DETAILED TECHNICAL SPECIFICATIONS FOR UPGRADATION OF SECURITY AND FIRE FIGHTING INFRASTRUCTURE IN 16 AMMUNITION DEPOTS

(ANNEXURE-II)

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Note: Bidder has to propose each product/system meeting all minimum technical/functional requirement given in RFP whereas bidder can also propose the product/system with better technical/functional specifications

INTRUSION DETECTION AND SURVEILLANCE SYSTEM

1. Surveillance IP System

(a) 13mm Thermal Camera

Item	Minimum Requirement Description
Make	
Model	
Sensor Format	Uncooled
Detector Type	VOx Microbolometer
Lens & Angle of view	Lens (>=13&<=18MM) providing <= 36 Degree
Thermal Resolution	640 x 480, 25 Hz
Spectral Band	8-13µ
Frame rate Hz/FPS	Full Frame – 25/30 Hz
Zoom	Up to 4X Digital zoom
Thermal Sensitivity	<50mK f/1.0
Modes	White-Hot & Black-Hot user selectable
Analytics	Built-in or server based analytics & IQ based processing for Human and Vehicle or other classification
Analytics Range	Shall reliably trigger intrusion detections analytics alarm for human at 150m or higher
Output	Analogue BNC and IP RJ45
Streaming	Dual Stream, ONVIF Profile S
Rating	IP-66 and MIL-STD-810F
Power	PoE and 24VAC/DC
Operating temp.	Temp: -20° C to 55°C , Humidity: 90%
Standard	BIS Standard 13252 (Part 1):2010

(b) 19mm Thermal Camera

Item	Minimum Requirement Description
Make	
Model	
Sensor Format	Uncooled
Detector Type	VOx Microbolometer

Lens & Angle of view	Lens (>=19&<=25MM) providing <= 27 Degree
Thermal Resolution	640 x 480, 25 Hz
Zoom	Up to 4X Digital zoom
Spectral Band	8-13μ
Frame rate Hz/FPS	Full Frame – 25/30 Hz
Thermal Sensitivity	<50mK f/1.0
Modes	White-Hot & Black-Hot user selectable
Analytics	Built-in or server based analytics & IQ based processing for Human and Vehicle or other classification
Analytics Range	Shall reliably trigger intrusion detections analytics alarm for human at 250m or higher
Output	Analogue BNC and IP RJ45
Streaming	Dual Stream, ONVIF Profile S
Rating	IP-66 and MIL-STD-810F
Power	PoE and 24VAC/DC
Operating temp.	Temp: -20° C to 55°C , Humidity: 90%
Standard	BIS Standard 13252 (Part 1):2010

(c) 35mm Thermal Camera

Item	Minimum Requirement Description
Make	
Model	
Sensor Format	Uncooled
Detector Type	VOx Microbolometer
Lens & Angle of view	Lens (>=35&<=50 MM) providing <= 18 Degree
Thermal Resolution	640 x 480, 25 Hz
Zoom	Up to 4X Digital zoom
Spectral Band	8-13μ
Frame rate Hz/FPS	Full Frame – 25/30 Hz
Thermal Sensitivity	<50mK f/1.0
Modes	White-Hot & Black-Hot user selectable
Analytics	Built-in or server based analytics & IQ based processing for Human and Vehicle or other classification
Analytics Range	Shall reliably trigger intrusion detections analytics alarm for human at 300m or higher
Output	Analogue BNC and IP RJ45
Streaming	Dual Stream, ONVIF Profile S
Rating	IP-66 and MIL-STD-810F
Power	PoE and 24VAC/DC
Operating temp.	Temp: -20° C to 55°C , Humidity: 90%
Standard	BIS Standard 13252 (Part 1):2010

(d) 60mm Thermal Camera

Item	Minimum Requirement Description
Make	
Model	
Sensor Format	Uncooled
Detector Type	VOx Microbolometer
Lens & Angle of view	Lens (>=60&<=75MM)providing <= 10 Degree
Thermal Resolution	640 x 480, 25 Hz
Zoom	Up to 4X Digital zoom
Spectral Band	8-13µ
Frame rate Hz/FPS	Full Frame – 25/30 Hz
Thermal Sensitivity	<50mK f/1.0
Modes	White-Hot & Black-Hot user selectable
Analytics	Built-in or server based analytics & IQ based processing for Human and Vehicle or other classification
Analytics Range	Shall reliably trigger intrusion detections analytics alarm for human at 550m or higher
Output	Analogue BNC and IP RJ45(Both required)
Streaming	Dual Stream, ONVIF Profile S
Rating	IP-66 with sunshield and MIL-STD-810F
Power	PoE and 24VAC/DC
Operating temp.	Temp: -20° C to 55°C , Humidity: 90%
Standard	BIS Standard 13252 (Part 1):2010

(e) IP Ultra HD Camera with IP 66 Outdoor Housing

Item	Minimum Requirement Description
Make	
Model	
Sensor	1/2.5" or bigger Progressive CMOS Sensor
WDR	High/Low/Medium user configurable
Minimum Illumination	Day 0.5 lux / Night 0.05 lux
Lens	9-50mm varifocal, Auto Iris, Full HD, D/N lens providing 15-40 degree adjustable FOV and detect human at 150m or higher
IR sensitivity	Between 680 to 1100nm IR cut filter
3D Noise reduction	User configurable ON/Off
Tamper Detection	User configurable On/Off
Compression	Dual H.264 streams
Compression Performance	Resolution & FPS Maximum Performance: Stream 1: 3840 x 2160 @ 25FPS and Stream 2: 720 x 576 @ 25FPS on two streams respectively at the same time
Bandwidth	64Kbps to 20Mbps

Motion Detection	Built-In Multi-zone motion detection
Protocols	Unicast, Multicast, RTP, TCP, UDP, HTTP, IGMP, ICMP, DHCP, ONVIF etc. or as per solution requirement to fulfill functional requirement
Connectivity	10/100 Base-T Auto sensing, Half/Full Duplex (RJ45)
Audio	Audio IN and Audio out for two way audio communication using suitable external microphones and speakers
SD Card Support	Built in Micro SD card slot to support up to 32GB storage for local recording. SD Card will be supplied by system Integrator
Alarm I/O	At least one potential free Alarm IN and one Alarm out
Power	Power : 802.3af class 3 PoE and 12VDC/24VAC auto sensing
Enclosure	Vandal resistant enclosure with IP66 rated, built in Heater and Blower, Sun shield.
Mounting	Wall, Pole as required
Operating conditions	Temp: -20° C to 50°C , Humidity: 90%
Standard	BIS Standard 13252 (Part 1):2010

(f) IP outdoor PTZ Camera 1080P (CCD/CMOS, 30x IP 66)

Item	Minimum Requirement Description
Make	
Model	
Sensor	1/3" CCD/CMOS Progressive Sensor
Minimum Illumination	Minimum Illumination : Color 0.5 lux & B/W 0.05 lux
Lens	Auto iris, Auto focus, Motorized 4.3mm-129mm or better zoom lens (30X) providing adjustable 3-65 degree or better FOV and detect human at 400m or higher
Compression	H.264
Compression Performance	Resolution & FPS Maximum Performance: Stream 1: 1920 x 1080 @ 25FPS and Stream 2: 720 x 576 @ 25FPS on two streams respectively at the same time
Bandwidth	Bandwidth : 64Kbps to 16Mbps
Protocols	Unicast, Multicast, RTP, TCP, UDP, HTTP, IGMP, ICMP, DHCP, ONVIF etc. or as per solution requirement to fulfil functional requirement
Connectivity	10/100 Base-T Auto sensing, Half/Full Duplex (RJ45)
Pan-Tilt	Endless 360° pan and -10° to 90° tilt movement
Speed	Manual Pan/tilt speed up to 90 deg per second and preset speed up to 200 deg per second
Mode	200 or more preset positions and 8 tour
Audio	External audio Input and output: Required
SD Card Support	Built in Micro SD card slot to support up to 64GB storage for local recording
Alarm I/O	At least one potential free Alarm IN and one Alarm out
IR	Built-in or external IR with minimum 150m range
Power	Power input: 24VAC or POE++ as per manufacturer standard
Rating	IP66 rated, Built in heater
Operating conditions	Temp: -20° C to 50°C , Humidity: 90%

Stereo Playback	Yes
Number of Speakers	2
Youtube	Yes
Web Browser	Yes
HDMI Input	2
USB Port	2
VGA Input	1
Composite Input	1
Component Input	1
Ethernet	1
DLNA Support	Yes
Dimensions (W x D x H) (mm)	Approx 1230mm x 210mm x 753mm
Approximate Net Weight (Kgs)	20
Remote Control	Yes
Brand	Should be from Sony/Samsung/LG/Panasonic
Digital Audio Output(Optical)	1 (rear)
Included Accessory	TV Remote
Power Supply	AC Auto 110 - 240 V, 50/60 Hz
Visible Screen Size (diagonal)	106 cm , 42 inches
Rated Power Consumption	97 W
Standby Power Consumption	0.20 W
Screen Resolution	1,920 (W) x 1,080 (H)
Dimensions (W x H x D) (w / o stand)	963 x 566 x 69 mm
Dimensions (W x H x D) (with stand)	963 x 610 x 247 mm
Stand	Mount wall stand with rotation facility
Brand	Should be from Sony/Samsung/LG/Panasonic
Item	Minimum Requirement Description
Certification	BIS, Energy Star
Video Wall Controller with Software (3x2)	
Make:	
Model:	

Mounting	Mount: Wall or pole or pendant
Standard	BIS Standard 13252 (Part 1):2010

(g) Joystick for PTZ Controlling

Item	Minimum Requirement Description
Make	
Model	
Keyboard	Electromechanical
Joystick	3-axis, vector-solving, twisting, return to-center
Connector	RS232
Display	LCD, 75.2mm x 33.85mm
Max User Accounts	1 Admin, 10 User
User Account Type	Admin, User
Power Supply	Input 100V ~240V 50Hz / 60Hz, Output 12V DC 1000mA
Power Consumption	Max 5W
Operating Temperature	Temp: 0° C to 40°C
Operating Humidity	<90%RH

(h) 65" Industrial Grade LED Screen with Controller

Item	Minimum Requirement Description
65" LED TV & Video Wall Controller with Software	
Make	
Model	
Screen Size (Inches)	Minimum 65
Type of Television	LED
Backlight	Yes
Resolution (Pixels)	1920 x 1080
Picture Processor	Yes
Aspect Ratio	16:09
Number of Selectable Picture Modes	Vivid, Standard, Custom, Cinema Pro, Cinema Home, Sports,
Picture In Picture	Yes
Selectable Sound Modes	Standard, Cinema, Live Sports, Music
Audio Output (PMPO) (Watts)	20W

General	Display Controller should be scalable to control video wall in a matrix of M x N (any combination of Row & Column) up to total of 6 screens. It should also be capable of taking universal inputs for video as well as data along with necessary wall management software's
Networking	Dual-port Gigabit Ethernet Controller Inbuilt Support for Add on Network adapters
Wall Configuration	6 DVI-D/ HDMI Outputs
Resolution Output support:	Minimum 1920x1080 or higher
Universal Ports	6 Universal Inputs (Should be able to accept at least 3 kinds of signals i.e. DVI/RGB/HDMI)
Redundancy Support:	System should have the redundancy support for following: - Controller Hard Disk Data - Power Supply - LAN
Matrix Combination	The video wall of any matrix combination (CR) should be capable of displaying multiple type of outputs as desired in CCC facility
Software Certification	Compatible Video Wall Management software to meet the required functionality BIS

(i) Video Management Solution (VMS)

(i) The VMS software shall consist of an MS-SQL 2012 or better based Main Directory Database, Failover directory, Recording Server licenses, Failover recording, Redundant recording, Incident Reports, Alarm and Management. All the related software licenses should be the part of the offered system.

(ii) Vendor should consider additional server for maintaining system administration database if required by the offered system configuration apart from recording servers.

(iii) The VMS system should be accessible from at least 15 computers from the network for system administration and video monitoring with minimum 5 simultaneous users. System administration and monitoring can be distributed depending on the sub division of the surveillance areas/zones. Even though system should allow to create unlimited user ID's in the system.

(iv) The VMS Server shall maintain a catalogue of settings for all the client, servers and IP cameras in the system.

(v) The VMS shall support up to 250 camera connections.

(vi) The VMS Archive Server, for video and audio, shall be capable to support and manage cameras @ 1920x1080 @ 25FPS, camera @ 1280x720. But considering the future intention to zonalise the recording not more than 120 cameras be loaded on any server during initial design of the system.

(vii) The VMS shall be able to set each camera frame rate, bit rate and resolution independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras. This should be applicable even if vendor propose to use multi-channel encoders.

(a) The VMS shall utilize multicast network communication for video monitoring.

(b) Unicast based equipment will not be considered as an approved equal for alternate system.

(viii) The VMS shall have Digital Video Matrix Switcher.

(a) The Virtual Matrix Switch shall provide a full matrix operation of IP video to digital (computer) screens.

(b) The Virtual Matrix Switch shall have the capability of creating at least 20 sequences including: I) Multiple cameras with independent dwell time for each camera ii) PTZ camera presets iii) Sequence of multiple pre-loaded pre-configured tile layout.

(ix) The VMS shall support thicl clients/web basedclients connecting to the VMS system.

(x) The VMS shall be based on a true open architecture that allow for use of non-proprietary PC and storage hardware that shall not limit the storage capacity and shall allow for gradual upgrades of recording capacity.

(xi) The VMS Server shall be of the most recent computer technology and shall cover the VMS requirements. To provide an advanced and reliable system the operating system shall be Linux/Windows 2012 server or higher.

(xii) The VMS shall allow use of latest Windows 10 OS or higher for client machines as we intend to access the video from existing machines which has these operating systems and cannot be changed.

(xiii) The VMS shall provide support for industry standard SNMP V2.0 and V3.0 and should provide the compatibility with any SNMP application to report the status of various component of VMS system. Required interface license shall be included in the offer.

(xiv) The VMS shall provide alarm dry contact interfaces to allow for any alarm input initiating any action in the VMS system. All the cameras should be provided with easily panic button accessible near each camera. If anyone press this switch, relevant camera should popup automatically on the client work station.

(i) The VMS client shall consist of Monitoring application, an Archive Player application, alarm handling, virtual matrix capability, and all other user related features. Each VMS system videos and administration should be possible from all unit workstations.

(ii) The VMS client shall perform the following applications simultaneously without interfering with any of the Archive Server operations (Recording, Alarms, etc.)

- Live display of cameras.
- Play Live audio.
- Broadcast audio to remote locations.
- Live display of camera sequences.
- Live display of panoramic camera views.
- Control of PTZ cameras.
- Playback of archived video and audio
- Playback of panoramic camera clips.
- Retrieval of archived video and audio.
- Instant Replay of live video and audio.
- Instant Replay of panoramic camera clips.
- Use of graphical controls (maps).
- Configuration of system settings

(iii) The VMS client applications shall support any form of IP network connectivity, including: LAN, WAN, VPN, Internet.

(iv) The VMS client applications shall support IP Multicast (UDP) and Unicast (UDP) video and audio streaming.

(v) The VMS client applications shall automatically adapt to the network topology and use the best available method to receive streaming video.

(vi) The VMS client applications shall provide an authentication mechanism, which verifies the validity of the user.

(vii) The Client application shall allow for live monitoring of video and audio.

- The Monitor shall enable view of up to 25 video tiles simultaneously on a single monitor.
- The IP Based VMS Shall provide more than 15 tile layouts on each of the VGA monitors independently including below formats.
- Full screen, Quad, 3x3, 4x4, 5x5 etc.

(viii) The VMS Monitor application shall allow operators to view an instant replay of any camera or audio input (microphone).

(ix) operator shall be able to define the amount of time he wishes to go back from a predefine list or through a custom setup period.

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(xv) The VMS Shall support full duplex audio communication and transmission signals over the IP Digital Transmission Network without the need of any additional license.

(xvi) The VMS shall support the group functionalities to facilitate the administrator to change the setting of all the cameras in single go. i.e. Changing resolution/FPS of all the cameras in single command, Changing user privileges of all the users etc.

(xvii) The VMS shall provide a reporting utility for tracking but not limited to the following options. Video and Images shall be stored with reports for documenting events.

(a) Alarms, Incidents, Operator logs, Service requests.

(b) The Email Alert should be generated in responds to alarms triggered in VMS software and sends out email alerts to a preconfigured list of recipients.

(c) It should be possible to export the settings of various entities within the VMS i.e. Archiver, Directory, cameras etc. it should be possible to print these reports.

(xviii) The VMS should allow to mask a specific area within the picture of any cameras in order to maintain privacy of sensitive areas without compromising the security. Any privileged user should be able to unmask the view during playback or live in case of specific situational requirements.

(xix) The VMS should allow to configure automatic scheduled backup of videos from user selected cameras to specified network drive. It should also allow to configure specific timings of the day whose video need to be backed up.

(xx) The VMS shall provide module to allow access of system through iPad, iPhone, Android phones. At least one license for the same shall be supplied.

(xxi) The VMS shall provide the facility so as any Android OS smart phone can capture the video using its in-built camera and stream it to the VMS server through 3G, 4G, LTE or Wi-Fi network. VMS shall have the capability to automatically popup this video and also indicate the GPS location of the smart phone.

(xxii) The VMS shall provide alarm management module without the need of any additional license.

(a) The alarm management shall be able to set any monitor or groups of monitors to automatically display cameras in response to alarm inputs.

(b) The alarm management shall be able to reset automatically or manually alarmed video.

(c) The alarm management shall allow for multiple modes of alarm handling capability, these modes to be programmed within the same system.

VMS Client

(x) The operator shall be able to control the playback with play, pause, forward, and speed buttons.

(xi) The VMS Monitor application shall allow operators to add bookmarks to recorded clips of video or audio.

(xii) The operator shall be able to choose and trigger an action from a list of available actions included but are not limited to: -

- View camera in a video tile.
- View Map or procedure in a video tile.
- Starting/stopping PTZ pattern.
- Go to PTZ Preset.
- Sending alert messages.

(xiii) VMS Monitor application shall display all cameras attached to the system regardless of their physical location on the network.

(xiv) The VMS Monitor application shall display all camera sequences created in the system.

(xv) The VMS Monitor application shall allow for unlimited cameras sequences, which can be run independently of each other on either digital monitor tiles or analog CCTV monitors.

(xvi) The VMS Monitor application shall allow operators to control (Pause/Play, skip forwards, skip backwards) Camera Sequences, without affecting other operators' ability to view and control the same sequence.

(xvii) The VMS Monitor application shall display all cameras, sequences and analogue monitors in a logical tree.

(xviii) The VMS Monitor application operator shall be able to drag and drop a camera from a tree of available cameras into any video tile or an analogue monitor icon for live viewing.

(xix) The VMS Monitor application operator shall be able to drag and drop a camera sequence from a tree of cameras into any video tile or an analogue monitor icon for live viewing. The VMS Monitor application shall support Graphical Site Representation (Maps) functionality, where digital maps are used to represent the physical location of cameras and other devices throughout facility.

(xx) The VMS Maps shall be able to import maps from any graphical software supporting BMP, JPEG and/or GIF image formats.

(xxi) The VMS Monitor application operator shall be able to drag and drop a camera from a map into a video tile for live viewing.

(xxii) The operator shall be able to click on an icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera in an analog monitor or send an I/O stream.

(xxiii) The VMS Monitor application shall support the procedure functionality, where procedures can be triggered to appear during a certain event and can be used to provide detail written or verbal instructions to the operator as to the actions to be taken.

(xxiv) The VMS Monitor application shall support digital zoom on a fixed camera's live and recorded video streams.

(xxv) The VMS Monitor application shall support digital zoom on a PTZ camera's live and recorded video streams.

(xxvi) The VMS Monitor application shall provide management and control over the system using Joystick controller of any compatible make. Each client workstation should be provided with joystick controller.

(xxvii) The VMS software must support PTZ cameras with complete PTZ functionality from any client workstation GUI.

(xxviii) The VMS should provide the application which should be integrated to the offered VMS and provide the below mentioned Incident Reporting and backup mechanism. Offered prices should include the price of this application.

(xxix) This application should provide the facility to create the incident reports for specific incidents.

(xxx) It should be possible to access recorded video within the VMS system for play back and export from this application.

(xxxi) It should also allow the operator to write the text, attach the snapshots, video clip, audio clip or any other type of attachment which can be used in conjunction with this incident and form the entire incident report.

(xxxii) It should be possible to send these reports by email or archived on offline media.

(xxxiii) Software shall have the facility to monitor the desktop of any networked computer in camera tiles. We intend to use this facility to create the central monitoring display of all the systems (BMS, FAS, ACS, PIDS etc.) on same monitor simultaneously.

Alarm Management

(i) The IP based VMS shall provide alarm management module.

(ii) The IP based VMS shall notify a user on any alarm set in the system.

(iii) The VMS user shall be able to support multiple alarms.

(iv) The VMS system administrator shall be able to set for each user the maximum alarms to be viewed at one time.

(v) It should be possible to populate the alarm on the maps indicating their actual location and current status.

(vi) It should be possible to drag the alarm related video on tile.

(vii) It should also be configurable to popup the procedural URL/standard operating procedure for alarm handling specific to the active alarm.

(viii) Alarms should be prioritized and displayed in different color for easy understanding of operators.

(ix) The VMS user shall be able to forward alarms to other users.

Integration Interface

(i) VMS shall provide SDK/API's interface for possibility to integrate it with third party security systems. Any required license shall be supplied.

(j) 6m Pole with Junction Box

Item	Minimum Requirement Description
Make	
Model	
General Requirement	Shall be minimum 6.5m height as per NHAI norms
General Requirement	Hot dip galvanized pole with silver coating of 86 micron as per IS:2629 min 10 cm diameter pole and suitable bottom and top thick HT plate along with base plate size 30x30x15 cms suitable for wind speed 50 m/sec with suitable arm bracket and with J type foundation bolts. Fabrication in accordance with IS 2713 (1980)
Foundation	Pole would be fixed on an adequate and strong foundation to withstand city weather conditions and wind speed of 150 km/hr
Foundation	Casting of civil foundation with foundation bolts to ensure vibration free (video feed quality should not be impacted due to wind in different climatic conditions) Expected foundation depth of minimum 100 cms or better
Sign Board with number plate	Sign board depicting the area under surveillance and with serial number of pole
Height	Height of the pole shall be as per requirement of the location varying from 6 m to 12/15 m.
Electrical Connection	Electrical power requirement for the systems/devices installed on the pole should be available with metering and protection equipment
Lightning Protection	Lighting arrestors with proper grounding

Earthing	Pole should have proper earthing system
Network Communication	All communication passive & active devices should be housed in enclosure of adequate standards and protection
Certification	ISI, BIS

2 Lighting System

(a) Pole for Lights

Item	Minimum Requirement Description
Make	
Model	
General Requirement	Shall be minimum 6.5m height as per NHAI norms
General Requirement	Hot dip galvanized pole with silver coating of 86 micron as per IS:2629 min 10 cm diameter pole and suitable bottom and top thick HT plate along with base plate size 30x30x15 cms suitable for wind speed 50 m/sec with suitable arm bracket and with J type foundation bolts. Fabrication in accordance with IS 2713 (1980)
Foundation	Pole would be fixed on an adequate and strong foundation to withstand city weather conditions and wind speed of 150 km/hr
Foundation	Casting of civil foundation with foundation bolts to ensure vibration free (video feed quality should not be impacted due to wind in different climatic conditions) Expected foundation depth of minimum 100 cms or better
Sign Board with number plate	Sign board depicting the area under surveillance and with serial number of pole
Height	Height of the pole shall be as per requirement of the location varying from 6 m to 12/15 m.
Electrical Connection	Electrical power requirement for the systems/devices installed on the pole should be available with metering and protection equipment
Lightning Protection	Lighting arrestors with proper grounding
Earthing	Pole should have proper earthing system
Network Communication	All communication passive & active devices should be housed in enclosure of adequate standards and protection
Certification	ISI, BIS

(b) LED Unit with Communication Unit

Feature	Minimum Requirement Description
Operating Voltage	100 - 277vAC
LED Power	150W
Colour Temp	Neutral White (3700-5000k)
Brightness	Neutral White 18,275LM
CRI	Neutral White >70
Spot Type	Polarized Oval
Adjustable Angle	15°
Lifespan	>50,000 hours

Communication Unit	Should be able to integrate with PIDS & CCC (RS232/485/422/TCP/IP or equivalent)
Power Factor	0.95
Efficiency	90%
Protections	Short Circuit/Over Load/Over Voltage/ Over Temperature/Lightning Protection
Surge Protection	4 KV
Working Temperature	-40to +55 °C
IP Rating	IP66
Certifications	CE, RoHS, UL

(c) Central Control Unit

(i) The Graphical user interface to interact with the system, which is divided into two subsystems: the first is the visualization model to monitor the state of the lighting systems, and also includes the management system; the second is the display model associated with intelligent management that allows for automatic system control.

(ii) Lighting System will be integrating with PIDS system and Lights will be ON/OFF based on the inputs from the PIDS system.

(iii) System should be able to segregate the area into zones and Software should be able to control individual Zone/Lighting devise from Control room.

(iv) Software services: they are the processes responsible for implementing new algorithms for intelligent system behavior. These Software services receive instructions from the intelligent control and monitor the environment to act intelligently. These processes use the web services layer to obtain the missing information from the upper layers.

(v) Web services: The Web services layer includes a security module that is responsible for filtering information to prevent attacks that attempt to access in-formation. Services will use the hardware layer interface to access the data from the devices. The hardware abstraction layer will define the access inter-face for each device.

(vi) Data source: the software component will implement the mechanisms to access the information defined by the hardware abstraction layer. Each data source can be from a different manufacturer on the condition that the hardware abstraction layer and interfaces remain constant.

3. PA System

(a) Speakers with Amp

Item	Minimum Requirement Description

Make	
Model	
Max sound pressure level	> 121 dB
Frequency response	280 Hz -12.5 kHz
Amplifier	Built in or integrated amplifier
Wattage Capacity	Minimum 20 W
Coverage pattern	70° horizontal by 100° vertical (at 2 kHz)
Power	Power over Ethernet (PoE) /220 VAC
Connectors	RJ45 10BASE-T/100BASE-TX
Operating conditions	20°C to 50°C (-4°F to 122°F) Humidity 10–100% RH(condensing)
Casing	Impact-resistant aluminium, IP66/IP67 rated. Tap: 119 dB
Range Certification	should cover minimum 150 meter in open environment EN 54-16 and ISO 7240-16

(b) Central Control Software

Item	Minimum Requirement Description
Make	
Model	
General Requirement	Should have the capability to control individual PAS i.e. to make announcement at select location (1:1) and all locations (1: many) simultaneously.
	The PAS should also support both Live and Recorded inputs.
	Should be able to configure min. 15 zones
	Shall support min. 5 users simultaneously
	Should be client-server architecture
	audio/visual representation of alarms
	should be able to play pre-recorded messages based on different alarms from different systems
	Able to generate reports in different format (word/excel/pdf)
Connectivity	IP Based
Integration	PIDS & Command and Control Centre or any other component if required
Central Server/Software	Redundant central application server/software

4. Cabling.

(a) Cat 6 cable (Indoor)

(i) Type: Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 & ISO/IEC 11801.

(ii) Conductors: solid bare copper.

(iii) Insulation: High Density Polyethylene.

(iv) Jacket: Low Smoke Zero Halogen (LSZH)/ Polyethylene.

(v) Pair Separator: Cross-member (+) fluted Spline.

(vi) Operating temperature: -20 °C to +60 °C Storage Temperature -20 °C to +80 °C.

(vii) Frequency: tested up to Minimum 250 MHz.

(viii) Packing Box of 305 meters.

(ix) Cable Outer Diameter: 6.3 +/- 0.4 mm.

(x) Bend Radius: 4 * Cable Diameter.

(xi) Impedance: 100 Ohms + / - 15 ohms, 1 to 250 MHz.

(xii) Fire Rating: IEC 60332-1, IEC 60754, IEC 61034.

(xiii) Conductor Resistance: 73 Ohms Max / KM nominal.

(xiv) Max. Tensile strength: 110N.

(xv) Performance characteristics to be provided along with bid Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR

(xvi) Standard Compliance: ANSI/TIA-568 C.2 category 6, ISO/IEC-11801, Class E/ IEC 61156-5: category 6.

(xvii) Application: IEEE 802.af and IEEE 802.3at for PoE Cat 6 Cable.

(b) Cat 6 cable (Outdoor)

(i) Type: Unshielded Twisted Pair, Category 6, TIA / EIA 568-C.2 &ISO/IEC 11801.

(ii) Conductors: AWG solid bare copper.

(iii) Insulation Material: Foam PE.

(iv) Inner Sheath Material: LSZH.

(v) Screening Material: AL/Mylar.

(vi) Armouring: > 65 % coverage steel wiring.

(v) Outer Sheath Material: LSZH.

(vi) Outer Sheath External O.D:11.2+-1.0mm.

(vii) Operating temperature: -20 °C to +70 °C Storage Temperature -20 °C to +80 °C.

(viii) Frequency: tested up to Minimum 250 MHz.

(ix) Packing Box of 305 meters.

(x) Cable Outer Diameter: 6.3 +/- 0.4 mm.

(xi) Min Bend Radius: 8 * Cable Diameter.

(xii) Impedance: 100 Ohms + / - 15 ohms, 1 to 250 MHz.

(xiii) Fire Rating: IEC 60332-1, IEC 60754, IEC 61034.

(xiv) Conductor Resistance: 73 Ohms Max / KM nominal.

(xv) Performance characteristics to be provided along with bid Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR.

(xvi) Standard Compliance: ANSI/TIA-568 C.2 category 6, ISO/IEC-11801, Class E/ IEC 61156-5: category 6.

(xvii) Application: IEEE 802.af and IEEE 802.3at for PoE.

(c) 6/12 Core Fiber Optic Cable Indoor/Outdoor (Multi Mode)

(i) Type – 6/12 core OM4 (50/125 micron) Multi mode Loose Tube jelly filled, Uni-tube design, Indoor/outdoor optical Fiber cable.

(ii) Outer Jacket: LSZH/ FR PVC, UL OFNR rated.

(iii) Strength Members: E-glass.

(iv) Can be used for both indoor and outdoor application.

(v) Crush Load: 1000N/100mm (Short term), 300N/100mm (Long term) as per IEC 60794-1-2-E3.

(vi) Colour Code: ANSI/TIA/EIA-598-B.

(vii) Max attenuation: <=2.3 dB per km@850 nm,<= 0.6 dB per km@ 1300nm.

(viii) Operating temperature - 20°C to 60°C.

(ix) Standard Compliance: ITU-T G.651.1 Fiber, ISO/IEC 11801, ISO/IEC 24702, ANSIANSI/TIA/EIA 568C.3, IEEE 802.3z Gigabit Ethernet, ROHS compliant Directive 2002/95/EC.

(d) 6/12 Core Fiber Optic Cable Indoor/Outdoor (Single Mode)

(i) Type – 6/12 core OS2 (9/125 micron) Single mode Loose Tube jelly filled, Uni-tube design, indoor/outdoor optical Fiber cable.

(ii) Outer Jacket: LSZH/ FR PVC, UL OFNR rated .

(iii) Strength Members: E-glass.

(iv) Can be used for both indoor and outdoor application.

(v) Crush Load: 1000N/100mm (Short term), 300N/100mm (Long term) as per IEC 60794-1-2-E3.

(vi) Colour Code: ANSI/TIA/EIA-598-B.

(vii) Max attenuation: 0.34 dB per km@1310 nm 0.24 dB per km@ 1550nm.

(viii) Operating temperature - 20°C to 60°C.

(ix) Standard Compliance: ITU-T G.652.D Fiber, ISO/IEC 11801, ISO/IEC 24702, ANSIANSI/TIA/EIA 568C.3, IEEE 802.3z Gigabit Ethernet, ROHS compliant Directive 2002/95/EC

(e) Pole Junction Box

Suitable Junction Box shall be specified by the bidder.

(f) PA System Cable

Suitable cable shall be specified by the bidder and the cable shall be of relevant IS standards.

(g) Power Cable 25 Sq mm

Suitable cable shall be specified by the bidder and the cable shall be of relevant IS standards.

(h) Power Distribution Cable 2 Sq mm

Suitable cable shall be specified by the bidder and the cable shall be of relevant IS standards.

(i) HDPE Conduit

Suitable HDPE Conduit shall be specified by the bidder.

(j) MS Conduit 20/25 Sqmm

Suitable MS Conduit 20/25 mm shall be specified by the bidder.

ACCESS CONTROL SYSTEM

1. Locking System

(a) Guard and Tour Management

(i) The guard tour Management logger is a simple device that can be installed anywhere, doesn't require power or wiring and serves as Patrol logger.

(ii) The guard tour Management Often security guards need to have access to premises as well as log their presence on those premises which means they need to have keys and a logging device.

(iii) The guard tour Management Patrol guard solution combines the controlled access of the premises and at the same time includes the logging solution.

(iv) All events created by the guard (by opening/locking the locks and by inserting his key in logger) are stored on the key and the logger.

(v) When the key downloads all the access logs to the software, a clear report can be issued to verify that the user has done his rounds when required.

(vi) On-line Guard Tour Management system is an automated record keeping system that

records tours and inspections performed by security officer at specific locations in a real time basis.

(vii) It allows for one or more card readers to be checked during routine tours to verify that predefined routes are completed. Security officers use their credentials at card readers in a Sequential order that is conducive to their watch path.

(viii) Each tour delivers events to Alarm Monitoring, allowing operators to know if checkpoints are reached on time, early, overdue, or late. Each guard tour station is equipped with a card reader that is attached to a guard tour control panel.

(ix) The security management software will update the latest guard tour transaction record via TCP/IP/ USB or any other protocol onto Guard tour management system. Each security guard as he or she makes rounds from one assigned guard tour station to the next. All entries are date and time stamped stored into system database.

(x) User configurable tour route definition, the Guard tour system come with interface for system supervisor to program the touring point sequence, the system user can have a flexible touring point vary from time to time, instead of having a constant tour route.

(xi) Comprehensive activities report can easily generate from the recorded transaction event. And best of all, the information is logged as it is happening in real time.

(xii) A conventional security guard tour system must wait until the security guard returns to the central office and downloads the security guard tour information from a system reader or scanner but with this real time scanning Guard Tour System, a supervisor can monitor the tour movement efficiently via computer workstation and do not need to wait until the completion of touring.

(b) Key

Item	Minimum Requirement Description
Make	
Model	
Number of Accessible Locks	1,00,000
Number of Access Logs	Last 1,000 Access (First-In/First-Out)
Battery Type	2 x LR1 batterie
Battery Life	25,000 opening or up to 2 years
Encryption	AES 128bit
LED	1 x Tri-color (Green, Red & Orange)
Locks	All Acsys Lock Types
Operating Temperature	-20 to 55 o C
Dimensions	40.7 x 72.7 x 17.8 mm
Material	BLADE SUS 316L / TOP COVER PC+25% GF / LED LENS / LCD 6 CHARACTERS / KEYPAD 7 BUTTONS PET/ SWIVEL SUS 304
Quality Certification	CE, FCC, ROHS

Water Protection	Splash Water resistance
LED Status	4 statuses LED (Access / No Access / Restricted Access / Low Battery)
LCD	LCD screen allows the user to see what digits are being entered before pressing OK
Certification	ISI

(c) Guard Locks

Item	Minimum Requirement Description
Make	
Model	
Dimensions	Type 1: 130 x 120 x 55 mm
	Type 2: 109 x 89 x 40.5 mm
Material	Hardened Steel
Locks	PL5 Padlock (shackle removable)
Security	Can be bolted and/or welded on gates
Usages	Easy to use (4 easy steps)
Protection	Casing serves as a robust barrier to entry on any doors, gates, by re-enforcing their fastening.
	Protects against cutting / grinding / drilling
Certification	ISI

(c) IP Programmer

Item	Minimum Requirement Description
Make	
Model	
Dimensions	98.5 x 92 x 28 mm
Material	TOP COVER PLASTIC / RAIN CAP ALUMINUM / LED
LED	3, blue color; On / Ready / Busy
IP Rating	IP55
Life Expectancy	10 years
Operating Temperature	-20 to 65 o C
Operating Humidity	0 to 97 R.H.
Power Supply	DC Power Supply (5V, 100mA)
Connectivity	Wired RJ-45
Encryption Algorithm	AES 128bit
Keys	All Key Types

Quality Certification	CE, FCC, ROHS

(e) Transfer Key

Item	Minimum Requirement Description
Make	
Model	
Dimensions	Type 1: 130 x 120 x 55 mm
	Type 2: 109 x 89 x 40.5 mm
Material	Hardened Steel
Locks	PL5 Padlock (shackle removable)
Security	Can be bolted and/or welded on gates
Usages	Easy to use (4 easy steps)
Protection	Casing serves as a robust barrier to entry on any doors, gates, by re-enforcing their fastening.
	Protects against cutting / grinding / drilling
Certification	ISI

(f) Software Features

Function: A web based software program, CILQ Web Manager is used to manage the CLIQ Remote System. User friendly and intuitive, system administrators use it to remotely manage the day to day functionality of the CILQ Remote System.

Applications: As a web-based solution, the CLIQ Web Manager provides access to the System's database from any computer with an internet connection and has been specifically designed to handle large, decentralized system.

Features:

(i) Secure login via a control key and a PIN code

(ii) Advanced search options

(iii) Manages and creates: -

(a) Access permissions

(b) Audit trails - including activities from remote devices

(c) Time – based authorization

(d) Recurring validation

(e) Reports

(iv) Supports remote programming device management

(v) Enables system grouping into manageable domains

(vi) Allows remote key programming

(vii) Key and personnel management

Specifications

(i) Web browser: Internet Explorer 7 and up

(ii) 128 bit Highly secured connection (SSL)

(iii) Available in multi-language versions

2. Barriers

(a) Crash Barriers

Item	Minimum Requirement Description
Make	
Model	
Crash Barrier	Hydraulic based with Minimum K12 rating
Blocking Width	3 Meter, Blocking Height 1000 MM or more.
Underground Housing	Width: Blocking segment + 0.36 or less
	Length: 2.2 m or less
	Depth: 0.4 m or less
Impact Rate Load	Minimum 1800 KJ.
Construction	All materials of high grade steel ST 355 & AISI stainless steel
Maximum Vehicle Penetration after impact	1 Meter from barrier.
Blocking Segment	Framework of RSJ type HEA160 or similar beam of 30.4kg/meter & intermediate reinforcement structure of RSJ type IPE 120 beam of 11.6kg/m with durbar chequer plate top 12mm thick providing a wheel load support of 100kN (10,000 kg) according to SLW60-DIN1072.
	Due to the modular design of the blocking part: after impact it should be swapped out immediately.
Underground casing	Outer framework from RSJ type IPE 400 beam of 62.1kg/m with 100 or more stub pieces 8 x 200mm welded externally to tie in with concrete pour for stability. Minimum 2 nos. hinge points, with 25mm diameter or more stainless steel shafts & bearing bushes.
Product Certifications	Certified according to DOS K12 (USA) or PAS 68 K12 (UK) (Documents of certifications to be attached from any of two authority)

Warning plate	Warning plate incorporating red round warning lights with LED illumination
Possibility to perform 500 complete cycles per hour under normal operating conditions.	Normal raise time – 3.5 secs
Operating Times	Normal lower time – 2 secs
	Normal use: Raising approx. 3.5 sec,
	Lowering approx. 2 sec to road surface
Electro Hydraulic Drive Cabinet	The EHDC shall be remotely located at a maximum distance of 25 meters from the barrier.
	Hoses are rated up to 250 Bar or more and have a burst pressure of at least 850 bar.
	Hoses shall have Plastic non braided reinforcement sleeves.
	The connectors are Quick lock connectors, and prevent a wrong connection, as male and female connectors are provided. These have an inner diameter of 30 mm.
	Flat Rubber O-rings will be used to reduce the possibility of leakage.
	Hydraulic Fluid shall be mineral oil HLP 22 or biodegradable hydraulic fluid Plantohyd 22, to be chosen by buyer
	The standard reservoir is a design conforming to hydraulic industry standards. (harmonized in the CE norm)
	The EHDC hall use standard industrial components, which conform to hydraulic industry standards, and have interchangeable mounting dimensions.
	The majority of hydraulic components shall be manifold mounted to minimize connection points, hydraulic leakage and permit component replacement without requiring the removal of other hydraulic components. The use of in-line valves alone shall not be used.
	The electrical motor shall be capable of being removed from the hydraulic pump, without disturbing the hydraulic lines.
	The EHDC will have a standard outdoor cabinet preventing environmental exposure of the aggregate
	All connections will be industry standard, sealed DIN connectors, on flexible cable assemblies.
Working Life	Average use:
	Per day: 150 cycles
	Cycles length: 8 sec
Cycles between service	50.000 Or every Year, what comes first
Product lifetime	1 million cycles
Emergency Use	By hand pump
Installation Unit	Wedge barrier is to be delivered as a complete installation unit to make sure that there is no assembling work on site necessary. The hydraulic drive unit is delivered in a separate drive unit cabinet.

Hydraulic Drive Unit	Compact hydraulic drive unit with aggregate, high pressure pump, high pressure cylinder and hand pump in a separate drive cabinet. Power 400 V 4.0 kW
Control	Control unit. Raise – Stop – Lower
	Control unit in drive cabinet, prewired in factory.
Protection Against Corrosion	Long term protection against corrosion by zinc based multi-layer plastic coating. Certificate according to ISOE N7253/ ISO9227 should be submitted. OEM should have certificate for salt testing period of minimum 2000 hrs or more with no significant corrosion on product.
Distance	Distance to road blocker with 25m hydraulic hose length
Power	4.0 kW, 400V/50 Hz AC, 3 - phases
Control Cabinet Voltage	24 V
Standard	BIS Standard or ISO Certification

(b) Gate Automation

(i) Sliding Gate Control Unit

Parameter	
Power supply(Vac+6%-10%50-60Hz)	230
Absorbed power(W)	650 or Better to sustain the 1000 KG gate
Reduction ratio	1 : 30
Type of pinion	Z16 - Z20
Rack	Module4-step12.566
Use frequency	70% (see graph)
Oil quantity(l)	1,8
Operative ambient temperature(°C)	-20 ÷ +55
Protection class	IP 44
Gatemax.weight(Kg)	1800 to 1000
Gate speed(m/min)	9,5 - 12
Gate max .length(m)(time-out)	40 - 50
Protective treatment	cataphoresis
Electric motor technical specifications	
RPM	1400 or better
Power (W)	650 or better
Absorbed current (A)	3,5 or better
Starting capacitor (µF)	35 or better
Standard	BIS 2008 Standard or ISO Certification

(ii) Swing Gate Control Unit

Parameter	
Duty type	Apartment, subdivision, industrial, and commercial applications
Duty cycle	80 Cycles/ Hour
Maximum leaf length5, ft (m)	18 (5.4)
Maximum leaf weight, lb (kg)	1300 (600)
Maximum leaf swing, deg	115
Thrust and traction, lb (kg)	0-1760 (0-800)
90 deg opening time, sec.6	15 or Better
Operating temperature range, deg C	-36 to 75
Thermal cut out, deg C	100
Hydraulic locking	Opened and/or closed
Power voltage required, VAC7	230 VAC
Standard	BIS 2008 Standard or ISO Certification

(c) Boom Barrier

Item	Minimum Requirement Description
Make	
Model	
Product Description:	Automatic vehicle boom barriers provide positive, dependable access control for all vehicle entry/exit scenarios. The boom pole will be lifted in response to any legitimate input signal. The barrier can be operated by means of coded cards, tokens, remote push button, keys, ticket machines, computer or loop detector.
Timing:	1.9 Sec or less
Blocking Width:	4 - 6 meter
Drive:	Torque Motor
Materials	Housing: Mild Steel Powder Coated
	Boom pole Aluminium and taped with red reflective tape
Technical Features	Engineered for long term reliability, fast on-site maintenance and durability
	Fully recessed removable access door
	Removable Lid for easy access to motor and linkage assembly
Power Failure	In the event of an emergency or isolation of power supply, the Barrier will remain in the locked position
Interface	Boom barrier is controlled by means of a control panel with following features:

	1 One (0V) Input for opening/closing signal (pulse N/O)
	2 One (0V) Dry Input for Remote Latching Open/close
	3 One (220V) Output for Motor
	4 One (0V) Input for beam
	5 One (0V) Barrier PVC Loop
Technical Data	Power Supply: 220 V DC
	Power Rating: 220/250V 50Hz 400W for 3 meter & 300 W for 6 Meter
	Logic Voltage: 220 V
	Operating Temperature: 0 - 55°C
	IP rating: IP54.
	Per Day Cycle: Up to 10000 for 3 meter fast operation & 2000 for 6 meter boom barrier.
Standard	BIS 2008 Standard or ISO Certification

3. Quick Reaction Capability

The successful bidder has to consider specification of in service 800 kg Lt. Vehicle 4*4 and provide additional accessories as listed below:

1	Other Accessories	Siren with integrated PA system
		Multi-charger to charge mobile phone, camera, laptop etc. from vehicle
		First-Aid kit