

SECTION XX11I – SERVICE EQUIPMENT SPECIFICIFICATIONS

CATEGORY 1: CCTV EQUIPMENT SPECIFICATIONS

IP MEGAPIXEL CAMERAS

Feature	Technical Specification	Bidder's Response
5 MEGAPIXEL ENVIRONMENTAL IP OUTDOOR/INDOOR FIXED MINI DOME IR CAMERAS WITH WDR		
Max Resolution	2048x1536	
Image Sensor	1/3.2-inch CMOS	
Lens	3-9 mm, varifocal	
IR Illumination	Integrated Adaptive IR Illumination	
Focus /Zoom	Auto focus, remote zoom	
Day/Night	Day/Night Capability	
Wide Dynamic Range	65 dB	
Illumination	0.03 lux @ f/1.2	
Max IPS at Max Resolution	12 IPS	
Video Streams	2 configurable streams	
Audio	Bidirectional	
Analytics	Simple motion detection/ camera sabotage	
Local Storage	Up to 32 GB with microSDHC or SDXC, record video	
Power Input	PoE (IEEE 802.3af, Class 3), 24 Vac	
Warranty	3-Year Warranty and Support	
ONVIF	ONVIF Profile S Conformant	

Feature	Technical Specification	Bidder's Response
5 MEGAPIXEL IP ENVIRONMENTAL BULLET OUTDOOR/INDOOR FIXED CAMERAS C/W INTEGRATED LENS AND IR WITH WDR		
Max Resolution	Up to 5 Megapixel (MPx) 2592 x 1944 (5.0 MPx) Resolution	
Image sensor	1/3.2-inch CMOS	
Lens	3-9 mm, Varifocal	
IR Illumination	Integrated Adaptive IR Illumination	
Local Storage	Accessible Edge Storage with Micro SD Card	
Frames per second	Up to 30 Images per Second (IPS) at 1080p	
Focus	Autofocus Motorized Remote Zoom Lens	
Compression	H.264 and MJPEG Compression Capability	
Day/Night	Day/Night Capability	
Illumination	0.03 lux @ f/1.2	
PoE	Power over Ethernet (IEEE 802.3af) or 24 VAC	
Video Streams	Up to 2 Simultaneous Video Streams	
Video Analytics	Motion Detection and Camera Sabotage Analytics	
Warranty	3-Year Warranty and Support	
ONVIF	ONVIF Profile S Conformant	

Feature	Technical Specification	Bidder's Response
12-MEGAPIXEL H.264 WDR 180° PANORAMIC DAY/NIGHT INDOOR/OUTDOOR DOME IP CAMERAS		
Image Sensor	4 x 3MP CMOS WDR	
Optical Format	1/3.2" Progressive Scan	
Pixel Pitch	2.2µm	
Minimum Illumination	Day/Night 0.025 Lux, IR sensitive	
Full Field of View (FOV) Resolution	Per Sensor 2048 H x 1536 V; Total = 4096 H x 768 V	
Dynamic Range	Up to 100dB at Full Resolution	
Lens	M12 small size lens, true 3MP lens	
Video Frame Rates	Max 5.2fps (8192 x 1536); 16.7fps (4096 x 768)	
Compression Type	H.264 (MPEG-4, Part 10)	
Multi-Streaming	8 non-identical streams (2 per sensor)	
Electrical	Power Over Ethernet; PoE 802.3af, Class 3 Auxiliary Power; 12–48V DC and 24V AC	
Programmability	Auto adjustment between WDR and LDR modes	
	Binning Mode; Privacy mask	
	Flexible Cropping (resolution windowing down to 1x1 pixel for JPEG and 2x2 pixels for H.264)	
	+/-5° Digital Vertical Alignment to adjust images; Electronic pan, tilt, zoom (PTZ)	
	On-camera real-time motion detection with up to 1024 detection zones (per sensor)	
	Bandwidth and storage savings by running at 1/4 resolution; Bit rate and bandwidth limit control	
Compliance	Industry Standard; ONVIF Conformant	
	Listings; UL (CB)	
	FCC Compliance; 47 CFR 15 Class A	
	Environmental; RoHS, REACH, WEEE	
	Markings; (CE) EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN60950-1	
Mechanical	Protection Ratings; IK-10 vandal-resistant polycarbonate dome; IP66 water/dust protection rating	

Feature	Technical Specification	Bidder's Response
20-MEGAPIXEL H.264 WDR ALL-IN ONE OMNI DIRECTIONAL USER-CONFIGURABLE MULTI-SENSOR TRUE DAY/NIGHT INDOOR/OUTDOOR DOME IP CAMERAS		
Image Sensor	4 x 5MP CMOS	
Optical Format	1/2.5"	
Pixel Pitch	2.2µm	
Minimum Illumination	Color-0.3 Lux	
	Color Binning -0.15 Lux	
	Day/Night -0.03 Lux, IR sensitive	
Full Field of View (FOV) Resolution	Total:10240 H x 1920 V	
	Per Sensor:2560 H x 1920 V	
1/4 Resolution	Total:5120 H x 960 V	
	Per Sensor:1280 H x 960 V	
Lens	2.8-8mm, F/1.6", H-FOV =114°-43°	
Video Frame Rates	5.2fps (8192 x 1536)	
Power Over Ethernet	PoE 802.3af, Class 3	
Gimbal	Easily adjustable, 2-axis w/360° pan and 90° tilt	
	Up to 4 Individual Camera Gimbals can be Independently Placed in Any Orientation Around a 360° Track with Extra Positions for Looking Straight Down	
Streaming	Multi-streams of at least 8no non-identical streams.	
WDR	Auto switch control adjustment between WDR and LDR modes .70.1dB at Full Resolution	
Network Interface	100BT-Ethernet	
Network protocols	RTSP, RTP/TCP, RTP/UDP, HTTP, DHCP, TFTP, IPv4, IPv6, QoS	
Day/Night	True Day/Night Functionality with Mechanical IR cut filter	
Binning Mode	Binning mode for strong low light performance(24fps-5120x960)	
Casing	Die-cast aluminum chassis with polycarbonate dome bubble	
Data Transmission	Compression Type:H.264 (MPEG-4, Part 10)/Motion JPEG 21 levels of quality	
Warranty	3-Year Warranty and Support	
Motion Detection	Real-time, 1024 detection zones	
Moonlighting Mode	Extended exposure and noise cancellation	

Picture-in-Picture	Simultaneous delivery of full field-of-view and zoomed images	
Backlight Compensation	Auto multi-matrix white balance	
Privacy Masking	Unlimited	
Other additional programming features	Programmable resolution, brightness, saturation, gamma, tint Simultaneous delivery of full field-of-view and zoomed images Electronic pan, tilt, zoom (PTZ) Auto Exposure (AE) and Gain Control (AGC) > 120dB Programmable shutter speed to help control motion blur Selectable flicker control 50/60 Hz	
Environmental	Protection Ratings: IP66 water/duct protection rating; IK-10 impact-resistant polycarbonate dome	
Operating temperature	-40°C (-40°F) to +50°C (122°F)	
Humidity	0% to 90% (non-condensing)	
Stable image temperature	0°C (32°F) to +50°C (122°F)	
Storage temperature	-40°C (-40°F) to +60°C (140°F)	

PTZ CAMERA SPECIFICATIONS

Feature	Technical Specification	Bidder's Response
AUTO DOME IP FULL HD PTZ CAMERA		
Image Sensor	The HD PTZ camera shall offer a 1/2.8-inch type Exmor CMOS imager	
Resolution	High-resolution, full HD PTZ camera with 1080p 25/30 resolution and 720p50/60 resolution using H.264 compression ,high-performance 30x zoom lens for capturing fine details in scenes with limited or non-uniform illumination The HD PTZ camera shall offer an effective number of pixels of 1944 x 1224 (2.38 megapixels).	
Lens	The HD PTZ camera shall have an autofocus lens with 360x zoom (30x optical/12x digital). The HD PTZ camera shall have 2.3° to 65° field of view (4.3 to 129 mm) The HD PTZ camera shall offer automatic focus and iris control with manual override.	
Zoom	The HD PTZ camera shall offer a 30x optical zoom lens (4.3 to 129 mm)	
Video Analytics	Intelligent Tracking and alarm rules engine with on-board Intelligent Video Analytics. <ol style="list-style-type: none"> 1. Shall be capable of processing and analyzing video within the camera itself, with no extra hardware required. 2. Shall be capable of detecting and sending alarms for abnormal events. 3. Shall be configurable to analyze up to 10 different scenes for one or more of the following events: Line Crossing, Loitering, Idle Object, Removed Object, Conditional Change, Trajectory Tracking, and Filters 4. PTZ camera shall support Bird's Eye View (BEV) people counting 	

	<ol style="list-style-type: none"> 5. Support scene tours that automatically reposition the camera to each scene for a specified duration. 6. shall incorporate an Alarm Rule Engine, enabling abnormal events that IVA detects to prompt the camera to take one or more actions such as: <ol style="list-style-type: none"> a. Trigger a relay connected to an alarm siren and/or strobe b. Trigger a visual alert to be displayed on the operator's screen c. Go to a specified preset position/scene. 7. Go to a specified scene (preset position) 	
Recording	Enhanced system flexibility with dual recording options (Video server/NVR and SD card-supply with 2TB) Full duplex Continuous recording of video and audio, alarm/events/schedule recording	
Defog feature.	To improve visibility on foggy and other low contrast moments, shall offer an anti-fog image feature that assists the camera in registering a usable image through the heaviest fog	
Input/output alarms	Input(7): 2 supervised, 5 non-supervised Programmable for “normally open” or “normally closed” Output (4): 1 dry contact relay, 3 open collector/transistor outputs 32 VDC @ 150 ma max.	
Minimum Illumination	0.066 lux and a monochrome image, when in the night mode, with a minimum illumination of 0.033 lux at 30 IRE	
Software control	Camera set up to be done via Web, Video management client or video management system	
Power Option	Dual power source options (High Power over Ethernet (High PoE) / 24 VAC)	

	RJ-45 10/100 Base-TX Ethernet (High Power-over-Ethernet (High PoE)) or PoE+ (IEEE 802.3at, class 4 standard)21-30 VAC, 50/60 Hz	
Streaming	Fully configurable quad streaming with individually configurable streams	
Integration	The HD PTZ camera shall conform to the ONVIF standard to provide interoperability with other conformant systems	
WDR	Wide Dynamic Range (WDR) / High Dynamic Range (HDR): 90 dB (720p/30 = 120 dB)	
Motion Detection and tracking	<ol style="list-style-type: none"> 1. Camera shall offer Intelligent Tracking to continuously track an object using pan, tilt, and zoom actions. 2. Camera shall have the ability to follow an object continually when passing behind a privacy mask. 3. Camera shall provide automatic motion tracking using intelligent video analytics. 4. Camera shall allow a user to define virtual masks for a scene so certain objects are not considered for flow analysis and will not trigger Intelligent Tracking. 5. Camera shall offer the following control options for the Intelligent Tracking feature: <ol style="list-style-type: none"> a. Off – the HD PTZ camera does not track moving object. b. Auto – the HD PTZ camera actively analyzes the video to detect moving objects. c. One Click – the HD PTZ camera allows a user to click a moving object in the live video image to activate Intelligent Tracking. d. IVA-triggered – the HD PTZ camera continuously analyzes the scene for 	

	<p>IVA alarms or an IVA rule violation. If an alarm or rule violation is detected, the camera activates Intelligent Tracking to track the object that triggered the alarm or rule violation.</p> <p>6. The HD PTZ camera shall have the ability to restart tracking if a target starts moving in the same area where the initial target stopped moving or if the camera detects an object moving along the last known trajectory.</p>	
Network Interface	10-Base T/100 Base-TX, auto-sensing, half/full duplex, RJ45	
Network protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, SNMP, SNMP (v1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selftHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication	
Day/Night	True Day/Night Functionality with Mechanical IR cut filter	
Casing	Die-cast aluminum chassis with polycarbonate dome bubble	
Data Transmission	The HD PTZ camera shall provide direct network connection using H.264 and –M-JPEG compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.	
Warranty	3-Year Warranty on replacement, repair and Support	
Backlight Compensation	Auto multi-matrix Sodium Vapor White Balance mode that automatically compensate for light from a sodium vapor lamp to restore objects to their true color 2000 K to 10,000 K; ATW, Indoor, Outdoor, AWB Hold, Extended ATW, Manual, Outdoor	

Preset Positions	256 user defined presets , each with a 20-character title	
Privacy Masking	24 individually configurable privacy with up to 8 masks per scene that prohibit areas of the field of view from being seen even if the camera is panned, tilted, or zoomed	
Optical Fiber Compatibility, SMF/MMF	8–10/125 μm SMF. Must meet or exceed fiber standard ITU-T G.652. 50/125 μm MMF. For 50/125 μm fiber, subtract 4 dB from the specified optical budget value. Must meet or exceed fiber standard ITU-T G.651.	
Other miscellaneous items	Supply with the following: Fiber Optic Ethernet Media Converter kit with a small form-factor pluggable (SFP) module - camera shall allow an optional fiber optic media converter module designed to accept a wide-range of 10/100 Mbps SFP modules for use with Multimode or Singlemode optical fiber with LC or SC connectors. Corner Mounting Plate Pole Mounting Plate Pipe Mount Kit Pendant Roof Mounts Optional Mounting Plates for Roof Mounts	
PTZ Features		
Sectors	Shall divide the cameras 360° rotation into 16 independent sectors with 20-character titles per sector. Any or all of the 16 sectors can be blanked from the operator's view	
Tracking	shall provide a feature that automatically rotates, or pivots, the camera to simplify tracking of a person walking directly under the camera	
Accuracy	Shall provide pan and tilt preset repeatability accurate to within ± 0.1 degrees.	
Speeds and modes	Shall offer the two variable modes of speed: Turbo Mode (manual control): Pan: 0.1°/s to 400°/s Tilt: 0.1°/s to 300°/s Normal Mode: Pan: 0.1°/s to 120°/s Tilt: 0.1°/s to 120°/s Preposition speed Pan: 0.1°/s to 400°/s Tilt: 0.1°/s to 300°/s	

	Electronic Shutter Speed (AES): 1/1 sec to 1/0000 sec (22 steps)	
Pre programmable modes	<ol style="list-style-type: none"> 1. The HD PTZ camera shall offer five (5) pre-programmed but configurable user modes. 2. The pre-programmed modes shall be optimized with the best settings for the following environments: <ol style="list-style-type: none"> a. Outdoor b. Indoor c. Low Light d. Motion e. Vibrant 3. The HD PTZ camera shall allow users to customize these modes for the specific requirements of the camera site. 	
Tilt Angle	[18° above the horizon for pendant housings.] [1° above the horizon for in-ceiling housings.]	
Touring	Two (2) types of tours: Recorded tours – two (2) Preset tour – one (1), consisting of up to 256 scenes, consecutively	
Environmental	<p>Protection Ratings: IP66 water/duct protection rating; IK-10 impact-resistant polycarbonate dome</p> <p>Conform to the NEMA 4X standard for the following:</p> <ol style="list-style-type: none"> a) Access to Hazardous parts b) Ingress of solid foreign objects (falling dirt, circulating dust, settling dust) c) Ingress of water (dripping and light splashing, hosedown and splashing) d) Corrosive agents 	

Heating and temperatures	<p>Operating Temperature without heater wired)10 to +55 °C(+14 to +131 °F)(continuous operation)</p> <p>Operating Temperature (with heater wired: -10 to +40 °C(+14 to +104 °F) , -34 to +74 °C(-30 to +165 °F)(in accordance with NEMA TS 2-2003 (R2008), section 2.1.5.1) -40 to +55 °C(-40 to +131 °F)(continuous operation)</p> <p>Storage Temperature: -40 to +60 °C(-40 to +140 °F) , -40 to +60 °C(-40 to +140 °F)</p> <p>Operating Humidity: 0% to 90% RH, non-condensing , 0% to 100% RH, condensing 7</p>	
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CLIENT WORKSTATIONS SPECIFICATIONS

Feature	Technical Specification	Bidder's Response
Client Workstation Computer		
Storage Devices	Up to two optional optical drives: DVD-ROM; DVD+/-RW; Optional 19-in-1 media card reader (installed in 5.25" bay)	
Environmental and Regulatory	ENERGY STAR® 5.2 configurations available including optional 80 PLUS® registered Gold power supplies; EPEAT® registered (see epeat.net for specific registration rating/status by country); China CECP; GS Mark. For a complete listing of declarations and certifications, see Dell's regulatory and compliance homepage at dell.com/regulatory-compliance	
Security Options⁶	Trusted Platform Module 1.2 (TPM 1.2); Intrusion switch; Setup/BIOS Password; I/O Interface Security; Kensington® lock slot, Padlock ring, lockable power supply; Dell Data Protection (DDP): DDP Security Tools for advanced authentication; DDP Protected Workspace for malware; DDP Encryption for data protection	
Chassis	HxWxD: 14.17" x 6.89" x 17.13" / 360mm x 175mm x 435mm Bays: Two internal 3.5" bays; two external 5.25" optical bays Slots: One PCIe x16 Gen 3; one PCIe x16 Gen 2 wired x4; one PCIe x1; One PCI 32bit/33MHz Power Supply: 365W 90% efficient (80 Plus® Gold Certified); 290W 65% efficient	
Monitor Compatibility	UltraSharp series - high-performance monitors with PremierColor (on select models) and ultrawide viewing: 21.5"-30";	
Keyboard; Mouse; Speakers	Smartcard Keyboard; Multimedia Keyboard; USB Optical Mouse; Laser USB 6-Button Mouse; 2.0 and 2.1 stereo speaker systems available; sound bar for select flat-panel displays	
Warranty and Support Services	1-year.	

LCD MONITORS 32/40/42 INCHES

Feature	Technical Specification	Bidder's Response
High Definition LCD Monitors		
Resolution	Minimum 1920 x 1080p full HD native resolution.	
LED Backlight Technology	Must use energy saving LED backlighting rather than cold cathode fluorescent lights (CCFL)	
PIP	Must provide picture-in-picture (PIP) for any combination of 2 inputs.	
Energy Star certified	Must be energy Star certified, ensuring reliability in a 24/7 security installation environment	
Design	Must be constructed of a lightweight aluminum frame composition for desktop or wall-mount installations.	

NETWORK MEDIA CONVERTORS

Feature	Technical Specification	Bidder's Response
MEDIA CONVERTERS SPECIFICATIONS		
General	<ul style="list-style-type: none"> • Industrial Gigabit and Supports 1000Base-SX/LX with SC connector, or SFP slot • Link Fault Pass-through (LFP) • 10K jumbo frame ›Redundant power input • -40 to 75°C operating temperature range (T models) • Supports Energy Efficient Ethernet (IEEE 802.3az) 	
Interface	RJ45 Ports: 10/100/1000BaseT(X) Fiber Ports: 100/1000Base-SX/LX or 100/1000BaseSFP slot	
Physical Characteristics Housing:	Metal, IP30 protection Dimensions: 30 x 125 x 79 mm (1.19 x 4.92 x 3.11 in) Weight: 170 g (0.37 lb)	
Power Requirement	Input Voltage: 12 to 48 VDC, redundant inputs Input Current: 285 mA @ 48 VDC max. Connection: Removable terminal block Overload Current Protection: 1.5 A Reverse Polarity Protection: Present	
Warranty:	5-Years	
LED Indicators	PWR1, PWR2, G1 (copper port 10M/100M/1000M), G2 (fiber port 100M/1000M)	
DIP Switches	Fiber speed 100M/1000M, Link Fault Pass-through, Energy Efficient Ethernet	
Optical Fiber	Multi-mode Transmission Distance: 1000BaseSX: 0 to 500 m, 850 nm (50/125 μm, 400 MHz*km) Single-mode Transmission Distance: 1000BaseLX: 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))	

Feature	Technical Specification	Bidder's Response
EMBEDDED HYBRID DVR SPECIFICATIONS COMPLETE WITH VIDEO MANAGEMENT SOFTWARE		
Video Playback mode	<ul style="list-style-type: none"> 8/16-ch synchronous playback 	
Analogue video input	<ul style="list-style-type: none"> 8/16-ch, BNC(1.0Vp-p, 75Ω), PAL/NTSC adaptive 	
IP Video Input	<ul style="list-style-type: none"> 8/16 channel 	
Composite Video Input	<ul style="list-style-type: none"> Up to 8/32-ch (Analog video + IP video) 	
Video Compression	<ul style="list-style-type: none"> H.264 video compression 	
Frame rate	<ul style="list-style-type: none"> Main stream: 25 fps (P) / 30 fps (N) Sub-stream: 25 fps (P) / 30 fps (N) 	
Resolution	<ul style="list-style-type: none"> Up to 5 Megapixels resolution recording HDMI and VGA output at up to 1920×1080P resolution 	
Playback resolution	<ul style="list-style-type: none"> 5MP/3MP/1080p/UXGA/720P/WD1/4CIF/VGA/DCIF/2CIF/CIF/QCIF 	
Recording Resolution	<ul style="list-style-type: none"> Main stream: 4CIF / 2CIF / CIF / QCIF Sub-stream: CIF / QCIF 	
VGA Output	<ul style="list-style-type: none"> 1920 × 1080 / 60 Hz (1080P), 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz 	
HDMI	<ul style="list-style-type: none"> 1920 × 1080 / 60 Hz (1080P), 1920 × 1080 / 50 Hz (1080P), 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz 	
CVBS Output	<ul style="list-style-type: none"> 5-ch (1 Main output + 4 Spot outputs) BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 × 576, NTSC: 704 × 480 	
Storage	<ul style="list-style-type: none"> HDD quota and group management RAID 0,1,5,10 supported(DS-9004/08/16HFI-RT) 8 SATA interfaces for 4 HDDs + 1 DVD-R/W (default), or 8HDDs; 1 eSATA interface each of 4TB Disk Array 8no and Virtual Array 8no. 	
Warranty:	3-Years	
Interfaces	<ul style="list-style-type: none"> Network: Dual Gigabit network interfaces 	

	<ul style="list-style-type: none"> • 2; 10M/100M/1000M self-adaptive Ethernet interface • RS-232, RS-485, Keyboard • USB:2, USB2.0 • Alarm IN/OUT: 16 / 4 	
Cameras supported	<ul style="list-style-type: none"> • Third-party network cameras supported 	
Optical Fiber	<p>Multi-mode Transmission Distance: 1000BaseSX: 0 to 500 m, 850 nm (50/125 μm, 400 MHz*km)</p> <p>Single-mode Transmission Distance: 1000BaseLX: 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))</p>	
Software	<p>General</p> <ul style="list-style-type: none"> ○ Application in local area network and wide area network ○ E-map function ○ Remote configuration for EZVIZ devices ○ User permission management ○ Embedded web server supporting web browsing function Create a password to activate the device ○ Support Counting, Road Traffic and VCA Search for Picture <p>Live view</p> <ul style="list-style-type: none"> ○ View settings and instant playback ○ Support up to 64-window division for standard screen, and48-window division for the wide screen ○ Set shortcuts for PC keyboard to conveniently access the commonly used actions ○ Disconnect background videos in single live view <p>PTZ Control</p> <ul style="list-style-type: none"> ○ Remote PTZ control, preset, patrol and pattern settings ○ 3D positioning, auxiliary focus and wiper function ○ Display analog speed dome's local menu via PTZ control panel <p>Alarm Management</p> <ul style="list-style-type: none"> ○ Alarm configuration for camera event, alarm input and device Exception 	

	<ul style="list-style-type: none"> ○ Camera Linkage and multiple linkage actions supported Search and export the linked pictures of alarm logs ○ Device arming and alarm output control <p>Recording</p> <ul style="list-style-type: none"> ○ Remote manual recording supported ○ Quota ratio of record, picture and additional information Configurable for the storage server <p>Play back</p> <ul style="list-style-type: none"> ○ Local and remote playback ○ Instant playback, normal playback, event playback, ATM playback and VCA playback <p>Back up</p> <ul style="list-style-type: none"> ○ Download record files to PC ○ Export record files via remote configuration ○ Import and export the configuration file ○ log search and backup <p>Network</p> <ul style="list-style-type: none"> ○ Encoding devices, decoding devices, EZVIZ devices, storage server, stream media server, third-party encoding devices, video wall controller, transcoder, cascading server, super NVR connectable ○ Adding devices by HiDDNS and IP Server; batch importing encoding Devices ○ Search the active online devices 	
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EMBEDDED NVR COMPLETE WITH VIDEO MANAGEMENT SOFTWARE SPECIFICATIONS

Feature	Technical Specification	Bidder's Response
EMBEDDED NVR SPECIFICATIONS COMPLETE WITH VIDEO MANAGEMENT SOFTWARE		
IP Video Input	<ul style="list-style-type: none"> • 32+ pre-licensed and 128+ maximum 	
Video Compression	<ul style="list-style-type: none"> • H.264 video compression 	
OS	<ul style="list-style-type: none"> • 2 x 120 GB SSD RAID-1 configuration • Installed on windows server 	
Installation	<ul style="list-style-type: none"> • Wizard-based set-up and centralized configuration. • All components to be pre-installed and pre-licensed • Pre-configured in a RAID 5 standard configuration with iSCSI LUNs (Logical Unit Numbers). 	
Resolution	<ul style="list-style-type: none"> • The built-in transcoder supports up to 4 x • UHD resolution video streams in parallel 	
Integration/Compatibility /operability with other systems	<ul style="list-style-type: none"> • ONVIV enabled to allow integration and especially with KPLC existing system(GENETIC) • Shall allow third party systems operations. 	
Viewing/Monitoring	<ul style="list-style-type: none"> • Remote monitoring via desktop application, browser or SNMP • View high quality HD and even UHD video despite low or limited bandwidth connections. Dynamic Transcoding technology to ensure viewing video immediately - anytime, anywhere. • Allow use of Video Security Client for viewing video from a separate workstation or mobile device. • Increased reliability of high-availability hardware, embedded design as well as system-wide monitoring and management ensure maximum uptime. • Robust, secure operation - instant real time access to video • Instantly find what you are looking for 	

Storage	<ul style="list-style-type: none"> • Pre-installed, pre-configured IP storage solution with up to 64 TB storage capacity • need for separate NVR (Network Video Recorder) server and storage hardware • HDD quota and group management • Hot-swappable hard drives • SATA-3, 7200 RPM, 64 MB, 3.5“, RAID-5 configuration DIP-6183-4HD: 4 x 3 TB DIP-6183-8HD: 8 x 3 TB DIP-6184-4HD: 4 x 4 TB DIP-6184-8HD: 8 x 4 TB DIP-6186-8HD: 8 x 6 TB DIP-6188-8HD: 8 x 8 TB DIP-6180-00N: w/o HDD • Disk Array 8no 	
Warranty:	3-Years	
Interfaces	<ul style="list-style-type: none"> • Network: Dual Intel i210AT Gigabit LAN (teamed) 1 IPMI BMC port • RS-232, RS-485, Keyboard • USB: Front: 2 USB 2.0 ports Rear: 2 USB 2.0 ports, 2 USB 3.0 ports • Advanced user and alarm management • Graphics card: AMD FirePro W4100 4 x Mini Display Port • Optical: DVD-RW • SAS RAID Card: 8 ports LSI 3108 SAS3 controller • HDMI • VGA 	
Processor	<ul style="list-style-type: none"> • Intel Xeon Processor E3-1275 V3 (8 MB Cache, 3.5 GHz) 	
Memory	<ul style="list-style-type: none"> • 8 GB, DDR3-1666 ECC UNB (1 x 8 GB) 	
Cameras supported	<ul style="list-style-type: none"> • Third-party network cameras supported 	
Software	<ul style="list-style-type: none"> • Web, Video management client or video management system • Once booted up the system shall offer immediate access to the VMS management application via a customized GUI with ability to use one central GUI for configuration and operation. • Advanced monitoring and management options using the Intelligent Platform Management Interface (IPMI). • Shall have the following installed: 	

	<ul style="list-style-type: none"> ○ Microsoft Operating System and Video application pre-installed: ○ Windows Storage Server 2012 R2, 64-bit ○ Video Management System ○ Video Recording Manager including Video Streaming Gateway ○ Dynamic Transcoding 	
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Core Switches

The Cisco Catalyst WS-C3560X-24T-S Switch is an enterprise-class stackable and standalone switch. This switch provides high availability, scalability, security, energy efficiency, and ease of operation with innovative features such as Cisco StackPower, IEEE 802.3at Power over Ethernet Plus (PoE+) configurations, optional network modules, redundant power supplies, and Media Access Control Security (MACsec) features.

The Cisco Catalyst WS-C3560X-24T-S with StackWise Plus technology provides scalability, ease of management and investment protection for the evolving business needs.

Key features of the WS-C3560X-24T-S:

- 24 x 10/100/1000 ports
- Optional four Gigabit Ethernet (GbE) SFP or two 10GbE SFP+ uplink network modules
- Dual redundant, modular power supplies and fans
- Media Access Control Security (MACsec) hardware-based encryption
- IPv4 and IPv6 routing, Multicast routing, advanced quality of service (QoS), and security features in hardware
- Enhanced limited lifetime warranty (LLW) with next business day (NBD) advance hardware replacement and 90 day access to Cisco Technical Assistance Center (TAC) support
- Enhanced Cisco EnergyWise for operational cost optimization by measuring actual power consumption of the device, reporting, and reducing energy consumption across the network
- Cisco StackPower technology: An innovative feature and industry first for sharing power among stack members
- Cisco StackWise Plus technology for ease of use and resiliency with 64 Gbps of throughput

Technical Specifications

Feature	Technical Specification	Bidder's Response
Core Switches		
Description	Cisco Catalyst WS-C3560X-24T-S-24 Port IP Base Switch	
General	RAM: 256MB Flash Memory: 128MB Layer 3 Functions: Yes	
Networking	<p>Networking</p> <p>Ports Quantity 24 x Ethernet 10Base-T, 100Base-TX, 1000Base-T SNMP 1/2c/3,</p> <p>Remote Management Protocol RMON 1/2, Telnet, HTTP, HTTPS, TFTP, SSH-2</p> <p>IPV6 Support Yes</p> <p>Netflow Support No</p> <p>Mac Addresses 12,000</p> <p>Packet Switching Capacity 160 Gbps</p> <p>Number of VLANs 1005</p> <p>Power Over Ethernet No</p> <p>Jumbo Frames 9216 bytes</p>	
Noise Specification	Noise Level (DbA) 55 Recommended Location Data Center	
Environmental	Min Operating Temperature 0 °C Max Operating Temperature 40 °C Humidity Range Operating 10 - 90%	

Edge Switches

The Cisco SG300-28P 26-Port Gigabit PoE Switch is part of the Cisco Small Business line of network solutions, a portfolio of affordable managed PoE switches that provides a reliable foundation for your business network. These Cisco SG300-28P switches deliver the features you need to improve the availability of your critical business applications, protect your sensitive information, and optimise your network bandwidth to deliver information and applications more effectively. Easy to set up and use, the Cisco SG300-28P 26-Port Gigabit Switch provides the ideal combination of affordability and capabilities for small businesses, and helps you create a more efficient, better-connected workforce.

Key Features

- Twenty-six 10/100/1000 switched RJ-45 ports with auto medium dependent interface (MDI) and MDI crossover (MDI-X) cable detection
- Twenty-four Power over Ethernet (PoE) ports offering up to 180W output
- 2 mini Gigabit Interface Converter (mini-GBIC) slots for fiber and copper Gigabit Ethernet expansion (shared)
- Nonblocking, store-and-forward switching mechanism
- Simplified QoS management enabled by advanced queuing techniques using 802.1p, differentiated services (DiffServ), or type of service (ToS) prioritisation schemes enhances the performance of real-time applications such as voice and video
- Configuration and monitoring from a standard web browser with WebView management
- Secure remote management of the switch via Secure Shell (SSH) and SSL secure channel network protocols
- 802.1Q-based VLANs enable segmentation of networks for improved performance and security
- Private VLAN Edge (PVE) for simplified network isolation of guest connections or autonomous networks
- Automatic configuration of VLANs across multiple switches through Generic VLAN Registration Protocol (GVRP) and Generic Attribute Registration Protocol (GARP)
- Automatic port configuration through auto MDI/MDIX and 802.1ab with Link Layer Discovery Protocol (LLDP) and Universal Plug and Play (UPnP) support
- User/network port-level security via 802.1X authentication and MAC-based filtering
- Increased bandwidth (up to 8x) and added link redundancy with Link Aggregation Control Protocol (LACP)
- Enhanced rate-limiting capabilities provide control, including back pressure to control the rate at which data can flow into and out of a port
- Multicasting, broadcasting, and flooding control
- Port mirroring for noninvasive monitoring of switch traffic
- Simple Network Management Protocol (SNMP) versions 1, 2c, and 3 and Remote Monitoring (RMON) support
- Fully rack mountable using the included rack-mounting hardware

Feature	Technical Specification	Bidder's Response
Edge Switches		
Description	Cisco SG 300-28 Gigabit Switch	
General	<ul style="list-style-type: none"> • Jumbo frames Frame sizes up to 10 KB supported on 10/100 and Gigabit interfaces • MAC table Up to 8000 MAC addresses 	
Ports	<ul style="list-style-type: none"> • 26 Gigabit Ethernet RJ45 • 2x RJ45/SFP Combo Ports 	
Power over Ethernet (PoE)	<ul style="list-style-type: none"> • Maximum power of 15.4W to any Gigabit Ethernet base port. Total power 180W 	
Security	<ul style="list-style-type: none"> • Secure Shell (SSH) Protocol • Secure Sockets Layer • IEEE 802.1X (Authenticator role) • Layer 3 isolation • Port security: Locks MAC addresses to ports, and limits the number of learned MAC addresses 	
Flash; CPU memory; Packet Buffer	16 MB; 128 MB; 4MB	
Cabling Type	<ul style="list-style-type: none"> • Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5 Ethernet or better for 1000BASE-T 	
Power	<ul style="list-style-type: none"> • Power saving mode: Energy Detect, Short Reach Maximum Consumption 110V = 30.1W / 220V = 30.3W • Heat Dissipation (BTU/hr) 103.4 • Power Supply: 100–240V 47–63 Hz, internal, universal 	
Certification	<ul style="list-style-type: none"> • UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A 	

1.5KVA DOUBLE CONVERSION UPS SPECIFICATIONS

Feature	Technical Specification	Bidder's Response
Input		
Nominal Voltage	230/220V	
Voltage range	10% - 15%	
Frequency	50/60Hz \pm 3Hz	
Power walk-in	5 sec	
Protection	Circuit breaker; RFI filter	
Output		
Voltage	230/220V	
Regulation (at normal input)	\pm 2Hz	
LCD panel	UPS status, load level, battery level, Import/Output voltage, discharge and fault conditions	
Charging Parameters	Built in super smart charger, shorten 50% of charging time	
Slew Rate	1Hz	
Overload	125% 10 min	
Load PF	0.99	
Waveform	Puresine wave	
THD	Less than 2%	
Crest factor	3:1	
Power output	1.5 kVA	
Efficiency AC-AC 100% load	85%	
Battery charging current	20A capable of charging 16No. 9Ah batteries	
Battery cabinet	Separate external	
Form factor	Rack Mount	
Output isolation transformer	Standard in built	

6KVA DOUBLE CONVERSATION UPS SPECIFICATIONS

Feature	Technical Specification	Bidder's Response
Input		
Nominal Voltage	230/220V	
Voltage range	10% - 15%	
Frequency	50/60Hz \pm 3Hz	
Power walk-in	5 sec	
Protection	Circuit breaker; RFI filter	
Output		
Voltage	230/220V	
Regulation (at normal input)	\pm 2Hz	
Slew Rate	1Hz	
Overload	125% 10 min	
Load PF	0.7	
Waveform	Puresine wave	
THD	Less than 2%	
Crest factor	3:1	
Power output	6kVA	
Efficiency AC-AC 100% load	85%	
Battery charging current	20A capable of charging 16No. 200Ah batteries	
Battery cabinet	Separate external	
Form factor	Tower	
Output isolation transformer	Standard in built	

CATEGORY 2: ALARM, ELECTRIC FENCE AND RADIO RESPONSE BACK UP EQUIPMENT SPECIFICATIONS

ALARM SYSTEM SPECIFICATIONS

ITEM	DESCRIPTION
A	<p>CONTROL PANEL WITH SOFTWARE AND PROGRAMMING 16-zones input expandable to more than 40 zones and with Keypad zones LCD Keypad with infrared receiver and battery as Pro - Sys 128 or equal and approved. At least more than 4-zones partitioning Accommodate more than 50 user codes 4 or more PGM(programmable output) Dialer compatible and GSM interactions Allow for IP Module connection to interface with computers, printer and other computer networks. GSM connectivity to allow events communication via mobile</p>
B	<p>MOTION DETECTORS (PIR) Indoor Dual element sensor. 12m (40ft), 110 view angle. False alarms reduction facilities. Interlock sensor geometry. Automatic temperature compensation. Sensitivity adjustment. Protection from UV rays. PET immunity especially for areas prone to PET in stores and go-downs</p>
C	<p>POWER SUPPLY UNIT(P.S.U.) Complete with back-up battery (12v, 7AH). Output current 3A. Output voltage 13.6-14vdc on mains power. Load regulation 5% Battery recharges 13 hours.</p>
D	<p>ALARM REMOTE RECEIVER KIT Operating voltage 12vdc. Operating range 200m. Dip-switch coding facility Momentary/latching relay contacts</p>
F	<p>SIREN Complete unit with built-in strobe Operating voltage 10-14.5vdc with reverse polarity protection. current(hold-off) siren-230mA(typical) Siren output-11dBA@1M,standby 108dBA@1M. Strobe flash rate-120/min,standby 30/min.</p>

ITEM	DESCRIPTION
A	PANIC BUTTONS Strong mechanical composition.
B	HEAVY DUTY MAGNETIC CONTACTS Strong Mechanical Composition robust to interferences.
C	CEILING MOUNT MOTION DETECTOR detection range 12m(40ft) adjustable height(between 1.5m-5.1m) Dual MW + PIR technologies Microprocessor controlled Patented true temperature compensation Superior fluorescent interference rejection Superior RFI immunity LED walk test display Alternate polarity pulse count
D	EXPANDER MODULE Compatible with supplied alarm control panel and related modules and accessories.
F	ADVANCED ALARM IP-NETWORK COMMUNICATION MODULE Secure IP communications with SSL,256Bit,AES256 encryption Compatible with 10BaseT, full duplex. Simultaneous multiple channel IP Communications event reporting and download at the same time. Report notification to E-mail addresses. Supports static and dynamic IP Addressing(DHCP) Project integration with 3 rd party applications using Modbus and XML protocols and others.
G	ADVANCED GSM/GPRS MODULE Central station events reporting Via Voice/sms/E-mail To transmit zone activations and other alarm events such as specific alarm activation zones, arm/disarm users plus time of arm/disarm, loss of power on the system, system failure/restore and others. Support both prepaid and post-paid SIM Cards. Support remote upload and download.
H	SMARTPHONE Apple or equivalent latest iPhone features an A9 chip, 3D Touch, ultrafast LTE Advanced wireless, Touch ID, a 12MP iSight camera, and iOS 9. 128GB 5.5-inch (diagonal) LED-backlit widescreen next-generation Multi-Touch display with IPS technology and Taptic Engine 1920-by-1080-pixel resolution at 401 ppi Fingerprint-resistant oleophobic coating

ELECTRIC FENCE SPECIFICATIONS

ITEM	DESCRIPTION
A	<p>ENERGIZER DRUID 15 Nemtek 4.6J output or equal and approved</p> <ul style="list-style-type: none"> •Built-in alarm monitors tampering or faults on the high voltage and earth fence wires •Connectable to armed response radio or GSM module •Lightning and power surge protection •Intelligent power saving to extend battery life •Easy-to-use tag included for controlling the energizer •Walk test mode for easy fence testing •The LCD background color changes to easily identify the fence condition •Powered by 230V mains and includes built-in battery for backup power •Built-in gate alarm inputs to monitor if the gate is open or closed •Optional keypad for controlling and programming the energizer. This allows the user to control the energizer remotely, with up to two keypads
B	<p>HT GALVANIZED HT FENCE WIRE High Tensile 1.6mm Double galvanized</p>
C	<p>FENCE POLES Electroplated, double galvanized square tube 25 x 25 x 1.5mm thick steel Hollow Square Tube for W and S insulators posts with plastic top caps. Apply Metal primer before installing and 2 finishing coats of 1st quality gloss paint "Crown" including embedding 200mm deep in the reinforced columns and walls Complete with metal lugs and approved by the client.</p>
D	<p>RAZOR WIRE (Double Galvanised) Coil size - 450mm diameter, Blade profile - Ripper Razor Wire, Stretch factor - coil and secured with steel plates at 1M centres</p>
E	<p>SIREN KIT (BOX, SIREN AND STROBE) 12V,DC Security sounder and strobe with a range of 1 km Galvanized box and mount to avoid rusting/corrosion. Well protected from environmental hazards like rain water leakages, hostile/extreme weather conditions like temperatures, strong winds etc.</p>
F	<p>EARTHING Earthing of the Electric fence as per the IEE regulations and to be done at intervals of 30M</p>
G	<p>INSULATION W and S insulators - High density porcelain insulators UV stabilised plastic polythene insulators for fastening the HT wire to the posts.</p>
H	<p>ENERGIZER CABINET Energizer steel cabinet 500x500x250mm fabricated from 25x25x3mm angle angle line framing and 3mm thick m.s plain sheet with lockable door including painting and mounting to Clients approval.</p>