

**RE-ADVERTISEMENT MODERNISATION/RESPOSITIONING, AND
CONFIGURATION/COMMISIONING OF CLOSE CIRCUIT TELEVISION (CCTV),
MAINTENACE AND SUPPORT AT GATEWAY AIRPORT AUTHORITY LIMITED FOR
A PERIOD OF 36 MONTHS**

TERMS OF REFERENCES AND SPECIAL CONDITIONS OF THE BID

GAAL/096/2022/2023

**SPECIFICATION FOR PROVISIONING, INSTALLATION, MODERNISATION,
AND CONFIGURATION/COMMISIONING OF CLOSE CIRCUIT TELEVISION
(CCTV), MAINTENACE AND SUPPORT AT GATEWAY AIRPORT
AUTHORITY LIMITED FOR A PERIOD OF 36 MONTHS**

A COMPULSORY BRIEFING SESSION TO BE HELD ON

1 NOVEMBER 2024 AT 10H00

POLOKWANE INTERNATIONAL AIRPORT CONFERENCE HALL

CLOSING DATE AND TIME OF BID

15 NOVEMBER 2024 AT 11H00

BID VALIDITY PERIOD: 150 DAYS FROM THE CLOSING DATE

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1. INTRODUCTION

- 1.1 Gateway Airport Authority Limited (GAAL) seeks to appoint a suitably qualified, reputable, and experienced service provider with an excellent track record for provisioning, installation, modernisation, configuration/commissioning, maintenance and support of Close Circuit Television (CCTV) for a period of 36 months.
- 1.2 The services shall be provided with fully comprehensive maintenance and support that includes all the necessary parts, licenses and softwares, replacement of equipment/s and cameras at Polokwane International Airport for a period of 36 months.
- 1.3 The potential service provider/s must do an assessment of the existing infrastructure and provide a methodology or project plan with timeframes on the delivery of the above services.
- 1.4 Detailed documentation of the project shall be provided by the appointed service provider upon completion and signing-off the project. The documentation shall include the network diagrams, test results, manuals with step-by-step procedures and phases as guidance on how CCTV services were configured, login credentials, Job cards etc. Furthermore, provide in-house training and skills transfer to GAAL's officials that will be managing the CCTV services in-house as a 1st line of support and ensure that the provided services fully belong to GAAL without interrupting any business operations and experiencing downtime for whatever reason may be.
- 1.5 The appointed service provider shall ensure that there is an official transfer and handing over of the system to the entity for business continuity, upon the expiry of the contract to

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minimize the risk of disruptions. Testing and quality assurance must be conducted prior to signing-off the project and payment of any invoices.

2. SCOPE OF WORK

2.1 The potential supplier must be able to provide the following CCTV services:

- 2.1.1 Modernisation and repositioning of the existing Close Circuit Television (CCTV) system and hardware in the new and old terminal buildings, landside, airside, and admin block at Polokwane International Airport.
- 2.1.2 Integrating existing IP (CCTV) systems with the new services to be installed.
- 2.1.3 Design, Supply, Installation, Commissioning of the new Close Circuit Television (CCTV) system and hardware in the New, Old Terminal Building, Landside, Airside and Admin Block at Polokwane International Airport.
- 2.1.4 Provide fully comprehensive, inclusive and serviceability maintenance of the entire Close Circuit Television (CCTV) services, with all the required parts, licenses, hardware and software, replacements of equipment/s and cameras for a period of 36 months.
- 2.1.5 Additional cameras, parts, licenses, hardware and software and equipment/s shall be installed/added as and when needed per request (The quotation must indicate the amount to be billed per additional CCTV services, including maintenance and support for the remaining months in line with the contract).
- 2.1.6 Integration of the License Plate Recognition cameras in line with the Road Traffic Act.

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2.2 Managed Services

- Support and Maintenance 24/7 365, 7 days a week.
- Log support calls with helpdesk by email, phone.
- Quick response times to prevent downtime (Acknowledgement of the logged call within 30 minutes or less and resolution within 2 hours or less where there is resources and equipment/parts to resolve the log call or alternatively the next business day where there is no equipment/parts and resources available)
- Monthly/Weekly/Daily reports on capacity, usage, and availability.

3. SPECIFICATIONS

Bidders must adhere to the below specifications on documenting and submission of their proposals, failure to adhere will lead to disqualification.

- Specifications is not brand-specific however its must.
- Bidders are required to provide specifications that meet the solution requirement.

3.1 SPECIFICATION – GENERAL

- 3.1.1.1 This section is to outline a Video Management System (VMS), the specifications required for a reliable platform and the required functions.
- 3.1.1.2 GAAL is looking for a stable, reliable and functional working solution that operates on an open platform and does not have scalability or model limitations.
- 3.1.1.3 The proposed solution must be compatible to the existing hardware and software systems.
- 3.1.1.4 All provided equipment shall have a minimum MTBF of 50 000 hours of continuous use.
- 3.1.1.5 The system shall offer open and documented interfaces.
- 3.1.1.6 The bidder shall supply upon request a complete Software Developers' Kit (SDK) for integration with third-party equipment free of charge including free developer support. Interfaces available shall be TCP/IP (network interfaces), SFP, or RS-232/USB.

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- 3.1.1.7 The bidder shall commit to a manufacturer warranty including spare part delivery or functional replacement for all equipment.
- 3.1.1.8 Software updates shall be available free of charge from the bidder or his representative. The system shall allow for functional upgrades via simple software license installation without hardware changes. No recurring license fees will be applicable. Security Information Management software systems shall form part of the proposal to bridge from existing Video Management System assets to the newly specified technology as per this document. VMS shall allow the ability to integrate to open video standards such as ONVIF for existing IP cameras and for encoding any existing analogue camera products into compatible video encoders (Full IP or OMNIBRID options).

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3.2 SPECIFICATIONS - VIDEO MANAGEMENT SYSTEM

- 3.2.1 The Video Management System (VMS), Network Video Recorder (NVR) Hardware, Network Surveillance Cameras, POE Network Switches, Workstations and related components shall be installed and commissioned by authorized integrators trained and certified by the manufacturer. Certification and training for authorized integrators shall be available from the bidder or his local representative.
- 3.2.2 Interconnectivity between systems shall allow a powerful, flexible, multi-function software solution designed to simplify the monitoring and management of IP security video.
- 3.2.3 The system apart from being easily inter-connectable shall be highly scalable, allowing for connections to and monitoring of hundreds of recorders and thousands of cameras.
- 3.2.4 The system shall in addition, have ability to add options for Health Dashboard, Maps, Reporting for BIRS – business intelligence reporting.
- 3.2.5 The VMS solution shall be cyber protected by a manufacturer that takes pro-active steps to ensure that the products follow secure product development practices, execute rigorous internal and external testing, have configuration guidelines for compliancy, and actively monitor for any threats that can impact the solutions in the field. The products shall adhere to the following:
- Backed by a dedicated cross-functional Cyber Protection Team to rapidly respond to any newly discovered threats that could impact the system.
 - VMS client shall provide a completely user-customizable 'Site View': enabling the organization of cameras, recorders, tours, salvos into user-defined, multi-level folders, like Windows Explorer-style file organization. On a large or distributed system, a Site will automatically be created in the Site List when a SAS is started.
 - VMS client shall support ability to manually track any person or object across multiple cameras and/or virtual PTZ pre-sets when configured with surveillance tracking arrows.

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- VMS client shall include an integrated Web Browser tab that can be combined with other user interface components (Video Views, Site View, Event Viewer, etc.) into an Application Layout. The Web Browser tab shall allow operators to continue monitoring their security system while also receiving weather or news updates from web-based information sources.
- VMS client shall support the ability to provide Client-to-Client “Push” enabling a workstation the ability to “push” any layout (e.g. video, alerts, web site, etc.) to another workstation’s monitor based on roles, security and license settings when using an Application Server. The receiving Client shall have the ability to accept or reject the incoming request.

3.3 SPECIFICATIONS – SYSTEM ANALYTICS AND FUNCTIONALITY

3.3.1 The VMS client shall support ability to execute video intelligence analytic searches on VMS recorders. The analytic search types can be conducted on cameras that have the analytic search feature enabled and shall include the following:

- a) Intrusion Detection,
- b) Cross Line Detection,
- c) Enter Area
- d) Leave Area
- e) Defocus Detection
- f) Auto Tracking
- g) Scene Change Detection
- h) Object Left Behind
- i) Object Removed
- j) Ultra-Motion Detection
- k) Smart Intrusion
- l) Behaviour Search
- m) Vehicle Search

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- n) People Flow Counting
- o) Crowd Density

3.3.2 The system/solution shall support ability to execute video face analytic searches on VMS recorders for Face Recognition and Verification. The analytic search types can be conducted on cameras that had analytic search feature enabled and shall include:

- Face Detection,
- Face Recognition and
- Face Comparison.

3.3.3 The system/solution shall support ability to execute License Plate Recognition (LPR) searches on VMS recorders for License Plate Recognition. The analytic search can be for specific license plates or unrecognized license plates. The service provider must also provide a solution that can be intergraded with the law enforcement authority.

3.3.4 The system/solution shall support edge-based analytic events when VMS recorders are configured with supported camera models.

3.3.5 The system/solution shall support searching on alarm rules that were defined on VMS recorders.

3.3.6 The system/solution shall support data visualization that enables the ability to easily chart graphically across timeline all searchable data, send reports in emails and drill-down to single events to view patterns for data mining and reporting.

3.3.7 The system/solution shall support dynamic bandwidth management with VMS recorders by selecting the current bandwidth connection speed, to help optimize the viewing experience over a WAN environment. For policy management, it shall also support enforcing the maximum bandwidth allowed based on the Role or Operator.

3.3.8 The system/solution shall support a health monitoring dashboard to allow access to the status updates of their systems with ability to easily drill-down to flagged items for identifying root causes.

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- 3.3.9 The system/solution shall support fish-eye cameras supported by select VMS recorders within the product family tree and multi-streams configured on the camera.
- 3.3.10 The VMS client shall support management of all the information associated for an incident and/or event and utilize a template to generate a single report containing video, still images, report data, report charts, notes, and any externally supported files. The VMS Player shall support playing exported incident package for Incident Builder.
- 3.3.11 VMS Client shall support creating single point in time bookmark or bookmark with begin and end time.

3.4 SPECIFICATIONS - INTELLIGENCE ANALYTIC SEARCHING

- 3.4.1 The VMS shall support the following Video Intelligence Analytic search functions:
- **Smart Intrusion Prevention** - provides highly visual system that includes detecting, alarming and recording. It's a perfect solution to improve perimeter protection and achieve efficient management.
 - **People Counting**- provide Intelligent Analysis functions such as people counting which supports real-time data of people flow at the entrance.
 - **Face Detection & Face Recognition** - Integrated with blacklist/whitelist filtering, Face Detection and Face Recognition (realized in a Smart Bar) functions enable cameras to spot a target person and send alarms instantly to the management centre.
 - **Auto-Tracking** - Detects moving targets and filters inattentive information. Automatically tracks detected targets.
 - **Crowd Density Monitoring** - monitors the number of people in a specified area and triggers an alarm if the number exceeds the set alarm threshold.
 - **Leave Area Detection** - detects objects leaving a user-specified area. The NVR takes snapshots and reports an alarm when the detection rule is triggered.
 - **Enter Area Detection** - detects objects entering a user-specified area. The NVR takes snapshots and reports an alarm when the detection rule is triggered.

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- **Intrusion Detection** - detects objects entering a user-specified area and staying for a preset time. The NVR takes snapshots and reports an alarm when the detection rule is triggered.

3.5 SPECIFICATIONS - FACIAL RECOGNITION ANALYTIC SEARCH

3.5.1 VMS site must have the facial recognition database site license and the VMS recorders must have one or more facial recognition channels licensed to support integrated facial recognition engine. VMS shall utilize the information available from the VMS to apply the following Face Recognition search criteria on the recorded video:

- Search against up to 1,000 indexed faces per VMS recorder database for faster identification and investigation.
- Search across the entire enterprise to find facial matches.
- Search for inclusion or exclusion of specific persons and visually see the associated corresponding video.
- Search specific area of interest on the scene.
- Search requires specific percentage of an object within the area of interest.
- Load pre-existing alert rules configured on the VMS.
- Alerts operators to take immediate action when a face is detected.

3.6 SPECIFICATIONS - FACIAL VERIFICATION ANALYTIC SEARCH

- VMS recorders must have one or more facial verification channels licensed to support integrated facial verification engine.
- VMS shall be a seamless integrated system with the Access Control System (ACS).
- VMS shall utilize the information available from VMS and ACS to apply the following Face Verification search criteria on the live video.
- Automatically provide visual notification when an access card is used by an unauthorized person. Display live video for Swipe-and-Show to provide real-time cross-reference of access card user.

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- Confirm authorized access card user by displaying associated card holder name under live video.
- VMS can control access control points for authorized personnel.

3.7 SPECIFICATIONS - LICENSE PLATE RECOGNITION ANALYTIC SEARCH

3.7.1 VMS recorders must have one or more License Plate Recognition (LPR) channels licensed to support integrated license plate recognition engine. VMS shall utilize the information available from the VMS to apply the following License Plate Recognition search criteria on the recorded video:

- Support fuzzy matching for similar alpha-numeric characters.
- Search for all captured license plates.
- Search for inclusion or exclusion of specific license plates.
- Sort LPR search results.
- Generate thumbnail for any LPR search results.
- Generate reports and data visualization for any LPR search result.
- Instant review of video associated with any LPR search result.
- Save any LPR search result as an alarm rule.
- Search LPR alarm entries in the Journal with filter option.
- VMS shall support License Plate Management by creating a black-and whitelist by individual or bulk upload license plates for specific cameras for license plate recognition.

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3.8 SPECIFICATIONS - INTEGRATION OPTIONS

- In addition to the abovementioned inclusive requirements, the Integration Platform Software Development Kit (IP SDK) shall enable seamless integration of video analytics algorithms and other third-party applications in VMS Client and Management Client.
- It shall be compatible with transactional software, which integrate video surveillance with point-of-sale (POS) and enterprise resource planning (ERP) systems for managing loss prevention and fraud.
- It shall be compatible with Access Control for video enabled physical security, which integrates with access control and intrusion systems.
- It shall be compatible with LPR for automatic reading and tracking of vehicle license plates.
- Generic event integration shall enable easy and fast integration of third-party applications and systems via a simple message-based socket communication interface.
- The integration option shall support ONVIF Bridge that enables full video interoperability in multivendor installations using a standardized ONVIF compliant video-out interface.
- The system configuration API shall enable external applications to make changes to the system's configuration.

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3.9 SPECIFICATIONS - RECORDING SYSTEM / FAILOVER RECORDING

- The system shall facilitate simultaneous digital multi-channel MJPEG, MPEG4, MPEG-4 ASP, MxPEG, H.264, H.265 and Ultra265 video recording of IP cameras and IP video encoders without any software limitations on number of cameras per server.
- The two-way audio shall allow users to transmit and record audio from connected microphones and audio from the operator's microphone to attached speakers.
- Pre-recording buffer (used for event/motion-based recording) in RAM shall minimize the disk read/write operations when no video is recorded.
- The generic framework shall receive and store metadata from compatible devices and clients.
- Route traffic between multiple connected cameras and multiple clients shall be able to request live view, playback and export.
- The system shall multicast one video stream to all VMS Clients. The infrastructure must support IGMP to reach remote networks.
- Multi-live streaming shall give the possibility to define multiple streams for live viewing with different properties. It shall optimize VMS Client viewing performance according to the available bandwidth and view layouts, which is ideal for deployments with remote viewing.
- A dedicated recording stream shall enable optimization stream properties (resolutions, encodings and frame rate) for video storage and forensic usage.
- The system shall secure high speed recording database holding JPEG images or MPEG4, MPEG-4 ASP, MxPEG, H.264 or H.265/265+ streams, Ultra265. Flexible control of recording characteristics for MPEG4/H.264/H.265 streams, shall make it possible to toggle between recording key frames only or the full stream.
- The system shall record more than 30 frames per second per camera, limited only by hardware.

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- Recording quality shall depend entirely on camera and video encoder capabilities with not software limitations.
- Pre-recording buffer (used for event/motion-based recording) in RAM shall minimize the disk read/write operations when no video is recorded.
- Edge Storage with flexible retrieval shall enable video retrieval from camera storage based on time schedules, events or manual requests. This shall enable users to effectively retrieve video recordings across low bandwidth connections.
- Scalable Video Quality Recording shall enable seamless merging of video stored centrally in the recording server, and video retrieved from a camera associated edge storage, or interconnected system.
- The system shall enable the possibility to import pre-event images recorded locally in camera or video encoder.
- Built-in, real-time, camera-independent motion detection with the ability to generate motion metadata for VMS Search.
- Port forwarding shall enable clients to access the recording servers from outside a network address translation (NAT) firewall.
- The system shall support for both IPv4 and IPv6 addressing.
- The secure HTTPS camera connection on devices shall support HTTPS.

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3.10 SPECIFICATIONS - HIGH AVAILABILITY

3.10.1 The VMS shall offer two levels of redundancy on the recording servers: Cold and hot stand-by failover.

- Both mechanisms shall offer fully automatic and user transparent failover in the event of hardware or system failure, with automatic synchronization at system recovery.
- Cold stand-by failover is a cost-efficient redundancy solution where one, or a group of, failover recording servers shall act as backup to one or multiple recording servers.
- Hot Stand-by failover is a high-security redundancy solution that shall provide minimal interruption in recording and live streams, where a dedicated failover recording server is preconfigured for a recording server.

3.11 SPECIFICATIONS - PAN-TILT-ZOOM (PTZ)

- Clients with user priority shall “Pass-through” control of manual PTZ operation.
- The VMS shall be able to identify PTZ priority levels for control of rights between different operators and automatic patrolling schemes.
- The VMS shall execute rule-based go-to preset position on events and patrolling.
- The VMS shall pause PTZ patrolling on event and resume patrolling after manual session timeout.
- The VMS shall import PTZ pre-sets defined in the PTZ camera.
- The VMS shall rename imported PTZ pre-sets.
- The VMS shall support devices with one or more input and output ports.
- The Powerful rule processing engine shall execute start and stop actions triggered by events or time profiles.
- The system shall act as a Simple Network Management Protocol (SNMP) agent that can generate an SNMP trap due to rule activation.
- Shall enable logging of system, audit, and rule entries to the management server with local caching during offline scenarios.

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3.12 SPECIFICATIONS - VIDEO MANAGEMENT SYSTEM AND FAILOVER SYSTEM

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- The Management system shall enable user authentication logon, system configuration and logging.
- The Management system shall enable central administration of the system such as recording, devices, security, rules and logging.
- The Failover solution for the VMS shall provide a resilient system solution ensuring high system availability.
- The VMS shall support both IPv4 and IPv6 addressing.

3.13 SPECIFICATIONS – INTERCONNECT

The VMS shall be inter-compatible with multiple VMS/NVR systems of the same type allowing the VMS/NVR to be connected to a central VMS to gain central surveillance operation across geographically dispersed sites.

3.14 SPECIFICATIONS - VMS FEDERATED ARCHITECTURE

The system concept that shall enable individual VMS systems to be interconnected with a central VMS system in a hierarchical architecture for infinite scalability and central management.

- Compatible with third-party IP Cameras supported with standard ONVIF and RTSP.
- Access: Browser, primary administrator and operators on-prem and mobile clients (both iOS and Android).
- Connection: 1000 device connections, up to 2000 channels of high-definition network videos.
- Management: Unified management of IPC, NVR, face recognition terminal, decoder, network keyboard, cloud devices, alarm control panel and door access control, support devices' configuration import/export.

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- Storage: Max 16 hard disks and 2 disk enclosures; expandable up to 48 disks with 672TB storage, recording backup, IPSAN storage.
- Decoding: Max 16x1080P decoding outputs in three screens, expandable up to 112x1080P in 15 screens with 2 decoding cards inserted.
- Service: Live view, playback, sequence, video wall, GIS map, two-way audio, and alarm plan.
- Reliability: Support of HTTPS, 802.1x authentication, ARP protection, Telnet enabling/disabling, network fault tolerance, multi-IP configuration, load balancing, secure password and IP address filtering.
- Operation and maintenance: Provide a comprehensive management dashboard, server status, device/channel online/offline status, HDD status, online users, bandwidth usage, packet loss rate, log query

3.15 SPECIFICATIONS – STORAGE (NAS)

- 3.15.1 Max 12 hard disks and 2 disk enclosures; expandable up to maximum 24 disks with 336TB storage.
- 3.15.2 Each storage container shall be defined as live database and one or more optional archives, where the video data is moved from the live database to secondary disk systems or network drives. The archived data shall be still online and available for clients.
- 3.15.3 The storage functionality shall enable the ability to allocate individual devices to different storage containers.
- 3.15.4 The VMS shall allow to move a device or a group of devices between two storage containers.
- 3.15.5 Storage overview shall give instant indication of used vs. available storage in total and for individual cameras.
- 3.15.6 The VMS shall manage maximum recording time for manual recordings.

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3.16 SPECIFICATIONS – DEVICES

- 3.16.1 The Hardware wizard shall add devices; automatically using Universal Plug and Play (UPnP) discovery, via IP network range scanning, or using manual device detection. All methods support automatic or manual model detection.
- 3.16.2 The Wizard shall enable swift replacement of malfunctioning devices with preserved configuration settings and recordings.
- 3.16.3 The Wizard shall enable easy moving of hardware devices (with attached cameras, microphones, speakers, inputs, outputs and metadata devices) between recording servers in runtime without losing settings, recordings, rules, permissions etc.
- 3.16.4 It shall enable and disable devices if they are not used or are down for maintenance. It shall allow to adjust settings such as brightness, colour level, compression, maximum bit rate, resolution and rotation per camera or camera group; select and configure video format, frames per second (FPS), resolution and quality for the video streams used per camera; select and configure one, or more, video streams per camera to be used for live viewing. Each stream can be in different video format, FPS, resolution and quality.
- 3.16.5 The VMS shall enable adjustable group of pictures (GOP) length for MPEG4 and H.264/H.265+ encoded video. It also shall enable assigning camera shortcut number for easy operation by clients and shall provide optional preview window for immediate verification of video settings per camera or for a group of cameras.
- 3.16.6 The VMS shall allow to define multiple PTZ preset positions on the server, to import PTZ preset positions from cameras and to enable PTZ scanning on supported devices.
- 3.16.7 The VMS shall allow to define multiple PTZ patrolling schemes with adjustable wait time between shifts and customizable transitions with disabling of motion detection to avoid false alarms.
- 3.16.8 The VMS shall allow to run multiple patrolling schedules per camera per day, for example, run different schedules for day/night/weekend.

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3.16.9 Privacy mask shall consistently hide certain areas in the camera view in live and playback video and in exported material.

3.16.10 It shall allow to configure device events like motion detection with pre- and post-buffers, or input signal behaviour options and allow to fine-tune motion detection sensitivity per camera manually or automatically.

3.16.11 The VMS shall allow to apply one or multiple exclusion zones for where motion detection is to be disabled to avoid unwanted detection.

3.16.12 The VMS system and connected devices shall support a wide set of events that can be used to trigger actions using the rule system. Events shall be grouped in the following categories:

- Hardware: events that relate to physical hardware devices connected to the system
- Devices: events that relates to certain functions and states of devices available to the VMS system via the connected hardware devices
- External Events: events that relate to VMS integrations.
- Recording server: events that relate to failover, archiving and database functions.
- Analytics: events from integrated applications and systems.
- Start actions: The triggering events may initiate a wide set of actions in the VMS system, connected devices or integrated systems. Stop actions: The rule engine may also trigger stop actions in the VMS system, connected devices or integrated systems upon the completion of a rule.

3.16.13 The VMS shall enable multi-recipient customizable email notification with image and/or AVI attachment of incidents.

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3.17 USER RIGHTS MANAGEMENT

3.17.1 User rights management shall enable common and central management of all user rights across all user and programmatic (IP SDK) interfaces.

3.17.2 Overall system security definition shall make it possible to globally allow or deny permission to devices and functions (such as manage, read, edit and delete).

3.17.3 Device-specific security definition shall make it possible to allow or deny permission to individual devices and functions (such as manage, read, edit and delete).

3.17.4 User rights management shall control roles, user and administrator access to:

- General: Management Client and VMS Client profiles, dual authorization rights, system log-in time profile.
- Cameras: visibility, administrate, live view (within time profile), playback (within time profile), search sequences, export, VMS search, AUX commands, manual recording, bookmark functions.
- Microphones and speakers: visibility, administrate, listen to live audio (within time profile), playback audio (within time profile), search sequences, export, manual recording, bookmark functions, speak to speakers.
- Inputs and outputs: visibility, administrate, status, activation.
- PTZ: manual control, activate PTZ presets, PTZ priority, manage PTZ presets and patrolling, lock/unlock PTZ presets, reserve, and release PTZ session.
- Remote recordings: retrieve remote recordings.
- VMS Wall: visibility, administrate, control, playback.
- External events: visibility, administrate, trigger.
- View groups privileges Servers: VMS Enterprise server access and authentication details, VMS Federated Architecture site permissions.
- Alarms: visibility of alarms and ability to manage alarms.
- MIP: Plug-in permissions.

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- Application: manager, VMS Client/Web Client/Mobile, live/ playback/setup, status API and service registration API.

3.18 LOGGING

Logs of system, audit and rule entries shall consolidate from all recording servers and clients. Each log file shall have adjustable size and time limitations.

3.19 CLIENT PROFILES

3.19.1 Centralized management of VMS Client application options shall enable optimization of the Management Client for different user categories and skill levels.

3.19.2 Management Client profiles shall enable the ability to three different profiles.

3.19.3 VMS Client profiles shall enable ability to enforce or recommend optional Client application options for a user or group of users, using a maximum of three Client profiles.

3.19.4 Profiles shall enable defining general VMS Client application options, including (listing not exhaustive): visibility of time, visibility of camera live indicators, default image quality, default frame rate, keyboard and joystick setup, start-up mode and de-interlacing filters.

3.19.5 Client profiles also shall:

- Provide access to live mode and the availability of individual control panels and overlay buttons.
- Shall provide access to playback mode and the availability of individual control panels, overlay buttons and settings for specific functions, such as default export path.
- Provide access to setup mode and the availability of individual control panels and setup functions.
- Provide access to Sequence Explorer, Alarm Manager, System Monitor.

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- Provide access to setup mode and the availability of individual control panels and setup functions.
- Define available view layouts.

3.20 SYSTEM ADMINISTRATION

- System administration shall include built-in backup and restore support for manual system backup of all configuration data, including (listing not exhaustive): system configuration data, maps, alarm settings and definitions and client views.
- The system monitor with customizable dashboard shall enable task or component specific live monitoring.
- System administration shall enable historic performance and usage investigation and reports of; storage usage, network use, server and camera performance.
- The system monitor shall enable customizable Normal, Warning and Critical system monitor and event triggers for; CPU and Memory usage on servers, used space, recording and live FPS on cameras, free space on disks and predicated retention time for storage definitions.
- Configuration Reporting shall enable complete or partial documentation of system configuration. Custom and site-specific free-text information, integrator's notes and logo can be added to the printer-friendly reports.

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3.21 ALARM MANAGER

- The alarm manager shall manage single-point alarm management of all internal system alarms and external security alarms. It shall provide alarm descriptions and work instructions to make alarms actionable for operators.
- An alarm location map shall be linked to each alarm providing instant situational awareness to the operator dealing with the alarm.
- Customizable alarm priorities shall allow operators to focus on the most critical alarms and shall enable logical grouping of alarms dependent on their type and nature.
- Customizable alarm statuses shall enable alignment of the alarm handling workflow with existing workflows and security systems.
- The alarm handling result code shall enable tracking of the outcome of the alarms.
- The alarm manager shall enable automatic allocation to alarm owner with escalation and alarm forwarding possibilities.
- The alarm manager shall enable time profiles for definition of active alarms. It shall provide the possibility to associate one or more cameras to an alarm (maximum 15 cameras can be displayed simultaneously in the alarm preview window).
- A set of alarm handling reports shall give valuable information about alarm inflow and alarm handling performance.
- The alarm manager shall enable extensive logging of alarms.
- Microsoft Clustering shall support the event server enables secure and redundant alarm handling.

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3.22 CUSTOMIZATION

- The application options shall enable customization of the general behaviour and look of the VMS Client. The customization shall be made as individual personalization managed by each operator, or centrally enforced using VMS Client Profiles. The application shall offer a simplified user interface with the possibility option to toggle between “Simple” and “Advanced” modes, where advanced mode is default.
- The VMS Client shall enable control of general look & feel and navigation properties, such as colour mode, camera title bar, grid sizes etc.
- The client shall provide the availability of control panels and functions in live and playback tabs, and in setup mode, as well as the behaviour and availability of the expert function.
- The application shall allow to include information in timeline in the playback tab, setup keyboard short cuts and joystick controls, as well as specific behaviour of alarms and access control notifications.
- The VMS Client shall include advanced application settings such as use of multicast, hardware acceleration, videos diagnostics overlay and time zone settings.

3.23 LIVE VIEW

- VMS Client shall enable to view live video from 1-32 cameras per computer monitor/view.
- Multiple computers monitor support shall provide a main window and any number of either floating windows or full screen views.
- Live view digital zoom shall allow a full view of recordings while the operator can digitally zoom in to see details.
- Live view shall support multiple view layouts optimized for 4:3 and 16:9 display settings in both landscape and portrait.
- Independent playback capability shall allow for instant playback of recorded video for one or more cameras, while in live mode.

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- Centralized storage of shared and private camera views shall enable coherent access to views across the system.
- Live view provide possibility to instantly re-arrange cameras in views for optimized monitoring of incidents, with single click restore of original view.
- Live view shall enable instant camera placement in live view allows for instant replacement of cameras in a view, where new cameras can be placed in a particular view and positioned through a simple drag-and drop operation.
- Live view shall update on “motion only” optimizes CPU use by allowing motion detection to control whether or not the image should be decoded and displayed.
- Global hotspot function shall allow users to work in detail with any camera selected from any view. Local hotspot function shall allow users to work in detail with a camera selected from the same view.
- Carousel function shall allow a specific view item to rotate between pre-defined cameras that are not necessarily present in the view at the same time. Operators shall select default or custom display times for each camera, and they are able to manually switch to the next or previous camera in the carousel list.
- Matrix function shall show live video from multiple cameras in any view layout with customizable rotation paths, remotely controlled by computers sending matrix remote commands.
- Live view shall import static or active HTML maps for fast navigation to cameras and to provide a good overview of premises.
- It shall hide HTML page toolbar in HTML page views.
- Live view shall activate matrix via graphical maps of premises using JavaScript or integrate with centralized access control systems.
- It shall allow the operator can assign outputs, PTZ presets and views as actions to joystick buttons and as keyboard shortcuts.

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- Two-way audio support shall enable VMS Client to record and play live audio from camera-connected microphones and outgoing audio from the operator's microphone to one or multiple camera speakers. Live view shall enable adaptive de-interlacing option secures high video quality, based on the actual video content received. VMS Client shall optionally apply a filter to areas of the image where jagged edges would otherwise show up.
- Operators shall start/stop manual recording on individual cameras, where the recording status is propagated to all VMS Client users active in the system.

3.24 PTZ

3.24.1 Control PTZ cameras by using:

- PTZ preset positions.
- PTZ point-and-click control.
- Manage PTZ presets.
- Video overlaid PTZ control.
- Virtual joystick function
- Joystick
- PTZ zoom to a defined rectangle.
- View who has PTZ control and time to automatic release
- Follows and detect human body/movements and activate alarms.

3.24.2 Live view shall enable to take manual control of a PTZ camera that is running a patrolling scheme. After a timeout with no activity, the camera reverts to its scheduled patrolling scheme.

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3.25 I/O AND EVENTS

- Overlay buttons shall provide intuitive control of cameras, camera-integrated devices, and other integrated systems directly from the camera view.
- I/O and events shall enable to manually trigger output port relay operation, for example when controlling gates.
- I/O and events shall enable to manually trigger events by activating a server- defined event from a list.

3.26 BOOKMARKING

- Bookmarking shall enable to manually define quick or detailed bookmarks with the bookmark function.
- Bookmarks shall be shown in timeline with instant preview.
- The function shall enable to listen and preview bookmarks in recording search.
- Bookmark reports shall enable effortless incident documentation.
- Direct video export of a bookmark shall reduce the time needed to prepare forensic video material.

3.27 PLAYBACK

- Playback shall provide playback video from 1-100 cameras per computer monitor/view.
- Advanced video navigation shall include fast/slow playback, jump to date/time, single step and video motion search.
- Playback shall include integrated video timeline with time navigation and playback controls, including an integrated function to select a time interval for export or video retrieval from Edge Storage devices and interconnected systems.
- Playback shall allow to toggle between simple and advanced timeline mode.
- The function shall provide overview of recorded sequences and bookmarks.

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- Independent playback capability shall allow the independent playback of recorded video from one or more cameras.
- Instant camera placement in playback view shall allow users to instantly replace cameras in a view, where a new camera can be placed in a particular view and position with a simple drag-and drop operation.
- Digital zoom shall allow the operator to see magnified details in the recorded video.

3.28 EXPORT AND PRINT

- The snapshot function shall enable operators to produce instant visual documentation of a camera by saving the camera image to a file or sending it directly to a printer.
- The VMS shall have storyboarding function that shall make it possible to include video sequences from different or overlapping time intervals from different cameras in the one and the same export.
- The export and print function shall provide export in the VMS format, including the standalone VMS Client - Player application for instant and easy viewing by authorities.
- The function shall allow export preview with looped playback.
- Export and print shall enable encryption and password protection of exported video material with a choice of following strong encryption algorithms: 56-bit DES 128, 192 and 256-bit AES.
- Secure video evidence handling with a digital signature of exported video material that shall enable users to verify the video has not been modified or tampered with when viewing the export in the VMS Client – Player.
- Export and print shall allow to create evidence material in media player format (AVI files), MKV format, or still image format (JPEG images).

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- The function shall allow to disable re-export option to prevent undesirable distribution of sensitive evidence material.
- Export and print shall allow to bulk camera export in multiple formats to multiple destinations, including direct export to optical media, results in more efficient video exports and more secure handling of evidence material.
- Export comment function shall enable users to add general and/or camera- specific comments to a video export when exporting to the VMS format.
- In media player format comments shall be added as pre/post slides.
- The VMS shall allow to print incident reports including image, surveillance details and free-text user comments.

3.29 SEQUENCE EXPLORER

- The VMS client shall include a dedicated tab for the Sequence Explorer.
- The search options shall be recording sequences (with support for time slicing), bookmarks and VMS Search.
- The sequence explorer shall include smooth navigation with sliding preview and “drag-and-throw” function for video thumbnails.
- The VMS shall include preview of selected sequence with auto play and direct export support.

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3.30 MAP FUNCTION

- The VMS shall have a built-in map function in the VMS Client and shall provide intuitive overview of the system and offers integrated access to all system components.
- Map images shall be in standard graphic file formats including JPG, GIF, PNG and TIF.
- Map function shall include any number of layered maps such as city, street, building and room.
- The function shall enable instant camera preview on “mouse over” and one- click shows all cameras on map.
- Map function shall provide one-click function to open floating window with all cameras (maximum 25 cameras) on the map.
- The function shall allow depiction of camera view zones on map with clickable PTZ zones for instant PTZ control.
- Map function shall allow easy drag-and-drop and point-and-click definition of: cameras, servers, microphones, speakers, I/O devices, hot-zones for map hierarchies, camera view zones and PTZ camera presets position view zones. The function shall provide integrated control of speakers, microphones, and events and output I/O control, including: doors, gates, light and access control systems.
- Map function shall also:
 - provide real-time status monitoring indication from all system components including cameras, I/O devices and system servers.
 - provide graphical visualization of the system status through colour coding.
 - provide hierarchical propagation of status indications to higher ordered maps.
 - make different levels of status indications available (alarm, warning and errors)
 - provide system performance data for cameras and servers including camera resolution, FPS, network use and disk space.

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- be able to suppress status indications (such as error and warning) for a given device.
- provide the possibility to edit device names in a map and assign map-specific names and references to devices in a map.
- Map editing subject to user rights.

3.31 VMS MAP FUNCTION

3.31.1 Map function that shall provide seamless geo-navigation, with seamless drilldown across different layers.

3.31.2 The functionality shall support at least one of:

- Bing, Google and OpenStreetMap map services
- Geo-referenced GIS maps (shapefiles)
- Geo-referenced CAD drawings (dwg and dxf files)
- Offline OpenStreetMap

3.31.3 VMS Maps shall also enable the ability for users to toggle different layers on and off in the map. Examples of such layers are cameras (names, view of field, name), quick links and different layers provided by the maps and drawings used (street names, buildings, etc.).

3.31.4 Location links shall enable quick navigation across different sites and locations. Map links shall enable drilldown to existing Client maps.

3.31.5 Additionally, the VMS Map function shall support:

- Instant one-click camera preview.
- Easy multi-camera selection with camera preview.
- Easy drag-and-drop and point-and-click definition of cameras, camera field of view, location links and quick links.
- Selection of 10 different camera icons.
- Depiction of camera field of view on map.

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3.31.6 It shall include the possibility to edit device names in a map and assign map- specific names and references to devices in a map. Camera object aggregation shall preserve the overview when several cameras are closely located.

3.32 CAMERA NAVIGATOR

- The camera navigator shall provide consistent and comprehensive visual verification, ensuring easier tracking of moving objects in geographically complex environments.
- The navigator shall automatically display thumbnail views of nearby cameras.
- The camera navigator shall provide add-on to the map application with no special configuration needed.

3.33 ALARM MANAGER

- The VMS Client shall provide dedicated snap on tab for the Alarm Manager.
- The alarm manager shall include alarm list with extensive filtering capabilities and an alarm preview in both live and playback mode.
- The alarm manager shall enable extensive alarm sort and filtering functions allow operators to focus on most critical alarms.
- Instant preview of primary and related cameras shall reduce the number of false alarms.
- Tight integration with the map function shall allow operators to indicate and acknowledge active alarms in the map.
- Alarm descriptions and work instructions shall make alarms actionable for operators.
- Alarm escalation and alarm forwarding possibilities shall allow operators with appropriate skills to handle different alarms.
- Alarm reports shall enable incident documentation.
- Alarm location map shall present the alarm operator with a map showing the alarm area when an alarm is selected.

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- The alarm manager shall provide alarm notification to a single or groups of Mobile client users using Push Notifications.
- The manager shall provide optional sound notifications for different alarm priorities for notification of new incoming alarm.
- Alarm disabling option shall enable users to suppress alarms from a given device in a certain time period.
- The alarm manager shall enable instant access to both live and recorded video from the cameras that are related to the alarm.
- Alarm handling reports shall give valuable information about alarm inflow and alarm handling performance.

3.34 SYSTEM MONITOR

- The system monitor shall provide dedicated snap on tab with system performance and use information.
- It shall provide dashboard for task or component specific live monitoring.
- The system monitor shall provide historic performance and usage investigation and reports of storage usage, network use, server, and camera performance.

3.35 SETUP AND MANAGEMENT

Download and installation of the VMS Client from a web page on the management server shall enable notification about new updates at log-in. Application options shall allow users to adapt the layout and personalize the application to their preferences.

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3.36 AUTHENTICATION

- System log-in shall use a basic user account assigned by VMS. Furthermore, it shall use current Windows logon for authentication, and use Auto-log-in and auto-restore views.
- Dual authorization shall offer an optional additional level of system security, where VMS Client users are granted access to the system only when a second user or supervisor has confirmed the log-in with a successful authorization of the second user.

3.37 SYSTEM

- The system shall support for IPv4 and IPv6 addressing.
-
- The system shall support multicast streams.
- It shall support for hardware accelerated decoding using Intel Quick Sync video.

3.38 VMS CLIENT – PLAYER

- The VMS Client - Player shall be able to play back recorded or archived video and audio evidence, including edited storyboard exports.
- The player shall include same user-friendly interface and most functions as the VMS Client.
- The player shall offer a simplified user interface with the possibility option to toggle between “Simple” and “Advanced” modes.
- It shall provide instant one-click playback for easy viewing of exported video evidence.
- Advanced second-level investigation tools shall make it easy to refine exported video and re-export the most essential evidence.
- Metadata bounding boxes included in exports shall be displayed time synchronized in VMS Client – Player.

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- The project tool shall allow users to merge video exports or archives from two different locations or systems together into one new export.
- The VMS Client – Player shall also:
 - Provide view up to 100 cameras time-synched during playback.
 - Provide camera search function promptly finds cameras, types of cameras and camera views in the system.
 - Provide scrollable activity timeline with magnifying feature.
 - Provide instant search on recordings based on date/time and activity/alarm (video motion detection)
 - Shall allow to view, modify, or add general and/or camera-specific comments for a given video export.
 - Shall allow de-interlacing of video from analogue cameras.
- Evidence shall be generated as a printed report, a JPEG image, an AVI or MKV film or in the VMS format.
- Shall include export audio recordings in WAV, MKV or AVI format.
- Exported video shall be digitally zoomed to view an area of interest and minimize export footprint size. The player shall enable re-export evidence containing the relative format and VMS Client - Player for instant, easy viewing by authorities.
- Verification of digital signatures added as a part of the export, shall enable users to verify that the video has not been modified or tampered with.
- The player shall provide encryption and password protection of exported video material with a choice of the following strong encryption algorithms: 56-bit DES 128, 192 and 256-bit AES.
- Secure video evidence handling with a digital signature of re-exported video material shall enable users to verify that the video has not been modified or tampered with when viewing the export in the VMS Client – Player.

3.39 WEB CLIENT

Views shall be accessed through the browser and avoid advanced setup.

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Shared views shall be managed centrally via the server with administrator/user rights and user groups.

Camera search function shall promptly find cameras, types of cameras and camera views in the system.

The client shall include:

- Easy multi camera video playback including fast/slow playback, single frame step and jump to date/time with frame preview while adjusting time.
- Investigation function with ability to save exports for later usage or download.
- List of alarms, that shall enable users to get a quick overview and act if needed.
- Option for client-side video decoding via browser plug-ins for details on supported browsers)
- Control PTZ cameras remotely, including preset positions.
- Dynamic bandwidth optimization when streaming from server to client gives better use of bandwidth.
- Create AVI files or save JPEG images.
- Preview exports on the server without downloading them.
- Trigger outputs and events with live view of related camera.
- System log-in using username and password.
- System log-in using Microsoft.
- Secure connection through HTTPS

The Web Client shall allow to export on the server to avoid moving large video files back and forth. The client shall allow to only download needed files or save them for downloading when on a faster connection.

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3.40 VMS MOBILE

- VMS mobile shall support any mobile device running Android® 2.2, iOS5, and Windows® Phone 8, or newer versions.
- The system should be able to accommodate at least 300 online users concurrently.
- Views shall be inherited from the connected VMS system. The client shall automatically obtain the user's private and shared views from the system to be used as camera lists in Mobile.
- A view with all cameras shall be automatically generated, allowing Mobile to be used when no views are set up. It shall also provide a quick way of searching through cameras.
- Camera search function shall promptly find cameras, types of cameras and camera views in the system.
- Cameras shall be viewed in full screen to take better advantage of the device's screen. It is also possible to search through cameras in a view while in full screen by swiping left or right.
- Digital pinch-to-zoom shall enable users to zoom in on a part of the image for closer review and conduct detailed investigation of video when using megapixel or high-definition cameras.
- VMS Mobile shall allow to play back recordings from the database and select a specific time or recorded sequence to start playback, step through recordings and select a playback speed.

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- VMS Mobile shall allow to view recordings from the database while keeping an eye on what is currently happening. The client shall display a live picture-in-picture frame of the same camera when in playback mode. The picture-in-picture shall be moved by dragging and double-tapping and will return to live view.
- Control over the PTZ cameras shall be given with Mobile either manually or by selecting predefined presets for quick navigation.
- Video Push shall allow users to use their mobile devices' cameras as cameras in the VMS. It is easy to use and requires no setup in the mobile device.
- VMS Mobile shall include the option to include location metadata in Video Push.

3.41 LICENSING STRUCTURE

- Provision of license for LPR cameras (A law enforcement integration license is required for full functionality of the LPR).
- The license shall permit GAAL to integrate their LPR cameras with law enforcement agencies for combating any criminal activities (e.g. stolen vehicles/ illegal vehicles etc).
- The client is expected to quote for the services and indicate the product/system they intend to deploy.

3.42 SPECIFICATIONS - Thermal Network Bullet Camera

- Thermal & Optical dual-spectrum image, dual video with single IP address, adaptable to more various scenes
- 1/1.8" target surface, high sensitivity sensor, satisfy the need of starlight monitoring
- Support reliable fire detection, smoking detection and fire shield area
- Thermal module supports temperature detection, cold and hot spot tracking which highlights the abnormal temperature, and link to alarm
- Thermal & Optical dual-spectrum smart intrusion prevention: cross line, enter area, leave area, intrusion

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- Support picture-in-picture mode, real-time contrast live, more convenient and clear
- Support audio and light alarm, with red and blue warning lights built in
- Ultra 265, H.265, H.264, MJPEG
- Triple streams
- Max 2688*1520@30fps in the optical module and Max 720P@30fps in the thermal module
- DC12V±25% or PoE power supply
- Alarm 2 in and 2 out, Audio 1 in and 1 out, Micro SD, up to 256 GB

3.43 SPECIFICATIONS – 4MP LPR Bullet Camera

2.8 to 12mm Focal length, PoE, H.265, warm light (IR)

- 1/1.8-inch 4MP CMOS
- Auto/Manual, range: 1/30 to 1/100000s
- 2688*1520@30 (default), 2688*1520@25
- Main stream: 2688*1520, 1080P (default), 720P, D1: Sub stream: 720P (default), D1, 2CIF, CIF; Third stream: D1 (default), 2CIF, CIF
- 30 (default), 25, 22, 20, 18, 16, 15, 12.5, 10, 8, 6, 5, 4, 3, 2, 1
- H.264 (default), H.265
- Support up to 8 regions
- Support 8 overlay areas and allows contents including date, time, date&time, zoom ratio, custom contents.
- Supports 8 overlay areas and allows contents including time, license plate number, device, Id, camera ID, allowlist, image authentication ID, custom contents (3 items), location.
- Supports ANR with a Micro SD card, up to 128GB
- Built-in vehicle license plate recognition algorithm can recognize standard license plates of multiple countries.

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- Supports simultaneous application to road and entry/exit scenes without switching.
- Supports license plate detection and recognition for up to 2 lanes in road scenes.
- Supports capturing vehicle head only.
- Supports recognition of up to 10 vehicle body colours.
- Supports allowlist and blocklist configuration.
- Supports vehicle access control when connected to a barrier.
- Supports Micro SD cards of up to 128GB.
- Supports Automatic Network Replenishment (ANR), the camera can automatically store video to its SD card in case of network disconnection.
- Supports audio acquisition and intercom
- 1 image stream, 3 video streams.
- Advanced H.265 encoding technology improves compression efficiency.
- Custom OSD allows various vehicle information to be overlaid on the video image.

3.44 SPECIFICATIONS - 2MP Outdoor High Speed PTZ

- High quality image with 2MP, 1/2.8" CMOS sensor
- 1920*1080@60fps in the mainstream
- Ultra 265, H.265, H.264, MJPEG
- Triple streams
- 33X Optical Zoom
- Smart intrusion prevention, support false alarm filtering, include Cross Line, Intrusion, Enter Area, Leave Area detection
- People Counting, support people flow counting and crowd density monitoring, suitable for different statistical scenarios
- Lighthunter technology ensures ultra-high image quality in low illumination environment

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- Vari-focal laser: 500m (1640ft) distance, proportional to optical zoom of camera module
- AC 24V \pm 25%, DC 24V \pm 25%, POE (PSE Required)
- Alarm 2 in and 1 out, Audio 1 in and 1 out
- IP66 ingress protection

3.45 SPECIFICATIONS - 4MP Outdoor High Speed PTZ

- High quality image with 4MP, 1/2.8" CMOS sensor
- 2688*1520@30fps in the mainstream
- Ultra 265, H.265, H.264, MJPEG
- Triple streams
- 33X Optical Zoom
- Smart intrusion prevention, support false alarm filtering, include Cross Line, Intrusion, Enter Area, Leave Area detection
- People Counting, support people flow counting and crowd density monitoring, suitable for different statistical scenarios
- Lighthunter technology ensures ultra-high image quality in low illumination environment
- Smart IR, up to 150m (492 ft) IR distance
- AC 24V \pm 25%, DC 24V \pm 25% or PoE+(IEEE 802.3at) power supply
- Alarm 2 in and 1 out, Audio 1 in and 1 out
- IP66 ingress protection

3.46 SPECIFICATIONS - 5MP WDR Starlight Indoor Mini PTZ

- Starlight illumination
- Day/night functionality
- Smart IR, up to 30 m (98 ft) IR distance
- Up to 120 dB Optical WDR (Wide Dynamic Range)

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- Optical glass window with higher light transmittance
- IR anti-reflection window to increase the infrared transmittance
- 2D/3D DNR (Digital Noise Reduction)

3.47 SPECIFICATIONS – 4K FISHEYE CAMERA(8MP)

- Ultra-wide-angle lens, 360° panoramic image
- Embedded infrared light, 360° fill-in light, up to 10m (33ft) IR distance.
- 2D/3D DNR (Digital Noise Reduction)
- Max 4000*3000 resolution
- Ultra265, H.265, H.264, MJPEG
- Built-in microphone & speaker, two-way talk supported.
- ROI (Region of Interest)
- Distortion correction supported.

3.48 SPECIFICATIONS - 4 MP IR Bullet Outdoor Camera

- High quality image with 4MP, 1/2.7"CMOS sensor
- 4MP (2688*1520) @ 25/20fps; 4MP (2560*1440) @ 25/20fps; 3MP (2304*1296) @30/25fps; 2MP (1920*1080) @30/25fps.
- Ultra 265, H.265, H.264, MJPEG
- Easystar technology ensures high image quality in low illumination environment.
- 120dB true WDR technology enables clear image in strong light scene.
- Support 9:16 Corridor Mode
- Built-in Mic
- Smart IR, up to 50m (164ft) IR distance
- Supports 256 G Micro SD card.
- IP67 ingress protection
- Support PoE power supply
- 3-Axis

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3.49 SPECIFICATIONS - 4 MP IR Dome Network Camera

- High quality image with 4MP, 1/3"CMOS sensor
- 4MP (2688*1520) @ 30/25fps; 4MP (2560*1440) @ 30/25fps; 3MP (2304*1296) @ 30/25fps; 2MP (1920*1080) @30/25fps.
- Ultra 265, H.265, H.264, MJPEG
- Intelligent perimeter protection, include cross line, intrusion, enter area, leave area detection.
- Based on target classification, smart intrusion prevention significantly reduces false alarm caused by leaves, birds and lights etc. accurately focus on human and, Motor vehicle and Non-Motor Vehicle
- Intelligent People Flow Counting and Crowd Density Monitoring
- Light Hunter technology ensures ultra-high image quality in low illumination environment.
- 120dB true WDR technology enables clear image in strong light scene.
- Support 9:16 Corridor Mode
- Alarm:1 in/1 out, Audio: 1 in/1 out
- Smart IR, up to 30m (98ft) IR distance
- Supports 256 G Micro SD card.
- IK10 vandal resistant and IP67 protection

3.50 SPECIFICATIONS -

- High quality image with 5MP, 1/2.7"CMOS sensor
 - 5MP (2880*1620)@30/25fps; 4MP (2560*1440)@30/25fps;3MP (2304*1296)@30/25fps; 2MP (1920*1080)@30/25fps
 - Ultra 265, H.265, H.264, MJPEG
 - Intelligent perimeter protection, include cross line, intrusion, enter area, leave area detection

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- Based on target classification, smart intrusion prevention significantly reduce false alarm caused by leaves, birds and lights etc., accurately focus on human and, motor vehicle and non-motor vehicle
- Intelligent
- Intelligent People Flow Counting and Crowd Density Monitoring
- Colorhunter technology ensures 24-hour full-color images
- 120dB true WDR technology enables clear image in strong light scene
- Support 9:16 corridor Mode
- Alarm:1 in/1 out, Audio: 1 in/1 out
- Supports 512 G micro SD card
- IK10 vandal resistant and IP67 protection
- Support PoE power supply

3.51 SPECIFICATIONS - Fibre AND CABLING

- Shielded Cat 6 Cable of high-standard.
- We require fibre cabling to connect the cameras that will be on the perimeter fence.
- Cameras at the air sight by the perimeter fence requires to be provided with power (solar panels with invertors and batteries).
- The service provider shall have knowledge, experience and the relevant certification/accreditation or expertise on how to juggle through Radio Frequency signals as our entity is located around the military base with lots of interferences.
- The service provider must be able to determine a suitable frequency to suffice any interferences that may arise and be able to commission air fibre if necessary.
- The service provider shall have knowledge, experience and the relevant certification/accreditation or expertise to commission fibre network, splicing and connecting it to the existing fibre line/network.

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The service provider shall commission the fibre network along the perimeter fence to connect all the cameras that will be structured on the perimeter and in turn connect the same fibre network back to the server room and splice it into the existing fibre line.

3.52 SPECIFICATIONS - Surge Protection

- Refer to the pricing schedule below and note that the service provider shall see to it that each equipment is surge protected (NVR, VMS, Cameras and etc.)

3.53 SPECIFICATIONS - Rack Mount Ups

1500VA 230V Rack Mount

Output

- Output power capacity - 1.0k Watts / 1.5kVA
- Max Configurable Power (Watts) -1.0k Watts / 1.5kVA
- Nominal Output Voltage - 230V
- Output Voltage Note - Configurable for 220 : 230 or 240 nominal output voltage
- Output Voltage Distortion - Less than 5% at full load
- Output Frequency (sync to mains) - 47 - 53 Hz for 50 Hz nominal, 57 - 63 Hz for 60 Hz nominal
- Other Output Voltages - 220, 240
- Topology - Line Interactive
- Waveform type - Sine wave
- Output Connections - (4) IEC 320 C13 (Battery Backup) (2) IEC Jumpers (Battery Backup)
- Transfer Time - 2ms typical

Input

- Nominal Input Voltage - 230V
- Input frequency - 50/60 Hz +/- 3 Hz (auto sensing)
- Input Connections - IEC-320 C14
- Input voltage range for main operations - 160 - 286V

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- Input voltage adjustable range for mains operation - 151 - 302V
- Other Input Voltages - 220, 240

Batteries & Runtime

- Battery type - Maintenance-free sealed Lead-Acid battery with suspended electrolyte: leak-proof b) Typical recharge time – 3 hour(s)
- Expected Battery Life (years) - 4 - 6
- Battery Volt-Amp-Hour Capacity – 432

Communications & Management

- Interface Port(s) - RJ-45 Serial, SmartSlot, USB
- Control panel - Multi-function LCD status and control console
- Audible Alarm - Alarm when on battery: distinctive low battery alarm: configurable delays
- Emergency Power Off (EPO) - Optional
- Available SmartSlot™ Interface Quantity – 1

Surge Protection and Filtering

- Surge energy rating - 459Joules
- Filtering - Full time multi-pole noise filtering: 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449

3.54 CAMERA INSTALLATION POLES

- Poles shall be galvanised steel with a height of 6m with solar mounting panels.
- Poles to be installed as per manufacturer instructions to minimize vibration due to wind.
- To prevent theft of cameras, the poles shall not be placed directly next to the fence, and anti-climbing devices shall be considered.

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- The pole shall be earthed via 50 x 3 mm earth tails, the earth tails shall be buried and welded to the base of the fence so as not to be easily visible. The join shall be painted the same colour as the fence to avoid theft of the copper earthing.
- The earthing shall conform to the latest revision of the general earthing standards of copper joints,
- Holes required for the fixing of the sensors and cameras may be drilled on-site and shall be appropriately sealed to prevent water ingress. Drilling can be minimised by using equipment that clamp securely onto the poles.
- Prior to the installation of the support foundation, the stone layer shall be removed sufficiently far enough from where the foundation is to be cast. Any soil excavated from the foundation hole shall not be mixed with the yard stone, as it will lower the resistivity of the yard stone, altering the touch and step potentials within the yard and thus increasing the risk of danger to human life.
- On completion of the installation, all excess soil shall be removed from the yard and the stone shall be replaced to cover the area surrounding the foundation. Any soil exposure due to the yard stone being replaced inappropriately is unacceptable.
- All cabling be routed through the foundation of the pole. Drilled holes shall be kept to a minimum and shall be appropriately sealed to prevent water ingress.

3.55 INSTALLATION OF SYSTEM

- The CCTV design shall be signed off as accepted by both Chief Security Officer and the ICT Manager before installation of the system can begin and post completion of the project. No work may begin on site without design approval from responsible personnel as outlined above and a site kick off meeting.
- The system shall be installed according to the appropriate manufacturer and agreed specifications.

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- Any changes to the design made during installation shall be approved by the Chief Security Officer and the ICT Manager through a formal site instruction and should be documented.

3.56 INSTALLATION

- To ensure quality workmanship and sound installation practice, it is imperative that the contractor adheres to the specifications supplied by GAAL. Should there be any uncertainty with regards to the specifications; the contractor is to contact the GAAL's employee responsible for the project for guidance.
- Only contractors with minimum required experience (as per functionality) in CCTV and alarm system installations shall do installations. To this end the tenderer shall provide a CV of relevant experience and references or reference letters confirming similar services rendered.
- All installers shall adhere to the OHS Act (Occupational Health and Safety Act) of 1970 when installing the system. Contractors and sub-contractors shall meet the requirements specified by GAAL's Health and Safety specifications.
- All equipment shall have a mechanical earth connected to the site earth.
- All equipment shall be designed and specified for a minimum realisable operational life 10 years under the prevailing environmental conditions unless otherwise agreed to by GAAL during the evaluation stage.
- Consideration must be given for the minimum working and electrical clearances of overhead equipment) All equipment shall be labelled in accordance with the design diagrams, with durable, weather resistant labels.
- Cabling and networking labelling shall be in accordance with appropriate standards, UTP Standard labelling for cabling and networking.
- All cables, network points and patch panels shall be labelled with a unique identification, at all terminations, in accordance with the cabling and networking diagrams supplied.

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- All of the splices and connections shall be mechanically secure and shall provide electrical contact without stress on connections and terminals. Splicing is strongly discouraged but if unavoidable, splices used shall have insulation equivalent to that of the wires being joined.
- Any hole which 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.
- Wireways shall be smooth and free from sharp edges, burrs, fins, or moving parts that may damage wiring.
- All internal wiring connections shall be made with a solder lug or pressure terminal connector.
- A terminal lug shall be arranged such that in any position it cannot contact the metal enclosure, non-energized accessible metal parts or other electrical circuits. Alternatively, the shank of the lug shall be provided with insulation equivalent to that of the conductor.
- Terminal blocks shall be in accordance with standard, Specification for Electrical Terminal Blocks.
- CCTV installation shall be signed off as accepted by Chief Security Officer and ICT Manager for the security system installation.

3.57 SPECIFICATIONS - Control Room UPS

As per the Bill of Material (BOQ) below.

3.58 TRAINING

The bidder shall provide full comprehensive training to internal staff and security personnel/officer.

The training should achieve the following objectives to GAAL officials:

- Demonstrate an understanding of the basic theory of CCTV.

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- Explain the functionality of the components of a CCTV system.
- Explain the ethics and legal aspects pertaining to CCTV installations.
- Demonstrating all VMS, NVR's, Camera's functionalities, how to access the portal, playback live view and etc.

The training should provide the following skills and competency:

- Operational requirements may include but are not limited to functional requirements, manufacturer's specifications, industry standards, health and safety.
- Components may include but are not limited to cable, cameras, lenses, housings, brackets, monitors, power supplies, stand-alone digital video recorder (DVR's), sequential switcher, quads and multiplexers.
- Most importantly the service provider shall ensure that there is concurrent transfer of skills to GAAL staff led by skills transfer plan for official transfer/handing over of the system to the entity to minimize the risk of disruptions and for business continuity.
- Despite any challenges or disputes, the service provider shall ensure that there are no disruptions to GAAL business operations.
- Full comprehensive testing and quality assurance of the system shall be conducted, and official documentation of the project shall be provided prior signing off the project. The service provider shall ensure that there is system availability and functionality without downtime, time availability and matrix penalties will be fully documented on the Service Level Agreement based on the system functionality, risk assessment and information classification.
- The service provider shall ensure that there is proper planning, building/developing, installation and operation of the system, inclusive of maintenance and support to close all the audit findings and internal risk assessment.

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4. Bill of Quantities

Refer to quantities as specified on the pricing schedule.

5. EVALUATION CRITERIA

All bids will be evaluated in terms of administrative & mandatory requirements, functionality, and preference point system.

Administrative (mandatory) Criteria (Gate 0)	Functionality Evaluation Criteria (Gate 1)	Price and Specific Goals Evaluation Criteria (Gate 2)
<p>Bidders must submit all documents as outlined in paragraph 3.1 (Table 1) below.</p> <p>Only bidders that comply with all these criteria will proceed to Gate 1.</p>	<p>Bidder(s) are required to achieve a minimum of 235 points out of 315 points to proceed to Gate 2 (Price and Specific goals).</p>	<p>Bidder(s) will be evaluated on price (weighted price) and Specific goals claimed points</p>

5.1 Gate 0: Administrative (mandatory) requirements

Bidder(s) must submit the documents listed in **Table 1** below. All documents must be completed and signed in black ink by the duly authorized representative of the prospective bidder(s). **Correction fluid is not allowed and any cancellation on the bid document must be initialed by the authorized signatory.** During this phase, Bidders' responses will be evaluated based on compliance with the listed administration and mandatory bid requirements. The bidder(s) proposal may be disqualified for non-submission of any of the documents.

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#	Document Name ¹	Included in the published bid document?	To be returned by the bidder?	Bidder may tick Yes if document is submitted
GATE 0: ADMINISTRATION REQUIREMENTS EVALUATION				
	SBD 1 Invitation to Bid	Yes	Yes	
	Proof of authority must be submitted as per SBD 1 e.g. company resolution for the capacity under which this bid is signed.	No	Yes	
	SBD 3.1 Pricing Schedule	Yes	Yes	
	SBD 4 Bidders Disclosure	Yes	Yes	
	SBD 6.1 Preference Points Claim Form	Yes	Yes	
	Full updated CSD report or MAAA number on SBD 1	No	Yes	
MANDATORY REQUIREMENTS EVALUATION				
	Pricing Schedule (or bid offer/pricing)	No	Yes	
	The Bidder must be accredited in cabling with either Krone or Molex (or equivalent cabling certification). Bidder must submit valid Krone or Molex accreditation certificate.	No	Yes	
	The bidder must be accredited with Radio Frequency/Wireless Networks certification/ ICASA ECNS license. Submit valid certificate in Radio Frequency/Wireless Networks/ Independent Communications Authority of South Africa (ICASA) Electronic Communication Network Services (ECNS) license in the name of	No	Yes	

¹ Table 1 is provided as guidance to assist bidders with documents that must be returned with the bid. The list is not exhaustive, and it is the responsibility of the bidder to provide all required documents as per the provision of each clause in this bid

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#	Document Name ¹	Included in the published bid document?	To be returned by the bidder?	Bidder may tick Yes if document is submitted
	the bidder.			
	The bidder must be accredited in VMS and CCTV installation. Accreditation must be between the bidder and the OEM or product supplier/be a valid reseller from the distributor.			
	Bidder must submit a valid OEM accreditation/certificate for the Camera/s that will be supplied/valid reseller certificate/letter from the distributor.	No	Yes	
	Bidder must submit a valid OEM accreditation/certificate for the VMS that will be supplied //valid reseller certificate/letter from the distributor.	No	Yes	
	The bidder must be registered with the Private Security Industry Regulation Authority (PSIRA).			
	Submit proof of valid registration with the PSIRA.	No	Yes	
	The quoted products (VMS and Camera) must be ONVIF Compliant			
	Bidder must submit proof of ONVIF Compliant for the quoted/offered VMS	No	Yes	
	Bidder must submit proof of ONVIF Compliant for the quoted/offered Cameras	No	Yes	
GATE 1: FUNCTIONALITY COMPLIANCE EVALUATION				
	Contactable reference letters with company experience in installation and maintenance of CCTV systems, (signed reference letters from previous and existing client).	No	Yes	

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#	Document Name ¹	Included in the published bid document?	To be returned by the bidder?	Bidder may tick Yes if document is submitted
	Valid bank rating letter or proof of funding to execute the project	No	Yes	
	Valid OEM accredited certifications of the existing product (Uniview and Pelco or Hikvision)	No	Yes	
	Valid CV and qualification certifications.	No	Yes	
	Detailed project implementation plan and methodology	No	Yes	
	Valid proof of address/residence (e.g. Municipal bill document for rates and taxes, letter from traditional council/Chief authority/lease agreement or any other valid proof of address not older than 6 months.	No	Yes	
	The bidders must be accredited with SAIDSA Certificate in CCTV Installation and/or any other related regulatory body and/or association. Submit certificate in the name of a bidder.	No	Yes	
GATE 2: PRICE & SPECIFIC GOALS EVALUATION				
	Pricing Schedule (or bid offer/pricing)	No	Yes	
OTHER DOCUMENTS REQUIRED				
	Bidders Company Profile	No	Yes	
	Bidders CIPC Company Registration Documents	No	Yes	
	General Condition of Contract	Yes	Yes	

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GATE 0: ADMINISTRATIVE EVALUATION

Bidders are required to submit the legislative documents to comply with the policy to guide uniformity in procurement reform processes in the Government regarding the standardised bidding documents (SBDs) for the supply chain management. It is also a requirement for bidders to submit additional documents as detailed below:

SBD 1 – Invitation to Bid

Proof of Authority – This is a Company Resolution for the capacity under which this bid is signed.

SBD 3.1 – Pricing schedule

SBD 4 – Bidders Disclosure

SBD 6.1 – Preference Points Claim Form

Central Supplier Database (CSD) – A full updated CSD report

MANDATORY REQUIREMENTS EVALUATION

During this gate, the bidders' responses will be evaluated based on the mandatory requirement.

Non-compliance to the mandatory requirement **will result in the disqualification** of the bid response.

Pricing Structure (or bid offer/pricing) and Schedule.

Bid price /pricing structure must be completed /or submitted in full for all services categories. Where bidder has omitted to put price for certain price categories the price offer will not be accepted and will be disqualified as it will not be comparable with others who have quoted for all service categories.

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Price structures that do not comply with this requirement will invalidate the bid. The prices must be all-inclusive for the provision of the CCTV, VMS systems, all other equipments and accessories as per bid specification and bill of materials, and any other costs that may influence the price. The prices must be per the bid specification inclusive of all inverters, solar panels, fibre, electrical power supply, backup batteries and all other required accessories to implement the project and have a fully functional CCTV systems without downtime.

5.2 Gate 1: Functionality Evaluation Criteria

All bidders are required to respond to the functionality evaluation criteria.

Only Bidders that have met the Administrative and/or Mandatory Criteria in (Gate 0) will be evaluated in Gate 1 for functionality as per below table:

Functionality Evaluation – Bidders will be evaluated out of 315 points and are required to achieve minimum threshold of 235 points to proceed to Gate 2 for Price and Specific goals evaluations; and

As part of due diligence, the entity may conduct a site visit at the bidders' place of business (as per the physical address provided by the bidder on SBD1) and/or at client of the Bidder (reference) for validation of the services previously rendered.



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Evaluation Criteria for Functionality is as Follows:

Criteria	Sub-Criteria	Weight of Criterion	Bidder Score
Company Experience and Track Record in installation, repairs and maintenance of CCTV systems Attach Signed Contactable Reference Letters	Reference letters covering installation, repairs and maintenance of CCTV systems.	More than 5 years' experience = 25 Points	
		More than 3 to 5 years = 15 Points	
		More than 2 to 3 years = 10 Points	
		Less than 2 years = 5 Points	
		0 experience = 0 Points	
Number of projects completed for CCTV systems. Attach Signed Contactable Reference Letters	Reference letters of number of completed projects in CCTV system.	5 or more Letters = 25 Points	
		3 - 4 Letters = 15 Points	
		1 - 2 Letters = 5 Points	
		0 Letters = 0 Points	
OEM Accreditation Certificates.	Bidder must submit accreditation/certificates of the existing product (Uniview, Pelco or Hikvision). Accreditation must be between the bidder and the OEM.	All Two certificates = 20 points	
		Any One of the certificates = 10 points	
		No certificates = 0 points	



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Financial Viability	Bidders must submit stamped Bank Letter or Proof of Funding from accredited financial institution confirming the ability to execute project.	Above R20m = 10 points Above R10m – R20m = 5 points Less than R10m = 0 points	
Detailed High Level Implementation Project Plan and Methodology showing implementation within the entity/airport including site surveys. The plan should also show the timelines for the entire project.	Implementation Project Plan and Methodology on how to provide CCTV services, configuration/Commissioning, implementation, repairs, maintenance, and support without downtime.	Excellent = 10 (Must include Project Timelines, Methodology Type, Quality Assurance, Testing and Training) Moderate = 5 (Only Three of the above) Poor = 0 (Only Two or below)	
Provide CV and Certified Copies of accredited qualifications for a professional service, repairs and maintenance of CCTV systems of quoted CAMERA/VMS SYSTEM . Provide CV for technician and proof of registration with Private Security Industry Regulation Authority (PSIRA).			
Project Manager CV	Project Manager required for the implementation of the project: Must have accredited certification in installation of CCTV, Risk Management or COBIT, Prince2 / PMP or equivalent Project Management certification. Acronyms: CCTV (Closed Circuit Television) PMP ((Project Management Professional) COBIT (Control Objectives for Information and Related Technology)	All 3 Certificates = 15 Points	
		2 Certificates = 10 Points	
		1 Certificate = 5 Points	
		No Certificates = 0 Points	



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Total Maximum Points to be scored by the technicians/engineers equals to 195			Engineer/Technician 1	Engineer/Technician 2	Engineer/Technician 3	Total Points
<p>(An Engineer/Technician to be onsite during the installation and implementation process)</p> <p>Technician CV should indicate minimum of three years' experience in installation and maintenance of CCTV and attach Diploma/Degree, CCTV installer training and recommended system installer accreditation</p>	Relevant accredited Diploma in IT or any equivalent qualification.	10 points				
	Accredited certificate in installation of VMS (of quoted VMS SYSTEM)	10 points.				
	Accredited certificate in installation of IP Cameras/CCTV.	10 Points				
	Accredited certificate in Radio Frequency/Wireless Networks/ECNS.	10 Points				
	Any Cabling Certification (Krone/Molex or any equivalent).	10 points.				



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<p>(An Engineer/Technician to be onsite during the installation and implementation process)</p> <p>Bidder must submit CV of Technician</p>	<p>More than 5 years' experience = 15 Points</p> <p>More than 3 to 5 years' experience = 10 Points</p> <p>1 to 3 years' experience = 5 Points</p> <p>Below 1 year experience = 0 Points</p>					
<p>Company address/Company's proof of address/residence (e.g. Municipal bill document for rates and taxes, letter from traditional council/Chief authority/lease agreement or any other valid proof of address not older than 6 months.</p>	<p>Demographic Provide a valid Company's proof of address/residence (e.g. Municipal bill document for rates and taxes, letter from traditional council/Chief authority/lease agreement or any other valid proof of address not older than 6 months.</p>	<p>Outside of Limpopo Province = 5</p> <p>Outside Capricorn District = 10</p> <p>Capricorn District = 15</p>				
<p>Total</p>				<p>315</p>		

The maximum points that can be scored on functionality equals to 315, Bidders scoring less than 235 points will be disqualified. Bidders that fail to meet the minimum threshold for functionality will be disqualified. Thereafter, only the qualifying bid(s) will be evaluated in terms of the 80/20.



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5.3 Gate 2: Preference Point System,

Only Bidders that have met the 235 points thresholds in Gate 1 will be evaluated in Gate 2 for price and specific goals.

Preference Points System where the 80 points are awarded for price and the 20 points are awarded for specific goals as follows:

FINAL EVALUATION CRITERIA	POINTS
Price	80
Specific goals	20
Total	100

6. SPECIAL CONDITIONS OF BIDDING AND BID SUBMISSION REQUIREMENTS

6.1 Terms and conditions:

6.1.1 The individuals proposed for professional work on the project shall remain on the project unless the airport grants permission to change the proposal. Such permission will only be granted in exceptional circumstances.

6.1.2 No material or information derived from the provision of the services under the Contract may be used for any purposes other than those of the airport, except where authorized in writing to do so. All information will be held strictly confidential. The successful service provider will be required to sign a non-disclosure and confidentiality agreement with the airport.

6.1.3 Copyright of all documents and electronic aids, software programs prepared or developed in terms of the appointment, shall vest in the airport.

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- 6.1.4 The airport reserves the right to amend, modify or withdraw this TOR document or amend, modify, or terminate any of the procedures or requirements set out herein at any time and from time to time, without prior notice except where required by law, and without liability to compensate or reimburse any Prospective service providers.
- 6.1.5 Any briefing notes which may be issued by the airport to the Bidder/s should be considered as part of this TOR. Furthermore, in the event that the negotiations between the airport and the preferred Bidder/s fail with regard to the conclusion of a Service Level Agreement, the airport reserves its right not to appoint the Preferred Bidder/s without incurring any liability to compensate or reimburse the Preferred Bidder/s.
- 6.1.6 Neither the airport, nor any of its respective, officers, or employees may make any representation or warranty, expressed, or implied in this TOR document. And nothing contained herein is, or shall be relied upon as, a promise or representation, whether as to the past or the future.
- 6.1.7 A proposal submitted by a company, close corporation or other legal person must be accompanied by a resolution or agreement of the directors or members and be signed by a duly authorized person.
- 6.1.8 A proposal submitted by a partnership must be accompanied by a written partnership agreement.
- 6.1.9 A proposal submitted by a consortium of two or more parties must be accompanied by a signed memorandum of understanding between the parties to such consortium indicating:
- the conditions under which the consortium will function;
 - Its period of duration;
 - The persons authorized to represent it;
 - The participation of the several parties forming the consortium;

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- The benefits that will accrue to each party;
- Any other information necessary to permit full appraisal of its functioning.

- 6.1.10 The costs of preparing proposals and of negotiating the contract will not be reimbursed.
- 6.1.11 The preferred Bidder will be required to enter into a Service Level Agreement (SLA) prior to appointment.
- 6.1.12 The airport is not bound to accept any of the proposals submitted and reserves the right to call for best and final offers from short-listed bidders before final selection. The airport also reserves the right to call interviews with short-listed bidders before final selection, and to negotiate prices.
- 6.1.13 Bidders may ask for clarification on this TOR or any of its Annexures up to close of business seven (7) working days before the deadline for the submission of bids. Any request for clarification must be submitted by email to the contact person. Copies of questions and answers will be published on the entity's website, without revealing the identity of the source of the questions.
- 6.1.14 Bidders may not contact the airport on any matter pertaining to their bid from the time when bids are submitted to the time the contract is awarded. Any effect by the bidder to influence bid evaluation, bid comparisons or award decisions in any manner, may result in rejection of the bid concerned.
- 6.1.15 Implement the project in schedules in accordance with the BOQ and should GAAL decide so, such slit implementation should not affect the costs offered at the time of award;
- 6.1.16 Bid submission requirements must be completed in sections and appendices provided in the bid document.

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7. BID SUBMISSION

Bid documents must be placed or couriered in the bid box to the address on or before the stipulated closing date and time as indicated in the SBD1.

Bid documents will only be considered if received by the entity on or before the closing date and time.

Bidders are required to submit their bids in two clearly marked envelopes as follows:-

ENVELOPE 1 (ADMINISTRATIVE AND/OR MANDATORY & FUNCTIONALITY)	ENVELOPE 2 (PRICE & SPECIFIC GOALS)
<p>Exhibit 1: Administrative and mandatory documents (Refer to Section 5.1 - Gate 0: Administrative requirements (Table 1)) and Detailed Pricing Schedule (Pricing Submission)</p>	<p>Exhibit 4:</p> <ul style="list-style-type: none"> • Company Profile • Any other supplementary information • General Conditions of Contract (GCC)
<p>Exhibit 2: Functionality Responses and Bidder Compliance Checklist for Technical Evaluation. Supporting documents for technical responses. (Refer to Section 5.3 - Gate 2: Functionality Evaluation Criteria)</p>	<p>Exhibit 5: SBD 6.1: Preference Points Claim Form in terms of the Preferential Procurement Regulations 2022.</p>
<p>Exhibit 3: Electronic submission (USB/Memory card/External hard drive) – clearly marked.</p>	

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**PART A
INVITATION TO BID**

SBD 1

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF DEPARTMENT/ PUBLIC ENTITY)					
BID NUMBER:	GAAL/096/2023/2024	CLOSING DATE:	15 NOVEMBER 2024	CLOSING TIME:	11H00
DESCRIPTION	RE-ADVERTISEMENT MODERNISATION/REPOSITIONING AND CONFIGURATION/COMMISSIONING OF CLOSE CIRCUIT TELEVISION (CCTV) CAMERAS, MAINTENANCE AND SUPPORT FOR A PERIOD OF THREE YEARS.				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
ADMIN BLOCK					
N1 NORTH TO MAKHADO					
GATEWAY WEG					
POLOKWANE, 0700					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	JULIUS RAMATJIE	CONTACT PERSON	MONICCA MNISI		
TELEPHONE NUMBER	087-291-1088	TELEPHONE NUMBER	087-291-1054		
FACSIMILE NUMBER	015-288-0125	FACSIMILE NUMBER	015-288-0122		
E-MAIL ADDRESS	scmgroupp@gaal.co.za	E-MAIL ADDRESS	monicca.mnisi@gaal.co.za		
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA

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ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]
--	---	---	--

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? YES NO

DOES THE ENTITY HAVE A BRANCH IN THE RSA? YES NO

DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? YES NO

DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? YES NO

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? YES NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.

**PART B
TERMS AND CONDITIONS FOR BIDDING**

1. BID SUBMISSION:
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION. 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT. 1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT. 1.4. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
2. TAX COMPLIANCE REQUIREMENTS
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS. 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.



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- 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
- 2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
- 2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE.”

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:
(Proof of authority must be submitted e.g. company resolution)

DATE:



• GATEWAY TO THE REST OF AFRICA •

Reg No: 1995/002792/06
 P.O. Box 1309, Polokwane, Limpopo Province. RSA, 0700
 Tel: 015 288 0122 Fax: 015 288 0125

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SBD 3.1

**PRICING SCHEDULE – FIRM PRICES
 (PURCHASES)**

**NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES
 SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

**IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A
 SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT**

Name of bidder.....	Bid number: GAAL/096/2023/2024
Closing Time 11:00	Closing date: 15 NOVEMBER 2024

OFFER TO BE VALID FOR **150 DAYS** FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY ** (ALL APPLICABLE TAXES INCLUDED)
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- Required by:
- At:
- Brand and model
- Country of origin
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s)



• GATEWAY TO THE REST OF AFRICA •

Reg No: 1995/002792/06
P.O. Box 1309, Polokwane, Limpopo Province. RSA, 0700
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- Period required for delivery
*Delivery: Firm/not firm
- Delivery basis

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

*Delete if not applicable

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BIDDER'S DISCLOSURE

SBD 4

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest² in the enterprise,

employed by the state?

YES/NO

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

² the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.



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2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

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- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.



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terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature	Date
.....
Position	Name of bidder

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SBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 **To be completed by the organ of state**

a) The applicable preference point system for this tender is the **80/20** preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

1.4 **To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and Specific Goals	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **“tender”** means a written offer in the form determined by an organ of state in response to an invitation to provide goods

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or services through price quotations, competitive tendering process or any other method envisaged in legislation;

- (b) “**price**” means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) “**tender for income-generating contracts**” means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) “**the Act**” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20	or	90/10
$P_s = 80 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)$	or	$P_s = 90 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)$

Where

- P_s = Points scored for price of tender under consideration
- P_t = Price of tender under consideration
- P_{min} = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20	or	90/10
$P_s = 80 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)$	or	$P_s = 90 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)$

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Where

- Ps = Points scored for price of tender under consideration
Pt = Price of tender under consideration
Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—
- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or
 - (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,
- then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.)

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Enterprises with ownership of 51% or more by person/s who are black	5	

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Enterprises with ownership of 51% or more by person/s who are women	5	
Enterprises with ownership of 51% or more by person/s who are youth	4	
Enterprises with ownership of 51% or more by person/s with disability	2	
Small, Medium and Micro Enterprises (SMMEs and QSEs)	4	
Total	20	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number:

4.5. TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One-person business/sole propriety
- Close corporation
- Public Company
- Personal Liability Company
- (Pty) Limited
- Non-Profit Company
- State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

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- (a) disqualify the person from the tendering process;
- (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
- (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) Recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

<p>..... SIGNATURE(S) OF TENDERER(S)</p>
<p>SURNAME AND NAME:</p> <p>DATE:</p> <p>ADDRESS:</p> <p>.....</p> <p>.....</p> <p>.....</p>