**AIR TRAFFIC AND NAVIGATION SERVICES CO. LTD**

**REPUBLIC OF SOUTH AFRICA**



**REQUEST FOR PROPOSAL: ATNS/HO/RFP067/FY22.23/FAKM&FAUP AIRPORT ELEC AND MECH**

**APPOINTMENT OF A SERVICE PROVIDER FOR THE REPLACEMENT OF ELECTRICAL AND MECHANICAL EQUIPMENT AT KIMBERLY AIRPORT AND UPINGTON AIRPORT**

**VOLUME 2, 3 and 4**

**Version 1.0**

**November 2022**

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| ABBREVIATIONS |

ATNS Air Traffic and Navigation Services SOC Ltd

ATSU Air Traffic Services Unit

CD Compact Disk

CNS Communications, Navigation and Surveillance

DB Distribution Board

ECC Electrical Compliance Certificate

EPS Emergency Power System

FAKM Kimberly Airport

FAUP Upington International Airport

HMI Human Machine Interface

IEC International Electrotechnical Commission

LCD Liquid Crystal Display

PMP Project Management Plan

PPE Personal Protective Equipment

RCMS Remote Control and Monitoring System

SABS South African Bureau of Standards

SANS South Africa National Standards

SAT Site Acceptance Test

UPS Uninterrupted Power Supply

USB Universal Serial Bus

VDF VHF Direction Finder

VHF Very High Frequency

WBS Work Breakdown Structure

# GENERAL INSTRUCTIONS TO TENDERERS

The Tenderer shall submit all responses, diagrams, project management documentation and drawings according to the GENERAL INFORMATION AND INSTRUCTIONS TO TENDERERS document and in the English language.

To assist Tenderers only, each paragraph or article has been appended throughout with the letters “(M)”, “(D)”, “(O)” or “(I)”, to indicate whether the requirement is **M**andatory, **D**esirable, **O**ptional or for **I**nformation only.

**ALL RESPONSES TO THE REQUIREMENTS IN THIS DOCUMENT SHALL BE PROVIDED AS FOLLOWS:**

TENDERERS SHALL RESPOND IN FULL TO EACH ITEM IN THE FORMAT PROVIDED AND REFERENCES (CHAPTER, SECTION, PAGE NUMBER, PARAGRAPH NUMBER) TO DOCUMENTS AND RELEVANT INFORMATION SUPPORTING THE RESPONSES SHALL BE INDICATED IN THE SPACE PROVIDED. THIS INFORMATION WILL BE THE **ONLY RESPONSE USED FOR THE EVALUATION AND ASSESSMENT**.

Responses, provided in the space allowed, that are not clear or inadequate or the lack thereof shall be interpreted as **“Not Compliant”** even though the compliance column is declared as “Comply” and/or the Tenderer’s offer meets the requirement. Tenderer’s shall ensure that each response correctly addresses the requirement stated. Responses not addressing the requirement of the specific paragraph shall be interpreted as **“Not Compliant”**.

Tenderer’s shall declare compliance to each and every paragraph of this document in the column labelled “Compliance” as follows:

C: fully compliant = 2 points:

PC: partly compliant = 1 point;

NC: not compliant = 0 points.

Noted: Noted and accepted (applicable to paragraphs marked as “I”, not containing requirements)

Tenderer’s shall, for paragraphs declared “PC” or “NC”, include a statement as to the nature of the variation and may additionally supply supporting information in the space provided to demonstrate how the proposal meets the needs of ATNS.

Paragraphs marked “(M)”, indicates that the requirement is mandatory and proposals not compliant with the requirement shall be disqualified for further evaluation.

Paragraphs marked “(D)”, indicates that the requirement is desirable, and the tenderer is expected to declare their level of compliance, formal response and reference supporting documents.

Paragraphs marked “(I)”, indicates that the requirement is for information, however the tenderer is still expected to respond and provide information if requested. Any information gathered herein may form part of the contractual terms.

Paragraphs marked “(O)”, indicates that the requirement is optional, and the tenderer may decide how to respond.

# SCOPE OF WORK

The project scope shall include all labour and materials necessary to form a complete supply, installation, commissioning and support for the required systems/equipment. The necessary interventions are listed as follows:

## FAKM

1. Decommission and disposal of the restroom and equipment room air conditioners;
2. Decommission and disposal of the tower complex Uninterrupted Power Supply (UPS);
3. Supply, installation and commissioning of three air conditioners, one for the rest room and two for the equipment room;
4. Supply, installation and commissioning of a new UPS for the tower complex; and
5. Support of the supplied air conditioners and UPS.

## FAUP

1. Supply, installation and commissioning of 2 UPSs at the FAUP Operational Centre;
2. Supply, installation and commissioning of an air conditioner at the VHF Direction Finder (VDF) equipment site;
3. Support of the supplied air conditioner and UPS.

# SUMMARY OF ITEMS REQUIRED

The diagram below summarizes the equipment required at each airport. All the sites are landside. The equipment that will be replaced is shaded in grey and the equipment that will be new to the site is shaded in green.

 

Figure 1: Summary of items required at each airport.

1. TECHNICAL REQUIREMENTS
2. GENERAL REQUIREMENTS

# ENVIRONMENTAL CONDITIONS

1. The systems offered shall operate within specifications under the following environmental conditions and tolerances.

Table 1: FAKM Environmental Conditions.

|  |  |  |
| --- | --- | --- |
| **Indoor Conditions** | Ambient Temperature | -5 °C to +35 °C |
| Relative humidity | ≤ 95% for temperatures ≤ +35 °C, and≤ 60% for temperatures $>$ + 35 °C |
|  |  |  |
| **Outdoor Conditions** | Ambient Temperature | -10 °C to +50 °C |
| Temperature variations | Up to 16 °C within 24 hours  |
| Relative humidity | 0% to 100% |
| Annual rainfall range | Average = 320 mm, Up to 450 mm |
| Wind speed | Up to 32 km/h |

Table 2: FAUP Environmental Conditions.

|  |  |  |
| --- | --- | --- |
| **Indoor Conditions** | Ambient Temperature | -5 °C to +55 °C |
| Relative humidity | ≤ 95% for temperatures ≤ +35 °C, and≤ 60% for temperatures $>$ + 35 °C |
|  |  |  |
| **Outdoor Conditions** | Ambient Temperature | -10 °C to +50 °C |
| Temperature variations | Up to 15 °C within 24 hours |
| Relative humidity | 0% to 100% |
| Annual rainfall range | Average = 94 mm, Up to 250 mm |
| Wind speed | Up to 30 km/h |

 The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# MAINS SUPPLY

1. All equipment shall operate from a mains power supply as specified below.
* 230 VAC, Tolerance: ±10%
* Frequency: 50 Hz, Tolerance: ± 5%

The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# CABLING

1. All power cables shall be supplied and installed to connect the various systems to the relevant power distribution points. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All the communication cables required shall be supplied and installed between the various systems and the associated control units located in the equipment room. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All cables shall be labelled, colour coded and include a numerical identifier, cable type, source (unit name, port, location) and destination (unit name, port and location). The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. An interconnection diagram depicting the flow of communication and power between the various system components shall be provided. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All cables shall be neatly installed in cable trays and/or ducts. Cable trays and/or ducts shall be provided. All cable trays and/or ducts shall be surface mounted. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. There shall be separation between power cables and communication cables to ensure that they do not run parallel to each other. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# ELECTRICAL WORK

1. The Contractor shall be responsible for disconnecting the current air conditioners and UPSs from the Distribution Boards (DB) and shall be responsible for supplying, installing and connecting power cables from the new air conditioners and UPSs to the DB’s. The Tenderer shall indicate compliance to this requirement and provide at least 1 reference letter for the UPS installation and 1 reference letter for the air conditioner installation. The Tenderer shall also provide the relevant qualification of the individual carrying out the work. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall supply and install new circuit breakers in the DB when connecting the new air conditioners and the UPS’s. The proposed circuit breakers shall be adequate to handle the currents of the various systems. The Tenderer shall provide details of the proposed circuit breakers. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall supply an Electrical Compliance Certificate (ECC) from a certified electrical contractor for the work that is done under this project. The installation shall be in compliance with SANS 10142-1.The Tenderer shall indicate compliance for this requirement and provide the wireman’s licence for the individual that will complete the compliance certificate. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall provide a quotation to supply an Electrical Compliance Certificate (ECC) from a certified electrical contractor for the whole building at each site. (O)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall ensure that all equipment installed are properly earthed. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall be responsible for verifying that the earthing is in a good condition. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# SOFTWARE

1. The Contractor shall supply all equipment related software on Compact Disk (CD) and a Universal Serial Bus (USB) Memory stick. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All software provided shall be placed under configuration control. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All software supplied may be copied by the Company for backup purposes and internal distribution. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. If the suggested Human Machine Interface (HMI) is a laptop/desktop, the Contractor shall provide the laptops and/or desktop computers required to run the software provided under this project. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# REGULATIONS

1. The installation of the various systems shall be in accordance with the following regulations:
	* The latest issue of SANS 10142-1: “Code of Practice for the Wiring of Premises”.
	* The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended.
	* The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority.
	* The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as emended.
	* The Electricity Act 1984 (Act 41 of 1984) as amended.

Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# EQUIPMENT INSTALLATION

1. The ATNS Project Manager reserves the right to attach ATNS Company officials to the Supplier’s installation party during installation, setting up and commissioning of the equipment for gaining practical experience (On the Job Training) on the equipment. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The final parameters and settings will be recorded by the Contractor on the successful installation and will be made available to the Company as part of the As-Built document. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# DECOMMISSIONING AND DISPOSAL

1. The Contractor shall decommission, uninstall and disassemble the existing equipment in an environmentally friendly manner and in line with current environmental laws. Waste must be managed according to the ATNS waste management policies and there shall be adherence to the requirements of the National Waste Management Act (No.59 of 2008). Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. During decommissioning process, equipment shall be assessed for further possible recycling or reuse opportunities prior disposal to waste disposal facilities. The Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall ensure that obsolete materials (UPS and air conditioners) shall not be disposed of at the municipal or general landfill sites. Only approved facilities with relevant licencing/permits shall be used. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall provide records of disposal. The original records of disposal shall be kept at sites and copies shall be sent to ATNS Environment and Sustainability Department. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. Once obsolete equipment has been uninstalled, it shall be removed from site and sent for disposal. If the obsolete equipment cannot be removed from site immediately during the decommissioning process, the obsolete equipment shall be stored in locations where they do not pose Occupational Health and Safety risks. The Contractor shall indicate the size of the area required to store this equipment. ATNS shall coordinate with ACSA to provide a space to store the obsolete equipment until it is removed. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# LIFE SPAN

1. The proposed air conditioners and UPSs shall each have a life span of at least 10 years. The Tenderer shall provide the life span of the proposed equipment. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. AIR CONDITIONER SPECIFICATIONS

# ROOM SPECIFICATIONS

## FAKM

1. The Contractor shall supply and install two split unit, wall mount, air conditioners in the Equipment Room. The new air conditioners shall be installed in the same position as the existing ones. The proposed size of each of the air conditioners are 26000BTU. The air conditioners shall be installed with a controller unit to manage the work load of the two air conditioners. The dimensions of the Equipment Room are 4000mm x 3000mm x 2500mm. The proposed size of the air conditioners shall be confirmed as per Paragraph [A] of Chapter 2, Section 2. The average number of occupants in the Equipment room are two. The Tenderer shall provide details of the proposed air conditioners to be installed in the FAKM Equipment Room. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractor shall supply and install one cassette type air conditioner in the Rest Room ceiling. The proposed size of the air conditioner is 26000BTU. The dimensions of the Rest Room are 4000mm x 4000mm x 2300mm. The proposed size of the air conditioners shall be confirmed as per Paragraph [A] of Chapter 2, Section 2. The average number of occupants in the Rest room are two. The Tenderer shall provide details of the proposed air conditioners to be installed in the FAKM Rest Room. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

## FAUP

1. The Contractor shall supply and install one split unit wall mount air conditioner in the VDF Site Equipment room. The proposed size of the air conditioner is 12000BTU. The dimensions of the VDF Site equipment room are 2000mm x 2000mm x 2100mm. The proposed size of the air conditioners shall be confirmed as per Paragraph [A] of Chapter 2, Section 2. The average number of occupants in the VDF Site Equipment room are two. The Tenderer shall provide details of the proposed air conditioners to be installed in the FAUP VDF Site Equipment Room. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# DESIGN

1. The Contractor shall perform an overall assessment of the Rest room and the Equipment room at FAKM and the VDF Site Equipment room at FAUP to confirm the proposed air conditioning solution. The assessment shall take into consideration the following aspects, including but not limited to:
	1. Room size,
	2. Layout,
	3. Equipment heat load, and
	4. Number of occupants.

Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The proposed air conditioners shall be of an inverter type. The Tenderer shall provide supporting information indicating compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The air conditioners shall have an air filter to stop dust and any other particles, that could negatively affect the system, from entering the air conditioner. The Tenderer shall provide supporting information indicating compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# GENERAL

1. The Contractor shall be responsible for all associated civil works required for the installation of the systems, such as painting, wall filling, etc. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. All air conditioning installations shall be compliant with SANS 204:2011. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The air conditioners shall have energy efficiency rating of A+ or higher. The Tenderer shall provide the energy efficiency rating of the proposed air conditioners.

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The air conditioners shall be free of any harmful gasses and substances. The Tenderer shall provide supporting information indicating compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The air conditioners shall be designed to support a relative humidity of 45% +- 5% at a temperature of 21°C. As temperature increases, the relative humidity should decrease, however humidity should remain above 15%. Tenderer shall indicate compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The room temperature range shall be selectable between 19°C and 26°C. The Tenderer shall provide supporting information indicating compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The air conditioners shall have a wall mounted wired controller with the following features, including but not limited to:
	1. Switching on/off
	2. Temperature adjustments
	3. Operating mode
	4. Fan speed

The Tenderer shall provide supporting information indicating compliance to this requirement. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. In line with the ‘’Regulations Regarding the Phasing-Out and Management of Ozone Depleting Substances’’, new air conditioners shall not contain Ozone Depleting elements, notably the R-22 (HCFC-22) refrigerant type. The Tenderer shall provide supporting information indicating that the proposed air conditioners do not contain any Ozone Depleting elements. (D)

|  |  |
| --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Tenderer shall provide the remote monitoring capabilities of the proposed air conditioners. The status of the air conditioner shall be available for viewing at the operational centre. Should there be no remote monitoring capabilities, the Tenderer shall indicate if a GSM Commander can be connected to the control panel. If a GSM Commander is going to be used for remote monitoring than the Contractor shall provide the GSM Commander. The sim card for the GSM Commander will be provided by ATNS. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. UPS SPECIFICATIONS

# SITE REQUIREMENTS

## FAKM

1. The Contractor shall supply and install one UPS at the FAKM Tower Complex with a rating of 6kVA. The Tenderer shall provide details of the proposed UPS for the FAKM Tower Complex showing compliance to this requirement. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall be installed in the Equipment Room. The Tenderer shall indicate compliance to this requirement. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

## FAUP

1. The Contractor shall supply and install two UPSs at the FAUP Tower Complex with a rating of 6kVA each. This UPS will not require a battery pack and will need to be compatible with the existing external battery banks. The model number of the existing battery banks is PW9130N6000T. The Tenderer shall provide details of the proposed UPS for the FAUP Tower Complex showing compliance to this requirement. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# DESIGN

1. The UPS and batteries for the FAKM Tower Complex shall be supplied as a self-contained unit. The dimensions of the space available for the UPS and the batteries is 1000mm x 700mm x 800mm (width x depth x height). The Tenderer shall provide supporting information showing compliance to this requirement for both proposed UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall operate from a single-phase power supply. The Tenderer shall provide supporting information showing compliance to this requirement for both proposed UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The output voltage of the UPS shall be 230V ± 10%. The Tenderer shall provide supporting information showing compliance to this requirement for both proposed UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. On battery mode, the UPS shall be capable of supplying power at full load for at least 5 hours. The Tenderer shall indicate how many hours the UPSs can supply power at full load based on the number of batteries that can fit within the space available. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Tenderer shall provide the recovery time for the batteries to recover to 90% capacity for both UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall be an online double conversion UPS. The Tenderer shall provide supporting information showing compliance to this requirement for both proposed UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall comply with the standard SANS 62040-3. The Tenderer shall provide supporting information showing compliance to this requirement for both proposed UPSs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall be installed with a static bypass switch to allow for the UPS to be isolated from the mains supply for maintenance. The Tenderer shall provide details of the proposed static bypass switch. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall have an operator panel located on the front of the UPS door. The operator panel shall have the following features, including but not limited to:
	1. LCD touch screen,
	2. Menu keys,
	3. Direct access keys, and
	4. Display a power flow chart.

The Tenderer shall provide images of the operator panel and indicate the features of the operator panel. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The LCD shall display the following information, including but not limited to:
	1. UPS operating mode,
	2. Battery status, and
	3. Alarm logs.

The Tenderer shall indicate what information can be displayed on the LCD and provide images of the LCD. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall have the following modes:
	1. Normal,
	2. Bypass, and
	3. Battery mode.

The Tenderer shall indicate what modes the UPSs have. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The UPS shall have a web based Remote Control and Monitoring System (RCMS). The web based application shall have the following functions, included but not limited to:
2. UPS operating mode,
3. Battery status, and
4. Alarm logs.

The Tenderer shall provide details of the RCMS and the features there of. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Contractors shall supply and install the network card required to connect the UPS to ATNS’s network. The network card shall have an ethernet interface. The Tenderer shall provide details of the proposed network card. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The type of batteries that will be supplied with the UPS shall be environmentally friendly, rechargeable and capable of being stored in small spaces. Lithium ion batteries will be preferred. The Tenderer shall indicate what type of batteries will be supplied and indicate compliance to this requirement. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. PROJECT MANAGEMENT SPECIFICATIONS

# PROJECT MANAGEMENT REQUIREMENTS

1. The contractor shall provide project status reports at two-weekly intervals, this shall capture the project performance to date and make recommendations for future implementations and changes. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The contractor shall provide the acceptance of the system once commissioning has been completed. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The contractor shall provide as-built drawings of all systems on commissioning of the system. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The tenderer shall develop a detailed Master Project Schedule for the entire management of the project. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. Project Status shall be presented relative to schedule critical path and cost and shall include a Risk Report, which will identify risks and place measures in place to manage or avoid these risks. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The project schedule includes all contractual specified milestones, identifies the critical path and is linked to the Work-Breakdown Structure. (I)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The contractor shall develop, maintain and track progress against the Master Project Schedule, which shall be organized to depict flow of work, task interdependencies and interrelationships necessary to accomplish the program objectives from contract award to completion. This Master Project Schedule shall be broken down to a sufficient level of detail. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The Tenderer shall provide a draft safety plan for the associated scope of work as contained in this tender. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. LOGISTIC SUPPORT REQUIREMENTS

# WARRANTY

1. The air conditioning system and UPS shall each have a minimum 2-year warranty. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The warranty shall cover all system malfunctions such that it shall maintain the system to its initial commissioning status. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# OPERATIONAL TRAINING

1. Operational training shall be provided to staff, on the use of these systems at commissioning, to monitor system status and contact the contractor when major faults occur. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The operational manual shall be delivered with the system. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# MAINTENANCE CONTRACT

1. The tenderer shall provide a detailed maintenance contract, clearly indicating all required maintenance activities per annum and related costs. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The maintenance contract shall be for a period of 10 years and shall commence after the 2 year warranty for the air conditioners and UPS’s. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

1. The contractor shall therefore be responsible to keep the systems fully operational for a total duration of 12 years. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |

# SERVICE LEVEL AGREEMENT

1. Should the system or any of its components malfunction the tenderer/contractor shall return the system to full operation within 24 hours. This applies to the warranty and maintenance contract period. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* |