Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.9.6 PVU- MAINTENANCE							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 6.1	PVU Preventative & Corrective Maintenance	C3-2.3.13 T2		Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.10.1 DEPOT/LAYOVER - PRODUCTION COSTS

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Depot Server	C3-2.3.6		complete	1		
Input 1.2	Administration terminal	C3-2.3.6		EACH	1		
Input 1.3	Wireless Access Point	C3-2.3.6		EACH	1		
Input 1.4	Antenna	C3-2.3.6		EACH	1		

Input 1.5	Power Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.6	Earth Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.7	Data Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.8	Signal Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.9	Power Accessories	C3-2.3.6	CB, surge protection, etc.	Lot	1		
Input 1.10	Distribution Board	C3-2.3.6	Power distribution board for AFCS	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.10.2 DEPOT - INSTALLATION COSTS

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Depot Server	C3-2.3.7	Complete unit including peripherals	complete	1		
Input 1.2	Administration terminal	C3-2.3.7	Complete unit including peripherals	EACH	1		
Input 1.3	Wireless Access Point	C3-2.3.7	Complete unit including peripherals	complete	1		
Input 1.4	Antenna	C3-2.3.7	Complete unit including peripherals	complete	1		
Input 1.5	Power Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 1.6	Earth Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 1.7	Data Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		

Input 1.8	Signal Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 1.9	Power Accessories	C3-2.3.7	CB, surge protection, etc.	Lot	1		
Input 1.10	Distribution Board	C3-2.3.7	Power distribution board for AFCS	EACH	1		
Input 1.11	Installation Acceptance Test	C3-2.3.7		EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.10.3 DEPOT - COMMISSIONING

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Pre-Testing Depot Server	C3-2.3.8	Complete unit including peripherals	Each	1		
Input 1.2	System Acceptance Test	C3-2.3.8	Complete unit including peripherals	Each	1		
Input 1.3	System Integration Test	C3-2.3.8	Complete unit including peripherals	Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11 COST OF DESASTER RECOVERY CENTER PRODUCTION,INSTALLATION, COMMISSIONING,POST-COMMISSIONING AND MAINTENANCE

C2.3.2.11.1 DISASTER RECOVERY CENTER - PRODUCTION COSTS

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Server	C3-2.3.6	All central system server & rack Hardware, operating system as specified by the contractor	complete	1		
Input 1.2	Administration terminal	C3-2.3.6	To contractor's specification, including termination	EACH	1		
Input 1.3	Power Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.6	Earth Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		

Input 1.7	Data Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.8	Signal Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.9	Power Accessories	C3-2.3.6	CB, surge protection, etc.	Lot	1		
Input 1.10	Distribution Board	C3-2.3.6	Power distribution board for AFCS	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11.2 DISASTER RECOVERY CENTER - INSTALLATION COSTS							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	HW Installations	C3-2.3.7	Install Server, rack and cabling	complete	1		
Input 2.2	Power Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.3	Earth Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.4	Data Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.5	Signal Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.6	Power Accessories	C3-2.3.7	CB, surge protection, etc.	Lot	1		

Input 2.7	Distribution Board	C3-2.3.7	Power distribution board for AFCS	EACH	1		
Input 2.8	Installation Acceptance Test	C3-2.3.7	Testing with the Employer and all related costs	Complete	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11.3 DISASTER RECOVERY CENTER - COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre-Testing	C3-2.3.8	Includes conducting of testing and acceptance of the server installation with operating system, as well as the installation of the AFCs application	Complete	1		
Input 3.2	System Acceptance Test	C3-2.3.8	Includes all preparation activities required to complete SAT	Complete	1		
Input 3.3	System Integration Test	C3-2.3.8	Includes all preparation activities required to complete SIT	Complete	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11.4 DISASTER RECOVERY CENTER -POST COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated test book	C3-2.3.11		Each	1		
Input 4.2	As-build documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11.5 DISASTER RECOVERY CENTER - OPERATIONS							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5 .1	All AFCS equipment operations	C3-2.3.13 T2-	All-inclusive cost of staff, supervision, uniforms, materials, tools, equipment, consumables, training, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.11.6 DISASTER RECOVERY CENTER - MAINTENANCE

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 6 .1	All AFCS equipment maintenance	C3-2.3.13 T2-	All-inclusive cost of staff, supervision, uniforms, materials, tools, equipment, consumables, training, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.12 COST OF CENTRAL SYSTEM, PRODUCTION,INSTALLATION, COMMISSIONING,POST-COMMISSIONING AND MAINTENANCE

C2.3.2.12.1 COST OF CENTRAL SYSTEM - PRODUCTION COSTS

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 1.1	Server	C3-2.3.6	All central system server & rack Hardware, operating system as specified by the contractor	complete	1		
Input 1.2	Administration terminal	C3-2.3.6	All workstation hardware and operating system as specified by the contractor	complete	1		
Input 1.3	Workstation operator		All workstation hardware and operating system as specified by the contractor	complete	1		
Input 1.4	Power Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		

Input 1.5	Earth Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.6	Data Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.7	Signal Cable	C3-2.3.6	To contractor's specification, including termination	Meter	100		
Input 1.8	Power Accessories	C3-2.3.6	CB, surge protection, etc.	Lot	1		
Input 1.9	Distribution Board	C3-2.3.6	Power distribution board for AFCS	EACH	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.12.2 COST OF CENTRAL SYSTEM - INSTALLATION COSTS							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	Install HW	C3-2.3.7	All central system server & rack Hardware, operating system as specified by the contractor	complete	1		
Input 2.2	Power cable	C3-2.3.7	All workstation hardware and operating system as specified by the contractor	Meter	100		
Input 2.3	Earth Cable	C3-2.3.7	All workstation hardware and operating system as specified by the contractor	Meter	100		
Input 2.4	Data Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.5	Signal Cable	C3-2.3.7	To contractor's specification, including termination	Meter	100		
Input 2.6	Power Accessories	C3-2.3.7	CB, surge protection, etc.	Lot	1		

Input 2.7	Distribution Board	C3-2.3.7	Power distribution board for AFCS	EACH	1		
Input 2.8	Installation Acceptance Test	C3-2.3.7	Includes any contractor installation activities, including completion of IAT together with employer				
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.12.3 COST OF CENTRAL SYSTEM - COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre Testing	C3-2.3.8	Include conducting of testing and acceptance of the server installation with operating system, as well as the installation of the AFCS application	complete	1		
Input 3.2	System Acceptance Testing	C3-2.3.8	Includes preparation activities required to complete SAT	complete	1		
Input 3.3	System Integration Testing	C3-2.3.8	Includes preparation activities required to complete SIT	complete	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.12.4 COST OF CENTRAL SYSTEM - POST-COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated test book	C3-2.3.11		Each	1		
Input 4.2	As-build documentation	C3-2.3.11		Lot	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to summary cost sheet							

C2.3.2.12.5 COST OF CENTRAL SYSTEM - OPERATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	All AFC equipment operations	C3-2.3.13 T2-	All-inclusive cost of staff, supervision, PPE, materials, tools, Uniform consumables, training subcontracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.12.6 COST OF CENTRAL SYSTEM - MAINTENANCE							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	All AFC equipment Corrective as well as preventative maintenance	C3-2.3.13	All-inclusive cost of staff, supervision, PPE, materials, tools, spares consumables, training subcontracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							
The above costs are carried forward to the summary cost sheet							

C2.3.2.13 COST OF IMPLEMENTING BANKING/PAYMENT SYSTEM

C2.3.2.13.1 BANKING/PAYMENT SYSTEM - PRODUCTION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	Banking Server	C3-2.3.6	Payment gateway	Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.13.2 BANKING/PAYMENT SYSTEM - INSTALLATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	Banking Server	C3-2.3.7	Includes all installation activities prior to IAT	Each	1		
Input 2.2	Installation Acceptance Test	C3-2.3.7	Includes IAT with Employer	Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.13.3 BANKING/PAYMENT SYSTEM -COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Pre Testing	C3-2.3.8	Internal Testing prior to SAT	Each	1		
Input 3.2	System Acceptance Test	C3-2.3.8	Includes all preparation activities to complete SAT	Each	1		
Input 3.3	System Integration Test	C3-2.3.8	Includes all preparation activities to complete SIT	Each	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.13.4 BANKING/PAYMENT SYSTEM - POST COMMISSIONING							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL

Input 4.1	Consolidated Test book	C3-2.3.11		Each	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.13.5 BANKING/PAYMENT SYSTEMWITH TICKET SALES CONFIGURATION - OPERATIONS							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 5.1	Consolidated Test book	C3-2.3.11		Each	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.13.6 BANKING/PAYMENT SYSTEMWITH TICKET SALES CONFIGURATION - MAINTENANCE							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 6.1	Preventative and corrective maintenance	C3-2.3.13 T2-	Investigation and analysis of damaged cards	System wide per Month	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.14 LABOUR RATES

REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL	UNIT	QTY	RATE	TOTAL	UNIT	QTY	RATE	TOTAL	UNIT
Input 1	Project Manager		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 2	Quality Controller		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 3	Electronics Engineer		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 4	Software Developer		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 5	System Administrator		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 6	Database administrator		Hourly rate to be used for adhoc work upon	hour	1			Day	1			Week	1			Mont

			Employer instruction													
Input 7	Site Supervisor		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 8	Electronics technician		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 9	Installer		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 10	Electrician		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 11	AFCS Manager		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 12	Technical manager		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont

Input 13	Financial Manager		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 14	Information Manager		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 15	Supervisor		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 16	Ticket Sales clerk		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 17	Inspector		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 18	Maintenance technician		Hourly rate to be used for adhoc work upon Employer instruction	hour	1			Day	1			Week	1			Mont
Input 19	System Monitor		Hourly rate to be used for adhoc work upon	hour	1			Day	1			Week	1			Mont

			Employer instruction													

C2.3.2.15 COST OF SPARE PARTS						
REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**RATE**	**TOTAL**
Input 1	Tenderer specified Item	Add applicable tender ref.	Tenderer may add any they may wish to specify forming part of the FD stage	Add Unit measure		
Input 2						
Input 3						
Input 4						
Input 5						
Input 6						
Input 7						
Input 8						
Input 9						
Input 10						
Input 11						
Input 12						
Input 13						
Input 14						

Input 15						
Input 16						
Input 17						
Input 18						
Input 19						
Input 20						
Input 21						
Input 22						
Input 23						
Input 24						
Input 25						
Input 26						
Input 27						

The Tenderer is to enter all replaceable units and spare parts for the system in the above table, with their unit rates. Where spares apply to options quoted for The Tenderer is to indicate such
C2.3.2.16 COST OPTIONAL FARE GATES, PRODUCTION,INSTALLATION,COMMISSIONING,POSTM-COMMISSIONING,MAINTENANACE

C2.3.2.16.1 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-PRODUCTION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 1.1	Fare Gate Wide Lane	C3-2.3.6	Complete Lane as part of array	Lane	0		
Input 1.2	Fare Gate Narrow Lane	C3-2.3.6	Complete Lane as part of array	Lane	0		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.16.2 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-INSTALLATION							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 2.1	Fare Gate Wide Lane	C3-2.3.7	Complete Lane as part of array	Lane	0		
Input 2.2	Fare Gate Narrow Lane	C3-2.3.7	Complete Lane as part of array	Lane	0		
Input 2.3	IAT-Fare Gates	C3-2.3.7	Inspection acceptance Test including certification and test documents	Each	0		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.16.3 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 3.1	Fare Gate Wide Lane	C3-2.3.8	Complete Lane as part of array	Lane	0		
Input 3.2	Fare Gate Narrow Lane	C3-2.3.8	Complete Lane as part of array	Lane	0		
Input 3.3	IAT-Fare Gates	C3-2.3.8	Inspection acceptance Test including certification and test documents	Each	0		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.16.4 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-POST-COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOTAL**
Input 4.1	Consolidated test book	C3-2.3.11		Lane	1		
Input 4.2	As-build documentation	C3-2.3.11		Lane	1		
SUB-TOTAL (EXCL.VAT) (Tenderer to check that added items are all included in the sum formula)							

C2.3.2.16.5 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-OPERATION

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 5.1	OPTIONAL FARE GATES	C3-2.3.13 T2	All-inclusive cost of staff, supervision, uniforms, materials, tools, consumables, training, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.16.6 OPTIONAL FARE GATES WITHOUT TICKET SALES CONFIGURATION-MAINTENANCE

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOTAL
Input 6.1	OPTIONAL FARE GATES	C3-2.3.13 T2	All-inclusive cost of staff, supervision, PPE, materials, tools, consumables, training, sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.1 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-PRODUCTION

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOT
Input 1.1	TOM with POS	C3-2.3.6	Complete with all peripherals	each	1		
Input 1.2	QR-Code Ticket Generation Device and Printer	C3-2.3.6	Complete with all peripherals	each	1		
Input 1.3	CIT Drop Safe	C3-2.3.6	Contracted and managed by Tenderer on behalf of City	Month	36		
Input 1.4	7,KW-10 kW Generator Set	C3-2.3.6	All Fuel managed by Contractor	Month	36		

Input 1.5	Vehicle e.g. Mercedes Panel Van	C3-2.3.6	All licensing requirements, rebuilding designs, including UA readiness	Month	36		
	GSM Router With Two SIM-card slots, mini Network	C3-2.3.6	Contract with Service Provider	Month	36		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.2 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-INSTALLATION

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOT
Input 2.1	TOM with POS	C3-2.3.7	Complete system	each	1		
Input 2.2	QR-Code Ticket Generation Device and Printer	C3-2.3.7	Complete system	each	1		
Input 2.3	CIT Drop Safe	C3-2.3.7		month	36		
Input 2.4	7,5KW-10 kW Generator Set	C3-2.3.7	Estimated fuel value and maintenance	month	36		
Input 2.5	IAT Mobile Kiosk	C3-2.3.7	Inspection acceptance Test including certification and test documents	each	1		
Input 2.6	Vehicle	C3-2.3.7	All AFC equipment Installation	each	1		
Input 2.7	GSM Router With Two SIM-card slots, mini Network	C3-2.3.7	Contract with Service Provider	month	36		
Input 2.8							
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.3 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-COMMISSIONING							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOT**
Input 3.1	TOM with POS	C3-2.3.8	Complete Set of Devices	each	1		
Input 3.2	QR-Code Ticket Generation Device and Printer	C3-2.3.8	Complete set of devices	each	1		
Input 3.3	CIT Drop Safe	C3-2.3.8	Contract	Month	36		
Input 3.4	7,7-10 kW Generator Set	C3-2.3.8	Fuel purchases and maintenance	month	36		
Input 3.5	IAT Mobile Kiosk	C3-2.3.8	Inspection acceptance Test including certification and test documents				
Input 3.6	Vehicle	C3-2.3.8	All Maintenance and licences	month	36		
Input 3.7	GSM Router With Two SIM-card slots, mini Network	C3-2.3.8	contract	month	36		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.4 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-POST COMMISSIONING

TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOT
Input 4.1	Consolidated test book	C3-2.3.11		each	1		
Input 4.2	As-build documentation	C3-2.3.11		each	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.5 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-OPERATION							
TABLE REF.No.	ITEM	TENDER REF.	REMARKS	UNIT	QTY	RATE	TOT
Input 5.1	Mobile KIOSK Complete	C3-2.3.13 T2	All inclusive cost ofstaff,supervision,uniforms,materials,tools,conumables,training,sub-contracting etc.	Monthly	36		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items are all included in the sum formula)							

C2.3.2.19.6 MOBILE-KIOSK WITH TICKET SALES CONFIGURATION-MAINTENANCE							
TABLE REF.No.	**ITEM**	**TENDER REF.**	**REMARKS**	**UNIT**	**QTY**	**RATE**	**TOT**
Input 6.1	Complete Mobile KIOSK	C3-2.3.13 T2	All inclusive cost ofstaff,supervision,PPE,materials,tools,conumables,training,sub-contracting etc.	Monthly	1		
SUB-TOTAL (EXCL.VAT)(Tenderer to check that added items							

are all included in the sum formula)							

MBD 6.1

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

1.2 To be completed by the organ of state

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

b) 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

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**

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

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.*)**

The specific goals allocated points in terms of this tender	MEANS OF VERIFICATION DOCUMENTS REQUIRED	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Ownership of 51% or more by persons who are black	CSD/Company registration copy and ID Copies of directors	5	
Ownership of 51% or more by persons who are woman	CSD/Company registration copy and ID Copies of directors	5	

Ownership of 51% or more by persons who are disable	Medical report indicating disability	4	
Ownership of 51% or more by persons who are youth	CSD/Company registration copy and ID Copies of directors	4	
Ownership by persons who are residing within jurisdiction of Polokwane Municipality	municipal rates and taxes statement of account/ signed valid leasing agreement/Letter from tribal authority	2	
Total points claimed		**20**	

Table 2: Business entity ownership disclosure

Bidders must list all shareholders and provide ownership information in terms of the business entity registration certificate

Full Names	Identity Number	% of ownership	South African (Yes/No)	Race	Gender	Disable (Yes/No)	Youth (Yes/No)	Local enterprise (Yes/No)

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:	.....
	.....
	.....
	.....

ANNEXURE A

EVALUATION PROCESS AND CRITERIA

BID NO: PM79-24/25

The following evaluation process and criteria will be used to evaluate all bids submitted:

1. Administrative Compliance – Phase One

1.1 All bids duly lodged will be examined to determine compliance with bidding requirements and conditions. Bids with obvious deviations from the requirements/conditions, will be eliminated from further evaluation.

4. ADMINISTRATIVE COMPLIANCE

4.1. All bids duly lodged will be examined to determine compliance with bidding requirements and conditions. Bids with obvious deviations from the requirements/conditions, will be eliminated from further evaluation.

4.2. **Critical Criteria**:
The following critical criteria have been identified for this bid and any non-compliance thereto will lead to the bid being regarded as non-responsive and disqualified from further evaluation:

- Authority to sign filled in full
- All Pages initialed
- Certified ID Copies of All Directors/Members/Shareholders of The Company/Business (If JV, For Both)
- Valid original tax compliance status certificate (If JV, For Both)
- Joint venture agreement (Where applicable)
- Pricing Schedule in black ink
- Signed for all alteration and in the Pricing Schedule
- Central Supplier Database (CSD) report (If JV, For Both)
- Company certificate
- Municipal rates and taxes/Lease agreement/Local tribal authority letter (**For company and all the directors)** not older than 3 months
- Completed and signed Invitation to bid **(MBD1)**
- Completed and signed declaration of interest **(MBD4)**
- Completed and signed declaration for procurement above R10 million (Including tax) **(MBD5)**
- Completed and signed preference points claim form **(MBD6.1)**
- Completed and signed declaration on past SCM practices form **(MBD8)**
- Completed and signed certificate of independent bid determination **(MBD9)**

NB: THE BIDDERS THAT MEET THE ABOVE ADMINISTRATIVE COMPLIANCE WILL FUTHER BE EVALUATED ON PRICE AND FUNCTIONALITY

1. EVALUATION ON QUALITY/ FUNCTIONALITY= 100

Scoring Criteria for Quality and Functionality

					Scores	Maximum Number of points
1	**Relevant Project Experience** on similar contracts and Current Users of the system	Relevant experience of key automatic fare collection, EMV transit card or similar projects as	**0**	The tenderer has no experience in the field of AFC-related projects. (**Very Poor**)	**0**	**20**
			40	The tenderer has **poor** and limited (1-2 projects) experience in the field of AFC. .(Integration with PTMS knowledge will be an additional advantage)	**8**	
			80	The tenderer has **satisfactory** and relevant (3-4 projects) experience in the field of AFC-related projects. (Integration with PTMS knowledge will be an additional advantage)	**16**	
			90	The tenderer has **good** and extensive (5-6 projects) experience in the field of AFC related projects. .(Integration with PTMS knowledge will be an additional advantage)	**18**	
			100	The tenderer has **very good** and outstanding (+6 projects) experience in AFC-related projects. (Integration with PTMS knowledge will be an additional advantage)	**20**	
	Methodology and Technical	Approach paper which responds to the scope of work and outlines the proposed approach/methodology,	**0**	**Very poor** response received which does not comply with this evaluation schedule.	**0**	**15**

2	**Approach, Project Management and Programme**	project management and programme including that relating to health and safety.	**40**	The technical approach and / or methodology are **poor** / are unlikely to satisfy project objectives or requirements. The tenderer has misunderstood certain aspects of the scope of work and does not deal with the critical aspects of the project.	**6**	
			80	The approach addresses the specific project objectives and methodology. The approach identifies the critical characteristics of the project and offers solutions that show an adequate understanding of the systems and services required. The quality plan, the manner in which risk is to be managed etc. is adequate/ **Satisfactory**	**12**	
			90	The approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The quality plan and approach to managing risk etc. is specifically tailored to the critical characteristics of the project. (**Good**)	**13.5**	
			100	Besides meeting the "good" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The approach paper details ways to improve the project outcomes and the quality of the outputs. (**Very Good**)	**15**	
	Operations and Maintenance plan (AFC)	Ability to provide a suitable operations and maintenance plan to meet the specified requirements.	**0**	**Very poor** response received which does not comply with this evaluation schedule.	**0**	**15**

3			**40**	The proposed operations and maintenance plan may likely not meet the stated employer's requirements (**Poor**)	**6**	
			80	The proposed operations and maintenance plan may possibly be able to meet the stated employer's requirements (**Satisfactory**)	**12**	
			90	The proposed operations and maintenance plan is likely to meet the stated employer's requirements (**Good**)	**13.5**	
			100	The proposed operations and maintenance plan is most likely to meet the stated employer's requirements. (**Very Good**)	**15**	
4	**Organization and staffing**	Qualifications and general experience of Key staff (Project Manager, Technical and Operational staff) And Adequacy for the assignment (assigned personnel) in relation to the Scope of Works	**0**	**Very poor/No** response received which does not comply with this evaluation schedule. A score of 0 will also be awarded for any misrepresentation made in the schedule of experience of key personnel.	**0**	**10**
			40	The organization chart is sketchy, the staffing plan is weak/poor in important areas. There is no clarity in allocation of tasks and responsibilities. Key staff have limited levels of project specific education, skills, training and experience **(Project Manager is <NQF-8 (or Equivalent Operational Staff (Relevant Qualifications).**	**4**	

			80	The organizational chart is complete and detailed, the technical level and composition of the staffing arrangements are adequate/**Satisfactory**. Key staff have reasonable levels of project-specific education **(Project Manager is NQF8 (or Equivalent Qualification), Technical Staff is NQF6 (or Equivalent Qualification) and Operational Staff (Relevant Qualifications)**, skills, training and experience **(5 years)**	**8**	
			90	Besides meeting the "satisfactory" rating, staff are well balanced i.e. they show good co-ordination, complementary skills, clear and defined duties and responsibilities, and the approach to satisfying local consultants. Some members of the project team have worked together before on limited occasions. Key staff have extensive levels of project-specific education **(Project Manager is NQF8 (or Equivalent Qualification), Technical Staff is NQF6 (or Equivalent Qualification) and Operational Staff (Relevant Qualifications),** skills, training and experience **(6-10 years).**	**9**	
			100	Besides meeting the "good" rating, the proposed team is well-integrated, and several members have worked together extensively in the past. Key staff have outstanding/Very Good levels of project-specific education **(Project Manager is NQF8 (or Equivalent Qualification), Technical Staff is NQF6 (or Equivalent Qualification) and Operational Staff (Relevant Qualifications)),** skills, training and experience **(+11 years)**	**10**	

5	**AFC - Equipment, design and contractor requirements**	Ability for equipment and contractor to fully comply with the specification and requirements criteria	**0**	None compliance with any of the below criteria, an alternative offer	**0**	**20**
			20	. **Electrical Standards Compliance** • Compliance with **international standards** (e.g., IEC, ISO, EN) and **national electrical regulations**. • Documentation proving conformity to safety, electromagnetic compatibility (EMC), and energy efficiency norms • Environmental resilience testing (e.g., IP65 rating, operational in extreme temperatures	**1** **2** **2**	
			40	**Technical Testing & Performance** • Third-party test reports validating performance under load (e.g., peak-hour transaction capacity). • Proof of **interoperability** with existing systems (e.g., fare gates, backend servers).	**2** **3**	

			80	**NDoT Certification** • Valid certification from the **National Department of Transport (NDoT)**. • A copy of the certification must be submitted as part of the bid. • Equipment must meet NDoT's technical and operational guidelines.	**1** **2** **2**	
			90	**Warranties & Lifecycle Support** • **Minimum 5-year warranty** from the OEM, covering parts, labor, and software updates. • Clear documentation of **equipment lifespan** (e.g., 10+ years). • Commitments for **local technical support**, spare parts availability, and response time guarantees (e.g., <24 hours for critical failures).	**2** **1** **2**	
			100	**Compliance with equipment requirements** • Alignment of technical specifications with those explicitly stated in the tender document.		

				Full adherence to functional, operational, and interoperability requirements		
6	**Quality Control Procedures**	Demonstrate the tenderers Quality Control practices and procedures.	**0**	Very poor response received which does not comply with this evaluation schedule.	**0**	**5**
			40	The described Quality control procedures are unlikely to ensure compliance with stated employer's requirements	**2**	
			80	The described Quality control procedures are likely to ensure compliance with stated employer's requirements	**4**	
			90	The described Quality control procedures are very likely to ensure compliance with stated employer's requirements, add to a well-managed project environment and ensure quality deliverables	**4.5**	
			100	Quality control procedures are very likely to ensure compliance with stated employer's requirements, add to a well management environment and are highly likely to add value to the project deliverables	**5**	
7	**Training Plan**	Detail the tenderers proposed Training programme.	**0**	Very poor response received which does not comply with this evaluation schedule.	**0**	**5**
			40	The training plan proposed may likely not meet the stated employer's requirements	**2**	
			80	The training plan is likely to meet the stated employer's requirements	**4**	
			90	The training plan is very likely to ensure compliance with stated employer's requirements	**4.5**	
			100	The training plan is very likely to ensure compliance with stated employer's requirements	**5**	

				and add value to the capability of the operations team.		
8	**System compatibility**	Demonstrate the ability of the system to integrate with similar 3rd party systems.	**0**	Very poor response received which does not comply with this evaluation schedule	**0**	**5**
			40	System compatibility is unlikely to ensure compliance with stated employer's requirements	**2**	
			80	System compatibility is possibly able to ensure compliance with stated employer's requirements	**4**	
			90	System compatibility is likely to ensure compliance with stated employer's requirements	**4.5**	
			100	System compatibility is most likely to ensure compliance with stated employer's requirements	**5**	
9	**Financial Capability**	Attach Audited Financial Statements for the past three years. (Liquidity ratio and gearing ratio in terms of industry)	**0**	The tenderer has a **very poor** financial ability.	**0**	**5**
			40	The tenderer has **poor** financial ability with unsatisfactory liquidity and gearing ratio.	**2**	
			80	The tenderer has a **satisfactory** liquidity and gearing ratio.	**4**	
			90	The tenderer has a **good** and extensive financial ability with good liquidity and gearing ratios.	**4.5**	
			100	The tenderer has a **very good** and outstanding liquidity and gearing ratio and the financial statements prove that the tenderer is financially strong to deliver a high-quality project.	**5**	
The maximum possible score for Quality and Functionality The total points scored for AFC						**100**
<u>The Tenderer must score the following Minimum score to Pass Quality and Functionality:</u> · Minimum of 80% of overall average Functionality/Quality (Tenderer must score 80% for AFC) · Minimum of 40% on relevant project experience for AFC individually (Tenderer must score 40% for AFC)						

• Minimum of 80% compliance with key requirements on AFC - Equipment, design and contractor requirements		

3. Price and Specific goals– Phase Three

The evaluation will be done by using **80/20**-point system as indicated below:

Preference point system	**Points**
Price	80
Specific Goals	20
Total Maximum Score	**100**

THE EVALUATION WILL BE DONE USING 80/20-POINT SYSTEM, 80 FOR PRICE AND 20 FOR SPECIFIC GOALS

***Notes: Bidders must note that points for specific goals must be claimed in terms with the percentage of ownership within their business entity. The tenderer must indicate how they claim points.*)**

SPECIFIC GOALS	**POINTS ALLOCATED**	**POINTS SCORED**
Ownership of 51% or more by persons who are black	5	
Ownership of 51% or more by persons who are woman	5	
Ownership of 51% or more by persons who are disable	4	
Ownership of 51% or more by persons who are youth	4	
Ownership by persons who are residing within jurisdiction of Polokwane Municipality	2	

Incase ownership of specific goals is below 51% points will be *claimed in terms with the percentage of ownership within their business entity. For example:*

An Entity that has 35% shareholding of able black man who is above age of 35 and residing outside the jurisdiction of Polokwane Municipality. Points will be claimed as follows:

$$\textit{Calculation} = \frac{\textit{Black Ownership}}{100} \; X \; \text{Total number of allocated points}$$

= 35 X 5

100

= 1.75

Points to be score for ownership of black person will be 1.75

OR

***Calculation* = *Black Ownership* *X* Total number of allocated points**

100

= 35 X 3

100

= 1.05

Points to be score for ownership of black person will be 1.05

MBD 4

DECLARATION OF INTEREST

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest1 in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	**Identity Number**	**Name of State institution**

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

……

1 the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

……

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

2.3.1 If so, furnish particulars:

……
……

3 DECLARATION

I, the undersigned, (name)…… in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

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

3.3 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 consortium2 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 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.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 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

2 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.

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.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

..……	……....
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?

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?

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.

2.2 If yes, provide particulars.

……

…….

…….

……..

* Delete if not applicable

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. Will any portion of goods or services be sourced from outside 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?

*__YES / NO__

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**

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:		
Item	**Question**	**Yes**	**No**
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**
…….	**……**
Position	**Name of Bidder**

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

6 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:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Municipality / Municipal Entity)

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.
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.

[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

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**

ANNEXURE "C"

CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: _____(Name of Bidder)

FURTHER DETAILS OF BIDDER(S); DIRECTORS/SHAREHOLDERS/PARTNERS, ETC.

Directors/shareholders/ Partner	Physical address of the Business	Municipal Account No.	Physical residential address of the Director/Shareholder/Partner	Municipal Account No.

NB: Please attach certified copy (ies) of ID document(s)

_____ _____

Signatory **Date**

Witnesses

1. _____ _____ _____

Full Names **Signature** **Date**

2. _____ _____ _____

Full Names **Signature** **Date**

ANNEXURE "D"

AUTHORISATION FOR DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: _____ (Name of the Bidder or Consortium)

I, _____ the undersigned, hereby authorise the Polokwane Municipality to deduct the full amount outstanding by the business organisation/Director/Shareholder/Partner, etc. from any payment due by us/me.

Signed at _____ **Date**_____ **Month** _____ **20**_____

Print Name: _____

Signature: _____

Thus done and signed for and on behalf of the bidder/Contractor

_____	_____
Signatory	**Date**

Witnesses

1. _____	_____	_____
Full Names	**Signature**	**Date**
2. _____	_____	_____
Full Names	**Signature**	**Date**