1   PROJECT DETAILS

Project No.'s	ID	IT00528	WBS	C.IT00528 N. IT00528
Project Name	Automatic Identification Data Capture			
GIT Customer Area	Group Procurement & Supply Chain (GP&SCM)			
IM Portfolio Manager	Loretta Tibbatts			
Project Delivery Portfolio Manager	Lizle De Kock			
Programme / Project Manager	Kabelo Mnyani			
Project Sponsor	Bathusi Montwedi			
PLCM Phase	Execution Phase			

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2   ABBREVIATIONS

Abbreviation	Description
P&SCM	Procurement and Supply Change Management
RFID	Radio Frequency Identification
MRO	Maintenance, Repair and Operation
MRP	Material Requirements Planning
AIDC	Automatic Identification Data Capture

3   Glossary of Terms/Definitions

Term	Definition
Radio **F**requency **I**dentification (RFID)	RFID is a technology that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency (RF) portion of the electromagnetic spectrum to uniquely identify an object, animal, or person
Bar **C**ode	A machine-readable code in the form of numbers and a pattern of parallel lines of varying widths, printed on a commodity and used especially for stock control
Quick **R**esponse (QR) **C**ode	QR Code is a machine-scannable image that can instantly be read using a Smartphone camera. Every QR Code consists of several black squares and dots which represent certain pieces of information
PAS **S**ystem	Process automation and scanning solution (PAS system). Barcoding the process is the automation of activities that would be paperless on handheld units

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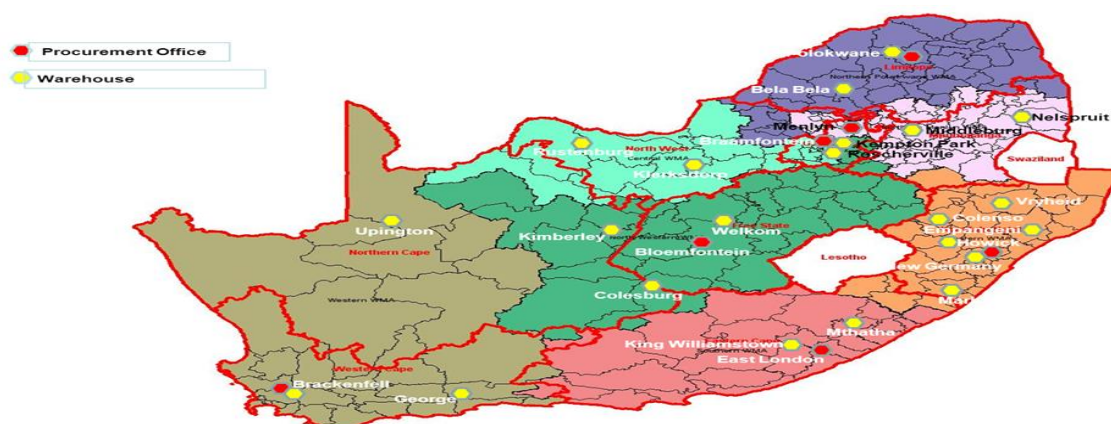
4 PROJECT SCOPE STATEMENT OVERVIEW

The project scope statement is the definition of the project – what needs to be accomplished. Define Scope is the process of developing a detailed description of the project and product. The key benefit of this process is that it describes the project, service, or result boundaries by defining which of the requirements collected will be included in and excluded from the project scope.

It also enables the project team to perform more detailed planning, guides the project team's work during execution, and provides the baseline for evaluating whether requests for changes or additional work are contained within or outside the project's boundaries.

The degree and level of detail to which the project scope statement defines what work will be performed and what work is excluded can determine how well the project management team can control the overall project scope. Managing the project scope, in turn, can determine how well the project management team can plan, manage, and control the execution of the project.

5 BACKGROUND AND CONTEXT

Materials Management deals with inventory stocked by Eskom business units for capital works and for the maintenance, repair, and operation (MRO) in excess of R21 Billion. Procurement and Supply Chain Management (P&SCM) functions are presently decentralised within the Divisions (Distribution, Transmission, Telecoms, ERI (Eskom Rotek Industries) and Generation) and this includes 48 warehouses located around South Africa.

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The Warehousing process is currently paper based. Information is collected manually (various forms are filled) from the warehouse management system and fed into the Inventory Management System (SAP), which results in the following inefficiency of warehouse management:

- Manual and paper-based counting (late cycle counts)

- Goods receipts and issuing processes

- Errors in accuracy result in low stock accuracy which is currently not measured (estimated 60% current stock accuracy)

- The integrity of the stock accuracy and financial reporting is compromised

- Increased capital expenditure due to the following:
  - Lack of visibility into the inventory, which has caused a need to maintain high levels of stock to prevent shortage
  - Ineffective inventory planning and management
  - Surplus stock that is above best practice benchmarks
  - Inaccurate demand forecasting from upstreaming the value chain
- Poor integrity of the balance sheet due to lack of stock accuracy assurance.
- Slower movement of information to and from the Inventory Management system (SAP) resulting in reduced visibility throughout the warehousing process.
- The skills level of staff is far behind with regards to best practices in warehouse technology
- Reduced employee productivity due to the time wasted in completing paperwork and locating information on the labels.

Eskom took a decision to find and implement an Automatic Identification and Data Capture Solution to assist the Supply Chain Management department in managing the numerous challenges faced due to resource and technology constraints. The solution is expected to increase productivity and enhance the warehousing process. To ensure a high and better confidence level of the stockholding to enable Materials Management to perform Inventory planning properly, i.e., enhanced planning of MRP. This will result in a reduction of supplies due to a reasonable confidence on the stockholding. With the confidence of assuring reasonable stockholding, surplus stock will be managed effectively and efficiently.

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The following sites or power stations are included on the scope of work.

- Lethabo, Kendal, Matimba, Medupi, Majuba, Duvha, Arnot, Peaking (Gourikwa and Ankerlig), Koeberg, Tutuka, Kusile, Komati, Grootvlei, Hendrina and Camden Power Stations.

6   SCOPE / BUSINESS REQUIREMENTS

Request for an off premise, Software as a Service (SaaS) cloud solution that will cover both the Software and Hardware as a service for the duration of the contract. Eskom will pay subscription fee for the entire service (Both Software and Hardware).

The solution must be provided as a turnkey solution for the analysis, design, development, testing (Unit, SIT, Regression, UAT, Performance, DR, Vulnerability, Security etc.), integration and deployment of the Automatic Identification Data Capture. The solution should be accessible from all web-based channels like, laptop, desktop, phones, tablets, etc for manual overwrite, reporting and audit purposes.

An experienced test manager with sufficient dedicated testers must be allocated to the project, independent of the development team. The solution should be kept up to date with and be aligned to Eskom security policies.

The following requirements should be provided for, breakdown or decomposition of the functionalities of the solution, cost decomposition as per the pricing schedule template, implementation approach and timelines (timelines must be in MS Project, Excel, and PDF).
If selected a further demonstration of the solution will be required which will need to align to the use cases based on the BRS and technical evaluation criteria.

Only tenderers that meet the gate keepers will be called to prepare for the demo. The demo session must be presented at the actual site where the solution is implemented. Eskom resources will travel to your respective sites.

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The scope shall include:

Deliverable	Description
Feasibility Analysis and Functional Specification	Conduct a feasibility analysis around RFID technologies and provide a feasibility report / document for phase 2, 3 and 4. Develop the functional speciation for this analysis. Ensure documents are approved and signed off by all relevant stakeholders.
Functional Specifications and Detailed Design	Deliver approved functional specifications and detailed design (physical design) based on the user requirement specification and logical design provided as part of this RFP.
	Facilitate review and approval of the design as required by Eskom methodology and governance. Ensure cyber security compliance and integration end points. The Tenderer is required to render solution architect services to this project which includes making sure that ADR approval is gained before build and again before go-live.
Integration	The Tenderer must provide technical resources to build and implement all required interfaces. Integration into the respective SAP Modules and any other systems that Eskom may need to integrate, to ensure the success of project. Refer to the logical design for systems that must integrate to the solution.
	The Integration into the Eskom applications will be done within a phased approach. Integration scope and deliverables is listed below:
	• Analyse, design, develop, test, and deploy integration solutions based on the logical design. External interfaces to integrate using Oracle Fusion 12c and IBM WebSphere (Data Power), thus the vendor should be well skilled to work with the mentioned technologies.
	• The Integration Centre of Excellence (ICOE) governance process must be followed for all approvals. Kindly reference "SOA

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Deliverable	Description
	Workgroup artefacts". All diagrams and processes are to be captured in the Eskom Enterprise Architect (EA). • All CIM message artefacts (including Mapping Document) to be placed in the Eskom defined CIM SVN. All code to be placed in Eskom defined Code SVN repository All artefacts to be placed in the Eskom share point.
Integration	The following are the integration and Testing activities and artefacts to be produced and presented at the committee for approval and sign off:
	• Business test case document. Integration specification document. Mapping Document. CIM message artefacts including WSDL's and XSD's. Code and unit testing review. Deployment Guide. SIT testing review of results in ALM. SIT test case sign-off. Performance testing review of results in ALM. Performance testing sign-off. • Pre-transfer documents for go-live approval. Test requirements in ALM. Test cases and results in ALM. Defects managed in ALM. Test plan Document. Non-functional Test plan document. Test closure reports documents. Performance test scripts and results.
	Provide an Integration message modeller to complete the following:
	• Analysis of message requirements. Model or update integration message which follow a Common information model. Create payloads and envelopes. Generate xsd, message model and model dictionary.
Testing	Acquire the testing requirements, develop the test cases, and conduct testing to ensure that the solution is comprehensively evaluated for implementation in the Eskom IT environment. The testing staff may not be the same staff as the configuration, development and implementation staff assigned to the Project.

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Deliverable	Description
	All testing must be completed on Eskom's test management systems and vendor must ensure that test staff is skilled in using the test management systems. Defects reporting and management throughout the project.
Testing	The following testing and testing milestones must be completed. A signed off test closure report is required before a test milestone is completed.
	• Unit Testing – test results from the Vendor team. • System Integrated Testing, Functionality testing (in QA – end to end functional testing and integration testing. That means testing with other systems and ensuring that all requirements have been successfully configured). This testing must be driven & executed by the Vendor but must include Eskom staff for completeness & authenticity. • Non-Functional Testing (performance testing and disaster recovery testing). This testing must be driven & executed by the Vendor but must include Eskom staff for completeness & authenticity. • User Acceptance Testing (Testing by the Eskom customer team that the system is working and meets requirements). This testing must be driven by the Vendor but must be executed by Eskom staff for completeness & authenticity.
	All testing requirements must cover all identified interfaces that are have been identified. The testing team must adhere to the TCoE Turnkey Project Requirements Guideline provided as part of the RFP document.
Security	• Refer to the "240-170007584 Rev 2 - Web Services Security Standard.pdf" Document. • Refer to the Technical Evaluation Document for detailed requirements

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Deliverable	Description
Network	Tenderer to ensure near Realtime response times below 3 seconds. A network performance certificate is required as proof to ensure that this requirement will be met. Network Optimizing: Tenderer to advise how the Network will be optimised to cater for the near real time transaction performance. Advise on the Network shaping tools you will deploy (if any) and performance of the solution over the cloud network. What monitoring will be provided outside of Eskom network".
	Vendor neutral (Teraco), connections required. Cross connect (one physical connect to different tenant), virtual connection (express connect) - R1000 (VLAN to supplier).
Training/Transfer of skills	Develop training material and support material. Train Eskom development, database, application technical support and support teams and ensure sufficient knowledge transfer. The vendor will be required to sign-off knowledge transfer acceptance certificate as part of every deliverable to ensure knowledge is transferred throughout the process and does not need to wait until the end of the project.
	The requirement for training will be at all 3 Eskom levels of functional application support, 1st line support, 2nd line and 3rd line of support, including the application technical support and database support. The service provider is required to provide all levels of support services. Physical classroom training is required together with additional online training must be made available to cater for future training requirements or issues due to COVID pandemic.
	Business: 300 x Inventory / Warehouse Personnel's. Areas: Mpumalanga, Free State, Kwa-Zulu Natal, Western Cape, and Limpopo.

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Deliverable	Description
	Technical: Functional 14 resources, Technical 9 resources, Development 10 resources and 1st line support 6 resources.
Build and Deploy	Provide test cases, provide unit testing evidence, once all the necessary testing is complete, testing reports are produced, all governance approvals are obtained, the solution will need to be deployed to production. The Tenderer must articulate clearly as part of the response the implementation and deploy approach.
	Update requirements traceability matrix. Ensure all environments are updated following successful test conclusions. Compile a go-live plan and ensure the solution obtains the necessary governance approvals as follows:
	• Architecture Design Review Committee (ADR) for pre-transfer, Change Review Management Committee (CRMC), Go/No-Go pack and decision by Group IT General Manager.
Service Level Agreement	1st line, 2nd line, 3rd line support and 4th line support will be required from the service provider to Eskom which will entail an escalation process.
	The Tenderer is expected to use the help desk services system as determined by Eskom. User support is 8/5 (Pending categorisation). 24/7 during change deployments. Logged incidents and requests for services to be acknowledged withing 2 hours. Incidents to be resolved within 4 hours and requests for services to be resolved within 8 hours.
Change Management	Change management is required for all the stipulated regions and power stations. Provide Change Management approach plan as part of the tender response. The approach should show how change management will be implemented, communication plan for Eskom, awareness sessions, etc.

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Deliverable	Description
Project Management	Deliver project documentation required by the Eskom Group IT PMO. This includes but is not limited to:
	Detailed integrated schedule. Weekly progress reports. Payment schedule forecast and actuals tracking against the forecast. Delivery Acceptance Certificates with supporting documents. Provide information required by Eskom team members to facilitate governance of the project and its deliverables. Integrate the current application support teams into the project delivery team. Deliverable Breakdown Structure indicating all fixed cost deliverables with the cost of each deliverable and the total cost of all deliverables.
	During execution deliverables will be evaluated by Eskom and a Deliverable Acceptance Certificate will be issued on approval. Approved deliverables can then be invoiced.
	A Project schedule in MS Project format. The top-level work breakdown in the schedule must reflect the Software Delivery Life Cycle stages (e.g., Feasibility, Design; Build, Test, Train, Deploy and Stabilise).
	Please note that, all scope items mentioned on this scope document and all the requirements stated on the Business Requirements Specification document must be accepted. There will not be any scope exclusions on the project RFP scope and business requirements.
Other Responsibilities	Dependencies and pre-requisites on Eskom must be clearly stipulated.
	All deliverables produced on this contract shall become the property of Eskom with Eskom holding sole rights to it. All deliverables shall be provided in maintainable format for each evaluation (i.e., editable documents).
	Project change control refers to the changes in project scope, time, and Cost. Changes will follow the process below:

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Deliverable	Description
	• Changes must be approved by the requester, business owner, project manager, and project sponsor.
	• Depending on the scale of the change, other approvals external to the project may be required. Guidance in this regard will be provided by Eskom. Approved changes must be noted in steering committee minutes and scope document must be compiled and signed off.

7 Phase Implementation Approach to be Followed

7.1 Phase 1: Barcode the Process

The term barcode represents any type of system used to scan a code e.g., QR codes / dot matrix. Barcoding the process is the automation of activities that would be paperless on handheld units. Handheld units will be mobile and have real time integration with SAP. Different users can login to their individual tasks. It will not be necessary to put a barcode label on individual material items.

The printable coded labels will represent the process documentation. Coded labels will be affixed at each bin location which contains or represents information such as material number, bin number, UMC, material description etc.

Each person will sign into a handheld device with their standard log in details. Each person will have an Individual Task List. Tasks can be assigned by the supervisor to different users. Users also have access to other relevant Task Lists to claim tasks to their individual lists. Tasks can be re-assigned from one user's Task List to another's. Issuing tasks (can be, create picking ticket, issue picket material). Storage Tasks (can be, binning, picking, cycle count, recounts). Receiving tasks (can be, material awaiting Quality Inspection).

All bin locations have fixed labels that can be scanned with data such as bin number, material number, description, UMC etc. Labels are printed for Materials received waiting to be binned, waiting for QI and material reservations picked waiting for issuing. Damaged items waiting for refurbishment.

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A consideration can be made to allow manual creation of tasks such as discrepancy investigations, housekeeping moving materials around, creating new bins, labelling bins etc. Reports on list of materials-/ duration of tasks, waiting time in dispatch, waiting time for QI, waiting time for binning, waiting time for supplier to collect returns or damaged for refurbishment. **The diagram below shows the process to be automated:**

Receiving and Binning Process:
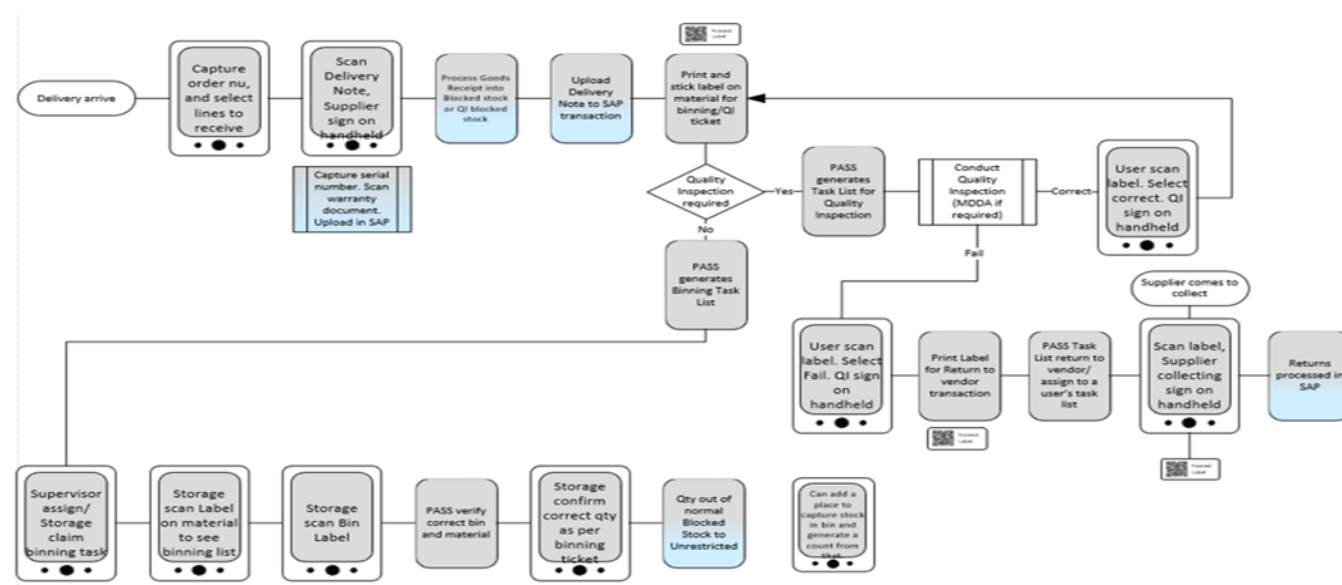
The concept process proposal only mentions standard material movement. We did not go into all the variations of what happens as described in work instruction documents. Such as partial deliveries, partial issues, transfers between plants, Batch management as in split valuation materials, delivery to site, non-stock management, ad hoc and independent counts, requirements for info requests from auditors. We have also not tested whether the coded label should represent the GI/reservation as a whole or be separate per line item for different material.

The solution must be able to cater for the above requirements as well and be costed in as part of the pricing schedule, turnkey proposal.

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7.2   Phase 2: RFID on Selected Items

This phase will serve as a pilot or feasibility study for the next phases. This phase will require further analysis on feasible RFID solutions for the Eskom maintenance, repair, and operation (MRO) environment. Requirements need to be identified for process changes and system changes to incorporate RFID codes. Phase in Passive RFID tags in the Warehouse for Items in the Warehouse not exposed to water, gas, or electrical fields (if feasible in future) – specific asset items not susceptible to these influences.

Consider metal and magnetic fields. Do a select identification of a limited number of fast-moving items (perhaps 10+ items). These items will be tagged with RFID tags. A scanner will be able to detect all RFID tags within a specified radius as a result, this will enable automated counts.

7.3   Phase 3: Expand RFID (dependent on the success of phase 2)
This will be a continuation of phase two for more of the materials to be tagged with RFID.

7.4   Phase 4: Barcode or RFID Items at Serialized Level (dependent on the success of phases 2 and 3)
One material number will have RFID tags or barcode to identify each unique item (like serialisation).

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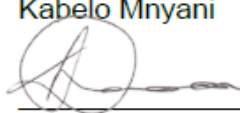
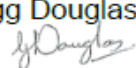**File name:** IT00528 AIDC_RFP Scope Rev 2
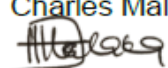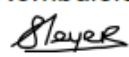
8   DOCUMENT ACKNOWLEDGEMENT

By signing this document, the people listed record their agreement on the contents of this document.

Project Manager: Name: Kabelo Mnyani

Signature:

Date: 08 December 2021

Solution Architect: Name: Charles Malaka

Signature:

Date: 08 December 2021

Integration CoE: Name: Leigh-Ann Vermaak

Signature:

Date: 08 December 2021

Security   Name: Gregg Douglas

Signature:

Date: 08/12/2021

Application Support   Name: Nombulelo Bopape / David Meyer

Signature:

Date: 08/12/2021
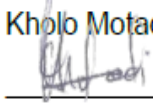
Network Team   Name: Albie Reyneke

Signature:

Date: 08/12/2021
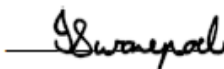
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Project Delivery Testing CoE: **Name:** Kholo Motadi

Signature: _____

Date: 08 December 2021

Business Owner: **Name:** Jacob Mosehle

Signature: _____

Date: 09/12/2021

Business SME: **Name:** Ineke Swanepoel

Signature: _____

Date: 09/12/2021

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9   DOCUMENT APPROVAL

Project Sponsor: **Name:**   Bathusi Montwedi

                              Signature:

                              Date: _09/12/2021_

10   TENDERER'S SCOPE ACCEPTANCE

Tenderer: **Name:**

                              Signature: _____

                              Date: _____

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