



Strategy

Research, Testing and Development

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1. INTRODUCTION

The inspection and maintenance of fossil-fired boilers present significant challenges due to their size, complexity, and the confined environments in which critical components are located. Traditional inspection methods often require scaffold erection, extended cooling periods, and personnel entry into potentially risky areas, leading to increased downtime, safety risks, and operational costs. In the pursuit of more efficient and cost-effective maintenance practices, Generation Engineering proposes integrating UAV technology into the non-destructive testing (NDT) and Non-destructive examination (NDE) programs. From the initial reports compiled by Generation Engineering, UAV technologies were identified as a powerful enhancement to conventional practices, offering an efficient, highly adaptable means of conducting visual inspections of hard-to-reach boiler internal areas, such as burners, furnace waterwalls, superheaters, reheaters, and economisers, without the need for human entry.

As part of this programme for fossil-fired boilers, Eskom RT&D intends to acquire an inspection-type UAV to assess the feasibility of its application within boiler environments and broader asset management contexts. The study aims to determine the capabilities and limitations of this technology when deployed under Eskom-specific operating conditions.

2. SUPPORTING CLAUSES

2.1 SCOPE

Supply, deliver, and commission an Unmanned Aerial Vehicle (UAV) platform capable of conducting visual inspections and non-destructive testing within hard-to-reach internal boiler environments, including areas beyond direct visual line of sight and in Global Positioning System (GPS)-denied conditions. Supply of required accessories, consumables, and initial spare parts. Provision for the ongoing availability of replacement components and spare parts. Offer user training for operation, safety, and basic maintenance. Additionally, offer post-purchase services, including maintenance, servicing, and repair of the platform and its supporting components.

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and TET member responsibilities for tender technical evaluation. The technical evaluation strategy serves as the basis for the tender technical evaluation process.

2.1.2 Applicability

This document applies to the Eskom Research, Testing & Development Division, Digitalisation department, as well as the Gx Boiler Engineering.

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] 240-48929482: Tender Technical Evaluation Procedure
- [2] 240- Use of UAV for NDT in the Fossil-Fired Boilers - Technical Requirements Definition

2.2.2 Informative

- [3] ISO 9001 Quality Management Systems
- [4] 32-1034 Eskom Procurement Policy

2.3 DEFINITIONS

The following are typical definition. Ordinary and/or other legal and/or contractual definitions remain applicable.

Definition	Description
Contractor/Tenderer	Refers to the corporation appointed to perform the engineering, procurement, and construction works required for the project.
Employer	Refers to Eskom Holdings State Owned Company
Eskom Plant Engineering	Refers to the Eskom Engineering team who will perform the reviews and provide technical assistance for the work performed or services rendered by the appointed supplier.
Specification	The document/s forming part of the contract in which the methods of executing the various items of work to be done is described, as well as the nature and quality of the materials to be supplied and it includes technical schedules and drawings attached thereto as well as all samples and patterns
The Client	The end user will be Eskom who will be represented by Eskom Research, Testing & Development throughout the duration of the Project.

2.3.1 Classification

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2.4 ABBREVIATIONS

Abbreviation	Meaning given to the abbreviation
TET	Technical Evaluation Team

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2.5 ROLES AND RESPONSIBILITIES

As per 240-48929482: Tender Technical Evaluation Procedure

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

Refer to section 2.2

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

The basic steps for a technical evaluation must be followed as per the Tender Technical Evaluation Procedure [1]. A two stage Technical Evaluation Strategy is set out.

Stage 1: Mandatory Technical Evaluation Criteria (gatekeepers) are 'must meet' criteria. These criteria shall not be weighted, or point scored but shall be assessed on a Yes/No basis as to whether the criteria are met. An assessment of 'No' against any criterion shall technically disqualify the tenderer and shall not be further evaluated against Qualitative Criteria.

Stage 2: Qualitative Technical Evaluation Criteria are weighted evaluation criteria used to identify the highest technically ranked tenderer after determining that all the Mandatory Evaluation Criteria have been met. The Qualitative Evaluation Criteria are weighted to reflect the relevant importance of each criterion. The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%.

The evaluation of the tender submission will be based on the tenderer's ability to meet the engineering and feasibility study requirements. A weighted score card approach will be used to evaluate the tender submission against the specifications and Employer's requirements.

Table 1: Evaluation Criteria

EVALUATION CRITERIA	WEIGHTING
Stage 1	Mandatory Technical Evaluation Criteria
Stage 2	Qualitative Technical Evaluation Criteria
Technical/Functional Requirements	Threshold of 70% for Functionality
TOTAL	100

The scoring method will be as shown Table 2.

Table 2: Qualitative Evaluation Criteria Scoring

Each Individual Technical Specification is evaluated on a PASS/FAIL basis and assigned a specific percentage weighting. A PASS is awarded where the requirement is fully met or exceeded, while a FAIL is assigned where the requirement is not met.

Individual Technical Specifications are grouped into Technical Specification Categories based on functional relevance. Each category has a total score of 100 percentage points, which are distributed among its constituent specifications according to their relative importance.

A category achieves a 100% score only if all its Individual Technical Specifications are passed. If any specifications are failed, the category score is reduced in proportion to the weighting of the failed items. Each Technical Specification Category contributes to the overall Tender Technical Evaluation Score according to its assigned weighting, as detailed in **Table 4**.

Table 3: Technical Specification Category point score.

Score	(%)	Definition
5	100	COMPLIANT • Meet technical requirement(s) AND; • No foreseen technical risk(s) in meeting technical requirements.
4	80	COMPLIANT WITH ASSOCIATED QUALIFICATIONS Meet technical requirement(s) with; • Acceptable technical risk(s) AND/OR; • Acceptable exceptions AND/OR; • Acceptable conditions.
2	40	NON-COMPLIANT • Does not meet technical requirement(s) AND/OR; • Unacceptable technical risk(s) AND/OR; • Unacceptable exceptions AND/OR; • Unacceptable conditions.
0	0	TOTALLY DEFICIENT OR NON-RESPONSIVE

Table 4: Evaluation Scores

Technical (100%)	
Supplier experience and capability	25%
Technical specifications of drone	60%
Training and Knowledge Transfer	5%
Warranties	10%
TOTAL (100%)	
Overall minimum threshold for qualification (70%)	

3.2 TET MEMBERS

Table 5: TET Members

TET number	TET Member Name	Designation
TET 1	Jabulani Bembe	Chief Engineer
TET 2	Manuel Matsimbi	Senior Engineer
TET 3	Jesse Eganza	Senior Engineer
TET 4	Amelia Shiang	Mechanical Engineer
TET 5	Benjamin Van Niekerk	Engineer in Training
TET 6	Azaan Hossain	Engineer in Training

3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Where the same documentation is applicable to multiple requirements, the supplier may cross-reference previously submitted evidence.

Table 6 Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1.	Technical data Technical data sheet for the drone from the drone OEM	Tender returnable - The technical data sheets for the proposed drone are to be submitted and supplemented by additional descriptions, explanations, drawings, and all other information necessary for a clear understanding of the device application.	To obtain the technical specifications for the proposed drone from the supplier and to conduct a comprehensive evaluation in accordance with those specifications.
2.	Product supply/reselling agreement Drone supply/reselling agreement between the supplier and the drone OEM	Tender returnable - A product supply/ reselling agreement between the supplier and the OEM for reselling the drone in South Africa, stating the duration of agreement, software licence Ts&Cs, warranties, reselling of spare parts etc.	To ensure the provision of aftermarket technical support and software licence support following the drone purchase, while preserving the full benefit of the manufacturer's warranties.

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

TABLE 7: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
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1.	Supplier Experience and capability			25%	
	1.1	Company Profile	Company Profile: Tender Returnables: The supplier must submit the company profile with the following information: 1. Company registration details 2. Company profile 3. Organogram with key personnel 4. Years of operation and industry experience. 5. Details of the local availability of critical spares. 6. Response time for technical support.	5	COMPLIANT Score = 5 (100%) 1. All required information is submitted by the supplier and meets all requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. Requested information is submitted by supplier and meets requirements with acceptable risks. - o <12 months of industry experience. TOTALLY DEFICIENT Score = 0 (0%) 1. The requested information is not provided and/or supplier does not meet requirements.
	1.2	Complete Delivery Set of the drone	Complete Delivery Set of the drone Tender returnables: The supplier shall submit the following documentation at the time of tender submission, as well as upon delivery of the drone: 1. A complete set of operational and maintenance manuals.	10%	COMPLIANT Score = 5 (100%) 1. All required information is submitted by the supplier and meets all requirements.

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			2. A document specifying all items that are supplied with the drone unit. 3. A list of critical spares to be provided.		TOTALLY DEFICIENT Score = 0 (0%) 1. The requested information is not provided and/or supplier does not meet requirements.
	1.3	Capabilities of supplier	Capabilities of supplier: Tender returnables: The supplier shall submit the following documentation: 1. Proof or contract/orders,, traceable references for previous projects/orders of similar scope and complexity.	10%	COMPLIANT Score = 5 (100%) 1. The supplier submitted at least 3 proofs of contract/orders of similar scope and complexity. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. The supplier submitted 2 proofs of contract of similar scope and complexity. NON-COMPLIANCE Score = 2 (40%) 1. The supplier ONLY submitted 1 proof of contract of similar scope and complexity. TOTALLY DEFICIENT Score = 0 (0%)

					1. The supplier did NOT submit any proof of contract/orders of similar scope and complexity
2.	Technical Specifications of Drone			60%	
	2.1	Dimensional Requirements	Dimensional Requirements Tender Returnables for each specification listed below: - Fit within a 550mm x 500mm x 400mm [L x W x H] space: - Manufacturer datasheet (overall dimensions) - Navigating vertically and horizontally within narrow gaps: - Demonstration video/link to internet (e.g. YouTube) in confined/narrow-space environment OR - Technical documentation of flight control / stabilization system (e.g., indoor navigation capability) - Navigate without relying on GNSS signals: - System architecture or technical datasheet describing GNSS-denied navigation (e.g., SLAM/vision/LiDAR-based) OR - Demonstration video or validated indoor flight test report - Maintain stable flight inside spaces ≤ 1000mm diameter: - Technical datasheet (minimum operating envelope / clearance capability) OR	6%	COMPLIANT Score = 5 (100%) The drone meets all the requirements: - Drone fits the 550mm x 500mm x 400mm envelope. - Video/link/ Technical documentation provided, and drone meets specified requirements - Technical datasheet is provided and indicates that the drone does not rely on Global Navigation Satellite System (GNSS). - Technical datasheet/flight demonstration video/test evidence provided, and the drone meets the stable flight specification. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) - All other requirements are met. BUT

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			Demonstration video or validated confined-space test evidence		2. Technical datasheets were NOT provided and/or there is NO evidence that indicates that the drone does not rely on GNSS for navigation. NON-COMPLIANCE Score = 2 (40%) 1. Only 2 requirements are met. TOTALLY DEFICIENT Score = 0 (0%) 1. Drone does not meet any requirements.
	2.2	Ingress Protection	Ingress Protection Tender Returnables for specifications listed below: - Designed for a minimum of IP44 - IP rating certification - OR - Manufacturer datasheet confirming IP rating - Operate in a dusty, ash-laden environment without degradation of critical systems. - Environmental performance test report or validated field performance data - OR	2%	COMPLIANT Score = 5 (100%) - IP rating certificate or manufacturer datasheet provided and indicate that drone meets IP44 specification. AND - Demonstration video/ environmental performance test provided, and drone meets the requirement of the drone operating in dusty/ ash environment.

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- Demonstration video or project reference in similar environment

COMPLIANT WITH ASSOCIATED QUALIFICATIONS

Score = 4 (80%)

1. IP rating certificate or manufacturer datasheet provided and indicate that drone meets IP44 specification.

BUT
2. NO demonstration video/ environmental performance test provided, and drone meets the requirement of the drone operating in dusty/ ash environment.

NON-COMPLIANCE

Score = 2 (40%)

1. NO IP rating certificate or manufacturer datasheet provided that indicate that drone meets IP44 specification.

AND
2. ONLY Demonstration video/ environmental performance test provided, and drone meets the requirement of the drone operating in dusty/ ash environment.

TOTALLY DEFICIENT

Score = 0 (0%)

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					1. Drone does not meet any requirements.
	2.3	Protection Requirements	Protection Requirements Tender Returnables for each specification listed below: - Support automated or assisted navigation modes: - Technical datasheet describing flight modes (manual / assisted / autonomous) OR - System architecture or user manual section describing navigation modes - Tolerate recoverable collision within the inspection area: - Demonstration video of collision recovery / contact tolerance in confined space OR - Manufacturer test report or validated operational case study in constrained environments - Has a collision-tolerant cage, guard, or frame to protect sensors, propellers, and other delicate components. - Mechanical design drawings or product datasheet showing protective cage/guard structure OR - Product specification sheet or certification confirming protective design intent - Equipped with autonomous obstacle avoidance. - Technical documentation of obstacle avoidance system (sensors + autonomy logic) OR	5%	COMPLIANT Score = 5 (100%) - All required supporting documents and/or Videos are submitted, and the drone meets all requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) - All other requirements are met. BUT - The drone does NOT demonstrate recoverable collision. OR - Does NOT have a collision tolerant cage/guard. NON-COMPLIANCE Score = 2 (40%) - The drone ONLY meets 2 requirements. TOTALLY DEFICIENT

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			○ Demonstration video or validated test report showing autonomous avoidance and fail-safe behaviour 5. Can detect obstacles at a minimum distance of ≥ 1000 mm ○ Sensor specification sheet (range and detection capability of LiDAR/vision system) OR ○ Validation test report confirming obstacle detection distance performance		Score = 0 (0%) 1. The drone does NOT meet any requirements.
	2.4	Battery Requirements	Battery Requirements Tender Returnables for each specification listed below: - Accommodate the use of interchangeable on-board batteries or tethered power systems: ○ Technical datasheet specifying power architecture (battery + tether compatibility) OR ○ System design documentation or user manual section describing power configuration options - Include audible or visual status indicators for battery and system health: ○ Product specification sheet listing onboard indicators (LEDs, alarms, HUD) OR ○ User manual section describing system health and battery status notifications - Implement a low battery warning and/or return to launch site:	5%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all battery requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. All other 4 requirements are met. BUT 2. The drone does NOT accommodate the use of interchangeable on-board batteries or tethered power systems. OR

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			○ Flight control system documentation describing failsafe battery logic (RTL / landing) OR ○ Demonstration video or test report showing low-battery response behaviour 4. Sustain a flight time of ≥7 minutes during normal operational conditions (Active lighting and payload use): ○ Manufacturer endurance specification sheet (flight time under payload load conditions) OR ○ Independent test report or validated operational flight time data 5. Standardised battery charging interfaces: ○ Battery/charging system specification sheet (connector type, charging standard) OR ○ Technical datasheet confirming compliance with industry-standard charging interface		3. The battery can NOT sustain a flight time of at least 7 minutes. NON-COMPLIANCE Score = 2 (40%) 1. The battery ONLY meets 2 requirements. TOTALLY DEFICIENT Score = 0 (0%) 1. The battery does NOT meet any of the 5 requirements.
	2.5	Payload Requirements	Payload Requirements Tender Returnables for each specification listed below: 1. Accommodates the interchangeability of payloads by the user without significant manufacturer assistance.: ○ User manual or operating procedure describing field payload swap process OR ○ Product specification sheet confirming tool-less or user-serviceable payload interchange 2. Allows integration of additional inspection payloads or sensors.	3%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all payload requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%)

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			○ API / SDK documentation or integration interface specification OR ○ Manufacturer integration guide or technical architecture documentation		1. The drone allows for integration of additional inspection payloads or sensors. BUT 2. The drone does NOT allow for interchangeability of payloads by the user WITHOUT manufacturer assistance. TOTALLY DEFICIENT Score = 0 (0%) 1. The drone does NOT meet any of the payload requirements.
	2.6	Navigation Requirements	Navigation Requirements Tender Returnables for each specification listed below: 1. Operate in an environment where the operator may not have DVLOS: ○ System architecture documentation showing autonomy / onboard navigation capability (SLAM, vision, LiDAR-based) OR ○ Operational manual or datasheet confirming BVLOS/DVLOS-independent operation capability OR ○ Demonstration video or validated indoor operational test report	3%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all Navigation requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. All other 4 requirements are met. BUT

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			2. Generate and transmit a high-grade 3D point cloud map of the inspection environment: ○ Technical specification sheet describing 3D mapping / SLAM capability OR ○ Sample output dataset (3D point cloud / model export file) demonstrating mapping quality OR ○ User manual or software documentation describing map generation and transmission workflow 3. Has LiDAR module: Minimum 32 beam sensor, 90° Vertical Field of View: ○ LiDAR sensor datasheet (beam count, vertical field of view specification) OR ○ Manufacturer specification sheet or subsystem integration documentation confirming installed sensor configuration 4. Allow inspection data to be linked to spatial coordinates within the generated 3D point cloud model: ○ Software documentation describing spatial tagging / georeferencing of inspection data ○ Sample inspection dataset demonstrating spatially referenced outputs within a 3D model		2. The drone can NOT generate and transmit a high-grade 3D point cloud map of the inspection environment OR 3. The drone does NOT have the LiDAR module: Minimum 32 beam sensor, 90° Vertical Field of View. NON-COMPLIANCE Score = 2 (40%) 1. The drone ONLY meets 2 of the 4 requirements. TOTALLY DEFICIENT Score = 0 (0%) 1. The drone does NOT meet any of the 4 requirements.
	2.7	Communication	Communication requirements: Tender Returnables for each specification listed below:	6%	COMPLIANT Score = 5 (100%)

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			- Support tethered or signal-repeater configurations: - System architecture or communication design documentation (tether / relay / repeater support) OR - Manufacturer datasheet confirming supported communication modes OR - Integration guide or accessory specification (tether kit / repeater compatibility) - Transmit live video and telemetry to the ground station: - Technical specification sheet confirming real-time video and telemetry transmission capability OR - System user manual describing communication workflow and ground station integration OR - Demonstration video or validated operational test report (live feed performance in confined environment) - Automatically enter safe recovery mode upon communication loss: - Flight controller failsafe specification document (loss-of-link behaviour) OR - User manual or safety documentation describing recovery logic (hover/return/land) - User authentication required for access to system software: - Software security architecture documentation (authentication and access control model) OR		- All required supporting documents and/or Videos are submitted, and the drone meets all Navigation requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) - All other 4 requirements are met. BUT - The drone can NOT support tethered or signal-repeater configurations. OR - The drone can NOT transmit live video and telemetry to the ground station OR - The drone can NOT automatically enter safe recovery mode upon communication loss. NON-COMPLIANCE Score = 2 (40%) - The drone ONLY meets 2 of the 4 requirements. TOTALLY DEFICIENT Score = 0 (0%)
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			○ User manual or software interface documentation showing login/role-based access control OR ○ Cybersecurity compliance statement or security certification (if available)		1. The drone does NOT meet any of the communication requirements
	2.8	Lighting requirements	Lighting requirements Tender Returnables for each specification listed below: 1. Operate in an environment in which no external artificial or natural light is present: ○ System specification sheet confirming low-light / no-light operational capability OR ○ Demonstration video or validated test report showing operation in complete darkness OR ○ Sensor and navigation system documentation (low-light cameras, IR/SLAM support, illumination dependency description) 2. Independently produce a minimum of 10 000 Lumens using onboard lights: ○ Lighting system technical specification sheet (lumen output rating per unit or total system) OR ○ Manufacturer datasheet or photometric performance report confirming illumination output OR ○ Test report or demonstration video validating illumination performance in confined dark environments	2%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all lighting requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. The drone can operate in an environment with no artificial light. - BUT 2. The drone produces LESS than 10 000 Lumens using onboard lights. TOTALLY DEFICIENT Score = 0 (0%) 1. The drone does NOT meet any of the lighting requirements.

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	2.9	Visual Camera Requirements	Visual Camera Requirements Tender Returnables for each specification listed below: - FHD video streaming: - Manufacturer specification sheet confirming Full HD (1080p) streaming capability OR - System user manual or software documentation describing streaming configuration OR - Demonstration video or test report verifying FHD streaming performance 4K still image capture and UHD video capture: - Camera sensor datasheet (resolution and capture capability) OR - Sample inspection imagery or dataset (4K stills / UHD video output) OR - Manufacturer specification sheet or imaging system documentation - Inspection data shall include timestamp metadata: - Sample inspection dataset showing embedded timestamp metadata OR - Software/data output specification document confirming metadata tagging OR - System manual describing data logging and timestamp generation process - Allow replay and post-processing of captured inspection data:	5%	COMPLIANT Score = 5 (100%) - All required supporting documents and/or Videos are submitted, and the drone meets all visual camera requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) - The drone camera meets ONLY 4 visual camera requirements. INCLUDING - The provision of onboard data storage in the event of communication loss. NON-COMPLIANCE Score = 2 (40%) - The drone ONLY meets 2 or 3 visual camera requirements. TOTALLY DEFICIENT Score = 0 (0%) - The drone ONLY meets 1 or NO visual requirements.
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			○ Software user manual describing replay and analysis functionality OR ○ Sample software output or demonstration of playback/post-processing workflow OR ○ Data processing documentation or supported software compatibility guide 5. Provide onboard data storage in the event of communication loss: ○ Technical specification sheet detailing onboard storage capacity and buffering system OR ○ System architecture documentation describing fail-safe data logging during link loss OR ○ User manual or test report demonstrating data retention after communication interruption ○		
	2.10	Thermal Camera Requirements	Thermal Camera Requirements Tender Returnables for each specification listed below: 1. Capture high resolution radiometric thermal images and video: ○ Thermal camera system datasheet (radiometric imaging and video capability) OR ○ Sample radiometric thermal dataset (images and video output) OR ○ Manufacturer specification sheet confirming thermal capture performance	2%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all thermal camera requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%)

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			2. Thermal camera resolution $\geq 160 \times 120$ px @ 9fps: - Thermal sensor datasheet specifying resolution and frame rate OR - Manufacturer product specification sheet or camera module documentation OR - Validation test report or sample thermal video confirming frame rate performance 3. Radiometric temperature measurement capability with accuracy $\pm 5^{\circ}\text{C}$ or better: - Calibration certificate or radiometric accuracy test report ($\pm^{\circ}\text{C}$ performance validation) OR - Thermal camera datasheet specifying temperature measurement accuracy OR - Manufacturer technical documentation describing radiometric measurement method		1. The thermal camera ONLY meets 2 thermal camera requirements. NON-COMPLIANCE Score = 2 (40%) 1. The thermal camera ONLY meets 1 thermal camera requirement. = TOTALLY DEFICIENT Score = 0 (0%) 1. The thermal camera does NOT meet any of the thermal camera requirements
	2.11	Data Requirements	Data Requirements Tender Returnables for each specification listed below: 1. Raw and processed inspection data files to be delivered within short period after inspection: - Data workflow / system architecture documentation (capture-to-delivery pipeline) OR - Sample project report or dataset demonstrating post-inspection turnaround time OR - Operational procedure / SLA statement defining data delivery timelines	5%	COMPLIANT Score = 5 (100%) 1. All required supporting documents and/or Videos are submitted, and the drone meets all data requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. All other 5 requirements are met.

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			2. Inspection data shall be exportable and compatible with external analysis software: ○ Data export specification sheet (supported formats: e.g. LAS, OBJ, E57, CSV, etc.) OR ○ Software interoperability documentation (supported third-party tools/platforms) OR ○ Sample exported datasets demonstrating compatibility 3. Allow generation of inspection reports identifying anomalies and inspection locations: ○ Software user manual describing reporting and analytics functions OR ○ Sample inspection report including anomaly detection and spatial tagging OR ○ Example dataset or case study demonstrating historical comparison / trend analysis 4. Support comparison of inspection data with previous inspections for trend analysis: ○ Software user manual describing reporting and analytics functions OR ○ Sample inspection report including anomaly detection and spatial tagging OR ○ Example dataset or case study demonstrating historical comparison / trend analysis 5. All data shall be securely stored and optionally integrated with the site's asset management system:		BUT 2. Drone does not allow for data to be securely stored and integrated with site's asset management system. NON-COMPLIANCE Score = 2 (40%) 1. The drone ONLY meets 2 of the 6 data requirements TOTALLY DEFICIENT Score = 0 (0%) 1. The drone does not meet ANY of the data requirements.
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			○ Data security architecture documentation (storage, encryption, access control) OR ○ Integration/API documentation for asset management systems (e.g. CMMS/EAM) OR ○ Cybersecurity or data protection compliance statement		
	2.12	Operational Requirements	Operational Requirements Tender Returnables for each specification listed below: - Function in ambient temperatures $\leq 50^{\circ}\text{C}$ ○ Manufacturer environmental operating specification sheet (temperature range) OR ○ Thermal/environmental test report validating operation up to $\leq 50^{\circ}\text{C}$ OR ○ Field deployment reference in high-temperature industrial environments - Maintain stable command and control link at a minimum distance of 50 m within enclosed metallic structures. ○ Communication system specification sheet (range and signal performance in RF-challenging environments) OR ○ System architecture documentation describing link stability in metallic/indoor environments OR ○ Test report or demonstration video validating communication performance in confined metallic structures	7%	COMPLIANT Score = 5 (100%) - Technical data sheet and/or test report is submitted, and the drone meets all operational requirements. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) - The drone can function in ambient temperature $\leq 40^{\circ}\text{C}$ AND - CAN maintain stable command and control link at a minimum distance of 50 m within enclosed metallic structures NON-COMPLIANCE Score = 2 (40%)

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					1. The drone ONLY meets 1 of the 2 operational requirements. TOTALLY DEFICIENT Score = 0 (0%) 1. The drone does NOT meet any of the operational requirements
	2.13	Secondary Development (SDK and/or API access)	Secondary Development (SDK and/or API access): Tender Returnables: the following documentation to prove that the drone platform supports SDK and/or API access: 1. A formal manufacturer confirmation letter OR 2. Developer Portal or Official Website Evidence OR 3. Technical architecture overview indicating SDK/API capability.	7%	COMPLIANT Score = 5 (100%) 1. The drone secondary development supports SDK and/or API access. TOTALLY DEFICIENT Score = 0 (0%) 1. The drone secondary development does NOT support the SDK and/or API access
3.	Training and Knowledge Transfer			5%	
	3.1	Drone operator training	Drone operator training Tender Returnables: The supplier shall submit a signed confirmation letter with the company letterhead confirming that training will be provided, and the letter shall indicate the following:		COMPLIANT Score = 5 (100%)

			1. Proof of capability to provide training and technical support 2. Training scope 3. Training duration 4. Number of trainees covered 5. Training location 6. Training methodology (classroom/practical) 7. Course outline/syllabus 8. Assessment approach		1. A signed training confirmation letter is submitted, detailing all requested training information and confirming that training will be provided by the supplier TOTALLY DEFICIENT Score = 0 (0%) 1. Supplier does NOT provide training.
4	Warranties			10%	
	4.1	Warranty Period	Warranty Period: Tender returnables: The following documentation that shows warranty period, serial/model number, coverage terms, exclusions, supplier/manufacture details: - o A user manual OR - o Warranty manual/ warranty terms booklet OR - o A formal written warranty letter or certificate with company letterhead.		COMPLIANT Score = 5 (100%) 1. A user manual/ warranty manual/certificate are submitted and a warranty of 24months is offered. COMPLIANT WITH ASSOCIATED QUALIFICATIONS Score = 4 (80%) 1. A warranty of 18-23 months is offered. NON-COMPLIANCE Score = 2 (40%)

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					1. A warranty of 12 – 17 months is offered. TOTALLY DEFICIENT Score = 0 (0%) 1. A warranty of less than 12 months is offered.
				TOTAL: 100	

3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Completed Technical Requirements Form : The evaluation of technical proposals will be based on the scoring results outlined in the technical scoring table above. For each requirement to receive a score, the bidder must fully meet all related sub-criteria. **If any of the sub-criteria for a requirement are not fully satisfied, no score will be awarded** for that requirement.

Final Scores and Ranking: The total weight for Qualitative Technical Evaluation Criteria is **100%**. For a tenderer to be recommended for further commercial evaluation the tenderer must achieve a minimum threshold of **70%**.

3.6 TET MEMBER RESPONSIBILITIES

Table 8: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5	TET 6
1	X	X	X	X	X	X
2	X	X	X	X	X	X
Qualitative Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5	TET 6
1.1	X	X	X	X	X	X
1.2	X	X	X	X	X	X
2.1	X	X	X	X	X	X
2.2	X	X	X	X	X	X

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2.3	X	X	X	X	X	X
2.4	X	X	X	X	X	X
2.5	X	X	X	X	X	X
2.6	X	X	X	X	X	X
2.7	X	X	X	X	X	X
2.8	X	X	X	X	X	X
2.9	X	X	X	X	X	X
2.10	X	X	X	X	X	X
2.11	X	X	X	X	X	X
2.12	X	X	X	X	X	X
2.13	X	X	X	X	X	X
3.1	X	X	X	X	X	X
4.1	X	X	X	X	X	X

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3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.7.1 Risks

Table 9: Acceptable Technical Risks

Risk	Description
1	Supplier proposes reasonable risk mitigation.
2	Supplier offers operator training through a subcontractor.

Table 10: Unacceptable Technical Risks

Risk	Description
1	Supplier does not demonstrate full understanding of the scope and critical aspects
2	Supplier does not have a Product supply/reselling agreement with the drone manufacturer
3	The supplier has no previous track record of previous projects/orders of similar scope and complexity.

3.7.2 Exceptions / Conditions

Table 11: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None

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Table 12: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	None

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Jabulani Bembe	Chief Engineer	
Manuel Matsimbi	Senior Engineer	
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5. REVISIONS

Date	Rev.	Compiler	Remarks
May 2026	1	Amelia Shiang	First draft

6. DEVELOPMENT TEAM

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

- Amelia Shiang
- Benjamin Van Niekerk

7. ACKNOWLEDGEMENTS

N/A