

[illegible]

46/88IR(23)

Bid Item No	Brand Name	Name of the company from where the goods or services will be sourced	Address and contact details of the company from where the goods or services will be sourced

(Should the table provided not be sufficient for all the items offered, please provide additional information as an attachment and it must be properly referenced to this document)

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**Note:**

*The authorization letter must be original, signed and on an official letterhead of the third party.  
A separate authorization letter must be included for each third party.  
The authorization letter must be addressed to the Bidding Company.*

*No copies of the authorization letter will be accepted. The validity of authorization letter/s will be verified with the third party/ies.*

Name of Bidding Company

Address of Bidding Company

Attention:

Dear Sir/Madam

**AUTHORIZATION LETTER: TENDER NR \_\_\_\_\_**

We, \_\_\_\_\_ (Name of Third Party) hereby authorize you,  
\_\_\_\_\_ (Name of Company) to include the products listed below in  
your bid submission for the abovementioned contract.

We confirm that we have firm supply arrangements in place, and have familiarized ourselves with the item descriptions, specifications and bid conditions relating to item/s listed below.

Item no.	Description of product	Brand name

*(Should the table provided not be sufficient for all the items offered, please provide additional information as an attachment and it must be properly referenced to this document)*

Yours faithfully,

\_\_\_\_\_  
Signature of Third Party

Date: \_\_\_\_\_

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## DEVIATION SHEET: Bid 19/1/9/1/88 TR (23)

To all bidders:

Please complete the deviation sheet for **all alternative or additional offers made.**

Please complete the deviation sheet for all paragraphs in the specification that you comment **"Do not comply"**

<b>Specification paragraph:</b>
<i>Reason:</i>
<i>Offered:</i>
<b>Specification paragraph</b>
<i>Reason:</i>

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## DEVIATION SHEET: Bid 19/1/9/1/88 TR (23)

*Offered:*

**Specification paragraph**

*Reason:*

*Offered:*

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## DEVIATION SHEET: Bid 19/1/9/1/88 TR (23)

<b>Specification paragraph</b>
<i>Reason:</i>
<i>Offered:</i>

SI/88TR(23)

**SPECIFICATION TO ESTABLISH A PANEL OF QUALIFIED SUPPLIERS, FOR THE PROVISION OF CLOSED CIRCUIT TELEVISION (CCTV) AND ACCESS CONTROL SYSTEMS FOR THE SOUTH AFRICAN POLICE SERVICE (SAPS) NATIONALLY FOR A PERIOD OF FIVE (5) YEARS**

**SCOPE OF THE REQUIREMENT**

The intention of this specification is to establish a panel of qualified suppliers, for the provision of Closed Circuit Television (CCTV) and access control systems for the South African Police Service (SAPS) nationally.

This specification calls for the supply delivery, installation, commissioning, warranty and training of Closed Circuit Television (CCTV) and Access Control systems for the South African Police Service (SAPS). The requirement includes maintenance and support of all systems deployed within this contract in accordance with the attached Maintenance and Support specification.

This requirement is based on the current and future needs of the South African Police Service (SAPS) inclusive of all SAPS Police stations, prioritised buildings and dedicated solutions and systems as specified in this document.

This term contract is for a **period of five years, on an as and when required basis. Please take note that the SAPS cannot guarantee any quantities.** The placement of official orders for goods and services in terms of this contract will be in accordance with the availability of funds.

**DOCUMENT FORMAT**

This document is divided into subsections viz.

1. Bid Conditions
2. Process of Establishing and using the Panel of Suppliers
3. General System Concept
4. Additional Requirements
5. System Overview
6. General Physical Requirements
7. System Components
8. Bidder Compliance and Legal Requirements
9. Standards applicable to this bid
10. Optional Maintenance Contract
11. List of Provinces (Annexure A)
12. SAPS Access Layer Site Cabling Infrastructure Standard (Annexure B)

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**SPECIFICATION TO ESTABLISH A PANEL OF QUALIFIED SUPPLIERS, FOR THE PROVISION OF CLOSED CIRCUIT TELEVISION (CCTV) AND ACCESS CONTROL SYSTEMS FOR THE SOUTH AFRICAN POLICE SERVICE (SAPS) NATIONALLY FOR A PERIOD OF FIVE (5) YEARS**

DESCRIPTION		COMPLY/ DO NOT COMPLY
1.	<b>BID CONDITIONS</b>	
1.1	<b>Completion of Bid Documents</b>	
1.1.1	Bidders shall explicitly state either "Comply" or "Do not Comply".	
1.1.2	Whenever technical parameters are specified as requirements, Bidders shall state, besides the terms according to section 1.1 above, also the numerical value(s). Numerical values shall be stated in the same units as the units of the technical parameters specified.	
1.1.3	Bidders must make sure that the values specified are not in conflict with the values found in the technical documentation accompanying the Bid reply.	
1.1.4	Bidders shall ensure that all clauses are answered individually. If no answer is stated against a clause, the clause will be regarded as DO NOT COMPLY.	
1.2	<b>Standards and SAPS Requirements</b>	
1.2.1	Bidders shall take note of all relevant standards and regulations as mentioned in this specification document. Bidders shall adhere to mentioned standards during installation and construction. Standards not mentioned in this Specification, but relevant shall be made known and will form part during construction or installation.	
1.3	<b>Indemnification</b>	
1.3.1	The SA Police Service will not be held responsible for any costs resulting in damage done to the equipment offered during testing or evaluation in accordance with this specification.	
1.4	<b>Technology</b>	
1.4.1	The Bidder shall ensure that all the equipment offered is of the latest technology and the latest available model and software release.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
1.5	<b>Training</b>	
1.5.1	<b>Technical Training</b>	
1.5.1.1	The following training must be provided by the successful bidder:	
1.5.1.1.1	Detailed technical training must be provided for selected technical personnel of the SA Police Service, at the SAPS training facility or a convenient and suitable location of the bidder <b>at the cost of the successful bidder.</b>	
1.5.1.2	The training course must cover the following curriculum in modular / outcome based format:	
1.5.1.2.1	Block diagrams for fault-finding and installation.	
1.5.1.2.2	Basic fault-finding to module level.	
1.5.1.2.3	Common faults.	
1.5.1.2.4	Assembly & disassembly of the equipment/system.	
1.5.1.2.5	Software settings and alignment.	
1.5.1.2.6	Operation and testing.	
1.5.1.2.7	Installation.	
1.5.2	<b>Training of Users</b>	
1.5.2.1	The bidder must provide user training and manuals for the identified users upon installation and sign-off of the system at the cost of the successful bidder.	
1.5.2.2	The bidder must provide remote telephonic assistance to users in use of the system by system experts from the bidder.	
1.5.2.3	Each system must be provided with a detailed user manual upon installation and sign-off of the system.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>2.</b>	<b>PROCESS OF ESTABLISHING AND USING THE PANEL OF SUPPLIERS</b>	
2.1.1	In response to this bid, bidders are required to submit an offer for all goods and services required for each complete solution. Bidders must comply with the requirements contained within this document including all engineering best practices for installations, system architecture designs and power reticulation solutions.	
2.1.2	Bidders will be required to provide demonstrations of all CCTV cameras, access control systems and all sub-systems contained within this specification. Bidders will be required to demonstrate equipment quality, the camera picture quality over different distances and conditions as well as technical competence of the bidder as per the demonstration requirement.	
2.1.3	Bidders that qualify to form part of the panel of supplier's roster will be invited to provide quotations as per the demands received by Division Technology Management Services. The quotations including all bill of materials will be as per the specified requirements and site surveys conducted.	
<b>2.2</b>	<b>Due Diligence:</b>	
2.2.1	Due diligence will be done with regard to the following areas:	
2.2.1.1	Technical quality and performance of equipment and systems offered by the bidder.	
2.2.1.2	Capacity of the bidder to provide security of SAPS information when such information is in possession of the supplier. Suppliers and sub-contractors must be PSIRA certified. Bidders must take note that the certificate must be in the name of the bidder.	
2.2.1.3	Compliance by the supplier to all applicable South African legislation relating to the supply of goods and services to the state.	
2.2.1.4	The bidders qualified staff that will form part of this bid nationally.	
2.2.1.5	The bidder's ability to provide goods and services in relation to this bid nationally.	
<b>2.3</b>	<b>Bidder Demonstration:</b>	
2.3.1	The bidders that are accepted to form part of the panel roster will be required to demonstrate the following goods and services:	
2.3.1.1	Equipment Performance Demonstration and Assessment	
2.3.1.2	Bidders are encouraged to indicate their national footprint for the ability to provide goods and services within their bid response. In the event that a bidder does not have a national footprint, bidders are requested to clearly indicate as to the various provinces that they wish and are able to bid for. Please provide a detailed list marked as <b>Annexure 'A'</b>	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
2.3.1.3	Supply of bill of materials.	
2.3.1.4	Delivery of materials.	
2.3.1.5	Development and maintenance of project plan.	
2.3.1.6	Development of an as-built document.	
2.3.1.7	Physical equipment Installation.	
2.3.1.8	Cabling installation.	
2.3.1.9	Network Equipment Installation.	
2.3.1.10	Camera installation.	
2.3.1.11	Development and maintenance of equipment inventories.	
2.3.1.12	Support to SAPS GPA Accounting Functionaries.	
2.3.1.13	Routine Maintenance Process.	
2.3.1.14	Handling of damages and failures.	
2.3.1.15	Mission Critical Components Stock Management.	
2.3.1.16	Routine System Performance assessment.	
2.3.1.17	System Performance Assessment and System Acceptance.	
2.3.1.18	Security of SAPS information as held by the supplier in accordance with the Minimum Information Security Standard (MISS).	
2.4	<b>Camera Demonstration:</b>	
2.4.1	The cameras and lenses shall be mutually compatible and compliant to open industry standards both mechanically as well as electronically. All cameras shall be Internet Protocol (IP) network compatible cameras.	
2.4.2	Bidders shall provide indoor and outdoor cameras with a minimum resolution of:	
2.4.2.1	2Mp Bullet type.	
2.4.2.2	2Mp Dome type vandal resistant.	
2.4.2.3	5Mp minimum bullet or dome and C/CS box type.	
2.4.2.4	10Mp minimum bullet or dome and C/CS box type.	
2.4.2.5	20Mp minimum bullet or dome and C/CS box type.	
2.4.2.6	2Mp PTZ Dome for use up to a 60-meter range.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
2.4.2.7	2Mp PTZ consisting of C/CS mount box camera in housing on a PTZ head for outdoor use only.	
2.4.2.8	Outdoor thermal camera with horizontal view angle of approximately 65 degrees.	
2.4.2.9	The SAPS will evaluate camera performance in accordance with SANS standards as well as through simulation of operational environments using a ROTAKIN test Target.	
2.4.2.10	Bidders shall provide ROTAKIN testing results of installations in accordance with the each project implemented.	
2.5	<b>IR Illumination:</b>	
2.5.1	The bidder shall offer a series of IR illuminators for both indoor as well as outdoor use in conjunction with the cameras offered such that supplementary IR illumination can be deployed where required in addition to internal IR illumination of the cameras.	
2.6	<b>Technical And Engineering Standards:</b>	
2.6.1	The South African Police Service requires bidders to conform to the best engineering practice for all of the requirements in this specification.	
2.6.2	Upon recommendation and in agreement with the SAPS where it is identified that the existing backup power generation is inadequate or unsuitable to provide power for the CCTV and access control systems, the SAPS may include such requirements as part of the project. Suppliers shall thus be required to provide backup power solutions in the form of diesel-powered generators, Hybrid inverters with Lithium- ion batteries, UPS and solar panels for the CCTV and access control systems.	
2.6.3	Bidders must take note that the CCTV and access control systems shall in most cases be grid powered and consist of sensitive electronic systems therefor bidders are required to provide solutions that will protect such electronic systems at all times.	
2.6.4	Bidders must provide systems that are scalable and expandable as the needs of the environment grow.	
2.6.5	The solution shall conform to the SAPS network security standards, network installation standards and cabling standards.	
2.6.6	The CCTV systems offered shall include embedded recording capabilities.	
2.6.7	Browser Access and Log In: The recorders shall have the option of remote access such that footage can be downloaded from remote workstations that are connected through the SAPS LAN network.	



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DESCRIPTION	COMPLY/ DO NOT COMPLY
2.6.8 Equipment housings shall provide security for the installed equipment by being lockable and with tamper alarms generated when unauthorised persons open equipment cabinets.	
2.6.9 Cameras, network elements and video storage equipment offered shall be designed to operate in the full range of South African natural environments including thermal range from -20°C to +60°C. Components exposed to outdoor environments shall be waterproof and shall be resistant to corrosive atmospheres.	
2.6.10 As a norm all cameras offered shall have, on camera basic image and video analytics that will provide at least motion detection, suspicious parcel detection and Number plate Recognition (ANPR).	
2.6.11 Network Video Recorders shall provide a minimum of 3 months of recorded footage at high recording quality.	
2.6.12 Hard drives used shall be continuous rated, designed and developed to be robust specifically for security or professional data centre applications.	
2.6.13 The bidder shall take note of the South African Police Service Access Layer Site Cabling Infrastructure Standard that must be adhered to for all systems implemented in accordance with this contract. The Standard document is attached as <b>Annexure 'B'</b>	
2.6.14 All CCTV building blocks, cameras, network, recording and CCTV management and review systems offered shall be ONVIF compliant.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>3</b>	<b>GENERAL SYSTEM CONCEPT</b>	
<b>3.1</b>	<b>Access Control:</b>	
3.1.1	The Access Control system is required to grant access to persons authorised to access the facilities for purposes of their daily duties, as well as for visitors who need to access the facilities for legitimate reasons.	
3.1.2	The Access Control system is required to effectively control access without obstructing service delivery.	
3.1.3	The Access Control system must keep an accurate record of all access, including date, time and identity of all persons accessing a facility or departing from such a facility.	
3.1.4	The Access Control system must identify all persons entering a facility by means of biometric fingerprint scanning as default, access cards and or identification.	
3.1.5	The Access control system must be integrated with the CCTV surveillance system and must share a database in such a manner that cross-referencing between Access Control System data and CCTV data must be available as a standard system feature including Automatic Number Plate Recognition (ANPR) analytics.	
3.1.6	The Access Control System database must be developed to interface to the SAPS PERSAL system such that access to facilities can be withdrawn from the system when employment of persons is terminated or such that access to various facilities can be granted via a central database to a collection of facilities that may be under a single command.	
<b>3.2</b>	<b>Closed Circuit Television Surveillance System:</b>	
3.2.1	The CCTV system must keep a record of all authorised access as well as activities at the facilities where the system is installed.	
3.2.2	The CCTV system must also keep a record of any unauthorised access and activities in the facilities and must generate alarm and record events before, during and after any incident that requires response.	
3.2.3	The CCTV system must be integrated to the Access Control system and must also serve as a backup evidence gathering system that will enable SAPS to effectively investigate any breach in the access of the facility.	
3.2.4	To this extent, the CCTV system must capture the facial features of every person that is granted access to the facility with a quality that is able to provide absolute identification of the person in question. This quality is known as forensic quality facial identification.	

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	DESCRIPTION	COMPLY/ DO NOT COMPLY
3.2.5	Forensic quality facial identification cameras must be installed at all entry and exit points of the facility.	
3.2.6	The normal routes that people follow in the facilities such as passages and foyers will be covered by static camera coverage that will enable track and trace the movement of any person to all rooms/facilities within the building or premises.	
3.2.7	This will allow the SAPS to connect the image captured at any entry point to the actions of the person under surveillance at any point in the building by means of track and tracing the movement of the person from the entry point to any point in the facility where identity of the person may be in question.	
3.2.8	Community service centre security: CCTV coverage must be provided as part of the system specifically to cover access routes to the community service centre. This CCTV footage must be displayed live at all times in the community service centre to enable SAPS members on duty to have situational awareness of persons approaching the community service centre.	
3.3	<b>Image Analytics:</b>	
3.3.1	SAPS CCTV systems are required to make effective use of image analytics. Analytics available in the systems must include the following as a minimum:	
3.3.1.1	Intelligent Motion Detection able to minimise false alarms in open spaces where wind induced motion of plants etc. is present.	
3.3.1.2	Facial Recognition with a capability to generate an alert to security personnel when specific persons enter or attempt to enter the facility.	
3.3.1.3	Automatic Number Plate Recognition.	
3.3.1.4	The CCTV system used must have a set of well-developed image analytics capabilities. The system must allow for the addition of custom image analytics modules that the SAPS may source or may self-develop.	
3.4	<b>CCTV Quality Levels:</b>	
3.4.1	The SAPS defines for purposes of this specification the following 4 quality levels:	
3.4.1.1	<p><b>Monitor:</b> Images conforming to this quality level must allow SAPS to follow the motion of all extremities of the human body and must enable SAPS to identify at least race and gender of persons appearing in the images.</p> <p>The surveillance material must at least provide 12 frames per second of images that will enable motion to be followed fluently and must provide at least 250 pixels in height over the average length of a person (1.6 Meter).</p>	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
3.4.1.2	<b>Recognition Quality:</b> Images conforming to recognition quality must achieve facial recognition on the standard test faces of the ROTAKIN CCTV evaluation target. The system must capture the facial features of person with adequate fidelity to achieve better than 97% recognition of the ROTAKIN faces.	
3.4.1.3	<b>Forensic Identification Quality:</b> Is defined as an image in which micro level features on the face, which includes scars, moles, wrinkles and other facial marks are effectively captured. This level of quality will enable identification of an individual to the degree that all reasonable doubt over identity of the individual is removed.	
3.4.1.4	<b>Identification of specified Items:</b> Is defined as a quality level engineered in a specific project for a specified purpose. Examples would be the optical capturing of the numbering and writing on sealed evidence containers such as the evidence bags used by SAPS.	
3.5	<b>Private Spaces Within The Secured Area:</b>	
3.5.1	Within the secured area, private spaces such as ablution facilities and offices where sensitive materials are not handled will not be covered. The camera coverage must however be of adequate quality to ensure facial recognition of persons entering or leaving these private and identification of objects that are carried in and out of these areas.	
3.6	<b>Storage Of CCTV Data</b>	
3.6.1	The CCTV data stored is required to facilitate investigation of incidents that occur in the SAPS facilities. Incidents may be identified immediately or may only be identified later. Storage of CCTV data in the case of buildings and premises is required as a norm for at least six weeks or if otherwise specified.	
3.6.2	Storage must be designed such that quality is not compromised. Footage quality must be stored in the same quality such that review at any later date will achieve the same operational result.	
3.7	<b>Network:</b>	
3.7.1	The architecture design and implementation of the system must have no negative impact on the existing SAPS data network within the building/facility.	
3.7.2	To achieve this it is recommended that the CCTV and Access Control System must be installed on an independent separate network infrastructure.	
3.7.3	This network must be specifically designed to deliver transmission services that are optimised for its purpose.	

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	DESCRIPTION	COMPLY/ DO NOT COMPLY
3.7.4	This network must provide low latency, specifically from Pan Tilt Zoom camera feeds, such that operators are not impeded in operational efficiency through undesirable networking phenomena.	
3.7.5	Remote access to the CCTV and Access Control System must be achieved by a single port connected to the SAPS internal Local Area Network (LAN) in the building.	
3.7.6	This port must be connected via a computer that provides access control to the CCTV and Access Control management system. The Video Management System must host the profiles of the users that are granted remote access.	
3.7.7	Different profiles must be created for different levels of remote access to the system. Control room system operator/monitor users may have only viewing rights, whereas SAPS technical personnel may have setup and configuration rights.	
3.7.8	The network transmission capacity must be designed with the transmission capacity equal to the maximum data rate that can be generated with all cameras in the systems actively streaming at maximum data rate level simultaneously.	
3.8	<b>Control Room:</b>	
3.8.1	The control room to be assembled at each site will act as the monitoring point where security personnel will monitor the CCTV and Access Control data on a 24 hour basis and where necessary, react to emergency situations.	
3.8.2	The security system in the control room must be able to give the security personnel control of the PTZ camera within the system to be able to follow incidents and provide guidance to security personnel out in the terrain.	
3.8.3	A minimum of 40" full HD screens mounted in a video wall configuration must be installed to display all cameras within the system. The number of active video feeds enabled will determine the amount of screens required.	
3.8.4	All cameras installed as part of the system must be visible on the video wall at all given times.	
3.8.5	The control room must be equipped with all of the necessary equipment that renders a fully functional control room environment such as Video Management software (VMS), servers, cables, electricity supply systems, cooling/air conditioning systems and back-up power supply systems.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>4</b>	<b>ADDITIONAL REQUIREMENTS</b>	
<b>4.1</b>	<b>Installation signoff of the System</b>	
4.1.1	The CCTV design shall be signed off as accepted by SAPS appointed Project Engineer before installation of the system can begin. No work may begin on site without design approval from SAPS and a site kick off meeting.	
4.1.2	Any changes to the design made during the course of installation shall be approved by the Project Engineer via a project change request (PCR) or a formal site instruction and reflected in the as-built design documents.	
<b>4.2</b>	<b>Commissioning of the system</b>	
4.2.1	Commissioning of the System includes adjusting all necessary settings to ensure that the installation meets the CCTV functional requirements. This requires explicit testing of the system including the simulation of incidents in all lighting conditions (sunrise, full sun, sunset, night). Commissioning tests include testing the interface between the CCTV system and the security control room (off site and on site).	
4.2.2	The site will not be accepted until Site Acceptance Tests prove that the installation meets all requirements as set out in the site-specific functional requirements.	
4.2.3	If the Site Acceptance Tests are not met after corrections have been made, the relevant contract defects process shall be followed.	
<b>4.3</b>	<b>Documentation</b>	
4.3.1	On completion of the installation the bidder shall provide SAPS with the following documentation:	
4.3.1.1	Detailed as-built drawings of the installation including the following:	
4.3.1.1.1	A site layout diagram indicating the position of all equipment and devices installed.	
4.3.1.1.2	A complete cable block and wiring diagram with cable & wire numbers	
4.3.1.1.3	A site layout diagram indicating the position of all equipment and devices installed	
4.3.1.1.4	Coverage plots of the areas covered by intruder detectors and a list and description of each zone.	
4.3.1.1.5	Coverage plots of the areas covered by cameras' fields of view	
4.3.1.1.6	Alarm system zones	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
4.3.1.2	Training Manuals for the CCTV surveillance system must include the following:	
4.3.1.2.1	An overview of the CCTV and intruder detection system, including the equipment block schematic	
4.3.1.2.2	The functions and features of each item of equipment.	
4.3.1.2.3	Individual operating instructions for each item of equipment.	
4.3.1.2.4	Detailed operating instructions for all modes of operation of the CCTV system.	
4.3.1.2.5	Manufacturer's technical and maintenance specifications for each item of equipment installed.	
4.3.2	All documents shall be provided in soft and hard copy. Drawings softcopies shall be provided in as CAD files in .dwg format. Other soft copy documents shall be provided in a pdf format during the submission of the bid document.	
4.3.3	All system and camera settings shall be recorded, so that they can be confirmed and reproduced as required.	
4.3.4	Where possible these settings and configurations shall consist of backup files which can be loaded onto the relevant equipment in the case of malfunction or replacement.	
4.3.5	Where the equipment does not allow for softcopy backups, an electronic document listing the settings may be provided.	
4.4	<b>Installation</b>	
4.4.1	To ensure quality workmanship and sound installation practice, it is imperative that the bidder adheres to the specifications and standards supplied by SAPS.	
4.4.2	The SAPS shall accept only experienced CCTV and access control installers for this bid. Bidders shall provide CV's for all installation technicians indicating their relevant experience with references.	
4.4.3	All installers shall adhere to the Occupational Health and Safety Act of 1970 when installing the system. Contractors and sub-contractors shall meet the requirements specified by SAPS Health and Safety specifications.	
4.4.4	All equipment shall have a mechanical earth connected to the site earth according to SAPS standards.	
4.4.5	All equipment shall be designed and specified for a minimum operational life of 5 years under the prevailing environmental conditions unless otherwise agreed to by SAPS.	

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DESCRIPTION	COMPLY/ DO NOT COMPLY
4.4.6 All equipment shall be labelled in accordance with the design diagrams, with durable, weather resistant labels.	
4.4.7 Cable and wiring marking shall be in accordance with SAPS standard, Standard for Wiring and Cable Marking.	
4.4.8 All cables and wires shall be marked with a unique identification, at all terminations, in accordance with the cabling and wiring diagrams supplied.	
4.4.9 All of the splices and connections shall be mechanically secure and shall provide electrical contact without stress on connections and terminals.	
4.4.10 Any hole that insulated conductors pass through shall be provided with a smooth, rounded bushing, or shall have smooth, rounded surfaces upon which the insulated conductors may bear.	
4.4.11 Wire-ways shall be smooth and free from sharp edges or moving parts that may damage wiring.	
4.4.12 Terminal blocks shall be in accordance with SAPS Access Layer Site Cabling Infrastructure Standards as indicated in Par 2.6.13.	
4.4.13 The CCTV installation shall be signed off by the SAPS's appointed Project manager for each project implemented under this contract.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>5</b>	<b>SYSTEM OVERVIEW</b>	
<b>5.1</b>	<b>Local Security Control Room</b>	
5.1.1	The Local Security Control Room shall be responsible for responding to alarms from sites and managing incidents on site using the CCTV data.	
5.1.2	The connection between the Local Security Server and the Local Security Control Room shall be a dedicated link (e.g., a Diginet line / microwave link). There may also be a backup links directly between the Local Security Control Room and sites if this is deemed necessary.	
<b>5.2</b>	<b>National Security Control Room</b>	
5.2.1	SAPS intends to establish a SAPS National Security Control Centre from which selected security incidents can be managed and monitored. A communication link would be established from the local security servers to the National Control Centre server via the SAPS LAN. It shall be possible to escalate events from the Local Security Control Centre to the National Security Control Centre.	
<b>5.3</b>	<b>Engineering and Operational Access</b>	
5.3.1	SAPS engineers shall be able to connect to the Local Security Server remotely from the SAPS Engineering LAN to perform maintenance and administrative tasks on the system.	
5.3.2	Members of SAPS shall be able to connect to the security server remotely from the SAPS corporate network in order to perform operational tasks (check-up time of systems, confirm sites are being armed etc.) and investigations (view footage and alarm logs etc.).	
5.3.3	This remote access shall be restricted to those who have explicitly been granted access rights.	
<b>5.4</b>	<b>Warranty and Certification</b>	
5.4.1	Contractor shall provide proof that technicians have been trained and certified to install and configure the CCTV equipment specified.	
5.4.2	There shall be an agreement from the OEM that the OEM supports the Bid offering and will continue to support the product if the Bidder defaults.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>6</b>	<b>GENERAL PHYSICAL REQUIREMENTS</b>	
<b>6.1</b>	<b>Environmental conditions</b>	
6.1.1	All equipment shall be designed for application in 'special' environmental conditions as follows:	
6.1.1.1	Ambient air temperature: -25 °C to +55 °C (installed indoors); or -25 °C to +70 °C (installed outdoors, within enclosures).	
6.1.1.2	Altitude: < 2 500 m	
6.1.1.3	Pollution: Location in urban areas with industrial activities and without special precautions to minimize the presence of sand or dust	
6.1.1.4	Relative humidity (24h average): 98%	
6.1.1.5	All outside equipment including fasteners and supports should be corrosion resistant and appropriate for the environment on site	
6.1.1.6	After fabrication, metal surfaces including doors and removable covers shall be prepared and finished with corrosion protection.	
6.1.1.7	Paintwork damaged during transport and delivery shall be made good as per manufacturer repair specification at no cost to SAPS. If site re-painting is necessary, the equipment and labels shall be carefully masked, and any overpaint that occurs in spite of the masking must be removed. If the damage is not repairable, SAPS reserves the right to return the equipment.	
6.1.1.8	All nuts, bolts and washers use for the construction to be stainless steel. Screws can be cadmium plated.	
6.1.1.9	Further environmental protection may be needed	
6.1.1.10	Convection cooled (fan-less) equipment are strongly preferred. If fans are used, they shall be speed controlled and the electronics shall be isolated and conformal coated to protect against dust ingress.	
<b>6.2</b>	<b>General Electrical Requirements</b>	
6.2.1	The expected life of equipment under conditions specified shall be a minimum of 5 years.	
6.2.2	All power cable shall be appropriately sized to ensure voltage drops along cable runs remain within the operating specifications of the equipment being powered.	
6.2.3	All equipment shall be effectively protected against overvoltage due to lightning strikes or switching surges by strategically placed surge arrestors	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
6.2.4	Cable selection and routing shall always be done in such a way that operation of equipment is not affected by electrical interference. This may be achieved by separating power and communications cables, shielding of cables, or a combination of the two.	
6.2.5	Equipment shall not be affected by electrostatic discharges that are applied directly to the equipment or to metal objects in the proximity of the equipment: All electronic equipment shall be a class 2 device as specified in IEEE 1613-2009, 8 Electrostatic discharge tests	
6.3	<b>Cable routes in equipment rooms</b>	
6.3.1	Auxiliary power cables shall be laid in the control room power rack, away from communication cables. No conduit is needed on the rack.	
6.3.2	Communications cables should use communications racks if available. No conduit is needed on the rack.	
6.3.3	Where cable racks are not available, cables may be routed along the wall or in PVC sleeves in the cable trench, at SAPS' discretion.	
6.3.4	Where security cables are routed along the walls, they shall be in metal or plastic conduit.	
6.3.5	Auxiliary power and communication cables shall be in separate conduit.	
6.3.6	Where possible, security cables shall not be routed in the ceiling.	
6.3.7	If fibre optic leads are used, they should be protected using Sprague tubing when entering and exiting cable trays or panels.	
6.3.8	Regional or site-specific requirements may supersede the above cable route requirements.	
6.4	<b>Outdoor Cables and Trenching</b>	
6.4.1	Security cable should share control cable or lighting trenches where possible, where this is not possible, security cable trenches shall be dug.	
6.4.2	The security cables shall enter the control room through the same path as control cables.	
6.4.3	Security cable trenches shall be 0,5 m deep	
6.4.4	All cables shall be armoured or alternatively laid in appropriately sized plastic / bosal conduit (whether in cable trenches or dedicated security trenches. The appropriate bends and connectors must be used for the conduit, according to manufacturer's instructions.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
6.4.5	Security systems communication cables and auxiliary power cables shall not be laid in the same conduit unless using fibre communication or DC power.	
6.4.6	Drilled holes in junction boxes shall be kept to a minimum and shall be appropriately sealed to prevent water ingress.	
6.4.7	Care shall be taken when working with fibre optic cable to ensure the fibre is not damaged during installation or maintenance.	
6.4.8	After the cables have been laid, the trenches must be backfilled with the original soil in layers not exceeding 300mm and properly compacted. Once the backfill is completed, the stone shall be replaced appropriately.	
6.5	<b>Security Cabinet</b>	
6.5.1	The security cabinet/panel shall contain all the control equipment of the intruder detection and the surveillance system (network / digital video recorder (NVR), communication equipment, public address (PA) etc.). The cabinet shall be housed within a suitable access-controlled equipment room.	
6.5.2	Cabinet shall be a freestanding swing frame panel or a freestanding server cabinet.	
6.5.3	Cabinet shall be designed so as to limit dust ingress which could affect effective operation of equipment.	
6.5.4	All points of cable entry shall be through glands so as to secure the cables.	
6.5.5	Access to the inside of the cabinet shall be restricted and controlled by means a physical lock to which only authorized security personnel and SAPS employees from TMS shall have access. Cabinet shall be alarmed for tampering and remain armed when main alarm system is disarmed. This is subject to regional requirements.	
6.5.6	Cabinet design shall take into consideration airflow and heat distribution. Equipment shall be laid out such that units that generate the most heat is at the top.	
6.5.7	There shall be a dedicated Aux power supply distribution module with a suitably sized incomer isolator and suitably sized load MCBs per piece of equipment	
6.5.8	The incomer supply DB MCB for this module must be correctly sized to protect the incomer cable in order to prevent nuisance trips.	
6.5.9	Cables shall be neatly routed in trunking.	
6.5.10	Cable ties or similar shall be used for cable management.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
6.5.11	Where possible equipment in the security cabinet shall be 19-inch rack	
6.5.12	Equipment or connection accessed regularly shall be accessible from the front of the panel or shall be wired to a terminal rack accessible from the front.	
6.5.13	Equipment shall be suitably earthed to the cabinet, and the cabinet shall be earthed to the substation earth.	
6.5.14	SAPS shall approve the layout design before the cabinet is populated.	
6.6	<b>Backup Power Supply</b>	
6.6.1	The responsible SAPS project manager shall be consulted on a per site basis to determine which power supply system will be used and to allocate connection on the main Distribution Board.	
6.6.2	The supply shall include all possible options as mentioned in 2.6.2 of this document.	
6.6.3	The standing time for backup power is 12 hours at sites within 200kms of a responsible SAPS section, 18 hours at sites more than 200kms from a responsible SAPS section.	
6.6.4	SAPS requires a complete backup power system made up of Hybrid Inverters (5KVa/ 8KVa) with solar capabilities (MPPT), Lithium Iron phosphate Batteries of at least 5.12 KWh. As per the attached specification 6.4.8. The backup system must allow for capacity expansion if and when required. The system must be of similar quality to the following brands: <ul style="list-style-type: none"> <li>Inverters: Victron, Mecer, ACDC, Sunsynk, Deye etc. With at least a 5 year guarantee.</li> <li>Lithium Iron phosphate Batteries: Hubble, Dyness, Sunsynk, N energy, Volta, Shoto etc. With at least a 10 year guarantee.</li> </ul>	
6.6.5	The system shall have remote Management connection capabilities not limited to the following interfaces: RJ 45, RS 232, Wi-Fi etc.	
6.6.6	The system must be supplied with all accessories for a complete installation including all circuit breakers, cabling, Distribution board (DB) with change-over, DC fuses with holders, buss-bar controller and mounting brackets to allow for a fully operational system.	
6.6.7	The system must be installed in accordance to applicable SANS standards and SAPS cabling standards.	
6.6.8	A certificate of compliance (COC) must be provided for all installations.	



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DESCRIPTION		COMPLY/ DO NOT COMPLY
6.6.9	<p>The SAPS requires that the backup power system provides power to the following essential areas and or equipment:</p> <ul style="list-style-type: none"> <li>• Network server room</li> <li>• CSC centre lights and plug point for the desktop computer (converted to LED bulbs)</li> <li>• CCTV and access control systems including displays.</li> <li>• Crime office lights</li> <li>• SAPS base Radio</li> <li>• Perimeter lighting surrounding the station including the main entrance and exit (LED floodlights)</li> <li>• All lights in cells</li> </ul>	
6.7	<b>220V AC Supply</b>	
6.7.1	The security system shall be powered by 220V AC supplied from the site's AC supply with an appropriately sized backup Power Supply. With this option, the requirements above shall still be complied with.	
6.7.2	Any power backup system used for the CCTV system shall provide as a minimum backup for the time specified in section above.	
6.7.3	The system shall have a power failure intruder detection indication that shall be sent through to the security control room should the AC supply be interrupted.	
6.7.4	The system may have an additional power failure alarm indication that shall be sent through to SAPS network control should the AC supply be interrupted.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>7</b>	<b>SYSTEM COMPONENTS</b>	
<b>7.1</b>	<b>Video Management Software (VMS)</b>	
7.1.1	The VMS should support a wide range of IP cameras from various manufacturers to ensure seamless integration with the existing camera networks.	
7.1.2	The system shall offer an automatic camera discovery feature for quick and hassle-free camera setup.	
7.1.3	The VMS shall have an easy-to-use and user-friendly interface for efficient navigation and camera management.	
7.1.4	Must have embedded support for different user profiles and permissions to restrict access based on user responsibilities.	
7.1.5	Multi-Platform Access: The VMS should be accessible from various platforms, including web browsers, desktop applications, and mobile devices.	
7.1.6	The VMS shall allow simultaneous live monitoring of multiple camera feeds in a multi-screen view.	
7.1.7	The VMS shall have seamless playback of recorded video footage with options for fast-forward, rewind, and frame-by-frame analysis.	
7.1.8	Shall support continuous 24/7 video recording from all cameras.	
7.1.9	Shall have efficient video compression (e.g., H.264, H.265) to optimize storage utilization without compromising video quality.	
7.1.10	The VMS shall offer flexible storage management options, including support for network-attached storage (NAS) and network video recorders (NVRs).	
7.1.11	Must have built-in redundancy and failover mechanisms to ensure data integrity and to prevent data loss.	
7.1.12	The VMS shall have configurable event triggers based on motion detection, audio detection, and other analytics features.	
7.1.13	Shall be equipped with real-time email or push notifications to designated personnel in case of security breaches or predefined events.	
7.1.14	The VMS shall be scalable to accommodate future expansion in terms of camera additions and storage requirements.	
7.1.15	The VMS shall have the capability to integrate with third-party security systems, access control, and alarm systems.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.1.16	The VMS shall have robust security measures, including encryption, user authentication, and secure communication protocols, to protect against unauthorized access and data breaches.	
7.1.17	The VMS shall have video analytics features, such as people counting, object detection, and facial recognition.	
7.2	<b>Network Video Recorder (NVR) for Small to Medium size CCTV Installations</b>	
7.2.1	The Network Video Recorder (NVR) required shall have a minimum of 16 camera channels.	
7.2.2	Shall support for H.264 or H.265 video compression to ensure efficient storage utilization.	
7.2.3	The NVR shall support various recording resolutions, including at least Full HD (1080p) and preferably higher resolutions.	
7.2.4	Must be capable of accommodating multiple hard drives with sufficient storage capacity for continuous video recording and data retention as per industry standards.	
7.2.5	The NVR shall support Power over Ethernet (PoE) to simplify camera installation and reduce cabling complexity.	
7.2.6	Shall have built-in features or support for remote access, allowing authorized users to view live streams and playback recorded footage via web browsers or dedicated mobile applications.	
7.2.7	The NVR shall have an intuitive and user-friendly interface for easy navigation, configuration, and system management.	
7.2.8	Must have compatibility with a wide range of Internet Protocol (IP) cameras from different manufacturers.	
7.2.9	The NVR shall have multiple network ports for seamless integration into existing network infrastructure.	
7.2.10	Shall have video analytics features such as motion detection, line crossing, and intrusion detection.	
7.2.11	Integration with external alarm systems and the ability to trigger alerts and notifications in case of suspicious activities.	
7.2.12	Support for RAID configurations and automated data backup options to ensure data integrity and continuity in case of hardware failure.	
7.2.13	Scalability: A system that allows for future expansion in case camera requirements grow.	



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DESCRIPTION		COMPLY/ DO NOT COMPLY
<b>7.3</b>	<b>Servers for Large CCTV Installations</b>	
7.3.1	Number of Camera Channels Supported: Minimum 80 camera channels per server.	
7.3.2	Processing Power: High-performance server hardware with multi-core processors and sufficient RAM to handle video processing and storage demands efficiently.	
7.3.3	Video Management Software: Robust video management software that can handle the concurrent streaming and recording of multiple camera feeds.	
7.3.4	Storage Capacity: Capable of accommodating multiple high-capacity hard drives or a scalable storage solution to cater to continuous video recording and data retention as per industry standards.	
7.3.5	Redundancy and Failover: Built-in redundancy features, such as RAID configurations and redundant power supplies, to ensure data integrity and minimize downtime in case of hardware failures.	
7.3.6	Network Connectivity: Multiple network ports with high-speed connectivity to support the bandwidth requirements of numerous cameras and remote access.	
7.3.7	Remote Access: Built-in features or support for remote access, allowing authorized users to view live streams and playback recorded footage via web browsers or dedicated mobile applications.	
7.3.8	Scalability: The ability to expand storage and processing capabilities as camera requirements may grow in the future.	
7.3.9	Video Analytics: CPU/GPU capabilities to cater for video analytics features such as motion detection, people counting, and facial recognition to enhance security and efficiency.	
7.3.10	User Management: Advanced user management features, including role-based access control, to regulate user permissions and ensure system security.	
7.3.11	Data Backup: Automated data backup options to ensure data safety and recovery in case of unexpected events.	
<b>7.4</b>	<b>PTZ Camera</b>	
7.4.1	PTZ Camera with minimum 23x Optical Zoom:	
7.4.2	Resolution: Minimum 2 Megapixels (MP)	
7.4.3	Lens: Vari-focal lens with adjustable focal length	
7.4.4	Field of View: Adjustable based on focal length	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.4.5	Pan Range: 360 degrees continuous rotation	
7.4.6	Tilt Range: -90 to +90 degrees	
7.4.7	Pre-set Positions: 150 programmable pre-set positions	
7.4.8	Infrared (IR) Range: Minimum 100 meters	
7.4.9	Mounting: Ceiling mount or pole mount	
7.4.10	Pan-Tilt-Zoom functionality, Pre-set tours, High-speed tracking	
7.4.11	IP66 weatherproof rating,	
7.4.12	Minimum Illumination: 0.01 lux for clear images in low-light conditions	
7.4.13	Image Enhancement: Wide Dynamic Range (WDR) for enhanced image quality in high-contrast scenes	
7.4.14	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	
7.4.15	Frame Rate: 30 frames per second (fps) for smooth video playback	
7.4.16	ONVIF Profile S	
7.4.17	Power: PoE (Power over Ethernet) or 24VDC/24VAC power options	
7.5	<b>Indoor Dome</b>	
7.5.1	Indoor Mini Dome Camera:	
7.5.2	Resolution: High Definition (HD), minimum 1080p	
7.5.3	Lens: Fixed lens with a wide-angle view	
7.5.4	Field of View: Minimum 90 degrees	
7.5.5	Mounting: Ceiling mount	
7.5.6	Wide Dynamic Range (WDR)	
7.5.7	IP66 weatherproof rating,	
7.5.8	Minimum Illumination: 0.01 lux for clear images in low-light conditions	
7.5.9	IR Range: Built-in infrared (IR) LEDs with a range of 30 meters for night vision	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.5.10	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	
7.5.11	Frame Rate: 30 frames per second (fps) for smooth video playback	
7.5.12	ONVIF Profile S	
7.5.13	Power: PoE (Power over Ethernet) or 12V DC power options	
7.6	<b>Outdoor Dome</b>	
7.6.1	Outdoor Dome Camera shall have a Vari-focal Lens	
7.6.2	Resolution: High Definition (HD), minimum 2MP	
7.6.3	Lens: Vari-focal lens with adjustable focal length	
7.6.4	Field of View: Adjustable based on focal length	
7.6.5	Infrared (IR) Range: Minimum 30 meters, IR-cut filter	
7.6.6	Mounting: Wall mount or ceiling mount	
7.6.7	IP66 weatherproof rating	
7.6.8	Minimum Illumination: 0.01 lux for clear images in low-light conditions	
7.6.9	IR Range: Built-in infrared (IR) LEDs with a range of 30 meters for night vision	
7.6.10	Image Enhancement: Wide Dynamic Range (WDR) for enhanced image quality in high-contrast scenes	
7.6.11	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	
7.6.12	Frame Rate: 30 frames per second (fps) for smooth video playback	
7.6.13	ONVIF Profile S	
7.6.14	Power: PoE (Power over Ethernet) or 12V DC power options	
7.7	<b>Bullet</b>	
7.7.1	Outdoor Bullet Camera with Vari-focal Lens:	
7.7.2	Resolution: High Definition (HD), minimum 2MP	
7.7.3	Lens: Vari-focal lens with adjustable focal length	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.7.4	Field of View: Adjustable based on focal length	
7.7.5	Infrared (IR) Range: Minimum 30 meters with IR-cut filter	
7.7.6	Mounting: Wall mount or pole mount	
7.7.7	IP66 weatherproof rating	
7.7.8	Image Enhancement: Wide Dynamic Range (WDR) for enhanced image quality in high-contrast scenes	
7.7.9	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	
7.7.10	Frame Rate: 30 frames per second (fps) for smooth video playback	
7.7.11	ONVIF Profile S	
7.7.12	Power: PoE (Power over Ethernet) or 12V DC power options	
7.8	<b>Automatic Number plate Recognition (ANPR) Camera Systems</b>	
7.8.1	<b>Fixed Mount ANPR Camera System</b>	
7.8.1.1	ANPR Bullet Camera	
7.8.1.2	Resolution: High Definition (HD), minimum 1080p	
7.8.1.3	Lens: Varifocal lens with adjustable focal length	
7.8.1.4	Field of View: Adjustable based on focal length	
7.8.1.5	Infrared (IR) Range: Minimum 30 meters	
7.8.1.6	Mounting: Wall mount or pole mount	
7.8.1.7	Automatic Number Plate Recognition (ANPR) capabilities, IR-cut filter	
7.8.1.8	IP66 weatherproof rating,	
7.8.1.9	Minimum Illumination: 0.01 lux for clear images in low-light conditions	
7.8.1.10	IR Range: Built-in infrared (IR) LEDs with a range of 30 meters for night vision	
7.8.1.11	Image Enhancement: Wide Dynamic Range (WDR) for enhanced image quality in high-contrast scenes	
7.8.1.12	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.8.1.13	Frame Rate: 30 frames per second (fps) for smooth video playback	
7.8.1.14	ONVIF Profile S	
7.8.1.15	Power: PoE (Power over Ethernet) or 12V DC power options	
7.8.2	<b>Vehicle Mount ANPR Camera System</b>	
7.8.2.1	The camera shall have a minimum resolution of 5MP	
7.8.2.2	Automatic Number Plate Recognition (ANPR) capabilities, IR-cut filter	
7.8.2.3	Shall have at least an IP66 weatherproof rating,	
7.8.2.4	Minimum Illumination: 0.01 lux for clear images in low-light conditions	
7.8.2.5	IR Range: Built-in infrared (IR) LEDs with a range of at least 20 meters for night vision	
7.8.2.6	Image Enhancement: Wide Dynamic Range (WDR) for enhanced image quality in high-contrast scenes	
7.8.2.7	Video Compression: H.264 and H.265 video compression for efficient storage and transmission of video footage	
7.8.2.8	Frame Rate: at least 25 frames per second (fps) for smooth video playback	
7.8.2.9	ONVIF Profile S	
7.8.2.10	Must have password protection.	
7.8.2.11	The camera shall have at least the following interfaces:	
7.8.2.11.1	RJ45 10M/100M Ethernet port,	
7.8.2.11.2	Power plug, alarm in/out	
7.8.2.12	The solution must be supplied with a mobile video recorder.	
7.8.2.13	The recorder must have HD encoding and decoding.	
7.8.2.14	Must be able to live stream all footage via an LTE or 3/4G network	
7.8.2.15	Must have Global Positioning System (GPS) capabilities.	
7.8.2.16	Must be able to withstand heavy vibrations and shall have anti-corrosion properties.	
7.8.2.17	The video recorder shall have at least four (4) PoE camera channels.	



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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.8.2.18	Shall have an encoding resolution of at least 720P	
7.8.2.19	Shall have HDD/SDD storage capabilities with the SD card up to 256GB	
7.8.2.20	The unit shall have Wi-Fi capabilities, 4G for connection to the local cellular network.	
7.9	<b>360 Degree Fisheye</b>	
7.9.1	Image Sensor: High-resolution image sensor for clear and detailed video capture	
7.9.2	Lens: Panoramic fisheye lens to provide a full 360-degree field of view without any blind spots.	
7.9.3	Video Resolution: High-definition video resolution minimum 5MP to ensure clear and sharp images.	
7.9.4	Video Compression: Support for efficient video compression formats like H.264 or H.265 to optimize storage usage.	
7.9.5	Frame Rate: At least 25 frames per second	
7.9.6	Built-in Microphone: The camera should have an integrated microphone to capture audio within the camera's vicinity.	
7.9.7	Audio Compression: Support for audio compression formats to maintain audio quality while minimizing data usage.	
7.9.8	Infrared (IR) Illumination: Built-in IR illuminators to provide clear video footage in low-light or night-time conditions.	
7.9.9	Minimum Illumination: The camera should have low-light capabilities with a minimum required illumination level.	
7.9.10	ONVIF Profile S	
7.9.11	Ethernet Port: The camera should have an Ethernet port for stable network connectivity.	
7.9.12	PoE Support: Preferably, support for Power over Ethernet (PoE) to simplify installation and reduce cabling requirements.	
7.9.13	Ceiling or Wall Mount: The camera should be mountable on both ceilings and walls for flexible installation.	
7.9.14	Camera Management: Intuitive software for camera configuration, settings adjustments, and firmware updates.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.9.15	Video Analytics: Support for video analytics features, such as motion detection, tampering detection, and object tracking.	
7.9.16	Compatibility with various video management systems and network video recorders.	
7.10	<b>Body Worn Camera</b>	
7.10.1	High Definition (HD) video resolution, preferably 1080p or higher, to ensure clear and detailed video footage.	
7.10.2	Support for adjustable video quality settings to optimize storage usage.	
7.10.3	Wide-angle lens with a minimum FOV of 120 degrees to capture a broader perspective.	
7.10.4	Infrared (IR) illumination or low-light sensitivity to enable clear video recording in dark or low-light conditions.	
7.10.5	Built-in microphone to capture clear audio in conjunction with video footage.	
7.10.6	Noise reduction and echo cancellation to ensure accurate audio recording, even in noisy environments.	
7.10.7	Ample internal storage capacity (preferably at least 64GB) for extended video recording sessions.	
7.10.8	Support for removable and expandable storage options such as micro SD cards.	
7.10.9	Advanced data management features to manage files efficiently, including the ability to categorize and tag recordings.	
7.10.10	Rugged and durable construction with an IP67 or higher rating for dust and water resistance.	
7.10.11	Shockproof design to withstand accidental drops and impacts. Drop test rating to be stated.	
7.10.12	Compact and lightweight form factor for comfortable wearing over extended periods.	
7.10.13	Long battery life with a minimum of 8 hours of continuous recording to support extended shifts.	
7.10.14	Removable and rechargeable battery for easy replacement and continuous operation.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.10.15	Built-in LCD screen or status indicators for easy access to camera settings and battery level. User-friendly interface for simple operation and quick access to recording controls.	
7.10.16	One-touch recording activation for immediate and discreet recording initiation.	
7.10.17	Additional options for automated recording triggers, such as when the camera detects sudden movement or when an external accessory (e.g., gun holster) is activated.	
7.10.18	Wi-Fi and Bluetooth connectivity for wireless data transfer and remote control capabilities.	
7.10.19	USB interface for data transfer and battery charging.	
7.10.20	LTE / 3G connectivity	
7.10.21	GPS tracking for location of the body worn camera.	
7.10.22	GPS functionality to provide geolocation data for recorded video footage.	
7.10.23	Multiple mounting options, including secure clips or straps, for flexible and comfortable attachment to clothing or equipment.	
7.10.24	Pre-recording buffer to capture several seconds of video before the record button is pressed ensuring critical moments are not missed.	
7.10.25	Post-recording buffer to continue recording a few seconds after the recording is stopped, preventing accidental cut-offs.	
7.10.26	Advanced encryption methods to secure recorded data and prevent unauthorized access.	
7.10.27	Compatibility with various video management systems for seamless integration into existing surveillance infrastructure.	
7.10.28	Optional evidence management software to efficiently manage and catalogue recorded video footage.	
7.10.29	Available docking station for video footage retrieval and body-worn camera charging.	
7.10.30	Please ensure that the body-worn camera complies with relevant privacy laws and regulations and consider any additional requirements specific to organizational needs.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.11	<b>Vehicle Mounted Camera</b>	
7.11.1	The camera must be of High Definition (HD) video resolution, preferably 1080p or higher, to ensure clear and detailed video footage.	
7.11.2	Support for adjustable video quality settings to optimize storage usage.	
7.11.3	Wide-angle lens with a minimum FOV of 120 degrees to capture a broad perspective of the vehicle's surroundings.	
7.11.4	Infrared (IR) illumination or low-light sensitivity to enable clear video recording in dark or low-light conditions.	
7.11.5	Built-in microphone to capture clear audio in the vehicle's cabin or exterior environment.	
7.11.6	Noise reduction and echo cancellation to ensure accurate audio recording, even in noisy conditions.	
7.11.7	Ample internal storage capacity (preferably at least 64GB) for extended video recording sessions.	
7.11.8	Support for removable and expandable storage options such as SD cards or SSDs.	
7.11.9	Loop recording to overwrite the oldest footage when the storage is full, ensuring continuous recording.	
7.11.10	Rugged and robust construction to withstand harsh road conditions and vibrations.	
7.11.11	Weatherproof and dustproof design with an IP66 or higher rating for protection against the elements.	
7.11.12	Wide voltage input range to accommodate different vehicle power systems (e.g., 12V or 24V).	
7.11.13	Built-in backup power or capacitor to save recordings and shut down gracefully in case of power loss.	
7.11.14	Built-in GPS functionality to provide geolocation data for recorded video footage, enabling vehicle tracking and route mapping.	
7.11.15	Optional built-in impact sensors (G-sensors) to detect sudden accelerations or collisions, automatically triggering event recording and protecting critical footage.	
7.11.16	Wi-Fi and/or 4G/LTE connectivity for wireless data transfer and remote access to live video streams and recorded footage.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.11.17	USB or Ethernet interface for data transfer and firmware updates.	
7.11.18	Capability to live-stream video footage to a remote monitoring centre or cloud-based platform.	
7.11.19	User-friendly interface with a display screen or status indicators for easy access to camera settings and system status.	
7.11.20	Multiple mounting options, such as windshield or dashboard or vehicle roof mounting, for flexible installation.	
7.11.21	PTZ functions for vehicle roof mounted cameras	
7.11.22	360° Pan	
7.11.23	-10° to 90° Tilt with auto-flip	
7.11.24	Patrol scanning	
7.11.25	Pre-Recording and Post-Recording Buffer	
7.11.26	Pre-recording buffer to capture several seconds of video before an event trigger recording, ensuring critical moments are not missed.	
7.11.27	Post-recording buffer to continue recording for a few seconds after an event ends, avoiding abrupt cut-offs.	
7.11.28	Optional video analytics features, such as lane departure warnings, forward collision warnings, and driver behaviour analysis.	
7.11.29	Compatibility with fleet management systems and video management software for seamless integration into existing infrastructure.	
7.11.30	Evidence management software to efficiently manage and catalogue recorded video footage.	
7.11.31	Please ensure that the vehicle-mounted camera complies with relevant transportation regulations.	
7.12	<b>Camera Analytics – To Be Selected as Required</b>	
7.12.1	Motion Detection: Detects movement within the camera's field of view and triggers events or alerts.	
7.12.2	Tampering Detection: Detects any tampering with the camera, such as blocking or defocusing, and sends alerts.	
7.12.3	Line Crossing Detection: Triggers events when an object crosses a virtual boundary or line.	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.12.4	Intrusion Detection: Detects unauthorized entry into a specific area or zone and raises alerts.	
7.12.5	People Counting: Counts the number of people passing through a specific area or entrance.	
7.12.6	Object Detection: Identifies and tracks specific objects, such as vehicles, bags, or other items of interest.	
7.12.7	Facial Recognition: Recognizes and identifies faces in the camera's field of view, comparing them against a predefined database.	
7.12.8	License Plate Recognition (LPR): Reads and recognizes license plates from vehicles passing through the camera's coverage area.	
7.12.9	Audio Analytics: Analyses audio data to detect specific sounds or abnormal noise patterns, such as gunshots or breaking glass.	
7.12.10	Heat map Analysis: Generates heat maps to show the areas with the highest activity or foot traffic.	
7.12.11	Queue Management: Monitors and analyses queues or lines, providing real-time alerts when queues exceed defined thresholds.	
7.12.12	Loitering Detection: Identifies individuals or objects that remain stationary for an extended period in a designated area.	
7.12.13	Fall Detection: Detects falls or sudden movements indicative of accidents or incidents.	
7.12.14	Left/Removed Object Detection: Detects when an object is left behind or removed from a designated area.	
7.13	<b>Back-Up Power</b>	
7.13.1	<b>Wall-mount / Rackmount 5KV Inverter</b>	
7.13.1.1	Zero (0ms) transfer time to protect mission-critical loads such as servers and ATMs	
7.13.1.2	Removable LCD control module with multiple communications	
7.13.1.3	The system shall have remote Management connection capabilities not limited to the following interfaces: RJ 45, RS 232, Wi-Fi etc. in accordance with SAPS network security protocols.	
7.13.1.4	Supports USB On-the-Go function	
7.13.1.5	Reserved communication port for BMS (RS485, CAN-BUS or RS232)	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.13.1.6	Configurable AC/PV output usage timer and prioritization	
7.13.1.7	Pure sine wave solar inverter	
7.13.1.8	Selectable high power charging current	
7.13.1.9	Wide DC input range	
7.13.1.10	Compatible to mains voltage or generator power	
7.13.1.11	Auto restart while AC is recovering	
7.13.1.12	Overload and short circuit protection	
7.13.1.13	Smart battery charger design for optimized battery performance	
7.13.1.14	Cold start function	
7.13.1.15	Optional parallel operation up to 9 units	
7.13.1.16	Rated Power - 5000VA/5000W	
7.13.1.17	Parallel Capability - Up to 9 units	
7.13.1.18	INPUT Voltage - 230 VAC	
7.13.1.19	Voltage Range - 110-280 VAC	
7.13.1.20	Frequency Range - 50 Hz/60 Hz (Auto sensing)	
7.13.1.21	OUTPUT AC Voltage Regulation - 230 VAC $\pm$ 5%	
7.13.1.22	Output Total Harmonic Distortion (THDv) $\leq$ 3% for Linear load, $\leq$ 8 % for non-linear load	
7.13.1.23	Surge Power 6000VA for 5 sec 10000VA for 5 sec	
7.13.1.24	Efficiency (Peak) - 93 % at Line Mode, 90% at Battery Mode	
7.13.1.25	Transfer Time 0 ms	
7.13.1.26	Waveform - Pure sine wave	
7.14	<b>48VDC 4.8kWh Lithium-ion Battery</b>	
7.14.1	Battery Voltage - 48 VDC	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.14.2	Floating Charge Voltage - 54 VDC	
7.14.3	Overcharge Protection - 66 VDC	
7.14.4	SOLAR CHARGER & AC CHARGER	
7.14.5	Solar Charger type - MPPT	
7.14.6	Maximum PV Array Open Circuit Voltage - 145 VDC	
7.14.7	Maximum PV Array Power - 4000 W	
7.14.8	MPPT Range @ Operating Voltage - 60 ~ 115 VDC	
7.14.9	Maximum Solar Charge Current - 80A	
7.14.10	Maximum AC Charge Current - 60A	
7.14.11	Maximum Charge Current - 140A	
7.14.12	Communication Interface - USB/RS232/RS485/Bluetooth/Dry-contact	
7.14.13	Humidity - 5% to 95% Relative Humidity(Non-condensing)	
7.14.14	Operating Temperature - 0°C to 55°C	
7.14.15	Storage Temperature - -15°C to 60°C	
7.14.16	Must have a live span of at least 10 years	
7.15	<b>Wall-mount / Rackmount 8KV Inverter</b>	
7.15.1	Customizable status LED bar with RGB lights	
7.15.2	Touchable button with large 5" coloured LCD	
7.15.3	The system shall have remote Management connection capabilities not limited to the following interfaces: RJ 45, RS 232, Wi-Fi etc. in accordance with SAPS network security protocols.	
7.15.4	Supports USB On-the-Go function	
7.15.5	Data log events stored in the inverter	
7.15.6	Reserved communication port for BMS (RS485, CAN-BUS or RS232)	
7.15.7	Replaceable fan design for ease of maintenance	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.15.8	Configurable AC/PV output usage timer and prioritization	
7.15.9	Selectable high power charging current	
7.15.10	Compatible to Utility Mains or generator input	
7.15.11	Built-in anti-dust kit	
7.15.12	Built-in DC output for DC fan, LED bulb, router and so on	
7.15.13	Parallel operation with 6 units	
7.15.14	Rated Power - 8000VA/8000W	
7.15.15	Parallel Capability - YES, 6 units	
7.15.16	INPUT Voltage - 230 VAC	
7.15.17	Selectable Voltage Range - 170-280 VAC (For Personal Computers) ; 90-280 VAC (For Home Appliances)	
7.15.18	Frequency Range - 50 Hz/60 Hz (Auto sensing)	
7.15.19	OUTPUT AC Voltage Regulation (Batt. Mode) 230VAC $\pm$ 5%	
7.15.20	Surge Power - 16000VA 93%	
7.15.21	Transfer Time 15 ms (For Personal Computers); 20 ms (For Home Appliances)	
7.15.22	Waveform - Pure sine wave	
7.15.23	No Load Power Consumption - < 70W	
7.15.24	DC Voltage - 12 VDC $\pm$ 5%, 100W	
7.16	<b>48VDC 5.12kWh Lithium-ion Phosphate Battery</b>	
7.16.1	Battery Voltage - 48 VDC	
7.16.2	Floating Charge Voltage - 54 VDC	
7.16.3	Overcharge Protection - 66 VDC	
7.16.4	SOLAR CHARGER & AC CHARGER	
7.16.5	Solar Charger Type - MPPT	



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DESCRIPTION		COMPLY/ DO NOT COMPLY
7.16.6	Maximum PV Array Power - 8000W (4000W x 2)	
7.16.7	MPPT Range @ Operating Voltage 90 ~ 450 VDC	
7.16.8	Maximum PV Array Open Circuit Voltage - 500 VDC	
7.16.9	Maximum Solar Charge Current - 150A	
7.16.10	Maximum AC Charge Current - 120A	
7.16.11	Maximum Charge Current - 150A	
7.16.12	Communication Interface - USB/RS232/RS485/Wi-Fi/Dry-contact	
7.16.13	Humidity - 5% to 95% Relative Humidity(Non-condensing)	
7.16.14	Operating Temperature -10°C to 50°C	
7.16.15	Storage Temperature -15°C to 60°C	
7.16.16	Compliance Safety - CE	
7.16.17	Must have a live span of at least 10 years	
<b>8</b>	<b>BIDDER COMPLIANCE AND LEGAL REQUIREMENTS</b>	
8.1	Proposed Health and Safety Plan in compliance with OHS (Occupational Health and Safety) standards and regulations.	
8.2	Bidders shall have a permanent South African office (physical address) with a minimum 3-year track record for supply and support of CCTV Systems	
8.3	Advanced-level support shall be available from the South African office on all Bided products for the duration of the contract	
8.4	Sub-contractor identification and certifications where required	
8.5	Project Management methodology and roll-out plan with high-level Gantt-chart	
8.6	An overall system diagram showing the interconnections between equipment	
8.7	Provide a detailed as-built documents at the end of the project inclusive of drawings (Visio)	
8.8	Quality plan based on ISO9001 Quality Management System	
8.9	Provide Factory Acceptance Test (FAT) procedures	

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	DESCRIPTION	COMPLY/ DO NOT COMPLY
8.10	Provide Site Acceptance Test (SAT) procedures	
8.11	Environmental plan, based on ISO14001 Environmental System	
8.12	Must be willing to offer between 3 year fully inclusive maintenance contract	
8.13	Compliance with privacy laws and regulations including Data protection and retention policies such as required by POPI (Protection of Personal Information)	
8.14	Compliance with industry standards (e.g., GDPR, PCI-DSS)	
8.15	All cameras to be ROTAKIN evaluated and rated – Provide ROTAKIN Test Certificate(s).	
8.16	Suppliers and sub-contractors must be <b>PSIRA</b> certified.	
8.17	Suppliers and sub-contractors must be <b>CIDB</b> certified.	
8.18	All designs must be confirmed by an Electronics Engineer and signed-off in his professional capacity	
<b>9</b>	<b>STANDARDS APPLICABLE TO THIS BID</b>	
9.1	SANS Series of specifications for general CCTV installation practice: (SANS 10222-5-1-1, SANS 10222-5-1-3, SANS 10222-5-1-4 and SANS 10222-5-1-5 and SANS 10222-5-1-2)	
9.2	All cameras shall be ONVIF API compliant with version 1.02, 2.00 and Profile S	
9.3	ROTAKIN Standard in accordance with BS EN 50132-7	
9.4	SANS 10222-5-1-1 Electrical security installations Part 5-1-1: CCTV installations - CCTV surveillance systems for use in security applications - Operational requirements	
9.5	SANS 10222-5-1-2 Electrical security installations Part 5-1-2: CCTV installations - CCTV surveillance systems for use in security applications - System design requirements	
9.6	SANS 10222-5-1-3 Electrical security installations Part 5-1-3: CCTV installations - CCTV surveillance systems for use in security applications - Installation, planning and implementation requirements	
9.7	SANS 10222-5-1-4 Electrical security installations Part 5-1-4: CCTV installations - CCTV surveillance systems for use in security applications - Testing, commissioning and hand-over requirements	

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DESCRIPTION		COMPLY/ DO NOT COMPLY
9.8	SANS 10222-5-1-5 Electrical security installations Part 5-1-5: CCTV installations - CCTV surveillance systems for use in security applications - Maintenance requirements	
9.9	BS EN 62676 series Video surveillance systems for use in security applications	
9.10	BS EN 62676-1-1 Video System Requirements	
9.11	BS EN 62676-1-2 Video Transmission – General Video Transmission - Requirements	
9.12	BS EN 62676-2-1 Video Transmission Protocols – General Requirements	
9.13	BS EN 62676-2-2 Video Transmission Protocols – IP Interoperability implementation based on HTTP and REST services	
9.14	BS EN 62676-2-3 Video Transmission Protocols – IP Interoperability implementation based on web services	
9.15	BS EN 62676-3 Analog and Digital Video Interfaces	
9.16	BS EN 62676-4 Application guidelines	
9.17	BS EN 60529 Degrees of Protection provided by Enclosures (IP Code)	
9.18	BS EN 62305 series Protection against Lightning	
9.19	BS EN 50132-7 CCTV surveillance systems for use in security applications: Application guidelines	
9.20	BS EN ISO 11064-1 Ergonomic design of control centres - Principles for the design of control centres	
9.21	BS EN ISO 11064-2 Ergonomic design of control centres - Principles for the arrangement of control suites	
9.22	BS EN ISO 11064-3 Ergonomic design of control centres - Control room layout	
9.23	BS 7958 CCTV Management and Operation – Code of Practice	
9.24	BS 8418 Installation and remote monitoring of detector activated CCTV systems – Code of practice	
9.25	BS 8495 Code of Practice for digital CCTV recording systems for image export to be used as evidence	

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