

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

**PART A  
REQUEST FOR INFORMATION (RFI)**

<b>Description of the works/goods/services</b>	<b>Re-design and refurbishment of C&amp;I training simulators.</b>		
<b>Deadline for submission</b>	<b>26 February 2024</b>	<b>At (South African Standard Time)</b>	<b>10h00 a.m. South African Standard Time (SAST)</b>
<b>RFI Number</b>	<b>MWP2376CX</b>		
<b>Site Inspection</b>	<b>Send email to <a href="mailto:MatshaTB@eskom.co.za">MatshaTB@eskom.co.za</a> by end of business on 07 February 2024.</b>		
<b>Tender Office address</b>	<b>Eskom, Megawatt Park (MWP) Tender Advice Centre Retail Centre Northside 1 Maxwell Drive Sunninghill</b>		

Eskom Holdings SOC Ltd ("Eskom") invites you to submit an:

- **Request for information (RFI)** to submit information for the works as stated in the table. This RFI is a stand-alone information-gathering and market-testing exercise, intended only to inform and assist Eskom's further deliberation and development of a strategy for the re-design and refurbishment of C&I training simulators. Eskom may request indicative prices if so stated in this RFI.

Eskom has delegated the responsibility for this **RFI** to the signatory of this document, whose details can be found below.

We look forward to receipt of your response.

Yours faithfully

<b>Name</b>	<b>Designation</b>	<b>Signature</b>	<b>Date</b>
<b>Damela Mathetja</b>	<b>Procurement Manager</b>		25.01.2024
<b>Telephone number</b>		<b>Fax and/or e-mail address</b>	

**Controlled Disclosure**

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

**PART B**  
**RESPONSE SHEET IN TERMS OF A REQUEST FOR AN EXPRESSION OF INTEREST/ REQUEST FOR INFORMATION**  
**To be completed by the supplier**

<b>To</b>	Eskom Holdings SOC Ltd	<b>Date</b>	
<b>Attention</b>	<b>Thembekile Matshaya</b>		
<b>Tel no</b>	011 800 3046	<b>e-mail address</b>	<a href="mailto:MatshaTB@eskom.co.za">MatshaTB@eskom.co.za</a>
<b>From</b>		<b>Address</b>	
<b>Address</b>			
<b>Sender</b>			
<b>Description of the works</b>	<b>Re-design and refurbishment of C&amp;I training simulators.</b>		

Please find below our response to Eskom's questions:

<b>No.</b>	<b>Question</b>	<b>Please indicate your response in this column</b>
1.	<b>Your contact name and contact details</b>	
2.	<b>Company registration number</b>	
3.	<b>Brief description of previous experience and Description of the solution that you can offer.</b>	
4.	<b>Indicative prices</b>	
5.	<b>Refer to the Annexure A</b>	

Yours faithfully

<b>Name</b>	<b>Designation</b>	<b>Signature</b>	<b>Date</b>
<b>Telephone number</b>		<b>Fax and/or e-mail address</b>	

**Controlled Disclosure**

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

## 5. ANNEXURE A

### INTRODUCTION

The purpose of this “Request for Information” document is to identify suitable industry resources and technologies that will be able to work with the Specialised Technical Learning environment at the Eskom Academy of Learning to potentially refurbish and upgrade five (5) existing SCADA training simulators. The information received will merely be demonstrations to give Eskom an idea of what the market can currently offer to assist the training facility to achieve/exceed the above-mentioned goal.

1. This is NOT a formal evaluation of the products on offer.
2. This Request for Information (RFI) process is NOT purchasing any products.

The document is set out to serve the following:

1. To gather information that will assist with the upgrade and/or refurbishment of the training simulators to acquire the goals as set out in Section 3.2 of this document.
2. As this process may lead to the issuing of tender documents for the refurbishment of the training simulators. the approach is to invite the OEMs and other industry leaders to participate in this RFI.

This RFI will in all likelihood be used to set the scope for future work on refurbishment/upgrading of the training simulators and will serve as input for any future contracts. The intent is therefore for the supplier to provide sufficient information on the products envisaged to achieve the full scope.

### Controlled Disclosure

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

## SUPPORTING CLAUSES

### MOTIVATION FOR RFI

The SCADA training simulators(X5) in question have been used extensively and has serve our Eskom training facility for many years now 15+ they are not performing as they were due to wear and tear and had become outdated with regard to current technology within general industry, our industry training counterparts and Eskom business at large.

Furthermore, new requirements within the renewable energy training space require basic SCADA training that encompasses the renewable technology's PV and Wind.

The SCADA system/loop upgrade/refurbishment will service both much needed training requirements.

### NORMATIVE / INFORMATIVE REFERENCES

#### Normative

Occupation Health and Safety Act, Act 85 of 1993.

#### Informative

### CLASSIFICATION

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

### DEFINITIONS

#### Mechanician

In this document it defines a person skilled in constructing, working or repairing Control & Instrumentation equipment.

#### OFO

The OFO is a coded occupational classification system that is a key tool utilized by the DHET for identification, reporting and monitoring of skills demand and supply in the South African labour market.

### Controlled Disclosure

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

## ABBREVIATIONS

Abbreviation	Description
C&I	Control & Instrumentation
DHET	Department of Higher Education and Training
EAL	Eskom Academy of Learning
OEM	Original Equipment Manufacturer
OFO	Organising Framework for Occupations
P&ID	Pipe & Instrumentation Diagram
PID	Proportional, Integral and Derivative
RFI	Request for Information
RFP	Request For Proposal
SCADA	Supervisory Control And Data Acquisition
PV	Photovoltaic
PLC	Programmable Logic Controller
VAC	Volt Alternating Current

## PROJECT OVERVIEW

### BACKGROUND

Over the past few years, the majority of Eskom power plants reached the middle of their expected lifespans and therefore embarked not only on midlife refurbishment projects but also elsewhere with the introduction and implementation of various renewable projects. These renewable and refurbishment projects brought with it the latest in control management philosophies and Control & Instrumentation technologies.

The enhanced SCADA training (imbedded PID control and renewable philosophy) with upgraded training facilities will benefit Eskom with regard to reliable C&I and Renewables maintenance and also skills retention.

### GOALS

The main goal here is to equip qualified technical personnel with specific needed inhouse training to enhance their skills and equip them with the knowledge required to perform their duties to the best of their ability.

### Controlled Disclosure

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

Furthermore, with Eskom's continued investment to have its own capability to assist with specific specialised training as and when needed will assist with the risk of unplanned/unforeseen staff turnover within the scarce and critical workforce space.

The purpose and end goal here is to have one SCADA operating system X5 able to perform/manage two main functions one is C&I PID SCADA control for GX post artisan training as per current design and secondly new/additional plant hardware with a different program but same SCADA control for training Eskom technicians within the renewable business.

## THE SCOPE OF WORK

### SCADA SIMULATORS (X 5)

There are a total of five (5) SCADA simulators placed on the left hand side of the room.

These simulators are utilised for SCADA training, the "plant" portion of the simulator is seldom touched by the student. The candidate develops front-end mimics, function plans, interlocking and control circuits to control and monitor the process.

#### The C&I training covered by the SCADA simulators include:

- Process Control Loops and Automatic Control.
- Instrumentation Drawings.
- Process communication systems.
- Compare measured variable values and adjust process loops.
- Processes of optimising process control loop and control loops.
- Diagnostic processes for fault finding on control systems.

#### The C&I scope of work envisaged for the SCADA process loops/simulators:

- Check and if any repair the main piping structures to ensure no water leaks (Pressure test).
- Check functionality and if necessary, replace instrumentation as per original loop philosophy.
- Check functionality and if necessary, replace/repair existing PLC and drives.
- Replace/recommend computer hardware and software.
  - Hardware includes all CPU's, screens and peripherals (mouse, keyboard etc.)
  - Operating system.
  - Software includes a SCADA package for front-end development.
- Perform function checks and re-commission all training loops as per training loop philosophies.
- Develop master sample screens and mimics.
- Run and optimize the simulator using sample screens.

### Controlled Disclosure

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

- Supply all mechanical and electrical drawings for the loop.
- Training (train-the-trainer) for all equipment and software supplied.

**The scope of work envisaged for the SCADA Photovoltaic, Wind and Battery Utility Scale:**

- Measure Practical setup as input to SCADA.
- Determine Virtual calculations from SCADA components.
- Record Output from SCADA to “historian” or to be exported to excel file.
- Weather station information into the SCADA (pyranometer, wind speed, temperature etc)
- Inclinometer inputs for axis tracking (single or dual if required)

**4.1.4 The training curriculum covered by the SCADA simulators include:**

- Drawings.
- Process communication systems.
- Compare measured variable values and adjust system.
- Processes of optimising.
- Diagnostic processes for fault finding on control systems.
- Other relevant interventions to renewables.

**COMMON RANGE (X 2)**

Each side of the room has its own common range for storage of water as supply to the simulators(**C&I**). On the right-hand side, the common range services the ten process simulators and on the left-hand side the common range services the remaining three process simulators as well as the five SCADA simulators

Part of the common equipment is also the power supplies for the simulators (18 in total) divided in ten for the right-hand side and eight for the left-hand side. These power supplies are powered from 220 VAC and the output voltage (24V) and currents need to be sized to suit the proposed equipment on the loops. Two spare power supplies (not installed) are envisaged to form part of the supply. Care should be taken that the learner never gets exposed to the 220VAC power supplies.

**FRONT-END AND PROGRAMMING STATION**

PLC programming and all front-end PC work are done at the plant X5 itself here all connections and wiring are also to be done as per standard requirement/ functionality.

**Controlled Disclosure**

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b>	240-72663051	<b>Rev</b>	1
		<b>Effective Date</b>	October 2022		
		<b>Review Date</b>	October 2027		
		<b>EOI/RFI Number</b>	MWP2376CX		

## RFI REQUIREMENTS PROCESS

### STRUCTURE OF THE DOCUMENT

This document portrays only the envisaged scope of work for the simulators and it is by no means exhaustive or final. Information is requested from the contractor to enhance, better, modify and/or optimize the envisaged scope of work using the latest technology available from the OEM equipment.

Any of the existing equipment may be reused provided it is in good order, functional and still supported by the original manufacturer.

### PARTICIPATION IN THE RFI

The participation of the Request for Information (RFI) process is based on the install base and immediate training needs within Eskom, Original Equipment Manufacturers (OEM's) and other industry leaders are engaged for information. For future processes such as Request for Proposal (RFP) and/or implementation the mix may be different.

Suppliers who have responded to the RFI will also be invited to Eskom Academy of Learning side to make assessment for more input and insights to Eskom.

### RFI TERMS AND CONDITIONS

After the initial submission technical engagements will follow to clarify and get more detailed information. Contractors may opt to bring their technical experts to EAL for information session or Eskom personnel may visit the contractor's site for engagement.

### RESPONSE FORMAT

The contractor can furnish the information in any format or template normally used by the contractor. The information needs to be detailed enough for understanding and once evaluated all contractors will be engaged in technical/engineering discussions to get the most benefit from the RFI process.

### Controlled Disclosure

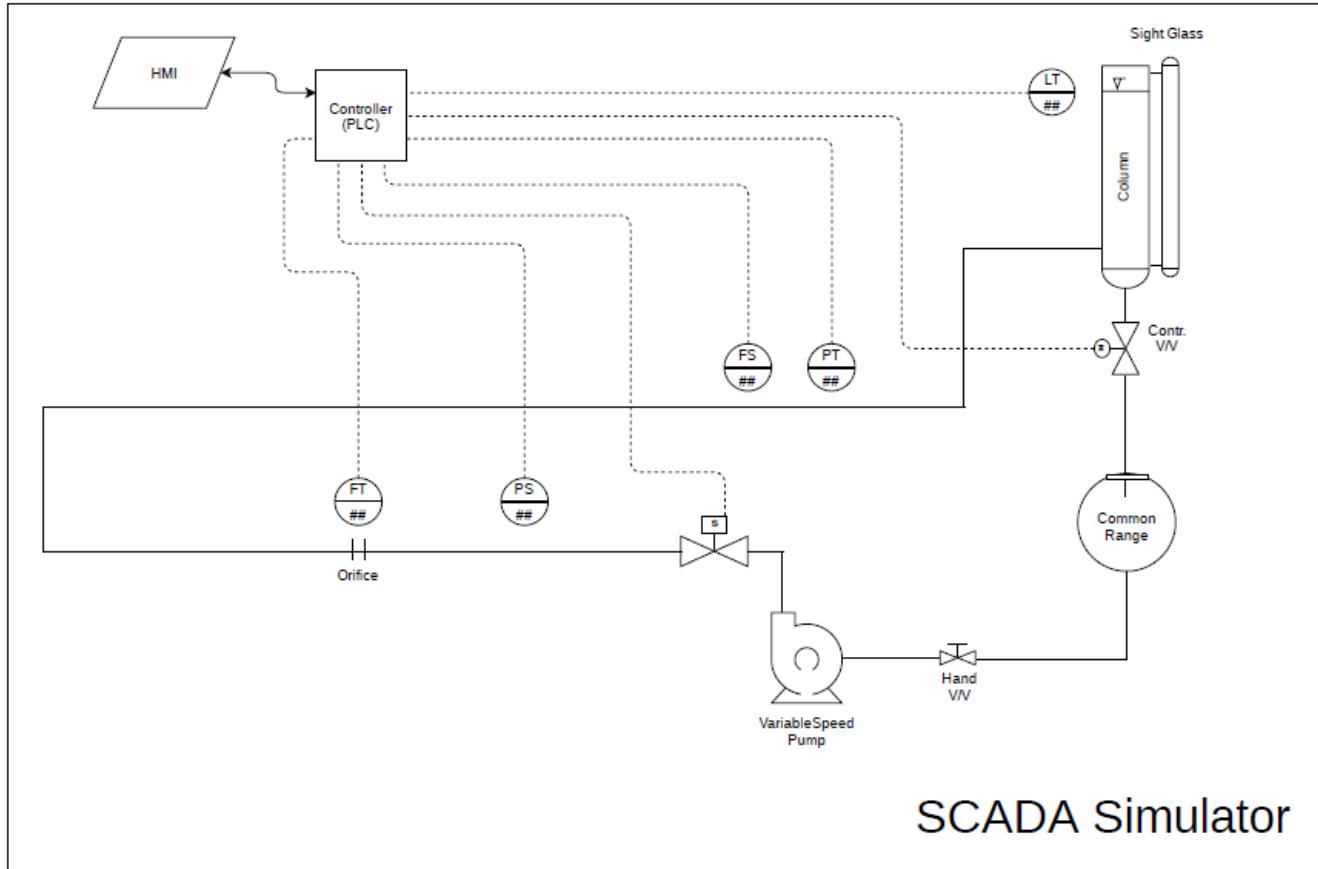
When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

 <b>Eskom</b>	<b>Expression of Interest (EOI) or Request for Information (RFI) Template</b>	<b>Document Identifier</b> 240-72663051	<b>Rev</b> 1
	<b>Effective Date</b> October 2022		
	<b>Review Date</b> October 2027		
	<b>EOI/RFI Number</b> MWP2376CX		

## ATTACHMENTS

### Appendix A

#### P&ID for SCADA Simulator



### Controlled Disclosure

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30