

## ANNEX A

### TECHNICAL SPECIFICATIONS

**Request for quotations No:**  
**For the Supply, Delivery, and Installation of Surveillance (CCTV) System**  
**for UNHCR Sub Office Ogoja in five (5) locations.**

UNHCR Sub Office Ogoja would like to install a new CCTV Surveillance System in five (5) locations (Ogoja Office, Ogoja guesthouse 1&3, Ogoja guest house 2, Takum Office and Calabar Office.

The project shall be implemented in five (5) phases.

The following are the main scope of works to be undertaken.

- 1- Supply, Delivery, and installation of 1 outdoor dome PTZ Cameras
- 2- Supply, Delivery, and installation of 22 outdoor bullet Cameras
- 3- Supply, Delivery, and installation 1 indoor bullet cameras
- 4- Supply, Delivery, and installation of 32 outdoor dome Cameras
- 5- Supply, Delivery, and installation 1 indoor dome cameras
- 6- Supply, Delivery, and installation of NVR: QTY Five (5) Devices
- 7- Supply, Delivery, and installation of POE Switches 24 ports: QTY Five (5) Devices
- 8- Supply, Delivery, and installation of Monitor Screen 40 inch: QTY five (5) Device
- 9- Supply, Delivery, and installation of Cable: estimation QTY 1,400 meters
- 10- Supply, Delivery, and installation of RJ45: QTY 1,000.
- 11- Supply, Delivery, and installation of tubes: estimation QTY 1,400 meters

Surveillance System			
Item no.	Minimum Acceptable Specifications	Qty	UoM
1	<p><b>PTZ Dome Camera (Outdoor)</b></p> <p>Below are required technical specs and features of the system. We do accept as well higher specs and features.</p> <ul style="list-style-type: none"><li>• Sensor 8 MP 1/1.8" CMOS</li><li>• Focal Length 5.9 to 147.5mm</li><li>• Lens Field of View Horizontal: 50.8 to 2.6°, Vertical: 29.4 to 1.5°, Diagonal: 57.4 to 3°</li><li>• Pan/Tilt/Programmed: Pan: 360° at 240°/s, Tilt: 105° (-15 to 90°) at 200°/s</li><li>• Power Source AC, PoE 802.3bt (60 W)</li><li>• Illumination IR LEDs up to 660' / 201.2 m</li><li>• Sensor 8 MP 1/1.8" CMOS</li><li>• Focal Length 5.9 to 147.5mm</li><li>• Maximum Aperture f/1.5</li></ul>	1	Unit

	<ul style="list-style-type: none"> <li>• Zoom Optical: 25x, Digital: 16x</li> <li>• IR Cut Filter Mechanical</li> <li>• Day/Night Yes</li> <li>• Minimum Illumination Color: 0.005 Lux, B&amp;W: 0 Lux</li> <li>• Shutter Speed 1/30000 to 1 Seconds</li> <li>• DORI Coverage: With 5.9 to 147.5mm Lens: Detect: at 6715.5' / at 2046.9 m, Observe: at 2665' / at 812.3 m, Recognize: at 1343.2' / at 409.4 m, Identify: at 671.6' / at 204.7 m</li> <li>• Streaming Resolution 3840 x 2160 at 24 fps (16.384 Mb/s)</li> <li>• Supported Video Compression H.264, H.264+, H.265, H.265+, MJPEG</li> <li>• Multi-View Streaming Yes, 3 Streams</li> <li>• Automatic Gain Control Yes</li> <li>• 1- or 2-Way Audio Two-Way</li> <li>• Audio Formats AAC, G.711, G.722.1, G.726, MP2L2, PCM</li> <li>• Built-In Speaker Yes</li> <li>• Security Digest Authentication, HTTPS, IEEE 802.1X, IP Address Filtering, MAC Address Filtering, Password Protection, Watermark</li> <li>• Supported Protocols Bonjour, DDNS, DHCP, DNS, FTP, HTTP, ICMP, IGMP, IPv4/v6, NTP, PPPoE, QoS Layer 3 DiffServ, RTCP, RTP, RTSP, SMTP, SNMP v1/v2c/v3 (MIB-II), TCP, UDP, UPnP</li> <li>• Application Programming Interface (API) ONVIF Profiles G, S &amp; T, ISAPI, SDK, ISUP</li> <li>• Analytics Motion Detection, Video Tampering Alarm, Exception, Alarm Input &amp; Output, Line Crossing Detection, Intrusion Detection, Region Entrance Detection, Region Exiting Detection, Unattended Baggage Detection, Object Removal Detection, Audio Exception Detection, Smart Tracking (Auto &amp; Manual), Face Capture, Perimeter Protection</li> <li>• OS Compatibility</li> <li>• Sensors &amp; Alarms</li> <li>• Event Trigger Yes</li> <li>• Event Action Recording, Notification, Alarm</li> <li>• Data Streaming Yes</li> <li>• Alarm I/O 2 / 1</li> <li>• Media/Memory Card Slot Single Slot: microSD/microSDHC/microSDXC [256 GB Maximum]</li> <li>• External Storage Options NAS</li> <li>• Power Source AC, PoE 802.3bt (60 W)</li> <li>• Power Consumption AC: 42 W (With Heater)</li> <li>• Operating Temperature -22 to 149°F / -30 to 65°C</li> <li>• Operating Humidity 0 to 90% (Non-Condensing)</li> <li>• IP Rating IP66</li> <li>• IK Rating IK10</li> <li>• Inputs/Outputs 1 x RJ45, 1 x Power</li> <li>• Illumination IR LEDs up to 660' / 201.2 m</li> </ul>		
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	<ul style="list-style-type: none"> <li>Video Management Software iVMS-4200</li> </ul>		
2	<p><b>Provision of installation Service for PTZ outdoor camera with all required accessories for installation purpose.</b></p> <ul style="list-style-type: none"> <li>Bidder must provide all required equipment.</li> <li>Bidder must coordinate with technical and admin unit and share the work plan prior installation one (1) week advance.</li> </ul>	1	Unit
3	<p><b>IP Dome Cameras (Indoor)</b></p> <ul style="list-style-type: none"> <li>5.0 Megapixel minimum</li> <li>1/3" Progressive Scan CMOS.</li> <li>Motorized 2.8-12mm lens.</li> <li>Multi-streaming from H.265 / H.264.</li> <li>Supports Motion Detection &amp; Email Notification.</li> <li>Provides True Day/Night functionality with automatic IR filter operation.</li> <li>Supports Power over Ethernet / 12VDC.</li> <li>ONVIF/ PSIA / CGI Compliant</li> </ul> <p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"> <li>All Cameras should be IP (with POE support) from known brand in CCTV industry with warranty of two years.</li> <li>Preferable Video codec is H.265.</li> <li>Cameras should record on motion detection and compatible with NVR.</li> <li>AES - Automatic Electronic Shutter, AGC - Automatic Gain Control, ATW Auto Tracing White Balance, AWB Auto White Balance, CCD Charge Coupled Device, DSS - Digital Slow Shuttering, HD High Definition, WDR Wide Dynamic Range,.....).</li> </ul> <p>Here below are basic common Cameras features</p>	13	units

	<div> <div> <b>Video Centralized Management</b> <ul style="list-style-type: none"> <li>• Native Hybrid Solution</li> <li>• Real-Time Recording &amp; Playback</li> <li>• Advanced Mapping</li> <li>• Event Manager</li> <li>• Unlimited Client Access</li> <li>• Smartphone Ready</li> <li>• Video Wall Support</li> <li>• FIPS &amp; USGCB Compliant</li> <li>• Intrusion Detection</li> <li>• Vehicle Monitoring</li> <li>• Left Objects</li> <li>• People Count</li> <li>• Loitering Detection</li> <li>• Camera Tampering</li> <li>• Object Removal</li> <li>• Image Stabilization</li> </ul> </div> <div> <b>Central Management</b> <ul style="list-style-type: none"> <li>• Event Management and reporting.</li> <li>• Centralized User Management with remote access over HTTPS</li> <li>• Centralized Device Management, all cameras to be optimized, configured and controlled.</li> <li>• System Health Status, Malfunction should be reported.</li> <li>• Configuration Reporting</li> <li>• System Wide Logging, for all events.</li> <li>• Video Management</li> <li>• Perimeter Intrusion</li> <li>• GIS Mapping for Cameras location.</li> <li>• Analytics</li> <li>• Event Management</li> <li>• Common Operating Picture and snapshot.</li> </ul> </div> </div> <p>Brand required : Hikvision OR Dahua</p>			
4	<p><b>Provision of installation Service for indoor cameras with all required accessories for installation purpose.</b></p> <ul style="list-style-type: none"> <li>• Bidder must provide all required equipment.</li> <li>• Bidder must coordinate with technical and admin unit and share the work plan prior installation one (1) week advance.</li> </ul>	13	Units	
5	<p><b>IP Dome Cameras (Outdoor)</b></p> <ul style="list-style-type: none"> <li>• 5.0 Megapixel minimum</li> <li>• 1/3" Progressive Scan CMOS.</li> <li>• Motorized 2.8-12mm lens.</li> <li>• Multi-streaming from H.265 / H.264.</li> <li>• Supports Motion Detection &amp; Email Notification.</li> <li>• Provides True Day/Night functionality with automatic IR filter operation.</li> <li>• Supports Power over Ethernet / 12VDC.</li> <li>• ONVIF/ PSIA / CGI Compliant</li> </ul> <p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"> <li>• All Cameras should be IP (with POE support) from known brand in CCTV industry with warranty of two years.</li> <li>• Preferable Video codec is H.265.</li> <li>• Cameras should record on motion detection and compatible with NVR.</li> <li>• AES - Automatic Electronic Shutter, AGC - Automatic Gain Control, ATW Auto Tracing White Balance, AWB Auto White Balance, CCD Charge Coupled Device, DSS - Digital Slow Shuttering, HD High Definition, WDR Wide Dynamic Range,.....).</li> </ul>	32	units	

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6	<p><b>Provision of installation Service for outdoor cameras with all required accessories for installation purpose.</b></p> <ul style="list-style-type: none"><li>• Bidder must provide all required equipment.</li><li>• Bidder must coordinate with technical and admin unit and share the work plan prior installation one (1) week advance.</li></ul>					

7	<p><b>IP Infrared Bullet Cameras (Outdoor)</b></p> <ul style="list-style-type: none"><li>• 5 Megapixel minimum</li><li>• 1/3” Progressive Scan CMOS</li><li>• Motorized 2.8-12mm lens.</li><li>• Multi-streaming from H.265 / H.264</li><li>• Supports Motion Detection &amp; Email Notification</li><li>• Weatherproof IP66-rated.</li><li>• Supports Power over Ethernet / 12VDC.</li><li>• Provides True Day/Night functionality with automatic IR filter operation.</li><li>• Extended IR range of up to 30m / 100ft</li><li>• ONVIF/ PSIA / CGI Compliant</li><li>• Weatherproof IP66-rated.</li></ul> <p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"><li>• All Cameras should be IP (with POE support) from known brand in CCTV industry with warranty of two years.</li><li>• All outdoor cameras must be weatherproof with anti-vandalism as Mounts, Housings &amp; Brackets should be included.</li><li>• Preferable Video codec is H.265.</li><li>• Cameras should record on motion detection and compatible with NVR.</li><li>• AES - Automatic Electronic Shutter, AGC - Automatic Gain Control, ATW Auto Tracing White Balance, AWB Auto White Balance, CCD Charge Coupled Device, DSS - Digital Slow Shuttering, HD High Definition, WDR Wide Dynamic Range,.....).</li><li>• All cameras and depends on type should have these basic features.</li></ul> <p>Here below are basic common Cameras features.</p> <table><tr><th>Video Centralized Management</th><th>Central Management</th></tr><tr><td><ul style="list-style-type: none"><li>• Native Hybrid Solution</li><li>• Real-Time Recording &amp; Playback</li><li>• Advanced Mapping</li><li>• Event Manager</li><li>• Unlimited Client Access</li><li>• Smartphone Ready</li><li>• Video Wall Support</li><li>• FIPS &amp; USGCB Compliant</li><li>• Intrusion Detection</li><li>• Vehicle Monitoring</li><li>• Left Objects</li><li>• People Count</li><li>• Loitering Detection</li><li>• Camera Tampering</li><li>• Object Removal</li><li>• Image Stabilization</li></ul></td><td><ul style="list-style-type: none"><li>• Event Management and reporting.</li><li>• Centralized User Management with remote access over HTTPS</li><li>• Centralized Device Management, all cameras to be optimized, configured and controlled.</li><li>• System Health Status, Malfunction should be reported.</li><li>• Configuration Reporting</li><li>• System Wide Logging, for all events.</li><li>• Video Management</li><li>• Perimeter Intrusion</li><li>• GIS Mapping for Cameras location.</li><li>• Analytics</li><li>• Event Management</li><li>• Common Operating Picture and snapshot.</li></ul></td></tr></table> <p>Brand required : Hikvision OR Dahua</p>	Video Centralized Management	Central Management	<ul style="list-style-type: none"><li>• Native Hybrid Solution</li><li>• Real-Time Recording &amp; Playback</li><li>• Advanced Mapping</li><li>• Event Manager</li><li>• Unlimited Client Access</li><li>• Smartphone Ready</li><li>• Video Wall Support</li><li>• FIPS &amp; USGCB Compliant</li><li>• Intrusion Detection</li><li>• Vehicle Monitoring</li><li>• Left Objects</li><li>• People Count</li><li>• Loitering Detection</li><li>• Camera Tampering</li><li>• Object Removal</li><li>• Image Stabilization</li></ul>	<ul style="list-style-type: none"><li>• Event Management and reporting.</li><li>• Centralized User Management with remote access over HTTPS</li><li>• Centralized Device Management, all cameras to be optimized, configured and controlled.</li><li>• System Health Status, Malfunction should be reported.</li><li>• Configuration Reporting</li><li>• System Wide Logging, for all events.</li><li>• Video Management</li><li>• Perimeter Intrusion</li><li>• GIS Mapping for Cameras location.</li><li>• Analytics</li><li>• Event Management</li><li>• Common Operating Picture and snapshot.</li></ul>	22	Units
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8	<b>Provision of installation Service for Outdoor cameras with all required accessories for installation purpose.</b> <ul style="list-style-type: none"> <li>Bidder must provide all required equipment.</li> <li>Bidder must coordinate with technical and admin unit and share the work plan prior installation one (1) week advance</li> </ul>	22	Unit
9	<b>IP Infrared Bullet Cameras (indoor)</b> <ul style="list-style-type: none"> <li>5 Megapixel minimum</li> <li>1/3" Progressive Scan CMOS</li> <li>Motorized 2.8-12mm lens.</li> <li>Multi-streaming from H.265 / H.264</li> <li>Supports Motion Detection &amp; Email Notification</li> <li>Weatherproof IP66-rated.</li> <li>Supports Power over Ethernet / 12VDC.</li> <li>Provides True Day/Night functionality with automatic IR filter operation.</li> <li>Extended IR range of up to 30m / 100ft</li> <li>ONVIF/ PSIA / CGI Compliant</li> <li>Weatherproof IP66-rated.</li> </ul> <p><b>IMPRTANT:</b></p> <ul style="list-style-type: none"> <li>All Cameras should be IP (with POE support) from known brand in CCTV industry with warranty of two years.</li> <li>All outdoor cameras must be weatherproof with anti-vandalism as Mounts, Housings &amp; Brackets should be included.</li> <li>Preferable Video codec is H.265.</li> <li>Cameras should record on motion detection and compatible with NVR.</li> <li>AES - Automatic Electronic Shutter, AGC - Automatic Gain Control, ATW Auto Tracing White Balance, AWB Auto White Balance, CCD Charge Coupled Device, DSS - Digital Slow Shuttering, HD High Definition, WDR Wide Dynamic Range,.....).</li> <li>All cameras and depends on type should have these basic features.</li> </ul> <p>Here below are basic common Cameras features.</p>	1	Unit

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10	<p><b>Provision of installation Service for indoor bullet camera with all required accessories for installation purpose.</b></p> <ul style="list-style-type: none"> <li>• Bidder must provide all required equipment.</li> </ul> <p>Bidder must coordinate with technical and admin unit and share the work plan prior installation one (1) week advance</p>	1	Unit
11	<p><b>NVR Device</b></p> <ul style="list-style-type: none"> <li>• One NVR should be installed in each location as will be specified by the focal persons (Security and ICT units) during site visit. In case the NVR require licenses to operate according to the camera count, then the requested number of licenses should be included in the offers.</li> <li>• NVR system should be from known brand (Compatible with Hikvision and Dahua cameras) in Video Surveillance industry with latest technology and with at least two-year warranty.</li> <li>• The operating system can be windows-based operating system.</li> </ul> <p>Below are required technical specs and features of the system. We do accept as well higher specs and features.</p> <ul style="list-style-type: none"> <li>• 24 network cameras can be connected.</li> <li>• Simple Network Management Protocol (SNMP) support</li> <li>• Built-in diagnostics</li> <li>• Protection of files against deletion</li> <li>• In-built firewall for the protection of data against unauthorized access</li> <li>• Synchronized audio and video recording and playback.</li> <li>• Hard-disk temperature monitoring</li> <li>• Mirroring capability for additional redundancy</li> <li>• It must be with Reliability, Availability &amp; Disaster Recovery</li> </ul>	5	Unit



	<ul style="list-style-type: none"> <li>• Minimum 16 Channel Synchronous Playback</li> <li>• User-Friendly Video Backup/Export</li> <li>• Rack mount Chassis</li> <li>• Storage capacity must be scalable in TB RAID Storage (scalable NAS could be considered) providing minimum of 30 days of recording.</li> <li>• NVR should come with video editing and managing software.</li> <li>• Third-party network cameras supported.</li> <li>• Up to 5 Megapixels resolution recording</li> <li>• HDMI and VGA output at up to 1920×1080P resolution</li> <li>• Standards connections HDMI, VGA, Ethernet Gig (2), USB.</li> <li>• Other: installation service is required; one device will be installed in each location as will be specified by the focal persons (Security and ICT units) during site visit.</li> </ul>		
12	<p><b>24 ports PoE Switch.</b></p> <p>Five 24 ports POE switches should be installed in the server room (one of them should be Layer 3 managed switch) connecting all cameras, NVR and monitoring system.</p> <p>Below are some required technical specs and features:</p> <ul style="list-style-type: none"> <li>• Full Managed Software Features</li> <li>• IEEE 802.3ab, 802.3ae, 802.3x, 802.1q, 802.1d, 802.1v, 802.1x standards.</li> <li>• 10/100/1000Base RJ-45 port.</li> <li>• Power input 100 – 240</li> <li>• POE Budget: 500W</li> <li>• Other: installation service is required.</li> </ul>	5	Units
13	<p><b>Monitor Screen 40 inch.</b></p> <ul style="list-style-type: none"> <li>• Monitoring system should be installed in the control room located on the ground floor.</li> <li>• The system should consist of 40” Monitor and a workstation.</li> <li>• The monitor must be provided with workstation and ability to display minimum of 16 Cameras without any jitters or delay in the live feed or recorded playback.</li> <li>• Other: installation service is required.</li> </ul>	6	Unit
14	<p><b>Cable – LAN</b></p> <p>A physical separated network should be installed for the surveillance network, as the following specs</p> <ul style="list-style-type: none"> <li>• Cat 6 UTP LAN cables are professional terminated at Cat 6 UTP Patch Panel.</li> <li>• Cameras should be directly connected to POE Switch.</li> <li>• Network must be professionally labeled, documented, and designed.</li> </ul>	1830	Meter

	<ul style="list-style-type: none"> <li>• All Cameras are powered by POE network switches.</li> <li>• The switches that are already available in the buildings for data network will not be used for the surveillance system recordings.</li> <li>• All surveillance items (NVRs, Patch Panels, Switches, etc....) will be installed in each location as will be specified by the focal persons (Security and ICT units) during site visit. Other: installation service is required.</li> </ul>		
15	<b>RJ45</b> <ul style="list-style-type: none"> <li>• Bidder must provide RJ45 for installation of required cameras and other connections for Surveillance System</li> </ul>	1,000	EA
16	<b>Tube for Cable (PVC conduit pipe)</b> <ul style="list-style-type: none"> <li>• Bidder must provide tube fit to cable.</li> </ul>	1830	Meter

**NOTE:**

**Before commissioning, the contractor MUST install and test the CCTV system in the locations listed in phases and ensure the system works properly.**

**END OF SCOPE OF WORK**

Cleared By:

Admin Officer

Approved by HSO: