

 Eskom	Report	Technology
--	---------------	-------------------

Title: **TECHNICAL EVALUATION
CRITERIA FOR MULTIFUNCTION
TEST SETS**

Unique Identifier: **240-170000797**

Alternative Reference Number: **n/a**

Area of Applicability: **Engineering**

Documentation Type: **Report**

Revision: **1**

Total Pages: **12**

Next Review Date: **n/a**

Disclosure Classification: **Controlled
Disclosure**

Compiled by	Functional Responsibility	Authorized by
		
Kashveer Jagdaw	Andre De La Guerre	Nelson Luthuli
Senior Engineer: Protection Technology & Support	Middle Manager: Protection Technology & Support	Acting Senior Manager: PTM&C Engineering
Date: 14/04/2022	Date: 14 April 2022	Date: 19 April 2022

Content

	Page
1. Introduction	3
2. Supporting clauses	3
2.1 Scope	3
2.1.1 Purpose	3
2.1.2 Applicability	3
2.2 Normative/informative references	3
2.2.1 Normative	3
2.2.2 Informative	3
2.3 Definitions	3
2.3.1 General	3
2.3.2 Disclosure classification	3
2.4 Abbreviations	3
2.5 Roles and responsibilities	4
2.6 Process for monitoring	4
2.7 Related/supporting documents	4
3. Technical Tender Evaluation Procedure	4
3.1 Stage 1 - Evaluation of Mandatory Requirements	5
3.2 Stage 2 - Evaluation of Technical Qualitative Requirements	6
3.2.1 Subcategory A1: A&B Technical Evaluation	6
3.2.2 Subcategory A2: A&B Technical Support Requirements	7
3.3 Practical Evaluation	7
3.4 Deemed Offer Risk(s)	9
4. Authorization	9
5. Revision History	10
6. Development team	10
7. Acknowledgements	10
Annex A – Offered Product/s	11
Annex B – Questionnaire	12

Tables

Table 1: Qualitative technical evaluation – overall	4
Table 2: Mandatory Requirements Evaluation	6
Table 3: Weight allocations for desktop evaluations	6
Table 4: Scoring of Items in Technical Schedules A&B	7
Table 5: Technical Support Requirement scoring	7
Table 6: Functionality Test Items for a Protection MFT	8
Table 7: Functionality Test Items for a Metering MFT	8
Table 8: Functionality Test Items for Cyber Security and IEC 61850 Network Tools	9
Table 9: Scoring of Items for Practical Evaluation Checklist	9
Table 10: Practical Evaluation	9
Table 11: Deemed Offer Risk(s) Evaluation	9

ESKOM COPYRIGHT PROTECTED

1. Introduction

This document provides an overview of Eskom's technical evaluation strategy and criteria to be used when evaluating the tender proposals for multi-function secondary plant test sets and IEC61850 network analysis tools.

The report defines the 'Mandatory', 'Technical Qualitative', 'Practical Evaluation', and 'Deemed Offer Risk(s)' criteria that will be used to evaluate responses to the enquiry.

2. Supporting clauses

2.1 Scope

The report provides the technical evaluation criteria relating to a commercial enquiry for the supply of a multi-function secondary plant test set/s and IEC61850 network analysis tools.

2.1.1 Purpose

The purpose of this document is to define the technical evaluation criteria that will be used to evaluate tenders for the supply of a multi-function secondary plant test set.

2.1.2 Applicability

This document may be applied to Eskom Holdings Limited, Transmission Division.

2.2 Normative/informative references

Parties using this document shall apply:

2.2.1 Normative

[1] 240-170000773– Multi Function Secondary Plant Test Set Standard

2.2.2 Informative

None

2.3 Definitions

2.3.1 General

Definition	Description
Eskom evaluation team	The persons appointed by Eskom to perform the evaluation of tender submissions in line with Eskom's requirements.
Normative	Documents that shall be read in conjunction with this report and are binding on Tenderers.

2.3.2 Disclosure classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

None

2.5 Roles and responsibilities

It is proposed that:

- Protection Technology & Support shall utilise this document as the basis for the technical evaluation process.
- Tenderers shall note the evaluation criteria as laid out in this document and submit tenders in compliance to the stipulated requirements.

2.6 Process for monitoring

Not applicable.

2.7 Related/supporting documents

Not applicable

3. Technical Tender Evaluation Procedure

A supplier may propose a Protection MFT; a Metering MFT; Cyber Security and IEC 61850 Network Tools or a combination of any of the above items.

The evaluation process has four stages, with a corresponding minimum score (threshold) required for a bid to be deemed compliant are:

- Technical Gatekeepers which require a 100% compliance threshold.
- Technical Criteria which require >95% compliance threshold.
- Practical Demonstration which requires >95% compliance threshold.
- Deemed offer Risks which should at least be acceptable.

The overall weighting for qualitative technical evaluation is shown in Table 1.

Table 1: Qualitative technical evaluation – overall

Criteria Number	Qualitative Technical Criteria Description	Criteria Weighting (%)	Criteria Sub Weighting (%)
M	Stage 1 - Mandatory Technical Gatekeepers	100	100
All Mandatory Technical Requirements (Gatekeepers) shall be met (100% compliance) in order to Proceed			

A	Stage 2 - Technical Criteria	Criteria Weighting 100%	Criteria Sub Weighting (%)
A1	Technical Requirements Schedules A&B		60
A2	Support Requirements Schedules A&B		40
Only submissions that pass the 'Technical Qualitative Requirements Evaluation' scoring threshold of >95% will proceed to 'Practical Evaluation'			

B	Stage 3 – Practical Demonstration & Deemed offer Risk	Criteria Weighting 100%	Criteria Sub Weighting (%)
B1	Functionality Test Items – Demonstration		100
Only submissions that pass the "Practical Demonstration" scoring threshold of >95% will proceed to Deemed Offer Risk			

C	Stage 4 - Deemed Offer Risk		
C1	Report detailing the risks	Acceptable	100
Minimum Stage 4 score to be obtained – "Acceptable"			

The technical evaluation process will follow a chronological order:

- 1) Stage 1, namely Technical Mandatory Requirements (Gatekeepers). If all of Stage 1 requirements have been satisfied then the evaluation will proceed to Stage 2, which is the evaluation of the technical criteria. If the bidder fails at Stage 1, then the submission is deemed to be non-responsive (non-compliant) and removed from further evaluation.
- 2) Stage 2 evaluates the technical criteria of the product offered and will be scored against the thresholds defined. If the Stage 2 thresholds are met, then the qualifying bids will proceed to Stage 3. If the bidder fails to achieve the defined threshold, then the submission is deemed to be non-compliant and will be removed from further evaluation. Note, the Protection MFT, Metering MFT; and Cyber Security and IEC 61850 Network Tools technical evaluations are considered separately and tenders may qualify for any one of these separately and be considered further for that particular product offering. Based on the evaluation, qualifying offers with any non-compliances which Eskom deems necessary for the functional operation of the MFT, may be recommended for negotiation as compulsory prior to contract award.
- 3) Stage 3 will include a practical demonstration of the offered product in a laboratory environment. A pre-defined threshold is set for Stage 3. If the bidder fails to achieve the defined threshold, then the submission is deemed to be non-compliant and will be removed from the bidding process.
- 4) Stage 4 is a report written by the evaluation team to determine and motivate whether any risks found throughout the evaluation are deemed low / acceptable / high and will serve as input to the recommendation as to whether the offer should be accepted.

The detailed methodologies for scoring in each stage are provided in Sections 3.1 to 3.4.

3.1 Stage 1 - Evaluation of Mandatory Requirements

The evaluation exercise is performed by the Eskom evaluation team. This part of the evaluation starts when submissions are opened and assessed for the first time. The Eskom evaluation team will go through the details of the returnable submissions that are required and will ensure that all the Mandatory Requirements are met, as indicated in Table 2.

Submissions that receive a "No" for any of these requirements will not be able to proceed to the Stage 2 - 'Technical Qualitative Requirements Evaluation' and therefore will fail the technical evaluation.

Table 2: Mandatory Requirements Evaluation

Mandatory Criteria	Enquiry Returnable	Comply	Comments
Are completed A&B Technical Schedules, submitted, and signed by the duly authorised representative, for at least one of: <ul style="list-style-type: none"> Protection MFT, Metering MFT, or Cyber Security and IEC 61850 Network Tools? 	Completed and signed A&B Technical Schedules as in the excel spreadsheet.	Yes/No	
Are completed A&B Support Requirements Schedules, submitted, and signed by the duly authorised representative, for at least one of: <ul style="list-style-type: none"> Protection MFT, Metering MFT, or Cyber Security and IEC 61850 Network Tools? 	Completed and signed A&B Technical Schedules as in the excel spreadsheet.	Yes/No	
Are Deviations to the Referenced Technical Standard submitted and signed by the duly authorised representative?	Completed and signed Deviation Schedules as in the excel spreadsheet.	Yes/No	
Are completed Annexure A and Annexure B of 240-170000797 submitted?	Completed and signed Annexures.	Yes/No	
Is all information supplied in English?	Documents, brochures, supporting documents supplied.	Yes/No	
Threshold. Should the tenderer fail to meet ANY ONE of the above requirements they will be disqualified.			

3.2 Stage 2 - Evaluation of Technical Qualitative Requirements

The following criteria will be used to assess the tenderer's capability to enter a contract with Eskom with respect to specific products and to meet Eskom's requirements. There are three A&B Schedules pertaining to this request for proposal viz. Protection MFT A&B Schedule; a Metering MFT A&B Schedule; Cyber Security and IEC 61850 Network Tools A&B Schedule. The relevant A&B Schedule pertaining to the proposed product, shall be completed, signed, and submitted. Annexure A shall also be completed, signed, and submitted to support the relevant A&B Schedule.

The Technical criteria will consist of 2 sub-categories and each sub-category will be weighted as per Table 3. The overall minimum threshold shall be >95%.

Table 3: Weight allocations for desktop evaluations

Technical subcategory number	Stage 2 evaluation Subcategory name	Weight (%)
A1	A&B Technical schedules	60
A2	A&B Technical support Requirements	40

3.2.1 Subcategory A1: A&B Technical Evaluation

Refer to the "A1-Technical Requirements AB" in the excel sheet of the relevant A&B Schedule. The A&B Schedules for a Protection MFT; Metering MFT and IEC61850 Network tools and Cyber Security MFT, use a default weight of 1 for each scored item with critical items being assigned higher weights. For example, a weight of 3 indicates that the item will count the same as three items with weight 1.

The excel spreadsheet containing the A&B Technical Schedules indicate the weight allocated for each item. Each item will be assigned a score by the Eskom evaluation team, based upon the tendered proposal, using Table 4.

Tender proposals claiming compliance to an item (e.g. 'Comply') but are found to be non-compliant during verification will be assigned the 'Non-compliant' score by the Eskom evaluation team. Items for which compliance is not claimed (e.g. 'Do Not Comply'), but which are found to be compliant during verification will be scored as 'Non-compliant' based on the original response.

All scores for the A&B Technical Schedules will be tallied and shall be calculated based on the maximum possible score (Weight x (Score from Table 4). This value will be recorded as the equivalent amount out of a score of 100%.

The completed "**A1-Technical Requirements AB**" sheet shall be printed, signed and submitted as part of the tendered proposal returnable. If the returnables are unsigned or incomplete, it will result in disqualification and the proposal will not be evaluated further.

Table 4: Scoring of Items in Technical Schedules A&B

Criteria	Score
Fully compliant	2
Partial Compliance (minor deviations)	1
Non-compliant (major deviation)	0

3.2.2 Subcategory A2: A&B Technical Support Requirements

Refer to the "**A2- A&B Technical Support Requirements**" in the excel sheet of the relevant A&B Schedule. Tenderers are required to indicate compliance to the requirements listed in the "**A2- A&B Technical Support Requirements**" sheet. The completed "**A2- A&B Technical Support Requirements**" sheet shall be printed, signed and submitted as part of the tendered proposal returnables. Unsigned copies will be excluded from the evaluation.

Each item will be assigned a score by the Eskom evaluation team, based upon the tendered proposal, using Table 5.

Tender proposals claiming compliance to an item (e.g. 'Comply') but are found to be non-compliant during verification will be assigned the 'Non-compliant' score by the Eskom evaluation team. Items for which compliance is not claimed (e.g. 'Do Not Comply'), but which are found to be compliant during verification will be scored as 'Non-compliant' based on the original response.

All scores for the A&B Support Requirements will be tallied and shall be calculated based on the maximum possible score (Weight x (Score from Table 5). This value will be recorded as the equivalent amount out of a score of 100%.

Table 5: Technical Support Requirement scoring

Criteria	Score
Fully compliant	2
Partial Compliance (minor deviations)	1
Non-compliant (major deviation)	0

3.3 Practical Evaluation

The technical evaluation will include a physical demonstration of the MFT and software by the supplier to the Eskom technical team on how to setup the software test module and physically testing the supplied product or products.

Details of the test criteria will be provided to suppliers that have progressed to the Practical Evaluation stage, prior to the practical evaluation date.

The demonstration shall be done by the local representative of the vendor. The local representative shall not be supported by an offshore specialist either at the preparation or demonstration stage. All suppliers will be given the same product to test and the same allocated time.

Each supplier where possible will be given the opportunity to familiarise themselves with the product. The product will be located in a laboratory and be powered up with the requisite circuit breaker simulator if applicable. In addition, the setting sheet, the schematic and the IED software will be available on the day.

The supplier will be responsible for any damage of the product. Eskom will only provide limited support.

An Eskom technical panel will evaluate the demonstration which will form a substantial part of the technical compliance assessment. Suppliers to indicate the time requirement for each of the test functionality listed in Table 6, Table 7 and Table 8, where the functionality tests are separated into subcategories.

The practical evaluation will comprise of functionality tests with respective weightings as defined in Table 6, Table 7 and Table 8. The Eskom evaluation team will score each item, listing their reasoning. Scores assigned by the Eskom evaluation team will not be shared with tenderers during the evaluation.

The Eskom technical team reserves the right not to proceed with the Practical evaluation if required.

Table 6: Functionality Test Items for a Protection MFT

Nos.	Demonstration	Weighting (%)
1	Protection Testing of electromechanical and electronic schemes	10
2	Protection Testing of Microprocessor based schemes	10
3	Protection Testing of Microprocessor based schemes utilizing IEC61850 and associated protocols.	10
4	Testing of measurement/metering devices	10
5	Ability of test set to provide test reports usable to Eskom, eg in pdf	10
6	Capability to import an Eskom setting file in the test template.	10
7	Demonstrate fault play back, with a file provided by the Eskom team.	5
8	Demonstrate the use of IEC61850 network commissioning tools.	10
9	Demonstration of requirements based on a single or multiple test sets to achieve the required functionality.	10
10	Demonstration of synchronised testing among multiple test sets with the same manufacturer	6
11	Demonstration of synchronised testing among multiple test sets with a different manufacturer.	4
12	Demonstration of an automated test template utilising IEC 61850 protocol.	10

Table 7: Functionality Test Items for a Metering MFT

Number	Demonstration	Weighting (%)
1	Accuracy testing of energy meters	20
2	Accuracy testing of transducers	20
3	Current instrument transformer testing - ratio and burden	10
4	Voltage instrument transformer testing - ratio, burden and voltage drop	10
5	Ability of test set to provide test reports usable to Eskom, eg in pdf	20
6	Ability of test set to generate vector diagrams, harmonic analysis and waveform display	20

ESKOM COPYRIGHT PROTECTED

Table 8: Functionality Test Items for Cyber Security and IEC 61850 Network Tools

Number	Demonstration	Weighting (%)
1	Demonstrate the use of Cyber Security and IEC61850 network commissioning tools.	100

The Practical Evaluation Checklist uses a weighting as defined in Table 6, Table 7 and Table 8 for each scored item. Each item will be assigned a score by the Eskom evaluation team using Table 9. The score for each item will be multiplied by its weight to obtain the total score per item.

Table 9: Scoring of Items for Practical Evaluation Checklist

Criteria	Score
Fully compliant	2
Non-compliant (major deviation)	0

All scores from Table 6, Table 7 and Table 8 will be tallied and shall be calculated based on the maximum possible score (Weight x (Score from Table 9)). This value will be recorded as the equivalent amount out of a score of 100%

Only submissions that pass the 'Practical Evaluation' scoring threshold of > 95% as in Table 10, will be deemed as compliant and will proceed to the 'Deemed Offer Risk(s)' stage.

Table 10: Practical Evaluation

Criteria	Score %	Comments
Evaluation score from Practical Evaluation Checklist		
Threshold	>95%	

3.4 Deemed Offer Risk(s)

Eskom's evaluation team shall compile a report summarising risks associated with any aspect of the offer:

- noted during the Technical Qualitative Requirements Evaluation,
- noted during the Practical Evaluation,
- noted during a review of any pricing anomalies that cannot be acceptably clarified.
- noted during a review of the tender's response to Annex B

This report shall be used to determine and motivate whether the risk is deemed low / acceptable / high and will serve as input to the recommendation as to whether the offer should be technically accepted as shown in Table 11 below.

Table 11: Deemed Offer Risk(s) Evaluation

Criteria	Score	Comments
Deemed Offer Risk(s)		
Threshold	Acceptable	

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Ian Worthington	Chief Engineer – Grid Operations

ESKOM COPYRIGHT PROTECTED

5. Revision History

Date	Rev	Compiler	Remarks
April 2022	1	K. Jagdaw	First Issue

6. Development team

- Kashveer Jagdaw
- Jan Cronje
- Ian Worthington
- Patrick Mashigo

7. Acknowledgements

Not applicable.

Annex A – Offered Product/s

The Supplier shall complete the table below, clearly indicating which products they are tendering for. This annexure shall be signed and submitted as part of the tender returnable. The corresponding AB Schedule shall be completed, signed and submitted as a tender returnable.

	Test Set configurations	AB Schedule name	State which test set is offered? (Y/N) -
1	Universal three phase test set	Protection AB Schedule.	
2	Universal six phase test set		
3	Universal six phase test set, additional 3 Phase Voltage channel		
4	Universal Single phase test set		
5	Energy Meter Test Set	Metering AB Schedule	
6	Universal three phase test set with refence/working standard		
7	Standalone universal three phase test set		
8	Standalone reference/working standard		
9	IEC61850 Digital Substation Network Tests, Monitoring, Simulations & Cyber Security Tools	Cyber & 61850 Tools Schedule	

Name of Company Representative: _____

Signature: _____

Date: _____

ESKOM COPYRIGHT PROTECTED

Annex B – Questionnaire

Tenders to complete and submit a signed copy of the questionnaire below.

	Question	Supplier Response																					
1.	What is the lead time in weeks to supply a multi-function test set?																						
2.	What is the lead time in weeks to replicate an existing Eskom MFT Test template into the offered products test template? For example, a commissioning and maintenance test template for schemes containing differential protection and impedance protection.																						
3.	What is the lead time in weeks to develop a new test set template? For example, a commissioning and maintenance test template for schemes containing differential protection and impedance protection.																						
4.	Has the offered MFT been supplied to any other customers? Please provide customer details; quantities supplied, and date supplied	<table border="1"> <thead> <tr> <th>Customer Name</th> <th>Quantity Supplied</th> <th>Date Supplied</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>	Customer Name	Quantity Supplied	Date Supplied																		
Customer Name	Quantity Supplied	Date Supplied																					
5.	Does the offered test set support synchronisation between different set manufacturers when used for synchronised testing between two sites e.g., line differential protection testing? Please provide details on how this will be achieved.																						

Declaration

I confirm that the responses indicated in this questionnaire are true and can achieve these requirements for the offered product to Eskom.

Name of Company Representative: _____

Signature: _____

Date: _____

ESKOM COPYRIGHT PROTECTED