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|  Eskom | Report | Gauteng Cluster |
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1. INTRODUCTION

Eskom substations are key to ensure continuous supply of electricity to the customers. In recent years the theft and vandalism of Eskom assets has negatively affected this continuous supply of electricity. Hence it is critical to ensure that the substations are protected against theft and vandalism. The ability to monitor the substations with the aid of CCTV surveillance system and video management system continuously will aid in minimising the theft and vandalism.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document details the scope of work that is required for a video management system and its camera systems for 4 sites.

It is mandatory that the tenderer is PSIRA (Private Security Industry Regulation Authority) registered to design, install & Maintain CCTV system's and have the relevant experience, qualifications and professional registrations for this.

2.1.1 Purpose

The scope of work is a requirement for the process of request for proposal.

2.2 DEFINITIONS

| Definition | Description |
|--------------------------|--|
| CCTV surveillance system | A system that consists of camera equipment as well as any monitoring and associated equipment for transmission and controlling purposes that is necessary for surveillance of a defined security zone. |
| Video Management System | Software used to connect to multiple DVRs or NVRs and view the footage from the attached cameras. |
| | |

2.2.1 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.3 ABBREVIATIONS

| Abbreviation | Description |
|--------------|---------------------------|
| CPM | Control Plant Maintenance |
| DVR | Digital Video Recorders |
| NVR | Network Video Recorders |
| VMS | Video Management System |

3. SCOPE OF WORK

Video Management System

The Contractor:

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- Design, supply and install hardware, software (including anti-virus) and all peripherals as per Eskom standard 240-91190304 Specification for CCTV Surveillance with Intruder Detection for a fully functional VMS system at Alpha Control in Midrand.
- Design, supply and Install a Video Wall as per Eskom standard 240-91190304 Specification for CCTV Surveillance with Intruder Detection.
- Data Analytics capability to be incorporated into VMS as per Eskom standard 240-91190304 Specification for CCTV Surveillance with Intruder Detection. VMS AI licence shall include: vehicle licence plate detection , facial recognition, smoke and fire detection, line crossing, tag & Track, human vs animal filtering, object tracking including tag & Track, RFID capabilities, Objects in Area, Object Loitering, Objects Crossing Beam, Object Appears or Enters Area, Object Not Present in Area, Objects Enter Area, Objects Leave Area, Object Stops in Area, Direction Violate, Tamper Detection. This should be a fixed once off licence cost!
- Shall relocate the existing VMS, from Simmerpan, to the new server room in Eskom college and design to integrate with new VMS.
- The contractor shall test and ensure full compatibility with new and existing VMS and surveillance infrastructure.
- Ensure a Fixed once off Licence costs for VMS, Cameras and AI technology on all apparatus supplied and installed.
- The VMS system shall be able to store at least 30 days of footage for up to 100 stations with 16 camera's each per station.
- Shall Supply and install all cabling (including fibre where required), electrical & IT Cabling to ensure a completed and functional VMS system.
- VMS system shall be capable of creating customisable reports and dashboards with options of selecting the frequency of reporting via email.
- Shall quote for a 3 year replacement warrantee as well as a 3 year maintenance, upgrade, Repair and support contract.
 - Replacement warrantee
 - All items must be available for replacement within 12hrs.
 - Maintenance Plan
 - Routine Maintenance Plan to be provided by the tenderer.
 - Breakdowns and repairs needs to be prioritised according to the nature of the fault. System downtime needs to be of the highest priority to ensure that the system availability is at 98%. System downtime faults needs to be attended to within 2 hours of the fault and a full plan to be provided on restoration of the fault which cannot be resolved within an hour after attending to the fault.
 - Medium priority Faults such as NVR not operational, NVR not communicating shall be responded to within 12 hours.
 - Low Priority faults that does not have an impact on the operations of the system such as camera resolution issues, camera downtime, a single screen not operational shall be responded to within 24hours.

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Server Room

The Contractor :

- Shall Design, build and fit the server room in accordance to EPSUIP-606-253 – Generic Design Specifications for Control Centres. This will include redesign, supplying and installing of the cooling systems, fire suppression and extraction systems for the room
- Shall Design, supply and install a UPS system fit to supply the VMS Hardware, IT equipment(routers, Firewalls, computers and DMZ) and all screens in accordance to Eskom's standards(240-118870219 & 240-91190304) including the batteries.
- Shall supply and install all cabling to be supplied and fitted from IT cabinets and Telecoms hardware to ensure a complete system is installed and commissioned
- Shall ensure all Electrical works to be designed, supplied and installed by a suitably qualified and accredited contractor. Installation of a distribution box is required for the connection of all equipment in the server room and control room. Contractor to install cabling from the Building main DB to the new DB. All cabling to be neatly installed and hidden.

IT

- Design, supply, install & Configure all related IT infrastructure for the proposed OT & IT integration as per the standard VMS architecture.

Control Room

The Contractor:

- Shall design, supply, build and fit the new control room in accordance to EPSUIP-606-253 – Generic Design Specifications for Control Centres and all applicable SANS Standards.
- Shall design, supply and install all furniture and accessories to complete the new control room in accordance to EPSUIP-606-253- Generic Design Specifications for Control Centres.
- Shall replace all carpets with same make and type currently in the room
- Shall replace the blinds in the room.
- Shall install emergency lighting, camera's and biometric access.

Eskom Telecoms

- Supply, deliver and install all terminal equipment to ensure complete commissioning of end to end fibre installation, link to microwave towers, GPRS link and satellite links.
- Design, supply and install Eskom Telecoms Equipment between the 4((Babelegi Main, Moroka Main, Germiston North & Sandpit Substations) x sites and the Server room.
- Test & Commission OT Firewalls and all other equipment.

CCTV surveillance system with artificial intelligence capabilities

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Design, supply and install camera Infrastructure at 4(Babelegi Main, Moroka Main, Germiston North & Sandpit Substations) sites as per Eskom standard 240-91190304 Specification for CCTV Surveillance with Intruder Detection.

The Contractor:

- Shall ensure that the NVR should be able to store at least 30 days of footage.
- Shall design the system considering the erratic network bandwidth issues and reliability of the system.
- Shall supply and install a 128GB SD memory card per camera.
- Shall design the system to ensure Data Analytic capabilities are incorporated which includes the following:
 - All licence shall include :vehicle licence plate detection , facial recognition, smoke and fire detection, line crossing, tag & Track, human vs animal filtering, object tracking including tag & Track, RFID capabilities, Objects in Area, Object Loitering, Objects Crossing Beam, Object Appears or Enters Area, Object Not Present in Area, Objects Enter Area, Objects Leave Area, Object Stops in Area, Direction Violate Tamper Detection.
 - This shall be a fixed once off licence cost!
- Shall provide training on installation, maintenance, functioning of the system and operator training. No. of people for training over an 18 month period.
 - Design Training- 4
 - Installation, Maintenance & Repairs-4
 - Operating of system-10
 - Super User(including system updates, Patch Management)- 2
- Shall test and ensure full compatibility with new and existing infrastructure.

4. DEVELOPMENT TEAM

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

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- Justice Ramanyoga
- Nicolaas De Klerk
- Success Mendes

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