المواصفات الفنية الخاصة بمنظومة كاميرات الرصد المرئى

(للمنشآت الدينية)

(المساجد – الكنائس – المعابد ...الخ)

➢ **D e s c r i p t i o n**

- **The IP video surveillance system shall serve the purpose of security surveillance providing both clear Live and Recorded video.**
- **Video is provided by IP cameras located at positions identified on the drawings, covering the intended fields of vision. Contractor to furnish supplementary drawings showing coverage areas.**
  - **The IP video surveillance system shall include but not limited to:**
    - **Outdoor/indoor Day/Night cameras fixed or PTZ.**
    - **Digital video management software on appropriate server platform/NVR.**
    - **Adequate internal or external Storage (NAS, SAN,….etc) if needed.**
    - **Client software on appropriate PC hardware platform.**
    - **Joystick keyboards.**
    - **LED monitors.**
    - **Necessary network components (Active and Passive).**

TECHNICAL SPECIFICATIONS

ALL items must meet or exceed the mentioned specs

1- Video Storage and management system

- ✓ **The following specification is required for VIDEO STORAGE AND MANAGEMENT SYSTEM installed in Control Rooms and shall meet or exceed the following design and performance specification.**
- ✓ **Information supplied from the camera sources via Ethernet shall be digitally recorded simultaneously through Video Storage system.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should be able to store recorded video on any standard storage Media, The bidder should be able to choose the appropriate storage media for their application, such as a hard disk storage array, storage area network, network video recorder or network attached storage.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should provide a fully modular architecture that offers an upgrade for all storage media which should support the RAID5 at least.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should simultaneously record video, display live video, and display recorded video. None of the video operations should interfere with the other recording; it should not stop playback, live viewing, or storage of video.**

- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should support event-based recording and/or should record on continues 24- hours basis.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should connect to an existing network. Various types of network architectures should be supported including Ethernet. Various types of network protocols should be supported including TCP/IP.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM shall be built upon open, industry standards and facilitate integration with IT infrastructures and other digital and analog systems.**
- ✓ **Recording the video from all cameras up to <u>at least 30 days</u> continuously with at least 25 FPS and full resolution for each camera.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM shall provide for digital zoom capability for any camera in live or playback mode.**
- ✓ **The Workstation Application shall provide the ability to control and program any protocol compliant camera equipped with pan, tilt controls and zoom lens:**
  1. **Manually control the pan, tilt and lens functions.**
  2. **Set the pan and tilt home positions for manual or alarm activation.**
  3. **Automatically control the cameras through an alarm Trigger.**
  4. **Ability to set multiple preset positions.**
  5. **Ability to set multiple tours.**
  6. **Adjust the zoom lens.**
  7. **The ability to control the camera menu and setup the camera through it.**
- ✓ **Monitor on screen display should identify camera names of up to 8 characters in length.**
- ✓ **The on screen display should have the option to be displayed or hidden as part of the camera view.**
- ✓ **Graphical indicators should alert the user to the type of recording occurring on any camera input.**
- ✓ **Indicators should alert the user if the video signal is lost or any camera is not recording or if during recording any camera is not functioning appropriately.**
- ✓ **Several user actions performed in the application and errors should be logged.**
- ✓ **The digital video management system should allow the backup of important data such as schedules and server settings in an executable file.**
- ✓ **A status bar should display information about the current date and time and the status of the storage disk.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should be accompanied by full printed and online help documentation.**
- ✓ **The VIDEO STORAGE AND MANAGEMENT SYSTEM should be connected to a LED monitor for full control (record- play back- viewing) on control room.**
- ✓ **The network storage chassis shall be designed for video surveillance recording applications .Redundant power supply modules preferred.**
- ✓ **Client software must be delivered for users' works as remote site for full accesses to system (live view – play recording data – camera control).**
- ✓ **The system should be supplied with Network Time Protocol (NTP) server.**
- ✓ **The bidder must supply the hardware and software VMS and with full accessories.**
- ✓ **The bidder must attach an estimated doc, for storage calculation for recording at least 30 days continuously with at least 25 FPS and full resolution for each camera.**

<u>2- IP Outdoor PTZ Dome Day/Night Camera Specifications</u>

- **Image device 1/3 inch at least.**
- **Color: PAL.**
- **Progressive scan.**
- **AGC switchable on/off.**
- **Sensitivity <or = 0.4 LUX. In color Mode (Day) <Or = 0.08 LUX at black/ white Mode (Night).**
- **Resolution 1920x1080 At Least.**
- **Built In optical zoom lens not less than 30x.**

- **Two simultaneous H264 /MPEG-4 video streams one of them at least - 25 F/S @Full resolution.**
- **Open IP Standards/ Onvif /Pisa comply.**
- **Pan Angle 360° with continuous rotation .**
- **Tilt Angle 180°/90° with auto Flip .**
- **WDR Not Less Than 90db.**
- **Automatic White Balance, Gain Control "Switchable ".**
- **Password Protected.**
- **Focus: Auto/Manual Preferred.**
- **Automatic Electronic Shutter: Selectable on/off.**
- **Support unicast and multicast.**
- **Supported protocols : TCP/IP,IPV4,SNMP,DHCP,IGMP,UPNP,RSTB,QoS ..etc.**
- **Must support Power over Ethernet (PoE) 802.3af**
- **Operating temperature 0 C → + 50 C.**
- **Enclosure IP 66.**

3- *IP Indoor PTZ Dome Day/Night Camera Specifications*

- **Image device 1/3 inch at least.**
- **Color: PAL.**
- **Progressive scan.**
- **AGC switchable on/off.**
- **Sensitivity <or = 0.4 LUX. In color Mode (Day) <Or = 0.08 LUX at black/ white Mode (Night).**
- **Resolution 1920x1080 At Least.**
- **Built In optical zoom lens not less than 16x.**
- **Two simultaneous H264 /MPEG-4 video streams one of them at least - 25 F/S @Full resolution.**
- **Open IP Standards/ Onvif /Pisa comply.**
- **Pan Angle 360° with continuous rotation .**
- **Tilt Angle 180°/90° with auto Flip .**
- **WDR Not Less Than 75db.**
- **Automatic White Balance, Gain Control "Switchable ".**
- **Password Protected.**
- **Focus: Auto/Manual Preferred.**
- **Automatic Electronic Shutter: Selectable on/off.**
- **Support unicast and multicast.**
- **Supported protocols : TCP/IP,IPV4,SNMP,DHCP,IGMP,UPNP,RSTB,QoS ..etc.**
- **Must support Power over Ethernet (PoE) 802.3af**
- **Operating temperature 0 C → + 50 C.**

4 -IP Indoor fixed Day/Night Camera Specifications

- **Built in multi video analytics applications on board of camera.**
- **It shall use a progressive scan 1/3" CMOS image sensor.**
- **It shall produce a maximum resolution of 1920 x 1080 pixels (2MP) at least.**
- **Wide dynamic range not less than 90dB.**
- **Sensitivity: (Color: 0.06 lux), (Mono: 0.007 lux).**
- **Video compression: H.264 (MP); M- JPEG.**
- **It shall offer a region of interest to zoom into a specific area of the full image.**
- **The camera shall allow a region of interest to be sent in a separate stream so it is possible to view both a overview and a detail at the same time.**
- **The camera shall deliver video over a 10/100 Base-T, auto-sensing, half/full duplex, RJ45 Ethernet connection.**

- **Mega pixel lens 1/3 inch format, varifocal, manual focus and zoom, suitable for use with day-night cameras**
- **IR illumination not less than 25m.**
- **The camera shall comply with the IEEE 802.3af Power over Ethernet standard.**
- **The camera shall conform to the ONVIF Profile S standard.**
- **The camera shall allow regions of interest to be sent in separate streams so it is possible to view both an overview and a detail at the same time.**
- **Must support Power over Ethernet (PoE) 802.3af**

5 -IP Outdoor fixed Day/Night Camera Specifications

- **Image device 1/3 inch At least.**
- **Built in multi video analytics applications on board of camera.**
- **Not less than 1920X 1080 Mega pixel @ full frame at least.**
- **Progressive scan.**
- **Minimum illumination <or= 0.4 lux at color mode &<or= 0.08 lux at black white mode.**
- **Day & night operation automatic switching between color and B/W modes depending on light intensity, mechanical IR cut filter removable.**
- **Two simultaneous H264/ MPEG-4 video streams one of them at least 25f/S @ full resolution.**
- **Support Unicast /Multicast**
- **Protocols: Tcp/Ip, Ipv4, Snmp, Dhcp, Igmp, Upnp, Rstb, Qos …..Etc**
- **Open IP standards/ ONVIF /PISA Comply.**
- **Back light compensation full range.**
- **Wide dynamic range 90 db at least.**
- **Auto / manual iris.**
- **Auto white balance.**
- **Operating temperature 0 C → + 50 C**
- **Must support Power over Ethernet (PoE) 802.3af**
- **IR illumination not less than 25m for 3:9mm lens & 40 m for 9:22mm or 5:50mm lens , if it's not in the camera the bidder must deliver a separate illuminator to install above the camera for the same range.**
- **Mega pixel lens 1/3 inch format, varifocal, manual focus and zoom, suitable for use with day-night cameras, high resolution, 3:9mm/9:22mm /5:50mm depend on camera location**
- **Enclosure IP 66 include fan and sun shield (if needed).**

6- Workstations

A. **The PC workstation with digital video outputs, USB keyboard, and mouse. It shall be capable of displaying all video streams simultaneously and process up to 25 FPS at full resolution of each camera**
B. **The PC workstation shall have, color, and on-screen messages to provide ongoing feedback about user activity and system status, and it shall have on-screen PTZ control and device property control.**
C. **The PC workstation shall allow users with authority to configure devices, set up users, adjust network settings, view system logs and diagnostics, and create recording schedules. Permission to access these functions and all other system services can be configured to a fine level of detail.**
D. **The PC workstation shall have advanced search capabilities, event logging, and alarm interface displays.**
E. **The PC workstation shall export video and still images in multiple formats, including Manufacturer's Native, QuickTime, MPEG-4, Native MPEG-4, PNG, BMP , JPEG and H264. A front panel USB port and DVD/CD-RW drive make it easy to export video clips and still images to external media.**
F. **The PC workstation shall provide for digital zoom capability for any camera in live or playback mode.**
G. **The Workstation Application shall provide the ability to control and program any protocol compliant camera equipped with pan, tilt controls and zoom lens:**
    1. **Manually control the pan, tilt and lens functions.**
    2. **Set the pan and tilt home positions for manual or alarm activation.**

3. **Automatically control the cameras through an alarm trigger.**
4. **Ability to set multiple preset positions.**
5. **Ability to set multiple tours.**
6. **Adjust the zoom lens.**
7. **The ability to control the camera menu and setup the camera through the PC Workstation.**

H. <u>The brand name PC Workstation shall meet or exceed the following design and performance specifications or better if the client software of video management and storage systems minimum requirements needs that :-</u>

<u>1. System Specifications</u>

a. Processor 3.4 GHz Intel Core i7 at least.
b. Internal Memory 8 GB RAM at least.
c. Video Systemgraphics card with suitable of MB video RAM 1280 x 1024 display resolution, and application programming interface; true color (32-bit), digital video outputs.

<u>2. Video Specifications</u>

a. Video standard 1920X1080
b. Video decoding H264 /MPEG-4
c. Video outputs DVI +HDMI

<u>3. PTZ Control Specifications</u>

PTZ Interface: On-screen

<u>4. DVD/CD-RW Drive</u>

DVD (ROM)

<u>5. Network Specifications</u>

Interface Gigabit Ethernet RJ-45 port, (1000Base-T)

<u>٦. Auxiliary Interfaces USB 2.0</u>

The brand name workstation must be supplied with original O.S software addition.

<u>7- LED Monitors</u>

<u>At least 40 inch monitor :</u>

<u>BUILD FOR SURVILLANCE NOT TV SET</u>

- **Flat monitor**
- **Resolution: FHD not less than 1920X 1080**
- **220 V /50 HZ**
- **DVI /VG A**
- **HDMI Interface**
- **Contrast ratio : NOT LEAST THAN 1000 :1**
- **BRIGTNESS :250 CD/m²**
- **Slim Design**

<u>8-Ethernet Switches:-</u>

– <u>MAIN SWITCH (managed Switch)</u>

Supplied with N <u>PORT 10/100/1000</u> –T/Tx for connectivity with IP camera AND client pc via UTP/STP cables
Supplied with N <u>FIBER PORT</u> –T/Tx for connectivity TO EDGE SWITCHES AND EXTERNAL TERMINATION IF NEDDED.
*** The Supplied switch must be fully managed and should support the following features:-**

- **MAC-based Trunk**
- **802.1q VLAN**

- **Support power over Ethernet.**
- **IP-Multicast IGMP Snooping.**
- **Rapid Spanning Tree for Redundancy.**
- **QoS for priority queuing.**
- **Support PoE – IEEE 802.3af**
- **IEEE802.1d, IEEE802.1p and IEEE802.1x compatible.**
- **RS-232 console, Telnet, SNMP V1, V2 & V3.**
- **Supports Command Line Interface in RS-232 Console**
- **Auto-Negotiation and Auto-MDI/MDIX.**
- **Full wire-speed forwarding rate.**
- **Switch should be fully compatible with IEEE 802.3 standard.**
- **Power requirements are 220 VAC, 50 Hz.**
- **All needed software, manuals, and cables and accessories needed for rack.**
- **IEEE standards:**
    - **IEEE 802.3u 100BaseTX**
    - **IEEE 802.1p CoS Prioritization (2 queues/port at least for QoS)**
    - **IEEE 802.1Q VLAN Tagging**
    - **IEEE 802.1x Port-based network access control**
    - **IEEE 802.1D Spanning Tree Protocol**
- **Bidder may state out other IP multicast protocols his proposed switch supports.**
- **The bidder should describe in details both the QoS features and parameters implemented over L2 The bidder should also state without any doubt if his QoS implementation is based on standard technologies or other proprietary mechanisms, and what is its' expected effect on the switch performance .**

– EDGE SWITCH (INDUSTRIAL TO OUTDOOR)

Supplied with N PORT 10/100/1000 –T/Tx for connectivity with IP camera
Supplied with N FIBER PORT –T/Tx for connectivity To Main Switches
*** The Supplied switch must be fully managed and should support the following features:-**

- **MAC-based Trunk**
- **802.1q VLAN**
- **Support power over Ethernet.**
- **IP-Multicast IGMP Snooping**
- **Rapid Spanning Tree for Redundancy**
- **QoS for priority queuing**
- **Support PoE – IEEE 802.3af**
- **IEEE802.1d, IEEE802.1p and IEEE802.1x compatible.**
- **RS-232 console, Telnet, SNMP V1, V2 & V3.**
- **Supports Command Line Interface in RS-232 Console**
- **Auto-Negotiation and Auto-MDI/MDIX.**
- **Full wire-speed forwarding rate.**
- **Switch should be fully compatible with IEEE 802.3 standard.**
- **Power requirements are 220 VAC, 50 Hz.**
- **All needed software, manuals, and cables and accessories needed for rack.**
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    - **IEEE 802.1p CoS Prioritization (2 queues/port at least for QoS)**
    - **IEEE 802.1Q VLAN Tagging**

- IEEE 802.1x Port-based network access control
- IEEE 802.1D Spanning Tree Protocol

- **Bidder may state out other IP multicast protocols his proposed switch supports.**
- **The bidder should describe in details both the QoS features and parameters implemented over L2 The bidder should also state without any doubt if his QoS implementation is based on standard technologies or other proprietary mechanisms, and what is its' expected effect on the switch performance .**

9- Control Room LAN General Specification:

- **UTP cables should be compliant with the standard of EIA/TIA for category 6.**
- **The wiring system should allow all different configurations (4 pairs should be installed).**
- **All nodes should be terminated in a wall mounted faceplate from one side and the other side terminated in patch panel**
- **The proposed faceplate and Patch panel should be complicate with category 6 or more.**
- **All the outlets should be tested with a tester that supports standard EIA/TIA category 6 UTP cables and labeled.**
- **All plastic ducts should be installed for data cables and should be isolated and far away from electrical cables by a convenient space.**

10-Control room Rack Specification

- **All Active equipments must be installed in a brand name wiring closet racks.**
- **The height of the installed equipments should not exceed more than 60% of the total rack height**
- **Bidder is responsible for providing the adequate number of racks to full fit the specification of the last mentioned item**
- **Bidder should provide the wiring closet racks with the following specifications as minimum:**
  - **Electrostatic painted coat rack cabinet**
  - **Door with mechanical locker with key.**
  - **Removable side and back panel with dust proof gates for cable entry**
  - **Fans modules should be provided for air circulation from the bottom toward the top.**

11- Network Specification

- **The bidder is responsible to do his own networking solution to connect all cameras to main control room to get full resolution, full frame rate, the bidder has to use switches (edges, core), Fiber optic cables.**
- **The outdoor networking devices must be installed in weather proof outdoor racks with the same spec's of control room racks.**
- **ALL cables must be protected by installed tunnels (PVC pipes) or inside metal ducts**

- UTP Cables *Specification* (From Switch to the Camera)

- **UTP / CAT6 Cable or more**
- **TIA/EIA 568A / T568B Wired (RJ- 45)**
- **Protection against noise and electromagnetic interference.**
- **Technology: Lan / Ethernet**
- **Application : Networking**
- **Connector type : RJ-45**

- Power Cables Specification

- Pure Copper/Preferred

- All Cables Outside Building Must Be Inside PvC Pipe.

- The Bidder Should Supply All Accessories for A/C Networks "Circuit Breakers, A/C Outlets ...Etc," And Connecting Cameras/Switches To Ups In Control Room.

12- Uninterruptible Power Supply for control room

- **UNIT consisted of two Smart-UPS in parallel operation, each with max load 40% of its capacity.**
- **Output voltage: - 230V (default) – 220/240 V user selectable.**
- **Typical Backup Time at Full Load 15 minutes.**
- **Protection: overload –short circuit – over voltage-under voltage Temperature-low battery**
- **Operating temperature 0°c/50° c .**

The bidder responsible to ensure that his own network design should support to view and record all cameras in control room At full frame @ full resolution for every camera .

إشتراطات التأمين الخارجي

- **تعمل الإشتراطات العامة على توفير الحد الأدنى المقبول لأشتراطات التركيب والتنفيذ التي تسمح للمنظومة الكهروبصرية توفير قرينة مادية واضحة والمتمثلة بالآتى:**

١. الأسوار و المناطق المحيطة

- **تحقيق مجال رؤية (field of view) من خلال الكاميرات الثابته يشمل الحد الخارجى للسور ومسافه لاتقل عن ٣ متر أمامه .**
- **إضافة الكاميرات المتحركه (PTZ) على زوايا الأسوار وبمسافات بينية لا تزيد على ٤٠٠ م على أن يتوفر بها قدرات عاليه على التكبير بصريا (optical zoom) لإستيضاح التفاصيل بالمناطق الغير مغطاه بمجال رؤية الكاميرات الثابتة.**
- **تركيب الكاميرات الثابته الخارجية بشكل متتابع وفى اتجاه واحد موازى للسور وبمسافات لا تزيد عن ٥٠ م وذلك لتقليل نقاط انعدام الرؤيه (dead zones).**
- **الإرتفاع المطلوب الكاميرات الثابتة الخارجية يتراوح بين ٣ م الى ٤ م وعلى أن يتم تركيب الكاميرات المتحركة على أقصى ارتفاع ممكن .**
- **جميع الكاميرات الثابتة الخارجية مزودة بخاصية الرؤية الليلية.**
- **جميع الأعمدة والحوامل المستخدمة على الأسوار الخارجية من المعادن المجلفنة (ضد الصداء).**
- **يتم الألتزام بإنشاء مسارات لجميع كابلات الشبكة داخل الأسوار بما يعمل على توفير حماية لها من العوامل الجوية والحفاظ على الشبكة من عناصر التخريب والإختراق .**
- **تركيب كاميرات متحركة(PTZ)على زوايا الأسوار (المسافة البينية بين كل كاميرا متحركة والأخرى لا تزيد عن ٤٠٠م).**

٢. البوابات (المداخل-المخارج)

- **يجب ان يوفر نظام المراقبة التلفزيونية صور دقيقه عن المترددين على المبنى (أفراد- مركبات) بحيث يمكن مقارنة هذه الصور بقواعد البيانات المختلفه.**
- **إستخدام كاميرات ثابتة لجميع المداخل بجميع البوابات فى عكس إتجاه السير وعلى ارتفاع يتراوح من ٢ إلى ٣ متر.**
- **يمكن الأعتماد على الكاميرات المزوده بخواص تحليل الصورة (تحديد الوجه – تحديد لوحات المركبات .....الخ).**
- **جميع الكاميرات المستخدمة بالبوابات توفر مجال رؤية كامل للبوابة ومزودة بخاصية الرؤية الليلية.**
- **جميع الأعمدة والحوامل المستخدمة بالبوابات من المعادن المعالجة أو (المواد المقاومة للصداء).**

إشتراطات التأمين الداخلى

يجب ان يشمل الحد الأدنى للتأمين والمراقبة التغطية المناسبة للأماكن التالية :

- **جميع الطرقات الداخلية والخارجية داخل المباني بأستخدام الكاميرات الثابتة الداخلية (إن وجدت).**
- **أماكن إنتظار السيارات (فوق الأرض / تحت الأرض) بأستخدام الكاميرات الثابتة الخارجية (إن وجدت).**
- **مداخل ومخارج المبانى (الأساسية / الطوارئ) بأستخدام الكاميرات الثابتة الخارجية.**
- **أماكن تردد الزائرين(كافتريات / صالات إنتظار / قاعات إستقبال / قاعات المناسبات/ ....) (إن وجدت).**
- **أبواب جميع المخازن بواسطة الكاميرات الثابتة لتوفير مراقبة على مدار الـ٢٤ ساعة.**
- **أماكن حفظ الوثائق والمكاتبات .**
- **غرف توزيع الكهرباء واللوحات الرئيسية للكهرباء.**
- **جميع صناديق النذور والتبرعات الثابتة (إن وجدت).**
- **الأماكن ذات الأهمية (طبقا لطبيعة عمل المنشآه) .**

الإشتراطات العامة

- **يتم الإعتماد اساسيا فى التغطية على الكاميرات الثابتة بالإضافة الى عدد مناسب من الكاميرات المتحركة للحصول على صورة عامة** (Overview) **و تفاصيل أدق فى حالة الحاجة لذلك .**
- **يتم الإعتماد فى الوسط التراسلى الخاص بنظام المراقبة التليفزيونية على شبكة الألياف الضوئية** (Fiber) **للمسافات الطويلة .**
- **يجب أن توفر جميع الكاميرات الثابتة خاصية تحليل الصورة (Built in Analytics or External) .**
- **جميع الكاميرات الثابتة مزودة بخاصية الرؤية الليلية .**
- **جميع الأعمدة والحوامل من المعادن المعالجه ضد الصداء .**
- **توفير الإضاءة الكافية فى جميع المواقع المغطاة بالكاميرات للحصول على صورة واضحة.**
- **يتم تسجيل كاميرات نظام المراقبة التليفزيونية لمدة ٣٠ يوم بأعلى جودة للكاميرات طبقا للمواصفات الفنية .**
- **يتم عرض جميع كاميرات نظام المراقبة التليفزيونية بغرفة المشاهدة الرئيسية من خلال عدد كافى من شاشات العرض (بحد أقصى** 9 **كاميرا فى الشاشة الواحدة).**
- **يتم الإحتفاظ بخرائط أو قوائم تبين مواقع كافة الكاميرات ومسارات البنية التحتية.**