

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

Title: TECHNICAL EVALUATION CRITERIA FOR STAND-ALONE TELEPROTECTION EQUIPMENT

Unique Identifier: 240-136142627

Alternative Reference Number: <n/a>

Area of Applicability: Engineering

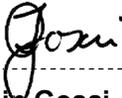
Documentation Type: Report

Revision: 4

Total Pages: 12

Next Review Date: n/a

Disclosure Classification: Controlled Disclosure

Compiled by	Functional Responsibility	Authorized by
		
Tejin Gosai	Cornelius Naidoo	Nelson Luthuli
Chief Engineer Telecomms Technology and Support	Manager Telecomms Technology and Support	Senior Manager PTM&C Engineering (Acting)
Date: 18/08/2022	Date: 18/8/2022	Date: 18 August 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.....	3
2.6 Process for monitoring.....	4
2.7 Related/supporting documents.....	4
3. Tender Technical Evaluation Criteria.....	4
3.1 Mandatory Criteria Evaluation.....	4
3.2 Desktop evaluation.....	4
3.3 Practical evaluation.....	5
3.4 Final Scores and Ranking.....	6
3.5 Scoring Method.....	6
4. Authorization.....	7
5. Revisions.....	7
6. Development team.....	7
7. Acknowledgements.....	7
Annex A – Compliance List from Technical Schedules A & B.....	8
Annex B – Practical Evaluation Checklist.....	11

Tables

Table 1: Mandatory Criteria Evaluation.....	4
Table 2: Desktop evaluation.....	5
Table 3: Practical evaluation.....	5
Table 4: Desktop and Factory Split.....	6
Table 5: Scoring method for Teleprotection Unit enquiry.....	6

1. Introduction

This document covers the technical evaluation criteria for the stand-alone teleprotection equipment.

2. Supporting clauses

2.1 Scope

2.1.1 Purpose

The document contains the technical evaluation criteria to be used for evaluating the tender submissions for the stand-alone teleprotection equipment.

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions.

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] 240-77422828 Teleprotection Equipment for use on Digital Telecommunications Channels or Dedicated Optical Fibre.

2.2.2 Informative

None

2.3 Definitions

2.3.1 General

Definition	Description
Submission	The tender in accordance with the requirements of the enquiry
Technical evaluator	End-users, technical experts nominated by the end-user and Divisional technical functionaries with the necessary technical expertise.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
TET	Technical Evaluation Team
TPE	Teleprotection Equipment

2.5 Roles and responsibilities

Not applicable.

ESKOM COPYRIGHT PROTECTED

2.6 Process for monitoring

Not applicable.

2.7 Related/supporting documents

Not applicable.

3. Tender Technical Evaluation Criteria

- a) The assessments are performed to assess the tenderer's capability to enter into a contract with Eskom with respect to a specific product or service and meet Eskom's requirements.
- b) This report and any actions that are listed or recommended as a result of the assessments are by no means a confirmation or guarantee that any contract will be entered into by Eskom.
- c) Any actions undertaken by the tenderer as a consequence of this report is for the tenderer's account. Any liability for the said actions undertaken by the tenderer is not transferrable to Eskom in any way.
- d) The assessment team has no authority or responsibility in the decision taken by Eskom with respect to contracting for a product or service.
- e) Any statements, intentions and/or actions expressed by the assessment team during the assessment and after the assessment should not be interpreted as the awarding of a contract and does not constitute any liability to Eskom with regards to contract placement or post-contract performance guarantees.
- f) The technical evaluation method has three sub-categories: Mandatory Criteria Evaluation, Desktop Evaluation and Practical Evaluation. The detailed methodologies for scoring in each sub-category are provided in sections 3.1 to 3.3 below.
- g) Tenderer's that do not achieve the minimum threshold for each of the sub-categories will not be evaluated further.

3.1 Mandatory Criteria Evaluation

This evaluation exercise is performed by the Eskom evaluating representatives. This part of the technical evaluation starts when submissions are opened for the first time. The Eskom evaluating representatives will peruse the tender submissions to ensure that the Mandatory criteria are met. Submissions that receive a "No" on any of the Mandatory criteria will not be able to proceed to the Desktop Evaluation and therefore will fail the technical evaluation.

Table 1: Mandatory Criteria Evaluation

Item	Criteria	Comply	Comments
1.1	Submission of Technical Schedules A & B from the Technical specification 240-77422828 (Written in English)		
1.2	The Supplier shall provide a letter confirming the following: a) The Teleprotection equipment shall have options for both an X.21 and an Ethernet telecommunications interface.		

3.2 Desktop evaluation

Submissions that obtain a minimum pass mark of 75% for the Desktop Evaluation (Table 2) shall proceed to the Practical Evaluation.

The Technical Schedules A & B (Annex D in 240-77422828 specification) use a default weight of 1 for each scored item. Each item will be scored according to Table 5 and cross-checked against the supporting documents tendered.

ESKOM COPYRIGHT PROTECTED

The total score for the Technical Schedules A & B will be expressed as a percentage of the maximum possible score of 762 (Item from Technical Schedules A & B x (Score “3” from Table 5). This score value will be recorded under item 2.1 in Table 2.

Table 2: Desktop evaluation

Item	Criteria	Maximum Score %	Actual Score %	Comments
2.1	Compliance with Technical Schedules A & B in the Technical specification 240-77422828. (Full compliance = 254 x 3 = 762 points (i.e. 100%)). Therefore to pass the Desktop evaluation a total of 571 points out of the maximum 762 need to be scored.	100		
	Subtotal	100		
	Threshold	75		

3.3 Practical evaluation

This evaluation exercise is performed by the Eskom evaluating representatives at Eskom’s premises and consists of a sample evaluation and testing. It is the responsibility of the tenderer to have complete teleprotection demo unit/s and test instruments available. The tenderer will be responsible to do all testing and configuration required by Eskom. This part of the evaluation is performed on the basis of assessing a sample of the teleprotection equipment according to the Compliance List (checklist) listed in Annex A in this document.

The tenderer will be required to setup a Teleprotection link that is two teleprotection units connected to Eskom’s multiplexer/router/telecommunications network, at Eskom’s premises, through the following interfaces:

- a) X.21 interface
- b) Ethernet interface
- c) Single mode fibre optic cable.

The above tests will be tested according to Annex B in this document.

The tenderer will be given 3 weeks’ notice to arrange and facilitate for the practical evaluation. The Eskom evaluating representatives will witness these tests at Eskom’s premises.

A threshold of 75% is required for the tenderer to pass the Practical Evaluation (Table 3).

Table 3: Practical evaluation

Item	Criteria	Maximum Score %	Actual Score %	Comments
3.1	Compliance to items listed in Annex A in this document. The items listed in Annex A in this document are the critical items that were taken from the Technical Schedules A & B from 240-77422828. (Full compliance = 32 x 3 = 96 points which equates to 30%). Each item will be scored according to Table 5 in this document.	30		

ESKOM COPYRIGHT PROTECTED

Item	Criteria	Maximum Score %	Actual Score %	Comments
3.2	Testing of the Teleprotection unit will follow Annex B in this document. This item (3.2) can only receive a score between 0 and 70. For example, should all items in Annex B be tested and be fully compliant: Full compliance = (Item x score (3) = 27 points which equates to 70%). Each item will be scored according to Table 5 in this document.	70		
	Subtotal	100		
	Threshold	75		

3.4 Final Scores and Ranking

The weight split for desktop evaluation and practical evaluation is as per the table below in order to rank the tenderers:

Table 4: Desktop and Factory Split

Final Combined Evaluation	Weighting
Desktop Evaluation	50%
Practical Evaluation	50%
Total	100%
Threshold	75%

The tenderer has to pass the Desktop and Factory evaluations in order to be considered technically compliant with a combined minimum threshold of 75%.

3.5 Scoring Method

Each item will be assigned a score by the Eskom evaluation team based upon the tendered response/demonstrated functionality and cross-checked with the supporting documents provided (where applicable). The scoring method is depicted in Table 5 below:

Table 5: Scoring method for Teleprotection Unit enquiry

Criteria	Score
Fully compliant <ul style="list-style-type: none"> • Meet technical requirement(s) AND; • Cross-checked with the supporting documents provided (where applicable) AND; • No foreseen technical risk(s) in meeting technical requirements 	3

ESKOM COPYRIGHT PROTECTED

<p>Partially compliant (minor deviation)</p> <ul style="list-style-type: none"> Does not meet all the technical requirement(s) AND/OR; Unacceptable technical risks(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions. No supporting documents provided. 	1
<p>Non-compliant (major deviation)</p> <ul style="list-style-type: none"> Totally deficient or non-responsive 	0

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Not applicable	Not applicable

5. Revisions

Date	Rev	Compiler	Remarks
August 2022	4	T Gosai	Added Compliance List in Annex A.
Feb 2019	3	T Gosai	Removed section 3.4 (Items to be negotiated before contract award) and changed the threshold in Table 3 to 85%.
Oct 2018	2	T Gosai	Changed the term 'Gatekeeper' to 'Mandatory Criteria' and modified the Objective section.
June 2018	1	T Gosai	Business Requirement

6. Development team

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

- Ashley Van der Poel
- Riyaz Gangat
- Zakhele Dlamini

7. Acknowledgements

Not applicable.

ESKOM COPYRIGHT PROTECTED

Annex A – Compliance List from Technical Schedules A & B

Name of Evaluator : _____

Date: _____

Supplier : _____

COMPLIANCE LIST					
FROM TECHNICAL SCHEDULES A & B FROM STANDARD, 240-77422828, "TELEPROTECTION EQUIPMENT FOR USE ON DIGITAL TELECOMMUNICATIONS CHANNELS OR DEDICATED OPTICAL FIBRE"					
Numbering	Description	Schedule A	Schedule B	Score	Comments
1	Manufacturer	Specify			
2	Manufacturer's type reference	Specify			
3	Teleprotection Equipment	X	X		
3.1	Background	X	X		
3.1.1a)	Conventional interfaces to protection and telecontrol equipment	Comply			
3.2	Teleprotection Equipment Requirements	X	X		
3.2.1	General	X	X		
3.2.1a)	a) Comply with clause 3.2.1a) of this specification	Comply			
3.2.1b)	b) Comply with clause 3.2.1b) of this specification	Comply			
3.2.1e)	e) Comply with clause 3.2.1e) of this specification	Comply			
3.2.3	Equipment Design	X	X		
3.2.3a)	a) Comply with clause 3.2.3a) of this specification	Comply			
3.2.3b)	b) Comply with clause 3.2.3b) of this specification	Comply			
3.2.3e)	e) Comply with clause 3.2.3e) of this specification	Comply			
3.2.3j)	j) Comply with clause 3.2.3j) of this specification	Comply			
3.2.4	End-to-end and local test facilities	X	X		
3.2.4a)	a) Comply with clause 3.2.4a) of this specification	Comply			
3.2.5	Management, Alarms and test facilities	X	X		
3.2.5.1	Functions required	X	X		

ESKOM COPYRIGHT PROTECTED

3.2.5.1a)	a) Comply with clause 3.2.5.1a) of this specification	Comply			
3.2.5.1b)	b) Comply with clause 3.2.5.1b) of this specification	Comply			
3.2.5.1c)	c) Comply with clause 3.2.5.1c) of this specification	Comply			
3.2.5.1d)	d) Comply with clause 3.2.5.1d) of this specification	Comply			
3.2.5.1e)	e) Comply with clause 3.2.5.1e) of this specification	Comply			
3.2.5.2	HMI interface standards/requirements				
3.2.5.2a)	a) Comply with clause 3.2.5.2a) of this specification	Comply			
3.2.5.2b)	b) Comply with clause 3.2.5.2b) of this specification	Comply			
3.2.5.2f)	f) Comply with clause 3.2.5.2f) of this specification	Comply			
3.2.5.3	Cyber Security				
3.2.5.3b)	b) Comply with clause 3.2.5.3b) of this specification	Comply			
3.2.5.3c)	c) Comply with clause 3.2.5.3c) of this specification	Comply			
3.2.5.3d)	d) Comply with clause 3.2.5.3d) of this specification	Comply			
3.2.5.3f)	f) Comply with clause 3.2.5.3f) of this specification	Comply			
3.2.5.4	Alarms				
3.2.5.4a)	a) Comply with clause 3.2.5.4a) of this specification	Comply			
3.2.5.4b)	b) Comply with clause 3.2.5.4b) of this specification	Comply			
3.2.6	Power Supplies				
3.2.6m)	m) Comply with clause 3.2.6m) of this specification	Comply			
3.2.7	Interface with Eskom's protection relay equipment				
3.2.7c)	System A				
3.2.7c1)	c) Comply with clause 3.2.7c1) of this specification	Comply			
3.2.7d)	System C				
3.2.7d2)	l) Comply with clause 3.2.7d2) of this specification	Comply			
3.2.8	Channel and Performance Requirements				
3.2.8a)	a) Comply with clause 3.2.8a) of this specification	Comply			
3.2.8b)	b) Comply with clause 3.2.8b) of this specification	Comply			

ESKOM COPYRIGHT PROTECTED

3.2.8c)	c) Comply with clause 3.2.8c) of this specification	Comply			
3.3	General Requirements				
3.3.1	Housing of equipment and cabling facilities				
3.3.1a)	a) Comply with clause 3.3.1a) of this specification	Comply			

Annex B – Practical Evaluation Checklist

Name of Evaluator : _____

Date: _____

Supplier : _____

Item	Criteria	Compliant	Details if not fully compliant	Score
		Part Compliant		
		Non-compliant		
1	The transmitter and receiver of the teleprotection units on the X.21 interface shall be easily connected back to back and the signal transfer time measured.			
2	The teleprotection units shall be connected to Eskom Telecoms network utilising the X.21 interface. The transfer time shall be measured.			
3	The transmitter and receiver of the teleprotection units on the Ethernet interface shall be easily connected back to back and the signal transfer time measured.			
4	The teleprotection units shall be connected to Eskom Telecoms network utilising the Ethernet interface. The transfer time shall be measured.			
5	The teleprotection units shall be connected via a single mode fibre link. The configuration, performance and testing of the unit on the fibre link will be tested. The transfer time shall also be measured.			
6	The teleprotection unit shall be able to “loop back” on itself to test local functions and fault finding.			
7	The trip inputs, trip outputs, alarm contacts, alarm conditions and the events log (sequence of events) shall be tested.			
8	The System A (110 VDC and 220 VDC) and System C (48 VDC) teleprotection interfaces shall be tested.			
9	The blocking of the command output and the operation of the appropriate alarms shall be checked under the following conditions:			
	a) When there is a sudden failure in the telecommunications path			

ESKOM COPYRIGHT PROTECTED

	b) Removal of any module			
--	--------------------------	--	--	--