PART A REQUEST FOR AN EXPRESSION OF INTEREST (EOI)/ REQUEST FOR INFORMATION (RFI)			
Description of the works/goods/services	**Request for information on commercially available and/or proven technology for re-engineering of the OPC DA (Data Access) communication protocol for control systems that are impacted by the Microsoft security changes for systems using the Windows operating system and have the OPC classic architecture infrastructure based on DCOM based communication (where OEM support is no longer available as they have exited the business).**		
Deadline for submission	***06 March 2026***	**At (South African Standard Time)**	***10H00***
Tender Office address	**Tenders are uploaded via Eskom Tender bulletin site on the Eskom E-tendering page.**		
EOI's/RFI are to be submitted electronically via Eskom E- tendering site by the stipulated closing date and time. ***Please note it is the responsibility of the supplier to ensure that EOI/RFI submission is submitted before the closing date and time***	***Open Tenders/EOIs are uploaded and published on Eskom Tender Bulletin and close tender are only uploaded to obtain the link***		
Electronic Submission of EOI/RFI	The tenderer must upload the tender via Eskom Tender bulletin site on the Eskom E- tendering page. All documents need to be submitted in a PDF and Excel format (The upload size per document is 500 megabytes and total submission is restricted to 4 gigabyte). No Zip/condense files can be uploaded No hard copy will be accepted If for some reason you resubmit your EOI, then the latest version of the EOI submitted will only be accepted and all previous submission/s will be null and void. Please ensure that the submission status is indicated as complete.		

	Supplier Help Manual guide and video can be found on Eskom E-Tendering page
E-tendering Help Manual for supplier	*attached*

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

- **Request for information (RFI)** to submit information for the works/goods/services 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-engineering of the OPC DA (Data Access) communication protocol for control systems that are impacted by the Microsoft security changes for systems using the Windows operating system and have the OPC classic architecture infrastructure based on DCOM based communication. Eskom may request indicative prices if so stated in this RFI.

1. BACKGROUND

The Automation System at Grootvlei Power Station known as the Distributed Control System (DCS) and its associated sub-systems were upgraded during the Return to Service between 2006 and 2011 to a discrete Control and Instrumentation system. These systems allowed for remote plant operation, monitoring and protection, coupled to this was the ability for the plant information to be available to business network for planning, auditing and process analysis.
Grootvlei Power Station utilises two different control system for Boiler & Turbine control, thus the Boiler is equipped with the Honeywell DCS whilst the Turbine is equipped with the MAUELL system.

These system needs to communicate to each other in order to ensure proper control and operation between boiler and turbine. The communication between these two systems was achieved by using an industrial automation protocol called OPC. OPC stands for OLE for Process Control, where OLE refers to Object Linking and Embedding. The implementation of this communication protocol was implemented in a redundant manner; this means that each unit has two servers running in parallel. This was done to improve reliability and availability of the system. These servers are industrial Personal Computers with additional hardware and software.

In 2014, a project to replace the OPC servers and the Backup HMI was successfully implemented. This was done as part of the C&I equipment Lifecycle support from the control system Original Equipment Manufacturer (OEM) and is in line with OEM recommendations and recommendations from the Eskom Generation C&I strategic report. The current OPC servers and Backup HMI have been in-service for over 7 years (replaced in 2014) and have passed their planned replacement interval of 3-6 years. The reliability of these components has drastically reduced as there have been intermittent failures experienced recently.

In March 2023, GE informed Grootvlei Power Station that the MAUELL control, protection system and its sub-systems (OPC servers, back-up HMI and process network systems) is obsolete and no longer supported with replacement parts or any other maintenance services and that MAUELL was

exiting the business. This meant that Grootvlei Power Station would not get any technical support, replacement parts or any other maintenance services from MAUELL or its' sole agent/distributor (GE) in the event of major system failure or technical difficulties.

The station does not have spares for the OPC interface servers, common HMI server and engineering server. Failure of the OPC servers will result in load losses and potential forced downtime since the turbine will not respond to boiler demands. The currently installed OPC servers do not comply with the latest Microsoft Windows DCOM hardening security updates. Honeywell OT servers have been upgraded to the latest Microsoft Windows operating system where the DCOM security patch came embedded to the operating system. This has led to the continuous communication failure between the boiler and turbine control functions, whereby the unit will sometimes fail to load or de-load, failure of the turbine run up. These failures pose a high risk to the continued operation of the station.

As indicated in the notice provided by Microsoft, the term "DCOM Hardening" has recently been associated with Microsoft's planned changes for DCOM in Windows to address security vulnerability CVE-2021-26414, which was announce mid-2021. Microsoft's updates will require a more stringent level of authentication when OPC client applications connect to OPC server.
The problem is that most OPC client and server applications are hard coded to only send the necessary information for the less stringent authentication requirement, until now. Software vendors and developers of OPC applications will need to address this and include the necessary modifications in a software update/release to meet the new authentication requirements. Until then, the effect of the Microsoft changes means that if you are using DCOM for networking and you apply the patch, your OPC connections might fail.

In late 2021, Microsoft announce the new security requirements that requires the users who wish to continue using the OPC classic infrastructure that relies on the DCOM based communication to shift to other alternatives in order to maintain communication connectivity**.**
Various mitigations were proposed by Microsoft as a workaround solution for the DCOM related issues, however, this necessitated the OEM to make changes to their OPC software applications and to conduct rigorous testing to ensure proper data communication connectivity.

According to Eskom Generation C&I Refurbishment Execution Strategy document (559-123589005), C&I obsolete systems can undergo two main types of retrofits, namely:
1) Full retrofit where all components from field instruments, junction boxes, multicore cables and the control cubicles and control room are replaced, or.
2) An upgrade or migration, where most of the field infrastructure including cabling and some control cubicles are kept and only certain modules, computer hardware and software of the control system is replaced.

The vendors of modern control systems follow the industry standards when designing their systems to ensure that they use standard protocols for interfacing with other systems, however, the control system vendors may further incorporate proprietary applications into their systems which may make it difficult to find alternatives solutions for obsolete systems such as virtualization, data connectivity using OPC protocols etc. There are industrial control system vendors who have the capabilities of decoupling the installed digital control systems from the obsolete based Operating systems and

automation hardware systems. However, this exercise requires that detailed technical analysis, testing into these alternate solutions be conducted system by system as there could be no solution suitable for all systems.

2. MOTIVATION

The capital cost associated with the replacement of the Turbine Control and Protection System is significant, taking into consideration the remaining operation life of Grootvlei Power Station (shutdown of the station in 2029/30 financial year) and the need for the continued operation of the station up until the dead stop dates. Grootvlei Power Station approach is looking into the system that will include upgrading the current automation servers, thus being the OPC, Backup HMI and the Engineering station/server whilst maintaining the existing turbine automation units/controllers. I/O's, trip blocks and any other interfacing modules for the turbine control and protection system.

3. BENEFITS TO ESKOM

Research Testing and Development will thereafter:

- Summarise RFI evaluation results of the participated suppliers and their offered demonstrated/proven technology for re-engineering of the OPC DA (Data Access) communication protocol for control systems that are impacted by the Microsoft security changes for systems using the Windows operating system and have the OPC classic architecture infrastructure based on DCOM based communication and provide recommendations to Eskom on the way forward.
- The recommended option will assist Grootvlei Power Station to review the option of conducting the full replacement of the turbine control and protection system, which will in turn reduce the cost.

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

Name	Designation	Signature	Date
Manala Mabhena	***Officer Procurement***		2026/02/20
Telephone number	+27 17 779 8789	**Fax and/or e-mail address**	MabhenMM@eskom.co.za

PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR AN EXPRESSION OF INTEREST/ REQUEST FOR INFORMATION To be completed by the supplier			
To	Eskom Holdings SOC Ltd	**Date**	
Attention	***Manala Mabhena***		
Tel no		**Fax no and /or e-mail address**	
From		**Address**	
Address			
Sender			
Description of the works/goods/services	No constraints are placed on the respondents in terms of visitation rights to the Site in order to make a proper evaluation of all requirements. “As is status” assessment includes all the activities to ensure that the individual parts of the C&I as well as the C&I system together with its sub-systems, is designed and operates as an integrated and consistent system within itself and together with the rest of the plant. The “as is assessment” activity includes the respondents’ evaluation work at Grootvlei Power Station. The evaluation is required to determine the “as is” status and condition of the existing systems by participating with the Employer in establishing the new requirements referred to the “as required” for Capability Assessment of Suppliers for commercially available and/or a well demonstrated/proven technology for re-engineering of the current Mauell (interfaced to Honeywell) OPC DA (Data Access) communication protocol for control systems that are impacted by the Microsoft security changes for systems using the Windows operating system and have the OPC classic architecture infrastructure based on DCOM based communication. This will include the integration of the Mauell Backup HMI, Engineering Stations and any of the associated equipment as per the existing Mauell/Honeywell system architecture as per figure 1 & 2 below. In order to obtain advances in other technologies for decoupling obsolete based Operating systems and automation hardware systems from the digital control systems deployed at Grootvlei Power Station, Grootvlei Power Station is inviting suppliers to furnish relevant information on how alternative technologies can be used to re-engineer the Mauell OPC DA (Data Access) communication protocol for the Turbine Control System that is impacted by the Microsoft security changes based on OPC classic DCOM communication. The		

	information provided by suppliers will be used by Grootvlei Power Station to determine the strategy of potentially using these advance technologies in Grootvlei Power Station and to possibly undertake bench scale/pilot plant tests that will demonstrate the applicability thereof. The scope of the RFI will include assessment for the provision of the unit OPC servers as well as the Backup HMI PC/server, installation of the Unit OPC servers (2 PER UNIT) and the Backup HMI PC as per the existing setup. This also includes the required operating software, application software, anti-virus software as well as any other software and hardware that might be required to ensure the correct operation of the OPC servers and the Backup HMI PC with the intention of improving the availability and reliability of the OPC server-client interface. The OPC server-client interface must be fully tested for correct functionality, and this must be demonstrated by the contractor before handover. ***[insert a description of the works as per part A]***

FIGURE 1: MAUELL/HONEYWELL OPC REDUNDANCY SETUP

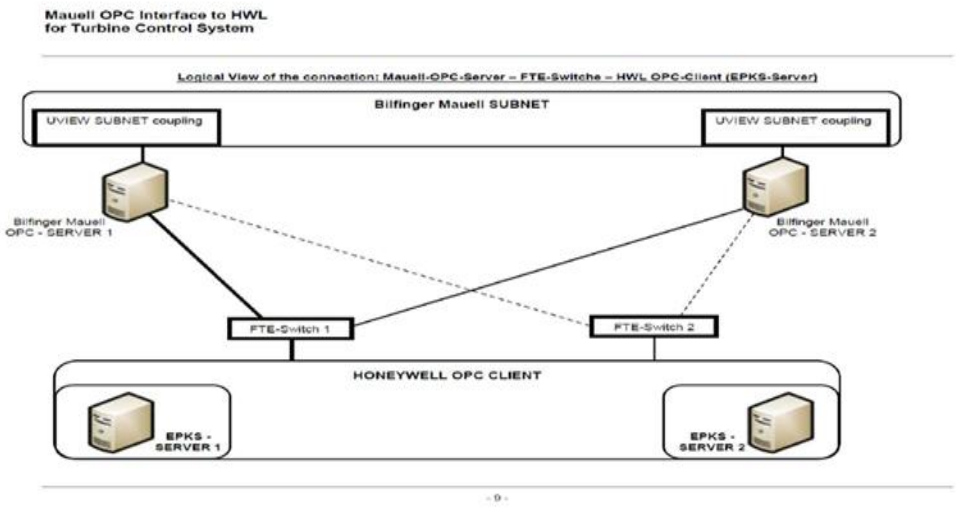
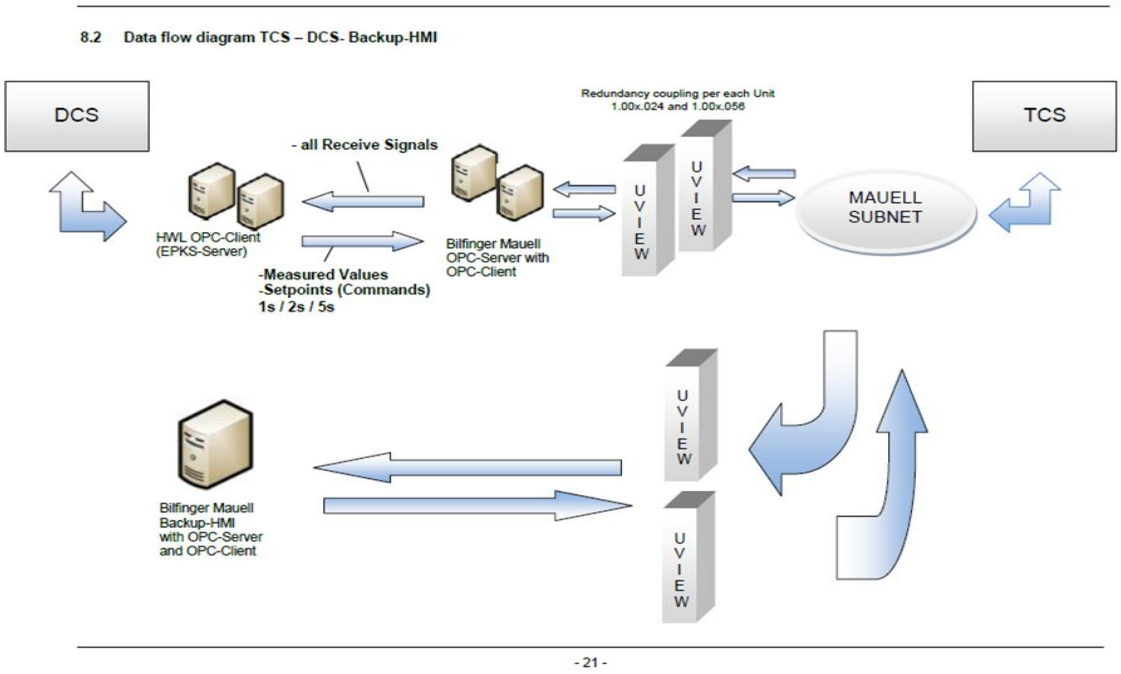


FIGURE 2: MAUELL/HONEYWELL OPC INTERFACE SETUP



Please find below our response to Eskom's questions:

No.	Question	Please indicate your response in this column
1.	***[your contact name and contact details]***	
2.	***[Company registration number]***	
3.	***[brief description of previous experience and Description of the solution that you can offer]***	
4.	***Indicative prices (optional and only for use of RFI's)***	
5.	***[Add applicable questions]***	

Yours faithfully

Name	Designation	Signature	Date
[insert your full name/s]	***[Insert your full designation]***		
Telephone number		**Fax and/or e-mail address**	

APPENDIX A – RETURNABLE QUESTIONNAIRE

Questionnaire:

Complete for your proposed area/s where service may be applicable:
A separate/individual sheet/table shall be submitted for each of the tables above.

Table 1: RFI Questions for Contractor/Applicator /Installer and System/Product Supplier Manufacturer

Name of the Contractor: (Include address, contact details and contractor contact person)	
Name of the Eskom component you are proposing solution for: (As per components in SOW section 4)	

A. Main Contractor - Specific RFI Questions		
Question	**Contractor's Answer**	**Supporting Documents**
Hardware and Software Specifications		
1.1 The decision on the hardware, e.g., CPU, RAM, Size of Hard Drive, type of network card etc. to be used will be discussed and determined by the Contractor. The Contractor is required to design/make the necessary changes that might be needed for the correct functionality of the system is in accordance with the requirements of the works information.		
1.2 The decision on the operating software will be determined by the Contractor based on the proposed solution.		
Contractor's experience with the proposed System.		

2.1 Where did the contractor apply the proposed system successfully in the last five years? (References to include Eskom, petrochemical and other industries where applicable (local and internationally) Reference installations [name of power plant/organisation, number of successful installations, date of when the re-engineering of the OPC DA (Data Access) communication protocol interface for the obsolete systems was initially deployed, years of operation after technology deployment;		Provide a list of verifiable references that the contractor has experience in applying the proposed system. *Note: The verifiable evidence shall have contact details for the listed reference projects (last five years).
Compliance to relevant standards		
3.1 Product name and product description (type of technology utilised and the scientific background, unique features, general arrangement drawings as to how this is deployed in a power station).		

3.2 For the proposed system which national or internationally recognised standards are used for the design or proposed solution? List the standards used for major activities.		
Functional Requirements		
4.1 Provide the system architecture of a typical installation;		
4.2 Provide functional descriptions and operating parameters of all key equipment;		
4.3 Describe the communication protocol to be utilised in the design of the system;		
4.4 Supply of equipment for demonstration [demonstration volume/scalability guarantee, a letter of intent if willing to implement a pilot/demonstration plant at Eskom power plants, terms and conditions		

for the use of the equipment, as well as indicative capital and operating expenditure;		
5.1 Provide a list of interface/utility requirements (electrical supplies, auxiliary power consumption, control and instrumentation interface requirements and number of signals, and modifications/upgrade of existing equipment);		
5.2 Provide the number of all “equipment” required for effective operation of the system;		
Maintenance		
6.1 Maintenance philosophy of all key equipment (service intervals and duration, wear parts and replacement timeframes, typical service costs, including repairs, spares and labour for each type of service, reliability and availability statistics from previous installations, spares availability and lead times and specialised engineering, operating and/or maintenance skills);		
Guarantees		

7.1 Typical guarantees offered jointly by the contractor and supplier/manufacturer for the particular system and environment/service parameters, both duration and terms and conditions.		Provide typical guarantees offered jointly by the supplier/manufacturer for the particular system and environment/service parameters, both duration and terms and conditions. *Note: Consider workmanship and product performance.
7.2 Case studies / patents / reports / literature based on product experience / usage (provide report title, year published, author names, author's affiliation);		
Indicative pricing and high-level costing		
8.1 Budgetary cost estimated for the supply of the re-engineering of the OPC DA (Data Access) communication protocol interface for the obsolete systems (that are impacted by the Microsoft security changes based on OPC classic DCOM communication) and its associated equipment installation of the technology on a typical unit complete with all required auxiliary and ancillary equipment required for the functioning of the system [capital and operating expenditure in South African Rand (ZAR);		

8.2 The Contractor/Applicator or System/Product Supplier Manufacturer shall provide budget costing information based on their industry experience for the proposed system, if there's no cos associated with this RFI, then it must be indicated as such.		
8.3 Implementation timeline;		
Supplier Development and Localization		
9.1 Estimated percentage of local content for associated technology; Indicate the company proposal and implementation of sub-contracting;		
Licenses/		
10.1 Intellectual property (license and ownership - if licensee, provide details including terms and conditions);		