

Title: **TECHNICAL EVALUATION  
CRITERIA FOR PHASE 6  
DIGITAL FAULT RECORDER  
AND TRAVELLING WAVE  
SYSTEM FAULT LOCATOR  
SCHEMES FOR USE IN  
TRANSMISSION SUBSTATIONS**

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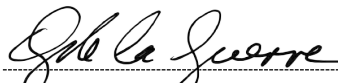
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**Compiled by****Elizabeth Thekkekkottaram****Engineer: Protection T&S**

Date: 23/05/2024

**Functional Responsibility****Andre de la Guerre****Manager: Protection,  
Metering and DC T&S**

Date: 23 May 2024

**Authorized by****Judith Malinga****Senior Manager: PTM&C  
Engineering**

Date: 24/05/2024

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## 1. Introduction

This report has been developed to propose the standard technical evaluation criteria to be used when evaluating tender submissions for the enquiry for Phase 6 digital fault recorder and travelling wave system fault locator schemes used within the Transmission division, for specifically identified projects.

The report defines the 'Mandatory', 'Technical Qualitative', 'Factory Evaluation' and 'Deemed Offer Risk(s)' criteria that may be used to evaluate responses to the enquiry and also indicates the criteria to determine the possible requirement to negotiate changes to the proposed offer.

## 2. Supporting clauses

### 2.1 Scope

#### 2.1.1 Purpose

The report provides proposed technical evaluation criteria relating to a commercial enquiry for the manufacturing, testing, training, supply, delivery, off-loading and installation/site erection of digital fault recorder and travelling wave system fault locator schemes for use within Eskom's Transmission business.

#### 2.1.2 Applicability

This document shall apply to Eskom's Transmission division.

## 2.2 Normative/informative references

### 2.2.1 Normative

- [1] 240-98186227 Specification for Transmission digital fault recorder schemes (Rev 1)
- [2] 240-64636794 Standard for wiring and cable marking in substations (Rev 0)
- [3] 240-62629353 Specification for panel labelling standard (Rev 1)
- [4] 240-64100247 Standard for earthing of secondary plant/control plant equipment in substations (Rev 3)
- [5] 240-60725641 Specification for standard (19 Inch) equipment cabinets (Rev 5)
- [6] DSP 34-1658 Corrosion protection specification for new indoor and outdoor distribution equipment, components, materials and structures manufactured from steel (Rev 0)
- [7] 0.52/30112 – Master drawings for 6DR-7100 scheme (Rev 3)
- [8] 0.52/30114 – Master drawings for 6DRB-7100 scheme (Rev 1)
- [9] D-DT-5400 – Master drawings for swing frame cabinet (Rev 5)

### 2.2.2 Informative

Not applicable.

## 2.3 Definitions

### 2.3.1 General

Definition	Description
<b>Technical evaluation team</b>	The persons appointed by Eskom to perform the technical evaluation of tender submissions in line with Eskom's requirements.

Definition	Description
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

Abbreviation	Description
CV	Curriculum Vitae
DFR	Digital Fault Recorder
TWS FL	Travelling Wave System Fault Locator

## 2.5 Roles and responsibilities

It is proposed that:

- Eskom Transmission 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

The following criteria will be used to assess the tenderer's technical capability to enter into a contract with Eskom with respect to specific products and to meet Eskom's requirements. The evaluation method has four main stages:

- 1) Mandatory Requirements Evaluation
- 2) Technical Qualitative Requirements Evaluation
- 3) Factory Evaluation
- 4) Deemed Offer Risk(s) Evaluation

Tenderer's offers must achieve at least the threshold for each stage in order to qualify for evaluation under a subsequent stage. Tenderers that do not achieve at least the threshold for a stage will not be evaluated further. The detailed methodologies for scoring in each stage are provided in Sections 3.1 to 3.4 below.

### 3.1 Mandatory Requirements Evaluation

The evaluation exercise is performed by the technical evaluation team. This part of the evaluation starts when submissions are opened and assessed for the first time.

The technical evaluation team will go through the details of the returnable submissions that are required at tender closing (disqualifiable) and will ensure that all the Mandatory Requirements are met. Submissions that receive a “No” for any of these requirements will not be able to proceed to the ‘Technical Qualitative Requirements Evaluation’ stage and therefore will fail the technical evaluation.

The technical evaluation team will go through the details of the returnable submissions that are required at tender closing (non-disqualifiable) and will ensure that all the Mandatory Requirements are met. Submissions that receive a “No” for any of these requirements will result in a request being sent to the tenderer for the outstanding returnables to be submitted within five (5) working days. Tenderers who do not meet this requirement will not be able to proceed to the ‘Supplier Equipment Tendered Declaration Evaluation’ stage and therefore will fail the technical evaluation.

**Table 1: Mandatory Requirements Evaluation**

Criteria	Reference	Returnable required at tender closing (disqualifiable)	Returnable required at tender closing (non-disqualifiable)	Returnable required prior to contract award	Comply	Comments
Are completed Technical Schedules A&B, including any deviations, submitted?	Table A.1 – Annex A	✓			Yes/No	
Is compliance to Quality Criteria, including any deviations, submitted?	Table A.2 – Annex A		✓		Yes/No	
Are delivery lead times for first scheme and subsequent schemes stipulated?	Table B.1 – Annex B		✓		Yes/No	
Is all information supplied in English?					Yes/No	
<b>Threshold.</b> Should the tenderer fail to meet ANY ONE of the above requirements they will be automatically disqualified.						

### 3.2 Technical Qualitative Requirements Evaluation

This stage will be adjudicated a score out of 100% based on the evaluation of the Technical Schedules A&B.

The Technical Schedules A&B use a default weight of 1 for each scored item. Critical items are assigned higher weights which will either be a 2 or 3. Each item will be assigned a score by the technical evaluation team, based upon the tendered response, using Table 2. The score for each item will be multiplied by its weight to obtain the total score per item.

Tender responses claiming compliance to an item (e.g. ‘Comply’) but which are found to be partially compliant or non-compliant during verification will be assigned the corresponding score by the technical 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’ or ‘Partially compliant’, based on the original response. Items for which no response is provided shall automatically be scored as ‘Non-compliant’.

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All scores for the Technical Schedules A&B will be tallied and shall be calculated based on the maximum possible score (Weight x (Score from Table 2)). This value will be recorded as the equivalent amount out of a score of 100% in Table 3.

Only submissions that pass the 'Technical Qualitative Requirements Evaluation' scoring threshold of **90%** (Table 3) will proceed to the 'Factory Evaluation' stage.

**Table 2: Scoring of Items in Technical Schedules A&B**

Criteria	Score
Fully compliant	3
Partially compliant (minor deviation)	1
Non-compliant (major deviation)	0

**Table 3: Technical Qualitative Requirements Evaluation**

Criteria	Score	Comments
Compliance with Technical Schedules A&B (Annex A)		
<b>Threshold</b>	<b>90%</b>	

### 3.3 Factory Evaluation

This evaluation is performed to assess the tenderer's capability to manufacture and test the required product. The evaluation will consist of a visit to the tenderer's manufacturing premises/factory at which the mechanical (steelwork) and electrical works are to be undertaken, to confirm the tenderer's capability in terms of facilities, skills and historical performance.

Tenderer visits shall be conducted during the tender evaluation phase.

The factory evaluation will be based on the Factory Evaluation Checklist provided in Table C.1 (Annex C) of this document. During the factory visit, the tenderer (and his metalwork and/or electrical sub-contractor(s)) may be requested to demonstrate the various items listed. The technical evaluation team will score each item, listing their reasoning. Scores assigned by the technical evaluation team will not be shared with tenderers during the evaluation.

The Factory Evaluation Checklist uses a default weight of 1 for each scored item. Critical items are assigned higher weights which will either be a 2 or 3. Each item will be assigned a score by the technical evaluation team using Table 4. The score for each item will be multiplied by its weight to obtain the total score per item.

**Table 4: Scoring of Items in Factory Evaluation Checklist**

Criteria	Score
Fully compliant	3
Partially compliant (minor deviation)	1
Non-compliant (major deviation)	0

All scores from Table C.1 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% in Table 5.

Only submissions that pass the 'Factory Evaluation' scoring threshold of **75%** (Table 5) will proceed to the 'Deemed Offer Risk(s) Evaluation' stage.

**Table 5: Factory Evaluation**

Criteria	Score %	Comments
Evaluation score from Factory Evaluation Checklist (Annex C)		
<b>Threshold</b>	<b>75%</b>	

### 3.4 Deemed Offer Risk(s) Evaluation

The technical evaluation team shall compile a narrative summarising risks associated with any aspect of the offer:

- a) noted during the Technical Qualitative Requirements Evaluation,
- b) noted during the Factory Evaluation,
- c) based on the delivery lead times stipulated in Table B.1: Delivery Lead Times,
- d) based on the CVs submitted for the key persons that will be involved with providing technical support and training, as per requirements provided in Annex D,
- e) based on the deviations provided in Table A.2: Quality Criteria,
- f) based on demonstratable historical poor performance in respect of supplying products to Eskom, and
- g) based on any pricing anomalies, noted during the subsequent financial evaluation that cannot be acceptably clarified.

This narrative 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 accepted as shown in Table 6 below. Note, the technical evaluation team shall only have access to financial information post completion of the technical evaluation report. Any changes as a result of g) above will be included in an update to the technical evaluation report.

**Table 6: Deemed Offer Risk(s) Evaluation**

Criteria	Score	Comments
Deemed Offer Risk(s)		
<b>Threshold</b>	<b>Acceptable</b>	

## 4. Possible Mandatory and Recommended Conditions of Acceptance of the Tenderer’s Offer

For tenderer’s offers that achieve the threshold for all stages of the technical evaluation, but which are found to have deficiencies regarding certain aspects of the offer (e.g. partial-compliances or non-compliances to requirements):

- 1) that are deemed critical to the offer and/or core functioning of the solution on the Eskom network, and that are deemed to be non-negotiable for contract award, or
- 2) whose improvement would enhance the offer and/or performance of the solution, but whose resolution is not mandatory for contract award,

Eskom will include ‘Mandatory’ or ‘Recommended’ conditions of acceptance, to be negotiated prior to any contract award, in the technical evaluation report.

## 5. Authorization

Not applicable.

## 6. Revisions

Date	Rev.	Compiler	Remarks
May 2024	3	E Thekkekkottaram	Section 3.1 (Mandatory Requirements Evaluation) updated.
September 2023	2	E Thekkekkottaram	Requirement for compliance to 'Quality Criteria' to be signed, removed from section 3.1 (Mandatory Requirements Evaluation).
August 2023	1	E Thekkekkottaram	First issue.

## 7. Development team

Not applicable.

## 8. Acknowledgements

Not applicable.

**Annex A – Technical Schedules A&B and Quality Criteria for Phase 6 Digital Fault Recorder and Travelling Wave System Fault Locator Schemes**

**A.1 Technical Schedules A&B**

**Schedule A: Purchasers specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

- Tenderers are to indicate 'Comply' in Schedule B where they are fully compliant to the 'Requirement'.
- Tenderers are to indicate 'Do Not Comply' in Schedule B where they are not fully compliant to the Requirements and Description. If tenderers respond with 'Do Not Comply', reasons shall be provided for the same in the 'Comments' column.

**Table A.1: Technical Schedules A&B**

Refer to	Requirement	Schedule A	Schedule B	Comments
	<b>Scheme Design</b>			
Drawing No. 0.52/30112	<p><b>Double Busbar Schemes (6DR-7100):</b> Schemes will be manufactured as per Eskom approved scheme design and using components specified, unless obsolescence requires substitution. The applicable drawing levels will be indicated per order.</p> <p><b>Note:</b> All Entrelec M4/6 terminals indicated as 'spring loaded' should be of the M4/6.RS type. This is applicable for the following terminals: Terminal Rail X1: 13-60 Terminal Rails X2 to X13: 16-48 &amp; 51-52 Terminal Rail X14: 19-26</p> <p><b>Note:</b> The order codes for the RSG2100 Ethernet Switch are as follows: RuggedCom order code: RSG2100-R-RM-HI-HI-FX11-FX11-FX11-XXXX-XXXX-TX01-TX01-TX01-TX01-XX Product number (MLFB): 6GK6021-0AS23-3DB0-Z A05+B05+C05+D05+E00+F00 +G01+H01+J01+K01</p>	Comply		

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Refer to	Requirement	Schedule A	Schedule B	Comments
Drawing No. 0.52/30114	<p><b>Breaker-and-a-Half Schemes (6DRB-7100):</b> Schemes will be manufactured as per Eskom approved scheme design and using components specified, unless obsolescence requires substitution. The applicable drawing levels will be indicated per order.</p> <p><b>Note:</b> All Entrelec M4/6 terminals indicated as 'spring loaded' should be of the M4/6.RS type. This is applicable for the following terminals: Terminal Rail X1: 13-60 Terminal Rails X2 to X13: 16-48 &amp; 51-52 Terminal Rail X14: 19-26</p> <p><b>Note:</b> The order codes for the RSG2100 Ethernet Switch are as follows: RuggedCom order code: RSG2100-R-RM-HI-HI-FX11-FX11-FX11-XXXX-XXXXX-TX01-TX01-TX01-TX01-XX Product number (MLFB): 6GK6021-0AS23-3DB0-Z A05+B05+C05+D05+E00+F00+G01+H01+J01+K01</p>	Comply		
	<b>Device Configuration</b>			
	Devices (DFR & TWS FL and Ethernet switches) will be manufactured, configured and licensed as per Eskom accepted design and to the same standard as the Eskom CORP3386R (2019-2023) contract.	Comply		
	<b>Device Firmware</b>			
	Qualitrol IDM+ Firmware Version	4.19_30		
	RuggedCom RSG2100 Ethernet Switch Firmware Version	ROS OS version 5.4.2		
	<b>Scheme Operating Voltages</b>			
240-98186227	110VDC (± 20%)	Comply		
	220VDC (± 20%)	Comply		

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Refer to	Requirement	Schedule A	Schedule B	Comments
	<b>Panel Construction</b>			
Drawing No. D-DT-5400	Swing Frame Panel	Comply		

## A.2 Quality Criteria

Tenderers are to indicate any deviations to the 'Requirement' in the 'Deviations' column.

Table A.2: Quality Criteria

Refer to	Requirement	Deviations
240-98186227	<i>Specification For Transmission Digital Fault Recorder Schemes (Rev 1)</i> Compliance to the following sections:	
	<b>3.8 Scheme composition</b>	
	3.8.5 Serial, hardware and firmware version numbers	
	<b>3.9 Physical panel construction</b>	
	3.9.1 Safety and regulatory requirements	
	3.9.2 Scheme housing and mounting	
	3.9.3 Panel design	
	3.9.4 Panel finishing	
	3.9.5 Component mounting and fixing	
	3.9.6 Terminals	
	3.9.7 Terminal strips	
	3.9.8 Wiring trunking	
	3.9.9 Wiring supports	
	3.9.10 Wiring terminations	
	3.9.11 Wiring identification	
	3.9.12 Wiring sizing and practices	
	3.9.13 Earthing	
	3.9.14 Labelling	
	3.9.15 Packaging for transport	
	<b>4.2 Testing of Production Schemes</b>	
4.2.1 Routine Testing		
<b>5. Tender Requirements</b>		
5.3.4 Production Phase		
5.3.5 Production Scheme Delivery		
240-60725641 & D-DT-5400	<i>Specification for standard (19 inch) equipment cabinets (Rev 5)</i> Compliance to the following sections:	
	3.1 Swing frame cabinets	
	3.3 Circuit breaker panel	
	3.4 AC supply module	
	3.7 Corrosion protection	
	4.1 Wiring test	
6. Drawings and type of cabinets		
240-64636794	<i>Standard for wiring and cable marking in substations (Rev 0)</i> Compliance to full document.	

Refer to	Requirement	Deviations
240-62629353	<i>Specification for panel labelling standard (Rev 1)</i> Compliance to full document.	
240-64100247	<i>Standard for earthing of secondary plant/control plant equipment in substations (Rev 3)</i> Compliance to full document.	
DSP 34-1658	<i>Corrosion protection specification for new indoor and outdoor distribution equipment, components, materials and structures manufactured from steel (Rev 0)</i> Compliance to full document.	

**Declaration**

The completed Table A.2 Quality Criteria details any and all deviations to the 'Requirements' stipulated and is binding in terms of this proposal.

Signed by \_\_\_\_\_ Signature \_\_\_\_\_

Date \_\_\_\_\_

## Annex B – Delivery Lead Time Commitment

Tenderers are to stipulate the lead time to delivery (in weeks).

**Table B.1: Delivery Lead Times**

Description	Number of Weeks
Delivery of first scheme from date of order	
Delivery of subsequent schemes from date of order	

**Annex C – Factory Evaluation Checklist**

The tenderer’s facility is expected to be capable of simultaneous manufacturing capacity for 2 schemes and simultaneous housing capacity for 6 schemes. The following questions will be evaluated by the Eskom technical evaluation team against the backdrop of this requirement.

**Table C.1: Factory Evaluation Checklist**

Item	Criteria	Eskom Evaluation	Details if not fully compliant	Score
1	<b>Support, facilities, services and quality (where applicable, would include sub-contractors for metal and/or electrical work)</b>			
1.1	Tenderer to provide the history of the company (presentation and/or brochures).			
1.2	Tenderer to provide company structure and organogram.			
1.3	Tenderer to provide a list of key personnel that will be involved with this contract and their relevant skills and qualifications.			
1.4	Tenderer to provide previous experience with manufacturing of Protection Schemes or similar type equipment. A table that lists all the projects, customers/companies, project quantities, project costs, types of equipment manufactured, completion date and the details of the project leader/company representative (name and contact number) shall be provided.			
1.5	Tenderer to provide the 'layout' diagram of the manufacturing premises (factory layout). The diagram must use an 'A3' page size or larger.			
1.6	The Tenderer to provide examples of Protection Schemes or similar type equipment manufactured. The examples could either be physical equipment or photographic evidence attributable to the Tenderer.			

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1.7	In-house assembly and testing: Assembly and test procedures are documented, with required inspection and test results. Tenderer to provide evidence for a similar product for the documentation including evidence of the order, test results, as-built drawings, quality checklist and proof of delivery.			
<b>2</b>	<b>Mechanical (Tenderer/Steelwork supplier)</b>			
2.1	Does the Tenderer or Steelwork Supplier have the deemed adequate production facilities?			
<b>3</b>	<b>Electrical (Tenderer/Electrical Contractor)</b>			
3.1	Does the Tenderer or Electrical Contractor have the deemed adequate production facilities and the requisite valid calibration certification?			

## Annex D – Technical Expertise of Key Persons

Tenderers are to provide the following details for all local technical staff that will be involved with providing **technical support and training** for any contract resulting from this enquiry. Abridged curriculum vitae (CVs) of these staff members, including the following details, shall be submitted as part of the enquiry:

- i. Name
- ii. Field(s) of expertise
- iii. Area(s) of speciality: Any of design, configuration, testing/commissioning
- iv. Years' experience in above categories (total)
- v. Highest qualification