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

**REPUBLIC OF SOUTH AFRICA**



**REQUEST FOR PROPOSAL: ATNS/RFP63/FY22.23/GENERAL COMPUTER EQUIPMENT/14122022**

**APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY, AND INSTALLATION OF GENERAL COMPUTER EQUIPMENT**

**TECHNICAL SPECIFICATION**

**PROJECT MANAGEMENT**

**LOGISTIC SUPPORT**

**Version 1.1**

**Volume 2, 3, 4**

**December 2022**

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| **TABLE OF CONTENTS** |

[ABBREVIATIONS AND ACRONYMS 3](#_Toc121919551)

[GENERAL INSTRUCTIONS TO TENDERERS 5](#_Toc121919552)

[1 PROJECT INTRODUCTION 6](#_Toc121919564)

[1.1 Background 6](#_Toc121919565)

[1.2 Scope of Work 6](#_Toc121919566)

[VOLUME 2 – TECHNICAL SPECIFICATIONS 8](#_Toc121919567)

[1 GENERAL SPECIFICATIONS 9](#_Toc121919568)

[1.1 Environmental Conditions 9](#_Toc121919569)

[1.2 Power Requirements 9](#_Toc121919570)

[1.3 Life Span 10](#_Toc121919571)

[1.4 Peripherals 10](#_Toc121919585)

[1.5 Operational Requirements 10](#_Toc121919586)

[2 SYSTEM FUNCTIONS AND PERFORMANCE REQUIREMENTS 11](#_Toc121919590)

[2.1 CONTROL AND MONITORING WORKSTATION 11](#_Toc121919592)

[2.2 MAINTENANCE WORKSTATION 12](#_Toc121919593)

[2.3 WEATHER VISUALISATION WORKSTATION 14](#_Toc121919606)

[2.4 DAID MONITOR 14](#_Toc121919608)

[2.5 RADAR TRACK DATA SERVER 15](#_Toc121919609)

[2.6 NETWORK SWITCHES 16](#_Toc121919611)

[2.6.1 General Network Switches Requirements 16](#_Toc121919612)

[2.6.2 NETWORK SWITCH: SITA DATA LINK 18](#_Toc121919613)

[2.6.3 NETWORK SWITCH: DAID SYSTEM 18](#_Toc121919614)

[2.7 MOTSETA SERVER REQUIREMENTS 20](#_Toc121919615)

[2.8 SYSTEM INTERFACE REQUIREMENTS 20](#_Toc121919616)

[VOLUME 3 – PROJECT MANAGEMENT REQUIREMENTS 22](#_Toc121919617)

[**3** **PROJECT MANAGEMENT** 23](#_Toc121919638)

[3.1 General 23](#_Toc121919639)

[VOLUME 4 – LOGISTIC SUPPORT REQUIREMENTS 24](#_Toc121919640)

[**4** **LOGISTICS AND GUARANTEE** 25](#_Toc121919658)

[4.1 Guarantee 25](#_Toc121919659)

[4.2 Delivery 25](#_Toc121919660)

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| ABBREVIATIONS AND ACRONYMS |

|  |  |
| --- | --- |
| AC | Alternating Current |
| ACL | Access Control List |
| ARP | Address Recovery Protocol |
| ATA | Aviation Training Academy |
| ATC | Air Traffic Controller |
| ATNS | Air Traffic and Navigation Services SOC. Ltd. |
| B-BBEE | Broad-Based Black Economic Empowerment |
| CNS | Communication, Navigation and Surveillance |
| DAID | Digital Airfield Information Display |
| DOS | Denial of Service |
| FAKM | Kimberly Airport |
| FACT | Cape Town International Airport |
| FAEL | East London Airport |
| FAGG | George Airport |
| FALE | King Shaka International Airport |
| FAOR | O.R Tambo International Airport |
| FAPE | Port Elizabeth International Airport |
| FAUP | Upington Airport |
| GBIC | Gigabyte Interface Converter |
| IPv6 | Internet Protocol version 6 |
| KVM | Keyboard Video Mouse |
| LAN | local Area Network |
| NEMA | National Environmental Management Act |
| OEM | Original Equipment Manufacturer |
| OTN | Optical Transport Network |
| PC | Personal Computer |
| PMP | Project Management Plan |
| PoE | Power over Ethernet |
| QoS | Quality of Service |
| RCMS | Remote Control and Monitoring System |
| RIP | Routing Information Protocol |
| SFP | Small Form-Factor Pluggable |
| VCS | Voice Communication Switching System |
| VM | Virtual Machine |
| VOR | Very High Frequency Omnidirectional Range |
| VSAT | Very Small Aperture Terminal |
| 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. Tenderers 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”**.

Tenderers 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.

# PROJECT INTRODUCTION

## Background

The computer equipment specified herein are used by the Technical Support personnel for maintenance purposes to monitor and control CNS equipment.

## Scope of Work

The project caters for the acquisition, supply and delivery of computer equipment listed in Table 1.

The project scope includes:

1. Supply, delivery, installation (where required) and commissioning of the new computer equipment at the various ATNS stations; and
2. Disposal of the old computer equipment.
3. The Bidder shall supply and deliver the complete list of items in Table 1.

Table 1: Requirements per Site

| **Station** | **Computer Requirements** | **Use** | **QUANTITY** |
| --- | --- | --- | --- |
| FAOR | Desktop PC | Voice Communication Switch (VCS) Control and Monitoring Workstation | 1 |
| Desktop PC | Weather Visualisation | 1 |
| Network Switch | SITA Datalink system | 2 |
| Network Switch | Digital Airfield Information Display (DAID) System | 1 |
| Monitor/ PC Screen | DAID Monitor | 3 |
| Desktop PC | Optical Telecommunication Network (OTN) Monitoring Workstation | 1 |
| Server | Radar Track Data Servers | 1 |
| Server | MOTSETA Server | 3 |
| FAGG | Desktop PC | OTN Monitoring Workstation | 1 |
| Desktop PC | Radar Vibration Monitoring Workstation | 2 |
| Desktop PC | DAID Computer | 2 |
| Monitor/ PC Screen | DAID Monitor | 2 |
| FAPE | Desktop PC | VSAT Remote Control and Monitoring System (RCMS) Workstation | 1 |
| FALE | Desktop PC | VCS Control and Monitoring Workstation | 1 |
| Desktop PC | OTN Monitoring Workstation | 1 |
| Desktop PC | Maintenance Workstation | 2 |
| FAKM | Desktop PC | Recorder Control and Monitoring Workstation | 1 |
| FAUP | Desktop PC | Recorder Control and Monitoring Workstation | 1 |
| FACT | Server | Radar Track Data Servers | 1 |
| FAEL | Desktop PC | VHF Omnidirectional Range (VOR) Monitoring and Control System Workstation | 2 |
| Desktop PC | Radar Vibration Monitoring Workstation | 1 |
| Desktop PC | OTN Monitoring Workstation | 1 |

# VOLUME 2 – TECHNICAL SPECIFICATIONS

# GENERAL SPECIFICATIONS

## Environmental Conditions

1. The computer equipment shall withstand and operate within specifications under the environmental conditions as provided in Table 2. Bidders shall include data sheets to indicate compliance with the values and tolerances in the table below. (D)

Table 2: Environmental Conditions

|  |  |
| --- | --- |
| Ambient Temperature | 5 °C to 40 °C |
| Relative Humidity | 10% to 80% non-condensing |
| Temperature Variations | 5 °C to 20 °C in 24-hour Period |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Power Requirements

1. The computer equipment shall operate from a mains power supply as defined below: (D)

* 230 VAC, Tolerance: +15%, ‑15%
* Frequency: 50 Hz, Tolerance: +2 Hz, -2 Hz

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The accessories for interfacing the computer equipment with the mains power supply shall be provided. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Life Span

1. The computer equipment shall operate within the environmental conditions stated in Chapter 2 Section 1.1, for a minimum period of 5 years. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Peripherals

1. All PCs shall be supplied together with a wired keyboard and mouse combo. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Operational Requirements

1. All computers provided under this project shall be desktop computers. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. All computers, except the maintenance computers, shall have a separate monitor. All-in-one (AIO) systems are not acceptable. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

# SYSTEM FUNCTIONS AND PERFORMANCE REQUIREMENTS

## CONTROL AND MONITORING WORKSTATION

The following specifications are applicable to the following computers:

* VCS Control and Monitoring Workstation
* Recorder Control and Monitoring Workstation
* OTN Monitoring Workstation
* Radar Vibration Monitoring Workstation
* VSAT RCMS Workstation
* DAID Computer
* VOR Monitoring and Control System Workstation

1. All desktop PCs shall meet all specifications listed in Table 3 below. Details of the offered desktops shall be provided as part of the Bidder’s offer. (D)

Table 3: PC specifications for VCS, Recorders, OTN, Radar Vibration and VSAT Monitoring and Control.

|  |  |
| --- | --- |
| Operating System | Windows 10 Professional 64-bit |
| Minimum CPU | Latest Generation Quad Core Processor |
| Minimum RAM | 8GB |
| Minimum Internal Storage | 125 GB SSD |
| External Storage | DVD Optical Drive |
| Networking Connector | RJ45 at least 3 ports |
| Wireless Connectivity Requirements | Wi-Fi 5  Bluetooth 3.0 |
| Display | 24-inch, Widescreen, LCD monitor |
| Monitor Resolution | 1920x1200 |
| USB Ports | At least 4 USB ports |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The desktop computers for FAGG shall be pre-installed with Oracle Virtual Machine (VM) ware to run Fedora Core 8, Win XP, Win 7, and Windows 10 Operating System. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The DAID computers for FAGG shall be supplied with 19 inch monitors as specified under Section 2.4. The 24 inch monitor specified in Table 3 will not be required. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VOR Monitoring and Control System Workstation for FAEL shall be preinstalled with Fedora Core 8. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Radar Vibration Monitoring Workstation and the OTN Monitoring Workstation for FAEL shall be preinstalled with Windows 7. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## MAINTENANCE WORKSTATION

1. The maintenance PC shall have an all-in-one form factor. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The maintenance PC shall meet all specifications listed in Table 4 below. Details of the offered desktop shall be provided as part of the Bidders offer. (D)

Table 4: Maintenance PC specifications

|  |  |
| --- | --- |
| Operating System | Windows 10 Professional 64-bit |
| Minimum CPU | 9th Generation Intel Core i5 |
| Minimum Base Frequency | 3 GHz |
| Minimum RAM | 8GB |
| Minimum Internal Storage | 1 TB HDD 7200 rpm SATA |
| Optical Drive | DVD-Writer |
| Networking Connector | RJ45 port |
| Wireless Connectivity Requirements | Wi-Fi 5  Bluetooth 3.0 |
| Wireless Network Interface | Intel Dual Band Wireless -AC 9560 802.11 ac (2x2) |
| Display | 21.5-inch FHD IPS widescreen LCD anti-glare WLED-backlit display |
| Monitor Resolution | 1920x1080 |
| Minimum Integrated Graphics | Intel UHD Graphics 630 |
| Audio | Internal stereo speaker, headset and headphone side port, multi-streaming capable |
| External Peripheral Connectors | 1 headphone/microphone  SD card reader  USB Type C  At least 2 USB ports |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## WEATHER VISUALISATION WORKSTATION

1. The Weather Visualisation PC shall not have an operating system installed. (I)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Weather Visualisation PC shall meet all specifications listed in Table 5 below. Details of the offered Weather Visualisation PC shall be provided as part of the Bidders offer. (D)

Table 5: Weather Visualisation Workstation specifications

|  |  |
| --- | --- |
| Minimum CPU | 2.8 GHz, Intel® Xeon® E5 v4 at minimum |
| Minimum RAM | 8GB |
| Minimum Internal Storage | 1000 GB HDD |
| Hard-Drive Spindle Speed | 7200 rpm |
| External Storage | DVD Super Multi or equivalent |
| Networking Connector | RJ45, at least 3 ports |
| Wireless Connectivity Requirements | Wi-Fi 5  Bluetooth 3.0 |
| External Peripheral Connectors | At least 4 USB ports |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## DAID MONITOR

1. The DAID PC monitor shall meet all the specifications listed in Table 6 below. Details of the offered DAID PC monitor shall be provided as part of the Bidders offer. (D)

Table 6: DAID PC Monitor Specifications

|  |  |
| --- | --- |
| Minimum display requirement | 19-inch, LED monitor |
| Minimum resolution | 1280 x 1024 |
| Minimum aspect ratio | 4 x 3 |
| Minimum view angle | 176° (H) 170° (V) |
| Analogue Interface | D-sub 15 pins |
| DVI | YES |
| Audio | Built-in Speaker |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## RADAR TRACK DATA SERVER

1. The Radar Track Data Server shall meet all the specifications listed in Table 7 below. Details of the offered Radar Track Data Server shall be provided as part of the Bidders offer. (D)

Table 7: Radar Track Data Server Specifications

|  |  |
| --- | --- |
| Operating System | Latest Windows Server OS (Windows Server 2019) |
| Minimum RAM | 16GB |
| Minimum Processor | Quad Core, 2.4 GHz |
| Minimum Internal Storage | RAID 0 server with at least of 2 x 1Tb HDD |
| Networking Connector | At least 4 Ethernet ports |
| Network Card | 10/100/1000 Ethernet |

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. A Keyboard Video Mouse (KVM) switch shall be provided for both FAOR and FACT. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. An Anti-virus software shall be installed on the servers provided. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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1. The server shall be 19” rack mount unit with a maximum rack size of 2U. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## NETWORK SWITCHES

## General Network Switches Requirements

1. Two (2) Ethernet local area network switches, one for the DAID system and the other for the SITA Datalink system, shall be provided for FAOR. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switches shall support full duplex operation. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switches shall support 10/100/1000 Mbps data transfer rate. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switches shall be layer 3 capable with support static and Routing Information Protocol (RIP) routing, sFlow, Access control List (ACLs), rate limiting and Internet Protocol version 6 (IPv6). (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switches shall support Power over Ethernet (PoE) signals. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switches shall be fully manageable. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## NETWORK SWITCH: SITA DATA LINK

1. The SITA Data link network switch shall provide eight (8) Ethernet ports. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switch shall have the following Security and Quality of Service (QoS) features: (D)
   1. The switch shall support flexible authentication methods including Local MAC, 802.1X, MAC, and Web for greater, policy-driven application security.
   2. The switch shall support advanced denial of service (DOS) protection, such as DHCP, Dynamic Address Recovery Protocol (ARP), and Dynamic IP lockdown, and flexible traffic controls including ACLs and QoS;
   3. The switch shall provide rate limiting and flow control help ensure reliable communications and
   4. The DHCPv6 Protection shall provide defence for IPv6 network.

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## NETWORK SWITCH: DAID SYSTEM

1. The DAID system network switch shall provide 24 Ethernet ports. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
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| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switch shall have SFP type connection. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switch shall have four (4) Shared SFP/ mini-Gigabyte Interface Converter (GBIC) ports. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. Four GBICs shall be provided for the four SFP ports. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switch shall support multimode fibre systems. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The network switch shall be fully manageable and support the following: (D)
2. The switch shall support web-based interfaces.
3. IEEE 802.1w Rapid Spanning Tree Protocol.
4. IEEE 802.1Q Tagged based and Port-based VLAN
5. Static and 802.3ad Link aggregation
6. IGMP Snooping v1/v2 and IGMP Query
7. Port Mirroring for traffic monitor
8. Ingress Rate Limit and Egress Shaping for Bandwidth Control
9. The switch shall provide rate limiting and flow control help ensure reliable communications and
10. 802.1 X Port based authentication

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| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## MOTSETA SERVER REQUIREMENTS

1. The MOTSETA Servers shall meet all specifications listed in Table 8 below. Details of the proposed MOTSETA Servers shall be provided as part of the Bidder’s offer. Refurbished versions of the server will be accepted. (D)

Table 8: MOTSETA Server Specifications

|  |  |
| --- | --- |
| Minimum CPU | Intel(R) Xeon(R) CPU E5440 @ 2.83GHz |
| Minimum RAM | 4 x 1 GB, 667 Mhz |
| Optical Drive | DVD-Writer |
| RAID Controller | Smart Array P400 Controller |
| Fibre channel host bus adapter | Qlogic ISP2432-based 4Gb Fibre Channel to PCI Express HBA |
| VGA compatible controller | ATI Technologies Inc ES 1000 |
| Network device | NetXtreme II BCM5708 Gigabit Ethernet (dual port) |
| Power Supplies | 2 x redundant power supplies |
| Fan Kits | 2 x redundant fan kits |

|  |  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## SYSTEM INTERFACE REQUIREMENTS

1. All PCs shall have interfaces for at least the following peripherals: : (D)
   1. Keyboard.
   2. Mouse
   3. HDMI
   4. USB devices

|  |  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

# VOLUME 3 – PROJECT MANAGEMENT REQUIREMENTS

1. **PROJECT MANAGEMENT**

## General

1. A schedule detailing the proposed timelines for the milestones that will ensure the successful completion of the project is required. The proposed schedule, timelines and milestones shall be included in the Bidder response. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The schedule shall clearly indicate the delivery and completion milestones. The target dates for delivery and completion shall be clearly highlighted in the bid response. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

# VOLUME 4 – LOGISTIC SUPPORT REQUIREMENTS

1. **LOGISTICS AND GUARANTEE**

## Guarantee

1. All computer equipment shall have at least a one (1)-year warranty. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The warranty shall cover all malfunctions on the system as well as their auxiliaries. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Delivery

1. Delivery of all computer equipment to all stations is the responsibility of the supplier. The Bidder shall submit a comprehensive delivery plan. (D)

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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The computer equipment shall be delivered at the stations listed below. (D)

Table 9: Computer Equipment Delivery Sites

|  |  |
| --- | --- |
| **Station Equipment** | **Delivery Site** |
| OR Tambo International Airport (FAOR) | OR Tambo International Airport (FAOR) |
| George Airport (FAGG) | Cape Town International Airport (FACT) |
| Cape Town International Airport (FACT) | Cape Town International Airport (FACT) |
| King Shaka International Airport (FALE) | King Shaka International Airport (FALE) |
| Upington Airport (FAUP) | Bram Fischer International Airport (FABL) |
| Kimberly Airport (FAKM) | Bram Fischer International Airport (FABL) |
| East London Airport (FAEL) | Port Elizabeth International Airport (FAPE) |
| Port Elizabeth International Airport (FAPE) | Port Elizabeth International Airport (FAPE) |

|  |  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Bidder shall bear the costs for breakages of any equipment during transport. (D)

|  |  |  |
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| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |