

CCTV System – Terms of Reference

- Mngazi Campus,
- Mapuzi Campus,
- Zimbane Campus,
- Mthatha Campus
- Ntabazuko Campus
- Ngcobob Campus

Campuses

Mthatha Campus



Mthatha Campus is situated in the King Sabata Dalindyebo Local Municipality, which is the economic hub of the O.R. Tambo District Municipality. It is approximately 10 km from the city centre on the R61 road to Queenstown. The campus has student's residences on site and is the administrative centre of the college. The campus runs a 200Mbps VSAT network which is linked to TENET at Walter Sisulu University.

Areas of Concern	
College House	Bricklaying structure
Electrical/Plumbing/Carpentry Workshop	Lecture Theatre 1 - 6
Welding Workshop	Computer Labs 1 - 13
Dining Hall	Staff Room
Old Cicira Blocks	Back of Classroom
Inside Student Kitchen	Classroom Passages
Looking at Blocks	Student Square
Female Hostels	Prefab Classrooms
Albertina House	Main Gate
Girls' Laundry Room	Exams Office
Jojo Tanks	Executive Parking Area
Hospitality Hall	Main Building
Main/Utility Hall	Rolihlahla House
Student Square	Boys' Laundry room
Library	Old boys Hostel
Business Centre	Finance Department
Executive Parking	Staff Parking

Zimbane Campus



Zimbane Campus is about 11 km from the Mthatha Campus. It is surrounded by semi-rural communities that are involved in small, medium and micro-sized enterprises (SMME's). The campus runs a 200Mbps wireless link for internet connectivity.

Areas of Concern	
Administration Block	Computer Labs
Main Gate	Main Hall
Prefab classrooms	Toilets
Student square	Parking Area
Reception	

Libode Campus



Libode Campus is 40 km from the Mthatha Campus. The area is very prone to waterborne diseases and natural disasters. The campus runs a 200Mbps wireless link for internet connectivity.

Areas of concern	
Main Gate	Student square
Workshops	Classroom passages
Computer lab	gymnasium
Ablution blocks	reception

Ngcobo Campus



Ngcobo Campus is 90 km from the Mthatha Campus and is located in a hinterland, sitting in the middle of the Eastern and Central regions of the Eastern Cape. The area is mainly rural with communities mainly dependent on community and public services, heavily involved in subsistence farming. The campus runs a 200Mbps Managed Fibre link for internet connectivity.

Areas of Concern	
Main Gate	Generator
Parking	Simulation Room
Classroom Passages	Agricultural Shed
Reception	Ablution blocks
Computer Labs	Container/Exams Office
Student Square	Agricultural Garden
Jojo Tanks	Prefab Classrooms

Ntabazuko Campus



Ntabozuko Campus is 115 km from the central office and is located at Xhora (Elliotdale), which is also in the deep rural areas of the region. The campus runs a 200Mbps wireless link for internet connectivity.

Areas of Concern	
Main Gate	Administrative block
Ablution blocks	Computer labs
Student square	Classroom passages
Parking area	

Mapuzi Campus



Mapuzi Campus is 120 km from the Mthatha Campus and is located at Coffee Bay along the wild coast and is surrounded by deep rural communities that are actively involved in tourism, hospitality, arts and craft and limited traditional or subsistence fishing. The campus runs a 200Mbps wireless link for internet connectivity.

Areas of Concern	
Main Gate	Classroom passages
Parking area	Computer labs
Reception area	Prefab classrooms
Kitchen	Jojo Tanks
Generator	

Mngazi Campus



Mngazi Campus is about 80 km from the central administration office and is located along the wild coast 10 km from the town of Port St Johns, which is already an international tourism brand. The campus runs a 200Mbps wireless link for internet connectivity.

Areas of concern	
Main Gate	Reception Area
Classroom passages	Computer labs
Ablution blocks	Generator

Scope of Work and Requirements

Purpose

In order to enhance the Safety and Security at all sites in KSD College. The college management has embarked on a project to implement a fully functional Intelligent CCTV Solution.

The objective is to add an additional layer of security by utilizing automated and AI technology, which will provide proactive video surveillance and monitoring. The requirements and specifications are based on the current challenges faced at many of the campuses due to their locations. Therefore, it is important that the solution implemented contributes highly to the safety and security of the college's staff, students and college's property and equipment.

Specifications have been developed with research on the latest technologies with popular CCTV brands and solutions.

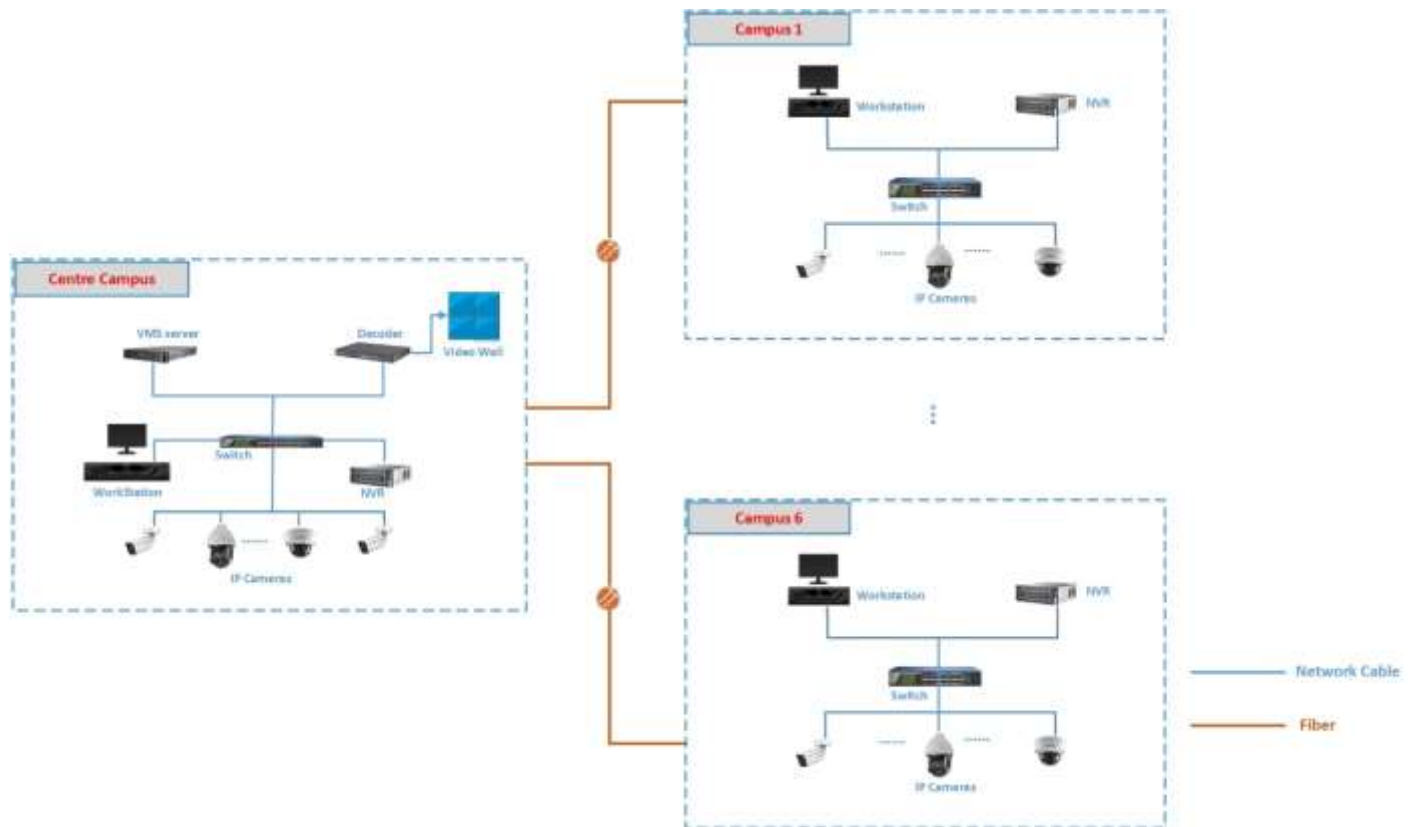
The purpose of the CCTV System is to provide:

1. Surveillance of
 - a. Main Entrance and Exit Points
 - b. Reception Areas
 - c. Strong rooms (Inside and out)
 - d. Server Rooms (Inside and out)
 - e. Computer Labs
 - f. Classroom Hallways
 - g. Dormitories
 - h. Key Infrastructure areas
2. Identification and documentation of all vehicles entering and leaving the property through the main entrance and exit points.
3. Identification and documentation of individuals entering Reception areas, Computer labs and Server Rooms.
4. Identification of individuals in main general assembly points
5. Enhance the college's capabilities for surveillance and incident management through control rooms.

Solution Requirements

1. 100% coverage to keep campus property and personnel safe.
2. Video and images can be stored for 21-30 days and can be backed for another 60-90 days. Back up storage must be expandable for future growth. Must allow to add more storage.
3. Support number plate recognition, behavior analysis and facial recognition.
4. All cameras at each site connect to PoE switch via IP network, each campus video footage will be stored on local NVR for 21-30 days with 1080p resolution continuously. All video footage will be backed up to the central location for 60-90 days.
5. When cameras detect abnormal behavior (like perimeter intrusion, suspicious behavior, over crowding etc.) The Local NVR and unified video surveillance platform in head office will receive the alarm that will notify operators and can respond quickly and effectively.
6. Cameras at entrance and exits support license plate recognition.
7. Protest/overcrowding monitoring and alerting.

Required Intelligent CCTV Solution



Brand considered in terms of functionality to meet the college's needs is HIKVISION or equivalent.

Technology Specifications



Figure 1: Hikvision 7700 Pro Series 32-ch AcuSense NVR 4K with 16-ch PoE DS-7732NXI-I4/16P/S

- 32-ch 1U 16 POE AcuSense 4K NVR
- H.265+/H.265/H.264+/H.264 video formats
- Intelligent analytics based on deep learning algorithm
- Up to 4-ch perimeter protection
- Up to 1-ch facial recognition for video stream, or up to 4-ch facial recognition for face picture
- Up to 32-ch IP camera inputs
- Plug & Play with 16 Power-over-Ethernet (PoE) interfaces
- Up to 16-ch 1080p decoding capability
- Up to 256 Mbps incoming bandwidth

- 4 MP ColorVu Fixed Bullet Network Camera
- High quality imaging with 4 MP resolution
- Efficient H.265+ compression technology
- Clear imaging against strong backlight due to 130 dB WDR technology
- Focus on human and vehicle targets classification based on deep learning
- 24/7 colorful imaging
- Water and dust resistant (IP67)



Figure 2 : Hikvision 4MP IP ColorVu Fixed Bullet Network Camera



- High quality imaging with 4 MP resolution
- Efficient H.265+ compression technology
- Clear imaging against strong back light due to 130 dB WDR technology
- 24/7 colorful imaging
- Focus on human and vehicle targets classification based on deep learning
- -SU: Built-in microphone for real-time audio security, audio and alarm interface available
- Water and dust resistant (IP67) and vandal resistant (IK10)

Figure 3 : Hikvision ColorVu 4MP 2.8mm Dome Network Camera DS-2CD2147G2-SU/2.8MM

- High quality imaging with 2 MP resolution
- Excellent low-light performance via DarkFighter technology
- Clear imaging against strong back light due to 140 dB WDR technology
- License Plate Recognition
- Efficient H.265+ compression technology to save bandwidth and storage
- 5 streams to meet a wide variety of applications
- Water and dust resistant (IP67) and vandal proof (IK10)



Figure 4: Hikvision 2MP 8-32mm DeepinView ANPR Motorized Varifocal Bullet Camera IDS-2CD7A26G0/P-IZHS8-32MM



Figure 5 : Hikvision 8-port Gigabit Smart Managed PoE Switch DS-3E1510P-SI

- 8 × gigabit PoE ports, and 2 × gigabit fiber optical ports.
- IEEE 802.3at/af standard for PoE ports.
- Network topology management, alarm push, network health monitor.
- 6 KV surge protection for PoE ports.
- AF/AT camera can reach up to 300 m in extend mode.
- PoE watchdog to auto detect and restart the cameras that do not respond.
- Various layer 2 management protocols such as STP/RSTP, VLAN, link aggregation, SNMP, QoS and so on.



- 64-ch 2U 4K AcuSense NVR
- H.265+/H.265/H.264+/H.264 video formats
- Intelligent analytics based on deep learning algorithm
- Up to 4-ch perimeter protection
- Up to 1-ch facial recognition for video stream, or up to 4-ch facial recognition for face picture
- Up to 64-ch IP camera inputs
- Up to 16-ch 1080p decoding capability
- Up to 320 Mbps incoming bandwidth

Figure 6 : Hikvision 9600 Ultra Series 64-ch AcuSense NVR 4K DS-9664NXI-I8/S



- Manage up to 2048 devices, 10,000 channels on a single server
- Support VSM cascade to RSM, up to 100,000 channels.
- Support 1000 on-board devices, 5000 video intercom devices, 64 DeepinMind servers, recording servers, streaming servers.
- Maximum 100 concurrent Accesses via Web Clients and Control clients
- Support 250,000 total credentials(card+fingerprint) for access control
- Support 5,000 persons for Time&Attendance

Functional Evaluation

The functional evaluation will be as follows, a score of less than 75% for functionality will disqualify the bidder

ITEM	POINT ALLOCATION	Weight
Company with previous experience in similar nature of work to be executed.	<p>Provide at least 3 referral letters and orders/letter of appoints from organizations that confirm that the company is able to successfully provide quality professional services. Referral letters must contain traceable contact people including their contact details.</p> <p>At least Two of the references must be from a Higher Education Institution, which one is from the Eastern Cape</p>	30
Delivery Team Certification and Experience	<p>Delivery Team must be made up of</p> <ul style="list-style-type: none"> • At least Two CCTV Specialists with HCSP • Project Manager – PMP Certified • At least Two Cabling Technicians – Krone Certified • At least Two Fibre Technicians – FOA Certified 	30
OEM Accreditation	Bidder to submit proof of accreditation as reseller and installer of OEM technology.	10
International Organisation for Standadization	Bidder to submit proof of compliance with the requirements of ISO 9001:2015	10
Roll out Methodology, System Compliance	Bidder to submit roll out plan and methodology, also proof of equipment compliance with the technology requirement in form of datasheets	20
TOTAL POINTS - 100		