	Guideline	**Technology**

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Compiled by	Functional Responsibility	Authorised by
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Date: .15 September 2020........	Date: 15 September 2020	Date: 16 September 2020

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FIGURES

TABLES

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1. INTRODUCTION

Eskom has developed an Online Vending Server, similarly known as OVS. OVS is an Eskom's national prepayment vending platform using the Itron Eclipse System. The system is enabled to vend prepaid electricity online and in real-time to approximately 6.3 million Eskom prepaid electricity customers.

Eskom is periodically issuing a Request for Proposals with the intention of procuring the services of National Vending Agents for the purpose of dispensing prepaid electricity tokens to Eskom customers.

Prospective suppliers will be required to demonstrate their systems compliance to Eskom's Specialised XMLVend Specification in order to ensure that the minimum requirements are met as which is a prerequisite for the submission to make it to the next phases of the evaluation so as to qualify as an Eskom National vending agent.

Eskom enters into a contractual agreement with selected prepaid Vending agents. The Vending agents use their own technology and vending terminals to provide vending services on behalf of Eskom.
Supporting Clauses

2. SCOPE

2.1.1 Purpose

The intention of this guideline is to provide a consistent and standard guide to the evaluation of technical demonstrations for the purpose of assessing compliance to Eskom's specialised XMLVend specification and also to ensure that the suppliers' vending systems comply to all related functional requirements.

2.1.2 Applicability

This document shall apply throughout Eskom Distribution Division.

2.2 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] ISO 9001 Quality Management Systems

2.2.2 Informative

[1] http://www.prepayment.eskom.co.za/terms.asp

[2] 240-76132187 Online Vending Receipt Formats

2.3 DEFINITIONS

Definition	Description

ClientID	This identifier is defined in the XMLVend specification and used to uniquely identify a Vendor in an Online Vending System.
Mag Card (Magnetic Card/Token)	Not the same as Meter Card. Magnetic Card is a specific type of a Token This is usually a paper (disposable) Card that carries the credit or other data to the meter.
Meter Card	A plastic card with magnetic strip according to ISO 7812 series specification.
Meter Type	The Meter Type is a combination of Token Technology and Algorithm Type. The Meter Type uniquely defines how a token should be created to work in the meter.
Reprint	A Reprint simply reproduces a copy of one or more earlier tokens. (The number of tokens is configurable on the Vending Server).
Simple Object Access Protocol	SOAP is a W3C standard to create a Web service. SOAP enables programmable logic / web service to be accessible using standard Internet protocols. It consists of service-agnostic request handler (a listener) that receives SOAP/XML message requests, and a facade layer that exposes the operations supported by the underlying business logic. The responses are then also packaged and sent as standardized SOAP / XML messages.
Token Technology / Type (TT)	A two-digit code defined by STS. There are codes for the various tokens used by STS as well as for the tokens used by proprietary meters. The combination of Token Technology and Algorithm Type, define the Meter Type
Update Meter Key	Update Meter Key is a new and simplified Key Change process. The Update Meter Key action is initiated by the Operator e.g. by selecting the appropriate button on the Client. The operator must then provide the "From" information from the Meter Card or sometimes via manual entry from an old token.
Vending Terminal	A Vending Terminal is vending device that usually has a proprietary design and communication. It operates similar to a Vending Client but may also have other dedicated functions that would be transparent to Eskom.
XMLVend	The NRS 009-6-10 specification specifies an XML communication mechanism named XMLVend. The Vending Server will communicate to all Vending Clients and Vending Gateways though XMLVend.
Vending Client	Vending client also synonymously referred to as Online Vending Point-of-Sale, contains no security module or customer data and must request every token from the Server in real time.
Online Vending System/ Server	OVS is a centralised application used to vend prepaid electricity tokens to Eskom prepaid customers.

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Use Cases	All the functions provided by the XMLVend are defined as Use Cases.

2.4 ABBREVIATIONS

Abbreviation	Explanation
XMLVend	eXtensible Markup Language
NVA	National Vending Agent
EAN	Numbering system designed by International Article Numbering Association (EAN) in Europe.
XML	eXtensible Markup Language
FBE	Free Basic Electricity
KRN	Key Revision Number
MSNO	Meter Serial Number
SGC	Supply Group Code
SOAP	Simple Object Access Protocol
TI	Tariff Index

2.5 ROLES AND RESPONSIBILITIES

2.5.1 Responsibilities over this document

Compiler	Shall ensure that the document gets updated with changes identified to the evaluation process.
Functional Responsibility	The Functional Responsible Person shall determine if the document is fit for purpose, before the document is submitted for authorisation
Authoriser	The document authoriser is a duly delegated person with the responsibility to review the document for alignment to business strategy, policy, objectives and requirements. He/she shall authorise the release and application of the document

2.6 PROCESS FOR MONITORING

This document will be monitored and maintained by the Prepayment Development section of the PTM&C department.

2.7 RELATED/SUPPORTING DOCUMENTS

- Online Vending RFP document

- Eskom Prepayment vending strategy

3. EVALUATION PROCESSES

3.1 UNDERLYING PRINCIPLES

The evaluation process is based on the following principles:

- Existing methods of performing the evaluations which are working have not been changed.

- Keeping matters efficient, effective and simple.

- Keep the workload of the evaluation team to a minimum in order to make sure that the team have sufficient time to deliver within time.

- Capture and consistently record scores fairly

3.2 PRE DEMONSTRATION

After the completion of the paper evaluation, the suppliers are required to demonstrate their client servers to determine XMLVend compliance. All testing requirements will be shared with the suppliers together with the invitation.

The link for the location of the testing requirements is on the Eskom prepayment website that is shared with the suppliers

3.3 XMLVEND COMMUNICATION
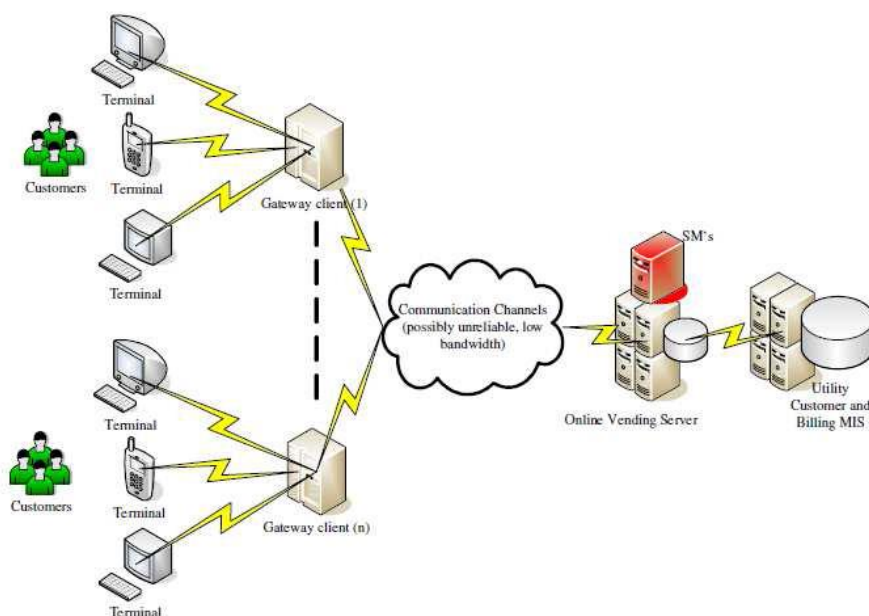
Figure 1**: XMLVend Communication between OVS and Client-server**

The diagram above depicts the architecture of how the vendor client server, also referred to as gateway client, interact with Eskom Online Vending Server. The communication between the gateway client and OVS should be strictly XMLVend compliant as per the XMLVend 2.1 specification.

3.4 USE CASES

Use cases have been identified to describe all the functions supported by the XMLVend specification. The business use cases are:
- Collect free basic electricity (FBE) token
- Purchase Credit token including the extended functions
- Reprint transaction

- Customer Report Fault
- Update Meter Key Data
- Account Payments
- Reprint Transactions
- Receipt Layout

These use cases are what will be tested during the demonstration. The responses to these use cases are loaded onto the test server and these can be configurable by the tester in order to achieve the required results.

3.5 TYPES OF METERS

There are currently two types of prepaid meters and all prospective vendors are required to cater for both types of meters. These are:-

Meter Type	Description
Key Pad Meter	This is a meter that has a display and a keypad to type in a token for credit.
Magnetic Card Meter	This is a meter that has a display and a slot to enter a paper based magnetic token for credit.

3.6 METHOD OF IDENTIFICATION

For the purpose of this document, the method of identification refers to the manner in which input data is provided at the vending point or device. This means that the supplier must use the following to identify the method of data input during the demonstration:-

Method	Description
Number-only	Number only based vending which means only the meter number is required and the meter must therefore be registered on the database to conduct the transaction.
All data	This is typically known as blind-vending, blind-vending refers to a scenario where the meter is not registered on the system but the transaction is still conducted by entering all the meter configuration (like supply group and tariff index) as well.
Magnetic card	To produce magnetic tokens, for sites with magnetic card meters, the vending points should be able to vend magnetic token. In all instances when conducting evaluations, tenderers are required to use the 3 listed functionalities for each use case.

3.7 MESSAGE INTERCEPTOR REPORT

The evaluator must verify the test results by comparing the printed receipts and the XMLVend requests and responses from interceptor report for compliance to XMLVend Specification. The interceptor, as illustrated in Figure 2 below, is an accurate tool used to record all interaction between client-server and Eskom/ Test server. The evaluator will be able to determine the correctness of the demonstration results by analysing the data from the interceptor report.

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The interceptor report is used to confirm that the correct request was sent from the client server and the correct response details were sent back from the Eskom server.

The artefacts used to determine compliance is the XMLVend Protocol Compliance Test Report, as reflected in the diagram below, and the XMLVend scoring sheet, see Annexure A.
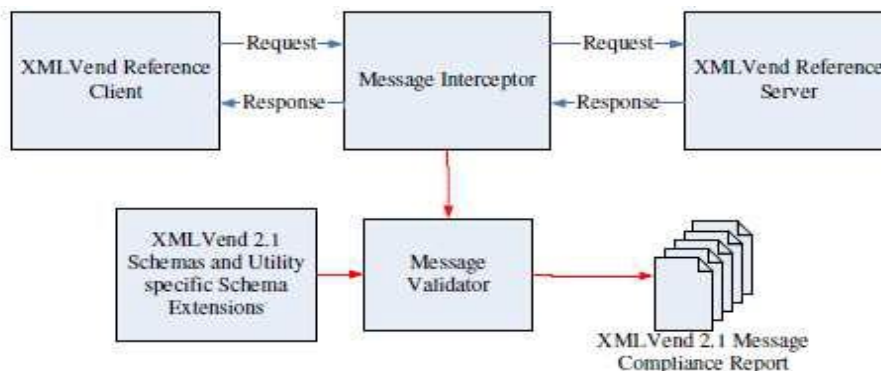

Figure 2: Message Interceptor: XMLVend 2.1 Message Compliant Report

3.8 THE DEMONSTRATION

A confirmation of the use cases to be tested is shared with the supplier in line with the requirements as published in the enquiry.

A Test vend is done in order to ensure that the configuration of the interceptor report is correct to record the details of the requests and responses.

The supplier will be requested to print out the receipts for all the use cases executed.

During the evaluation, the suppliers will be given instructions on how to execute the uses cases.

All the data set required to execute the use cases shall be provided to the suppliers.

All the server configurations that are required in order to achieve the desired results shall be communicated to the suppliers.

At the end of the demonstration session, the supplier must compile the message interceptor report and make it available to Eskom.

All the receipts printed must be made available to Eskom.

All the message interceptor reports and receipts will be made available to Eskom for further evaluation.

3.9 ASSESSMENT RATING DESCRIPTION

Rating Indicator	Description / supporting information
Pass	The results of the test have met all the compulsory conditions that have been set to execute the use case.
	Confirmation that the response displayed in the message interceptor report corresponds with receipt output.
	The rating is a score of one (1) point on the use case.

Rating Indicator	Description / supporting information
Qualified Pass	The results of the test have met some of the conditions that have been set to execute the use case.
	Confirmation that the response displayed in the message interceptor report corresponds with receipt output.
	The rating is a score of half (0.5) a point on the use case.
Fail	The results of the test have not met all the compulsory conditions that have been set to execute the use case.
	Confirmation that the response displayed in the message interceptor report does not correspond with receipt output or there is no response received from the server.
	The use case has not been tested because the supplier does not support the use case.
	The rating is zero (0) point on the use case.
Pending	The confirmation of the outcomes of the test has not been received from the supplier.
	The rating is zero (0) points on the use case and will be updated when the results have been confirmed.
Not Applicable	The use case will not be tested for the purpose of the evaluation as it does not apply.
	The weighting and points for the use case is not included in the final mark.
Not Tested	The use case has not been tested because the supplier ran out of time to complete the testing.
	The rating is zero (0) points on the use case.

3.10 SCORE CONSOLIDATION

Results analysis and scoring

All the message interceptor reports and the receipts produced by the supplier shall be used to verify and validate the outcomes of the technical demonstration.

All the scores for the individual evaluators will be consolidated into one scoring sheet to determine the suppliers' overall rating for this part of the evaluation.

Suppliers are required to achieve a total of 80% threshold on both the technical paper evaluation together with the technical demonstration and those who have met the threshold will be recommended for possible contracting.

By the end of the evaluation process, the evaluators must sign off the consolidated scoring sheets as well as the final supplier technical evaluation report.

3.11 QUICK GUIDE TO THE EVALUATION PROCESS

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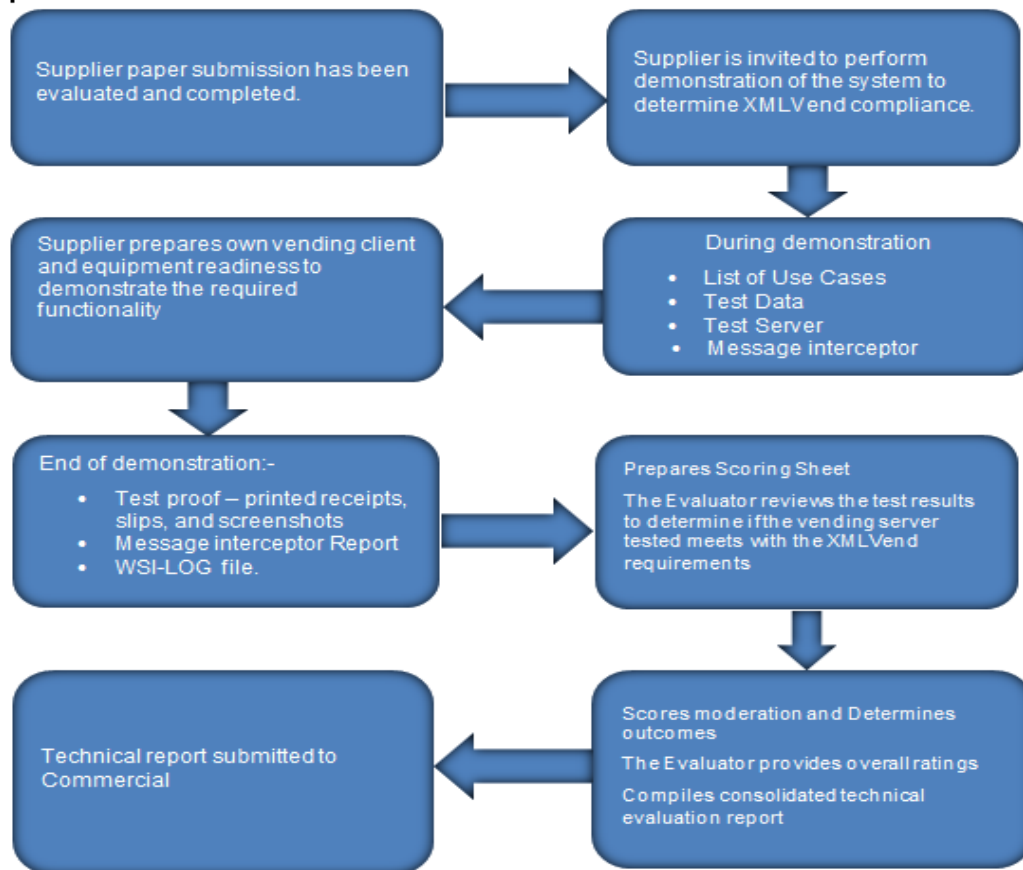
Figure 3: Technical Evaluation Process Summary

4. ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
Deon van Rooi	Middle Manager Prepayment Development
Brian Mokgele	Middle Manager, Value Chain Management
Jimmy O'Kennedy	Chief Engineer
Mbali Biyela	Senior Advisor Prepayment Development

5. REVISIONS

Date	Rev.	Compiler	Remarks
September 2020	0.1	M Masoleng	Original Draft Document.

6. DEVELOPMENT TEAM ACKNOWLEDGEMENTS

The following people were involved in the development of this document:

- Martin Masoleng
- Mbali Biyela
- Jimmy O'Kennedy

Annex A – XMLVend Scoring Sheet

R F P CORP: _____

Supplier Tested : _____

Date : _____

No.	Use Cases	Categories	Weighting	Technical Score	Weighted Score
1	Dispense / Purchase Credit Token	1.1 Purchase Credit Token Only Using MSNO (11 digit MSNO)	15	#DIV/0!	#DIV/0!
		1.2 Purchase Credit Token Only Using MSNO (13 digit MSNO)			
		1.3 Purchase Credit Token Only Using Mtr Crd Track 2 Data			
		1.4 Purchase Credit Token Only Using All details			
2	Dispense / Purchase Credit Token with with extended Functions	2.1 Purchase Credit Token (with debt recovery)	15	#DIV/0!	#DIV/0!
		2.2 Purchase Credit Token (with fixed charges)			
		2.3 Purchase Credit Token (with auto FBE, Debt recovery & fixed charges)			
		2.4 Purchase Credit Token (currency)			
		2.5 Purchase Credit Token (with over recovery)			
		2.6 Purchase Credit Token (with auto FBE)			
		2.7 Purchase Credit Token (with auto FBE, with debt recovery)			
3	Dispense Free Basic Electricity (FBE) Token	3.1 FBE Token Only Using MSNO	5	#DIV/0!	#DIV/0!
		3.2 FBE Token Only Using Mtr Crd Track 2 Data			
4	Reprint Token	4.1 MSNO	5	#DIV/0!	#DIV/0!
		4.2 Mtr Crd Track 2 Data			
5	Update Meter Key Using Meter Card	5.1 Keypad meter	10	#DIV/0!	#DIV/0!
		5.2 Magnetic card meter			
		5.3 Meter card encoding			
6	Vend token for Magnetic Meters	6.1 Purchase Credit Token Only Using MSNO	15	#DIV/0!	#DIV/0!
		6.2 Purchase Credit Token Only Using Mtr Crd Track 2 Data			
		6.3 Purchase Credit Token Only Using All details			
		6.4 Purchase Credit Token (with debt recovery) Using MSNO			
		6.5 Purchase Credit Token (with debt recovery) Using Mtr Crd Track 2 Data			
		6.6 Purchase Credit Token (with debt recovery) Using All details			
		6.7 Purchase Credit Token (with auto FBE) Using MSNO			
		6.8 Purchase Credit Token (with auto FBE) Using Mtr Crd Track 2 Data			
		6.9 Purchase Credit Token (with auto FBE) Using All details			
7	Customer 'Fault Reporting Functionality' on vending device	7.1 Serious Box damage	10	#DIV/0!	#DIV/0!
		7.2 Fire / water damage			
		7.3 Meter dead			
		7.4 Keeps tripping			
		7.5 No trip			
		7.6 Display, lights, buttons			
		7.7 Token not working - Incorrect TI			
		7.8 Token not working - Incorrect SGC			
		7.9 Unregistered meter-RecordMissing NewInstallation			
		7.10 Unregistered meter-RecordMissing MeterChangedOut			
		7.11 Unregistered meter-RecordMissing ConvertedFromConventional			
		7.12 NetworkFaultReport			
8	Prepaid Debt Payment	8.1 Pay Prepaid Debt Using MSNO	5	#DIV/0!	#DIV/0!
		8.2 Pay Prepaid Debt Using Mtr Crd Track 2 Data			
9	Exceptions	9.1 Insufficient Meter Data to Vend	10	#DIV/0!	#DIV/0!
		9.2 Meter not Registered			
		9.3 Grace purchases depleted			
		9.4 Grace purchases warning			
		9.5 More recent data on server (Exception)			
		9.6 Require Meter Card (Exception)			
		9.7 Minimum Vend Amount			
		9.8 ExpiredMessage			
		9.9 MSNOCheckDigitEx			
10	Receipt Layout	10.1 POS	10	#DIV/0!	#DIV/0!
		10.2 Virtual Channels			
			100		#DIV/0!
		Technical Evaluation Threshold	80	Final Score	#DIV/0!

Scores Signed Off:-

Evaluator Names:	Designation:	Signature:	Date:
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