

**Project**

**: Supply, Delivery, Configuration,  
Testing, Commissioning, Installation,  
Upgrading/Additional Closed Circuit  
Television (CCTV) Surveillance System  
: General Administration and Support  
: P1,500,000.00  
: 60 Calendar Days**

**Budget/Program**

**Approved Budget for the Contract**

**Delivery Period**

## **TERMS OF REFERENCE**

### **1. PROJECT BACKGROUND**

The Closed Circuit Television (CCTV) Surveillance System is a technology that will support and improve security and monitoring within the facilities of the Department of Justice (DOJ) Main compound and its facilities.

Currently, the DOJ has an existing CCTV Surveillance System. CCTV cameras located in the different strategic areas, cabling for the CCTV camera operates in a separate individual network.

### **2. TERMS OF ENGAGEMENT**

The Terms of Engagement will be for Three (3) Years, with expected full supply, delivery and installation within Sixty (60) Calendar Days upon receipt of Notice to Proceed (NTP).

### **3. TECHNICAL REQUIREMENTS**

3.1 Design, supply, delivery, configuration, testing, commissioning, installation, enhancement/upgrade and make operational the closed circuit television (CCTV) surveillance system for DOJ New Building with the following components:

- 3.1.1 Closed Circuit Television (CCTV) Surveillance System (Software license), proposed CCTV Surveillance System must be compatible with the existing CCTV cameras.
- 3.1.2 Network Video Recording (NVR) System, proposed NVR must be compatible with the existing CCTV cameras.
- 3.1.3 The proposed NVR shall have thirty (30) days video retention.
- 3.1.4 Structured Cabling for CCTV Surveillance System, all cabling will be "home run" at the Security Section Office (Guard House).
- 3.1.5 New CCTV Cameras as distributed (New Building)
  - 1<sup>st</sup> Floor 2 CCTV
  - 2<sup>nd</sup> Floor 3 CCTV
  - 3<sup>rd</sup> Floor 3 CCTV
  - 2<sup>nd</sup> Floor (Facing Quadrangle) 2 CCTV
  - 2<sup>rd</sup> Floor (Facing Parking Area) 1 CCTV

- 3.2 All project components shall be brand new and of good quality.
- 3.3 Relocated existing CCTV Cameras, the contractor/service provider shall provide new network cables for the relocation of CCTV, and shall use the same/existing network IDF for CCTV.
  - 3.3.1 1 PTZ Camera on perimeter fence relocate near the new entrance going to the new Frontline Office
  - 3.3.2 1 CCTV Camera on corner of Programs Building facing motorcycle parking relocate to the middle/center of Programs Building also facing motorcycle parking.
  - 3.3.3 1 CCTV Camera on the old Frontline Office to the Guard House facing the gate entrance.

Note: For Security reasons, Floor plan for the location of the cameras will be provided to only those service provider that has bought bidding documents and issued a letter of intent.

#### 4. DETAILED TECHNICAL REQUIREMENTS

##### Network Video Recorder

Provide a new Network Video Recorder (NVR) for the various cameras with the following minimum technical specifications"

##### *Features:*

- 1. The Standalone NVR included the following recording, control, and interface functions:
- 2. Minimum of three (3) months retention on continuous recording.
- 3. At least Dual-core embedded processor with embedded operating system.
- 4. Manage up to 32 IP cameras or video encoders
- 5. Support H.264/MPEG-4/MJPEG compression formats up to 4-Megapixel resolution
- 6. Live view with 1, 2, 4, 6, 8, 9, 10, 16, 25, 32 window layouts
- 7. HDD Bay for SATA disks to store recordings for 3 months.
- 8. Maximum video resolution of 1920x1080.
- 9. Maximum total recording throughput: at least 185 Mbps
- 10. Must have at least 32 channel with 1080p real time live view
- 11. Schedule, event triggered and manual recording
- 12. Time and event based search
- 13. Playback AVI/MP4 video export function
- 14. Must have a playback features: Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Net Camera, Previous Camera, Full Screen, Repeat, Shuffle, Back up selection, Digital zoom.
- 15. Event management with motion detection and DI/DO
- 16. Two-way audio
- 17. at least 15 remote clients using web browser



18. Back up mode – USB Device, SATA Device, Internal SATA Burner, Network storage.
19. Can accommodate at least 20 Users or more.
20. Three (3) years warranty on parts, labor and services.

#### *Live View Functions*

- 1 Maximum Number of Cameras: 32 cameras.
- 2 Display Layout Mode: 1, 2, 4, 5, 6, 8, 9, 10, 16, 25, 32 windows.
- 3 Layout Manager: An interface to define display layout and the pre-set cameras within layouts; full-screen mode available
- 4 Layout Tour: Automatic switch between different display layouts
- 5 Digital Zoom: Zoom in/out digitally by PIP (Picture-in-Picture) Camera Zoom at least 3x capability
  - 5.1 Camera Tree: Drag and drop video source from camera tree into display layout
  - 5.2 Event Panel: Display event status upon alarm or upon connection loss or recovery between server and client or when the allocated disk space is full
  - 5.3 Manual Recording: instant recording upon mouse click
  - 5.4 Instant Playback: Pop-up window shows the instant playback video
  - 5.5 Take Snapshots: Provide for copying a snapshot of the "Live View" to your clipboard.
  - 5.6 Digital Output: Manually start and end digital output from the device.

#### *Pan Tilt Zoom Control Functions*

1. Preset Point and Tours: Create preset points; create auto tours between preset points. Activate NVR preset points or auto tours between preset points
  - 1.1 Number of Preset Points: 32
  - 1.2 Joystick: USB or network based joystick supported

#### *Recording Functions*

1. Schedule Recording: Provide recording of video with user-defined schedule and time period. The 24x7 scheduler allow individual cameras to be configured in 10 minutes increments.
2. Event Recording: Record video when the alarm event is triggered, including the pre-event buffered video clip.
3. Alarm Recording: Provide recording of video when a input event is triggered.
4. Motion Recording: Provide recording of video when motion detected.
5. User defined Recording: Provide user-defined recording time period to record video before the occurrence of an event.
6. Buffer less Recording: Event recording without pre-buffered video clip; no streaming in normal mode; saves bandwidth.
7. Manual Recording: Instant recording upon mouse click
8. Recording Frame Rate: Maximum 192 Mbps total; Maximum 30 fps per camera.
9. Recording throughput: Maximum 384 Mbps

10. Recording Format: standard MPEG-4/H.264/MJPEG video compression format.
11. Export Recording: allow the standalone server to export the video clips to a user-defined path or remote PC or store them on DVD media through an external burner in AVI Files (\*.avi) or MP4 format.

#### *Storage Manager Functions / Data Recovery*

1. Interface: Serial ATA (SATA)
2. Number of Drives: up to 2, 4 and 9 drives
3. CCTV video recording retention: 3 months

#### *Search Functions*

1. Time Based Video Search: Search video recordings by time, channel or bookmark
2. Event Based Video Search: Search alarm triggered video recordings
3. Activity and Status log Search: Search for log of video loss/recovery, network disconnect/reconnect, alarm events, user activity; export of all logs

#### *Playback Functions*

1. Playback Control: Forward and backward playback with speeds 48x-96x; pause; stop.
2. Synchronized Playback: Provide for 4 channels of synchronized playback at the same time.
3. Manual Snapshot: Create snapshot from playback for export
4. Digital Zoom: Zoom in/out digitally by PIP (Picture-In-Picture)
5. Video Cropping: Crop a short video clip from long recording file and save it as an independent file
6. Video Export: Export video clips in AVI format; text overlay supported

#### *Event Management*

1. Event Trigger: Video motion detection; External device through digital input; Video loss and recovery; Network loss and recovery.
2. Event Response: Record Video; Play alert beep; Activate external device through digital output; Upload snapshot to FTP server; E-mail notification with snapshots; Event logging

#### *System Functions*

1. Permission Control: Unlimited number of users, multi-level permission, camera group permission for different users
2. Data Backup and Restore: Provide capability to perform configuration backup and restore via remote PC or by external DVD drive(optional)
3. Operation System: Embedded Linux or Windows
4. System Status Monitor: Real time status reports on remote browser
5. Language: Multi-language support

#### *Network*

1. Ethernet Port: 2 ports (should be in different subnets), Ethernet (1000 Base-T), RJ-45 connector.
2. Protocol: TCP, UDP, IPv4, IPv6, HTTP, HTTPS, DHCP, RTP, RTSP, FTP, SMTP, DNS, NTP, ICMP, ARP, UPNP, Bonjour.



#### **USB**

1. Version: at least USB 2.0
2. Ports: 4 ports

#### **Connectors**

1. Local Display: at least 1 VGA and at least 1 HDMI
2. Mouse: 1 USB
3. Keyboard: 1 USB
4. Audio: 3, 3.5 mm Phone Jack

#### **Monitor**

1. Aspect Ratio: Widescreen (16:9)
1. At least 32" Diagonal with Aspect Ratio 16:9
2. With IPS Panel Technology or equivalent
3. Must have at least Connectivity Input Digital HDMI, DVI-D, Analog (RGB)
4. Must have at least Audio In/Out – USB External Control, IR Receiver, RJ45, HDTV Format, Audio Out, Extended Speaker Out, RS232

#### **Power Requirements**

1. AC Power : 110 ~ 220 VAC±10%, 50/60Hz
2. Power Consumption : 350W

#### **Uninterruptible Power Supply (UPS)**

1. Rack Mountable
2. LED light display
3. At least 1.5 KVA for IDF and 3KVA for MDF;
4. Provides full sequence battery testing,
5. With lightning and surge protection,
6. Auto- sense 10M/100M Ethernet,
7. With at least 3 output cables,
8. Resettable circuit breaker;
9. Sealed/no spillage/maintenance free lead acid battery
10. With at least 5 year life time; ISO Certified.

#### **Accessories**

1. Keyboard
2. Mouse

#### **Camera (In-Door /Out-Door Cameras)**

Provide Megapixel IP Fixed Dome Camera with features and characteristics as follows:

1. Imaging Sensor: 4MP Full HD Progressive Scan CMOS
2. Sensor Size: 1 / 2.7 mm
3. Minimum Scene Illumination: Color: 0.3lux, BW : 0.12 lux
4. Black and White: 0 Lux (IR LED on).
5. Lens Focal Length: Vari-focal, f3.3 -12 mm / F1.6.
6. Iris: Fixed iris
7. Focus: Manual focus / Auto
8. User Account at least 12 users
9. Compression: H.264/H.265MPEG-4 SP/MJPEG

10. Produce a resolution of 1920×1080 pixels at up to 30 fps with a 16:9 aspect ratio
11. 120dB wide dynamic range based on Enhanced Super Dynamic
12. Produce a color image with a minimum illumination of 0.1 lux and a monochrome image with 0.04 lux at F2.0, shutter speed of 1/30s and AGC 11
13. Offer built-in IR illumination to produce a clear monochrome image in zero lux conditions with 30m (100feet) irradiation distance
14. Transmit up to three (3) video streams simultaneously which can be selected up to three (3) H.265 (Main profile) or up to one (1) H.265 + two (2) JPEG streams.
15. Equipped with intelligent auto mode, the technology for shooting license plate and person's face more clearly
16. Equipped with GOP control included frame rate control which control an image quality of a stationary area, a moving area, as bitrate reducing technology
17. Corridor mode that enables the capture of a more vertically-oriented area than the normal format would allow.
18. Realize SSL / TLS communication.
19. User shall be able to view video on a PC using a browser.
20. User shall be able to view video on a smartphone and tablet using viewer software for iPhone and Android.
21. Video Motion Detection (VMD) with four (4) programmable detection areas, 15 steps sensitivity level and 10 steps detection size
22. The Fixed Camera shall offer Scene Change Detection (SCD) is possible to issue an alarm when a camera is covered with something or the camera direction is changed to shoot a different subject.
23. Fog compensation function
24. High light compensation (HLC) function
25. Super Chroma Compensation (SCC) which realizes a better color reproducibility in the low illumination
26. Provide up to eight (8) areas of electronic privacy masking
27. Offer the prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially
28. SD memory card slot that supports microSD, microSDHC and microSDXC memory card for local storage
29. Three (3) alarm sources of SCD alarm, VMD, and command alarm that activate the processes such as microSDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification, Indication on browser, and alarm protocol output
30. Conform to the ONVIF standard

#### *Day/ Night Watching*

1. Color to B/W switch: CDS sensor based switch, configurable / DSP based switch, configurable
2. Mechanical IR Cut filter: Yes
3. S/N Ratio More than 50dB
4. ICR Auto(ICR) / Color / B / W
5. IR Working Distance: 30 m (0 lux, 30 IRE, Max Exposure Gain)



### *Functions*

1. Wide dynamic range: 102dB
2. Video Adjustment: Brightness/Saturation/Contrast/Sharpness
3. Automatic Gain Control
4. Auto Exposure Control: Auto/manual.
5. Flickerless
6. Image Orientation: Image Flip / Image Mirror
7. Privacy Mask: 4 configurable regions
8. Text Overlay: User defined text on video
9. Alarm: Video motion detection: Up to 3 motion regions, each region has adjustable sensitivity and trigger threshold
10. Alarm Response:
  - 10.1 Notify control center
  - 10.2 Change camera settings
  - 10.3 Command other devices
  - 10.4 E-mail notification with snapshots
  - 10.5 Upload video, snapshot to FTP server
  - 10.6 Activate external device through digital output

### *Picture Resolution*

1. 2560 x 1440
2. 1920 x 1080
3. 1280 x 720

### *Maximum Image Frame Rate*

1. 20 fps at 2560 x 1440
2. 25 fps at 1920 x 1080
3. 26 fps at 1280 x 720
4. 30 fps at CIF
5. 30 fps at DI
  - 5.1 Bit Rate: 28Kbps – 6Mbps per stream; Support Constant and Variable Bit Rate Mode.
  - 5.2 Multi-Stream: Simultaneous dual streams based on two configurations.
  - 5.3 External Input: Reset button for reset to factory default settings.

### *Network*

1. Ethernet Port: 1, Ethernet (10/100Base-T) via RJ-45 connector.
2. Protocol: TCP, UDP, HTTP, HTTPS, DHCP, PPPoE, RTP, RTSP, IPv6, DNS, DDNS, NTP, ICMP, ARP, IGMP, SMTP, FTP, UPnP, SNMP, Bonjour, ONVIF, PSIA
3. Security: IP address filtering; HTTPS encryption; Password protected user levels; IEEE 802.1X network access control.

### *Integration*

1. ISV Integration: Software Development Kit (SDK) available.
2. Same Brand with NVR : Fully compatible with Proposed NVR

3. Firmware Access Browser: Microsoft Internet Explorer 6.0 or newer versions or other compatible browsers

#### *Power Source / Consumption*

1. DC Power : 12 VDC / 7.5 W (IR on)
2. PoE : PoE Class 3 (IEEE802.3af)

#### *Mount Type*

1. Surface, Flush, Wall, Pendant, Pole, Corner

### **Structured Cabling for CCTV**

#### *Network Specification*

1. All cable trays for horizontal home runs shall be sized accordingly based on the number of outlets per floor. Minimum size of cable tray should be at least 300mm width x 100mm depth;
2. All cable trays/ladder shall be power coated or hot dip galvanized and all, conduits for horizontal home runs shall be PVC with connector coupling;
3. All conduits for the backbone cables shall be EMT pipe with connector coupling and all cable trays/conduit support or hangers shall be permanently anchored on the ceiling.
4. Each floor of the DOJ Main building will have a data cabinet with sixteen (16) port minimum PoE switch and uninterruptible power supply for each data cabinet.
5. Backbone will be fiber optic cable at least 4-pairs multimode OM3.

#### *IDF Floors*

1. All data ports shall be terminated within a managed cable rack system.
2. All patch panels (UTP), wire management and patch cords from station end shall be provided and installed by the contractor. The color of the patch cord shall white for data.

#### *Horizontal Cabling*

1. All copper products in the communication channel shall be capable of supporting the provision of power to the Data Terminal Equipment via the electrically conductive Media Dependent Interfaces as specified in the latest IEEE 802.3af "Power over Ethernet" standard.
1. All horizontal UTP cable must meet requirement specified for current applications such as IEEE 802.3 10/100/1000 BASE T; IEEE 802.5 4/26/100Mbps; ATM Forum 52/155/622/1200 Mbps, 1 Gigabit Networking
2. The 4-pair UTP cable should be Underwriter Laboratories (UL) listed as type CM or CMR.
3. The 4-pair UTP cable shall meet or exceed the following ISO/IEC 11801:2002 requirements
4. The UTP cable shall be of nominal 0.5mm diameter bare solid copper conductors insulated with high density insulation and a PVC sheath. The insulated conductors shall be twisted into pairs, with pairs balanced for maximum performance and noise reduction.

#### *Switch*

1. No. of Ports: 32 ports x 10/100/1000 Base-T LAN
1. Port: RJ45 Port



2. Connectivity Media: Twisted Pair 10/100/1000Base-T
3. Management: Managed, provides plug-and-play
4. Form factor: Rack mountable
5. Certification and Standards: IEEE 802.3-LAN, IEEE 802.3U-LAN, IEEE 802.3ab-LAN
6. Safety: EN 60950/IEC 950 , UL 1950 3rd edition , cUL (CSA 950) NOM-019-SCFI-1994
7. Emissions: FCC Class A , EN 55022/CISPR-22 Class A , VCCI Class A
8. Immunity: Generic: EN 50082-1 , ESD: IEC/EN 61000-4-2 , 4 kV CD, 8 kV AD
9. Radiated: IEC/EN 61000-4-3; 3V/m , EFT/Burst: IEC/EN 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)

#### *Modular Patch Panel*

##### **32-port Patch Panel Category 6**

The panel feature an exclusive clip-on system to ensure the connector in the panel and to provide a simple means of earthing shielded connectors to facilitate installation. All horizontal cables shall be terminated to Category 6/Class E compliant patch panels. The panels shall be sized to fit an EIA standard and shall:

1. Made of black or white anodized aluminum in 16 port configuration.
1. Can accommodate at least 16 port for each rack space.
2. Shall be compatible with all performance categories of connector
3. Must have a rear cable management bar for strain relief.
4. Must have port identification numbers on both the front and rear of the panel.
5. The patch panels shall be in 8 pin modular sockets having a worst pair NEXT loss values for the outlet of >43dB at 100MHz.
6. Patch panels shall be 1RU and provide 24 modular jack ports, with universal wiring that maybe terminated to a T568A or T568B.
7. Patch panel shall terminate the building cabling on 110-style insulation displacement connectors.

#### *Backbone Cabling*

The backbone system shall be fiber optic cable with complete accessories for high speed video streaming.

#### *Data Cabinet*

1. Rack cabinet enclosure
2. 19" standard opening system
3. Plexiglas front door with lock key
4. Plexiglas back door with lock
5. Detachable side panel with lock and proper ventilation
6. With vertical power strip 8 outlets, 3 prong 220v, 20amps, -fuse capacity
7. With 6 pcs exhaust fans at the top panel
8. Adjustable mounting railings
9. Power coated; black
10. Uninterruptible power supply (UPS)

#### *Labeling*

All jacks, panels and frames shall be clearly labeled. Labels should be tamper resistant and made with a label maker at the station end. Data frames should be created with label maker

#### *Uninterruptible power supply (UPS)*

The UPS must be 2kva for Intermediate Distribution Frame (IDF)

1. Power factor connection
1. Frequency conversion
2. Support for up to four external battery cabinets
3. At least 1 hour of battery backup time at full load
4. Full sequence battery testing
5. Must have lighting and surge protection
6. Auto-senses 10M/100M Ethernet
7. At least 4 output cables
8. Shall be resettable circuit breaker for input protection type
9. Sealed, non-spillage, maintenance-free, lead acid with at least 5 year typical life time
10. Brand offered must be ISO Certified

### **5. CONTRACTOR/SERVICE PROVIDER QUALIFICATIONS**

To ensure the quality of service, the contractor shall submit the following documents for the end-to-end solution for the structure cabling system.

- 5.1 Contractor must have at least five (5) years of experience in supply, delivery, installation, testing and commissioning of network equipment and structured cabling system.
- 5.2 Contractor must have at least five (5) years of experience in supply, delivery, installation, testing and commissioning of CCTV Surveillance System.
- 5.3 Contractor must have completed at least three (3) similar projects in supply, delivery, installation, testing and commissioning of network equipment and structured cabling system and CCTV Surveillance System.
- 5.4 The contractor shall submit implementation time-line that reflects all the milestones in Gantt chart.
- 5.5 The contractor shall be responsible for all required permits.
- 5.6 The contractor shall be responsible and accountable for the removal and proper disposal of material and waste generated by this project. Debris, surplus materials, equipment, etc. shall be removed daily.
- 5.7 The contractor shall be held solely responsible for any property or personal damages or claims, including damage to existing structures, systems, equipment and/or site caused by the contractor shall repair or replace it to its original condition at no additional cost to the office.



## **6. TRAINING**

Training for Personnel that will be assigned/designated by Administrative Service, Security Section to monitor surveillance system and maintain CCTV equipment.

Appropriate certification must be issued to the participants.

## **7. DOCUMENTATION**

- 7.1 As Built Design
- 7.2 Warranty Certification from the CCTV Manufacturer

## **8. MISCELLANEOUS**

- 8.1 The contractor shall coordinate with the building Administrator with regard to the following requirements at the site during actual implementation of the project:
  - 8.1.1 Securing permits to operate
  - 8.1.2 Security and safety
  - 8.1.3 Order and cleanliness
  - 8.1.4 Hygiene and sanitation
  - 8.1.5 Personal conveyance and material handling; and
  - 8.1.6 Fire protection
- 8.2 The building Administrator and/or the DOJ shall have the authority to impose rules and regulations in compliance with the requirements of the project.
- 8.3 The contractor shall ensure that there will be minimal disruption to the day-to-day operation of the DOJ during the implementation of the project.
- 8.4 All work shall be performed in a workmanlike manner. MISD personnel may observe the work procedures and workmanship of the contractor but such observation will not relieve the contractor from the responsibility for performance.
- 8.5 There must be a provision for expansion and the system should be capable for future enhancement (i.e. additional CCTV cameras)
- 8.6 On completion of work, the contractor should provide DOJ the drawings documenting location of and ID number of all horizontal cable terminations and all backbone cable pathways. All drawings and documentation should be provided to DOJ in both softcopy file and full size print documents.
- 8.7 The structured cabling system shall be separated from the CCTV network and surveillance system.

## **9. SCHEDULE OF THE REQUIRED SITE INSPECTION**

- 9.1 The date and time of the schedule of the required site inspection is determined during pre-bidding conference.
- 9.2 Bidders are advised to coordinate with Mr. Russel C. Trasmonte, ICTS - Infrastructure Division, Department of Justice at telephone number 85231581.
- 9.3 Any bidder who fails to conduct a site inspection shall be considered ineligible for this particular requirement.

**10. WARRANTY**

Three (3) years on support and technical services

The contractor shall guarantee workmanship for a period of three (3) years.

**11. DEVIATION FROM REQUIREMENTS**

The service provider will be allowed to deviate from the requirements of this TOR provided that said deviations will be equal or greater than those stipulated. Furthermore, any and all deviations should be listed and explained in detail within their proposal under a separate and dedicated provision.

**12. COVID-19 PROTOCOLS**

The supplier must present a negative RT-PCR test result taken within forty-eight (48) hours from the actual day of installation, of its personnel prior to entry in the premises of the Department. Notwithstanding a negative RT-PCR result, the supplier and its personnel are still required to observe the minimum health protocols of wearing a face mask and a face shield, observing physical distancing at all times and frequently hand washing and/or using sanitizers or alcohol.

**13. LIQUIDATED DAMAGES**


Where the Contractor refuses or fails to satisfactorily complete the work within the specified contract time, plus any time extension duly granted and is thereby in default under the Contract, The Contractor shall pay the DOJ for Liquidated Damages pursuant to implementing rules and regulations of R.A. 9184.

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