SECURITY PRINTING AND MINTING CORPORATION OF INDIA LIMITED

TECHINCAL SPECIFICATION AND SCOPE OF WORK

A.   IP BASED VIDEO SURVEILLANCE SYSTEM & ANPR

1. INTRODUCTION

Bank Note Press (BNP), Dewas is an Industrial Unit of Security Printing & Minting Corporation of India Limited, wholly owned by Govt. of India and is engaged in sovereign function of Designing and Printing of Bank Notes. BNP proposes for "Upgradation of IP Based CCTV System along with analytics". This proposal includes replacing the existing CCTV cameras, NVR's, Servers, Network Switch, Routers, UPS and Storage with latest IP based HD/UHD IR cameras, Servers and storage and also implementation of Video Analytics features. It also includes new installation of 110 cameras and 6 nos. ANPR Cameras along with required network and server installation. The task would be executed by understanding the unit's existing CCTV system for implementing the new solution by the System Integrator/OEM/OEM integrator including Design, Supply, Installation, Testing & commissioning on a turnkey basis, training of unit's officials, handing over etc.

This is a turnkey project involves designing, engineering, supply, install, test, commission & support of IP Based Surveillance System. The system should be scalable and it should be possible to integrate other security systems like Fire Alarm, Intrusion Detection System, ANPR (Auto Number plate Recognition System), Access control system etc. Total storage/ record retention period for the CCTV system shall be 90 days. All the IP cameras, VMS Software should be ONVIF conformant. CCTV solution should be based on open architecture. Proprietary products / solutions are not acceptable. Bank Note Press, Dewas being a Security Sensitive institution of National Importance, the proposed system shall be fault tolerant and operational round the clock 24x7 basis. The offered system OEM for Hardware & Software shall have sales & service office in India.

2. GENERAL

2.1. Video Surveillance System shall be end to end IP based with IP cameras as per site requirement.

2.2. The recording of the video shall be on an open architecture, non-embedded based recording server from reputed manufacturers like HP/ Dell or equivalent.

2.3. The entire system shall be based on nonproprietary open architecture where the video management software can work and integrate with any make of IT hardware.

2.4. Original Equipment Manufacturer (OEM) of video surveillance system shall have office in India. OEM or its authorized representative shall have service facility in India.

2.5. Genuinity/Authenticity certificate needs to be provided from OEM for all major component used in the system at the time of supply.

2.6. All software and firmware upgrades shall be without any additional cost during the period of warranty and CAMC. All the IP cameras shall be freely accessible and programmable from the control room

2.7. The power supply available at the units shall be 230 V/ 50 Hz AC which may vary from 160 Volts to 270 Volts.

2.8. After erection and commissioning work is over, the SELLER shall clear all kinds of waste and debris from the site at the respective units.

2.9. One number copper plate earthing shall be provided for entire installation including all electronic/ power gadgets in control room.

2.10.   Supplier & offered system has to adhere to the Company IT Policy.

2.11.   Bidders are advised to visit the site before quoting in order to completely understand the scope, requirement & site condition before quoting.

2.12.   The successful firm will have to give the escalation matrix for their service personnel.

2.13.   The System is required to be fully operational round the clock on 24 by 7 basis.

2.14.   The system shall work in offline mode. When operating offline (unavailability of network connectivity), all activities/transaction should be stored in Camera memory and upon resumption of network connectivity, it should be sent to server.

2.15.   The tender person/company shall demonstrate his competence with the equipment (software & hardware) he is tendering:

  2.15.1. The tender person/company shall obtain a certificate from OEM stating the name of the company and a statement that it has sufficient competence in Software and Hardware to install the tendered equipment.

  2.15.2. The tender person shall provide the proof in the form of training certificates from the OEM of VMS and Server and storage hardware.

2.16.   All cables (OFC, CAT6, Electric/Power cable) shall have LSZH & Fire-retardant insulation material (cable jackets).

  2.16.1. Power Cable Specifications

     Type: 3 Core 2.5 Sq.mm mm Armored cable

     Type of Conductor: Copper

     No of cores: 3

     strands: Multi

     Make - Polycom/Anchor/RRKabel/Finolex/Equivalent

  2.16.2. CAT6 Cable Specifications

     Shielded CAT6 Cable (STP Cat 6 Cable)

     4 Pair Cable, 23 AWG Copper with integral cross -member pair separator for uniform characteristic impedance.

     Make - Dlink/Polycom/Molex/Finolex/Digisol/Equivalent

  2.16.3. OFC Cable Specifications

     6 core armored outdoor single mode optical fiber cable with OS-2 compliance.

     Color- Block, UV resistance

     corrugated steel armor should be provided to protect crush resistance

     Make: Molex/D-Link / Systimax / Panduit / Siemon/Equivalent

2.17.   The bidder organization shall be ISO/IEC 27001 & 9001 certified.

2.18.   All claim related to ONVIF conformant product will be cross checked on ONVIF website.

3. SITE INSPECTION & EXISTING SYSTEM DETAILS

3.1. The bidder should inspect and examine the site and its surrounding and shall satisfy as to the nature of the ground and sub soil, building layout and design, the quantities and nature of work, materials necessary for completion of the work and their availability, means of access to site and in general to obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his offer. No extra claim consequent on any misunderstanding or otherwise shall be allowed.

3.2. Existing system comprises of about 207 cameras, 5 NVR Server, 1 R-NVR cum Domain Server, 1 VMS, 1 Core Switch, 4 Distribution Switch, 34 Access Switch, 14 UPS with 30 min backup, 10 Workstation, 17 LED Monitors. Further Details mentioned below –

SL NO.	Item	Quantity	Model
1	Recording Server (NVR)	05	HP PROLIANT DL180 G6 Intel Xeon E5620 2.5 GHz, 16 Gb RAM Win Server 2012 R2
2	Redundant NVR cum Domain Server	01	HP PROLIANT DL180 G6 Intel Xeon E5620 2.5 GHz, 16 Gb RAM Win Server 2012 R2
3	VMS Server H/W	01	HP PROLIANT DL180 G6 Intel Xeon E5620 2.5 GHz, 16 Gb RAM Win Server 2012 R2
4	VMS Software	01	Godrej IQ Vision Ultimate Management Centre 2016 R3 Ver – 10.2b Build 2511 along with Client Server
5	Analytics Hardware along with Software	01	VCA Analytics
6	Additional Server	02	HP PROLIANT DL180 G6 Intel Xeon E5620 2.5 GHz, 16 Gb RAM Win Server 2008 R2
7	NAS Server	12	HP P2000 Series 24 TB RAID 5
8	NAS Server	06	HP Store Easy 1650/1660 Series with Windows Storage OS 2012 & 2016 Raw Capacity = 48 Tera Byte (TB) each Usable Space = 35TB to 36 TB
9	PTZ Cameras	190	Sony SNC-RH/RS Series
10	Fixed Cameras	17	Panasonic WV-NP502 Series
11	Fixed Cameras	02	Hikvision Fixed Bullet Camera HD IR 2 MP
12	Workstation Client along with monitor	10	HP Z400 Workstation 1 TB Intel Xeon 3.3 GHz W3680
13	LED/LCD Screen	17	Panasonic, LG, Sony 40 to 43 inches
14	Core Switch	01	H3C S7503E
15	Access Switch POE	34	H3C S3100 Series
16	Distribution Switch	04	H3C S5500 Fiber Switch Series (24 Port Fiber/ 8 Copper Port) – 03 nos. HP A5500 Series JD374A (24 Port Fiber/ 8 Copper Port) – 01 nos.
17	42 U Rack	03	Valrack
18	6U Rack incl Pole Racks	45	Valrack.
19	UPS 6 kVA	14 nos.	Make – APC. To Maintain 30 min Backup Time Battery in Scope of CAMC
20	Media Converter	20 nos.	Digisol/D Link 10/100/1000 Mbps
21	Complete Network	01 Lot	Complete OFC (underground, aerial, on surface) and Copper Network, Electrical Wiring network, Pole (15 nos.).

The above details are indicative and system is under continuous AMC. There might be some changes owing to day to day replacement under maintenance contract.

Storage mentioned at sl. No. 08 of existing system have to be re-used with the existing system. It is under scope of bidder to make use of same in designing the upgrade of existing system and accordingly do calculation/estimation of extra storage required.
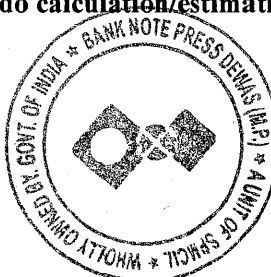
All Passive components can be reused with the upgraded system such as laid cables (electric, OFC, Racks). However, in case any passive network component including cable required is under scope of supplier.

The reused component & LAN infrastructure will be under warranty and CAMC under the scope of successful supplier.

3.3. Wherever possible, all the passive component of the existing IP network (Such as OFC cable network, Power and LAN Cables) have to be re-used and accordingly bidder is strongly advised to site visit for better estimation of quantum of work involved. Depending upon site condition, bidder may require to replace the network passive components.

4. SCOPE

4.1. The scope includes upgradation as per technical specification by replacing cum relocation of 171 nos. of CCTV Cameras along with respective servers, storage and active network components. Apart from replacing cu scope also includes new installation & commissioning of 110 CCTV cameras. It is a turnkey project.

4.2. The scope of work in this specification includes Design, supply, assembly, installation, testing, erection, integration and commissioning software integration, training and performance testing of the complete IP BASED CCTV SURVEILLANCE SYSTEM ON TURN KEY BASIS.

4.3. The firm will have to carry out detail engineering, preparation and submission of all drawings as specified in this specification including preparation and submission of area wise bill of materials, layout and erection drawings showing location of all system equipment and components, power and data cables for IP network, cable tray/rack and conduit routing.

4.4. It shall include SITC on Turn Key basis of all accessories including secondary power supplies for back up and fail safe operation i.e. hardware, software, supports, data cables, UPS, storage and retrieval media, viewing stations, servers, CAT 6 cables, O.F cable, markers, power cables & conduits, software and software integration, earthing to the equipment, mounts, structures, etc. as required for the satisfactory operation of the system.

4.5. This will include fixing of camera using suitable camera mount (as per site requirement) complete with required civil and fabrication works, creating backbone for the system by laying the required data and power cables cable laying & termination/splicing of all cables, fixing of cable trays, conduits, installation and commissioning of all items supplied under CCTV system as required basis.

4.6. Mounting & installation of Servers, Racks recording/storage devices, viewing stations and connecting to network

4.7. Mounting and Installation of LED Screen and connecting them with operator workstation.

4.8. Installation and configuration of Core Switch, Access Switch and all active, passive components.

4.9. Removal, unmounting and safekeeping of existing servers, switch, cameras (Maximum Qty 207 nos.+ 32 nos.) and any other components as per site requirement. Removed item have to be handed over to BNP' representative.

4.10. Integrating the whole system for optimum performance.

4.11. The proposed Cameras will be installed on dedicated poles wherever required. The cameras at various sections are to be installed on walls or on Trusses where walls are not available, using proper mounting brackets and pipes duly painted and finished complete with Fasteners, clamps to support the required load. Supply & Erection of poles is under scope of Supplier.

4.12. Erection and commissioning of networking e.g., cables (UTP/OFC thru' conduit/cable tray), network panels, switches, enclosure, switch media converter, LIU, patch cords etc.

4.13.   The firm shall bear full responsibility for all kinds of maintenance which include periodic maintenance as well as attending to all break-down and emergency calls at short notice whenever called during the Warranty & CAMC period.

4.14.   All the software's supplied shall be perpetual licensed software's.

4.15.   Providing Application software OEM copies along with license keys and passwords.

4.16.   **The Warranty period for complete system shall start from the date of issue of Final Acceptance Certificate.**

4.17.   **The successful firm will have to give the escalation matrix.**

4.18.   All flexible cables shall be laid in GI/PVC Casing Capping (Industrial) conduits/flexible PVC conduits with proper markings.

4.19.   Scope includes Erection and commissioning of all the interfaces.

4.20.   Installation and configuration of all the software's e.g., VMS, VA, AV, AD etc. Configuration e.g., related to VMS / Video analytic software, demonstration of functionalities, operation and maintenance procedure, handing over, end user training etc.

4.21.   Bidder shall supply and install the, necessary CAT6 interconnecting cables, patch cords, jacks, jack panels, trays, conduits and other accessories as required for the satisfactory operation of the system along with any other devices and components for completion of the systems.

4.22.   The firm will have to Supply install Test and commission Earthing system for the whole IP based Camera system. Earthing pit with all required items for proper earthing as per IS Standards. As power system is centralized, earthing is to be done centralized.

4.23.   The supplier shall inform day-to-day progress of the work to the Engineer In Charge /authorized representative from BNP.

4.24.   All the cabling of new IP based system shall have separate identification markers/cables tags of permanent nature with clear marking for easy identification of the individual camera/zone/cabling.

4.25.   All the cabling, conduit and installation shall be laid as per relevant standards or practice in vogue and shall have aesthetic look.

4.26.   Identification tags to be installed on each cable.

4.27.   **Any additional equipment, components and/or changes in design of equipment to fulfil the operational requirements, even though not explicitly mentioned shall be under the scope of bidder.**

4.28.   **Electrical Works:**

4.28.1. Electrical cabling of system components, UPS, Supply Installation & commissioning of Distribution Boards, UPS DB loaded with MCB all under scope of supplier.

4.28.2. The power is to be tapped from source as per instruction of Electrical Section manager of BNP.

4.28.3. All electrical components to be supplied & installed shall have ISI marks and heavy duty to work in industrial environment.

4.29.   **Civil Works:** Any **civil works** to meet the system requirement would be under the scope of supplier such as but not limited to –

4.29.1. Civil works involved in laying of cables underground

4.29.2. Fabrication, fixing support for camera mounts, poles etc.

4.29.3. Any damage to false ceiling/ civil structure etc. during the execution of work the firm has repair the same without any additional cost.

4.29.4. Supply and erection of poles as per site requirement and demand.

4.30.   Cable(s) shall be laid in underground trenches, ducts, channels, tunnels, on racks, trays, in HDPE PLB pipes along structure or buildings as per the site conditions. The cable shall be laid in underground trenches through GI pipe specially when laid through rail crossing, road crossing, hard standing etc.

4.31.   The SELLER shall do fabrication/ modification work, if any, involving erection of cable supporting structures, welding/ gas cutting, etc. at site as per the actual requirements.

4.32.   All cables shall be tested for proper continuity and insulation as per the statutory standards/ rules before laying.

4.33.   Connecting of all the active, passive elements with the proposed network through laying of network cable including all network provisions for TCP / IP with I/O Boxes.
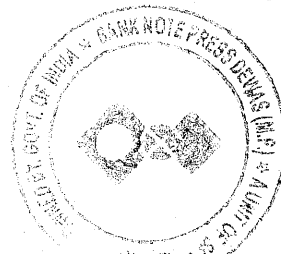
4.34.　　All required power wiring etc. from the Centralized UPS room for the system is under the scope of supplier. All electrical works for the same is under the scope of supplier.

4.35.　　LAN Management like Switch configuration, router configuration will be under the scope of supplier.

4.36.　　**The replacement/upgradation activity have to be carried by the prospective firm without any loss of archival CCTV footages.**

4.37.　　At all Gates location where ANPR Cameras are to be installed have available Network points and power supply in radius of 50 meters. However, it is under the bidder scope to tap the network and power supply from given nearest location to their system. All items required for tapping of network and power supply such as OFC Media Converter, MCBs, Power Cable, LAN, Optic Fiber Cable are under the scope of Bidder.

4.38.　　**Camera License:**

Current License	One Base License and 207 Camera License. These licenses have to be upgraded/replace as per tender scope along with support for period up to 8 years from date of FAC.
New License	New License have to be provided as per tender scope.

5. <u>INTEGRATION</u>

5.1. The Proposed solution shall be integrated with existing below system and solution shall be based on open architecture, vendor independent confirming to industry standard for 3rd party integration and shall be open to integration with future CCTV system to be installed in BNP. It shall centralize the system in one, easy to use interface. If required, the existing components/software without loss of any functionality can be reconfigure/replace as the case may be to achieve the integration.

5.2. <u>**Compliance Sheet**</u>

Sr. No.	Description	Experience with supporting documents	Compliance (Yes/No)
1.	Vendor has to submit the requisite documents for claiming experience in integration of different security systems.		
2.	Vendor has to integrate the proposed CCTV system with the existing CCTV system of Bank Note Press, Dewas		
3.	Vendor has to provide list of APIs along with SDK of the proposed system for future integration.		

6. SYSTEM DESIGN, REQUIREMENT AND DETAILED TECHNICAL SPECIFICATION

6.1. The CCTVs Surveillance System need to be functional on 24x7 basic i.e. 24 hours all the days and need to have at least 90 days data storage (retention) capacity for all CCTVs.

6.2. IP based CCTV Surveillance system need to be installed at various desired locations of Bank Note Press for surveillance and monitoring purposes.

6.3. All cameras shall be IP based with Night Vision IR full HD/4K as per specs.

6.4. The IP Based Video Surveillance system shall be a Hybrid System with distributed architecture having control station at the administrative department/Security Office (CMS Room) & Live/Record Viewing facility at the security cabin (CMS Room), GM Office, DGM Office, Commandant Office.

6.5. The offered system shall allow for expansion in future through off the shelf available hardware and not any proprietary hardware.

6.6. System shall be pentaplex i.e. it should provide facility of Viewing, Recording & Replay, backup/ transmission and remote access simultaneously. The offered system shall have facility to export the desired portion of clipping (from a desired date/time to another desired date/time) on CD or DVD or USB Stick or External HD. Viewing of this recording shall be possible on standard PC using standard software like windows media player etc.

6.7. Design, Supply, Installation, Testing & commissioning of Video Management Server, Network Recording Servers and SAN storage system.

6.8. Design, Supply, Installation, Testing, Integration & commissioning of video analytics software along with all hardware requirement will be under scope of supplier.

6.9. The proposed solution should allow BNP Official to locally & centrally monitor facilities from a remote location over LAN on a portable/Fixed Personal Computer.

6.10.   **Proposed System to have facility for additional camera installation beyond the originally planned capacity by 50%.**

6.11.   Development of an effective network to provide 100% uptime for the entire links.

6.12.   The system should be designed in a manner that operational data/recording is not lost in case of any failure of equipment or communication network.

6.13.   The system should have the capacity of functioning 24x7 days in Central Indian Conditions.

6.14.   The camera shall be designed for commercial/industrial 24x7x365 use based upon standard components and proven technology using open and published protocols.

6.15.   After commissioning the Video surveillance system, the same shall be demonstrated for all its capabilities to the relevant user department to make them familiar with the system on mutually agreed dates.

6.16.   Once the supply order is placed, it will be the vendors' responsibility to make the project functional. Any additional cost incurred for completing the project and for which the vendor has not bid at the time of submission of the final offer will be borne by the vendor

6.17.   Bidders should share all the relevant firmware/OS/Patches etc. as and when they are released by OEM during entire warranty & CAMC period at no cost to BNP.

6.18.   UPS backup for whole system with 2-hour back-up time. Providing battery is under scope of supplier.

6.19.   All the fitting and fixtures for IP / CCTV camera, their cabinet, pole mounts, pole etc. at specified locations, workstation computers, UPS fitting will be done by firm only as per the instruction of BNP officials.

6.20.   **Clock/Time Sync**: All the elements of the system shall sync time with a central server. No manual setting/regular work to be done for the regular date & time sync. All necessary items & work
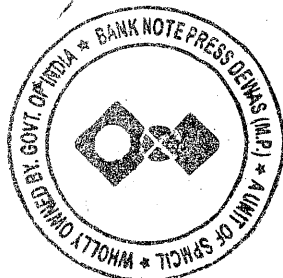
required for a central date & time server will be in the scope of supplier. VMS server shall act as NTP Server.

6.21. The system shall provide future system expansion capability, through the use of scalable hardware and software solutions.

6.22. All the PC/Server systems shall be protected by Server-Client based Anti-Virus software.

6.23. The network video recording servers (NVR) should be the front-end recording of the cameras for 07 days RAID 6 back up with N+1 hot stand by configuration. If any one of the camera servers fails, the stand by server must take over automatically without any delay.

6.24. VMS (Management server) should be in hot-stand by configuration and in case primary fails then the secondary stand-by will become primary one. Once the down VMS server comes up, auto sync of data to be done b/w Primary VMS server and Hot-standby Stand by VMS server.

6.25. NVR server should be in hot-stand by configuration and in case one NVR fails all camera recording will be taken by standby NVR. Once the down NVR comes up, auto sync of video data to be done b/w Hot NVR and Stand by NVR.

6.26. The video stream should be recorded parallel in both i.e. NVR Server and SAN storage without interruption or delay. In case of loss of video to SAN storage due to any failure, there shall be provision to sync & update the data from camera server for the failure duration.

6.27. Storage system shall be SAN: Storage Area Network. Capable to record video of -

Resolution	: 2 megapixels, 4K/12mp/8mp
Frame Rate	: 25/30/60 fps
Duration of Recording	: 24x7 continuous recording
Activity Rate	: 100%
Video retention Period	: 90 Days
Free Storage	: At least 20% space should be free after all recording archival
of all cameras for 90 days.	

6.28. The bidder shall provide storage capacity as per the above requirement for the various types of cameras. If the offered storage capacity is found to be insufficient at any point of time, the bidder shall provide additional storage without any additional cost.

6.29. All storage redundancy and mirroring capabilities shall be done using hardware solution and shall not rely on the Operating System and Server CPU to perform these functions.

6.30. **Locations for 171 cameras**: Cameras will be installed in place of existing one with variations as per site and security requirement. At present most cameras in Printing and Finishing Hall are installed at ceiling heights which is to be relocated and reinstalled over the walls of halls as per site and security requirement.

6.31. **Location of ANPR Cameras**: -

| Sl. No.	LOCATION	Minimum no. of Cameras Required	Remark
1	Factory Main Gate	2	All In, Out Vehicles number plate and driver image shall be captured by system
2	AB Road Gate	2	
3	Radha Ganj Gate	2	
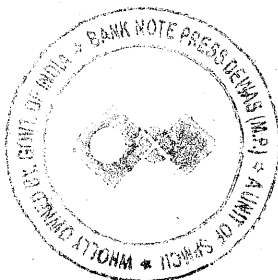
6.32. **Locations for 110 cameras**: Location of 110 CCTV Cameras for new installation would be as follows –

SL NO.	LOCATION	QTY	SL NO.	LOCATION	QTY
1	ETP LOADING POINT	1	18	CANTEEN	1
2	AC PLANT	2	19	BPS SHED	1
3	WSRTP HALL	1	20	Watch Tower 1 Towards Main Gate	1
4	SCRAP YARD	3	21	TENDER ROOM	1
5	SUBSTATION	2	22	IT ROOM	1
6	RAILWAY GATE	1	23	STORE SECTION	4
7	NEW INCINERATOR	1	24	PARKING MAIN	2
8	TIMBER AREA	1	25	GRILL GATE TO PACKING BAY IN CENTER	1
9	PERIMETER WALL	7	26	INTERNAL INCINERATOR	1
10	DG POLE TOWARD AC PLANT ROAD	1	27	PAPER STORE CORRIDOR	1
11	DG POLE TOWARD OPEN SCRAP YARD	1	28	WORKSHOP HALL	1
12	ACS HALL	2	29	NEW CCTV MONITOR ROOM	2
13	MAIN GATE	1	30	SIMULTAN	2
14	ADMIN GATE	1	31	INTAGLIO	2
15	WEIGH BRIDGE & RECEIPT STORE	1	32	NUMBERING	2
16	TOWARDS FIRE STATION ROAD	1	33	New Ink Factory Building & Area	50
17	Finishing	10	**TOTAL**		**110**

Fiber Cable is already available b/w New Ink Factory and Central Server Room which is to be utilized for backbone connectivity of 50 cameras which is to be installed in New Ink Factory building.

6.33. **Minimum Specs for CCTV Poles**: Octagonal shape pole, height -7 meter or more, non-abrasive and anti-corrosive in nature, hot dip galvanized, minimum thickness-3.5mm, secured door for cable entry along with requisite accessories. Tentative no. of Poles will be 15 but it can vary during execution as per site requirement.

6.34. **Basic Architecture and System Design**
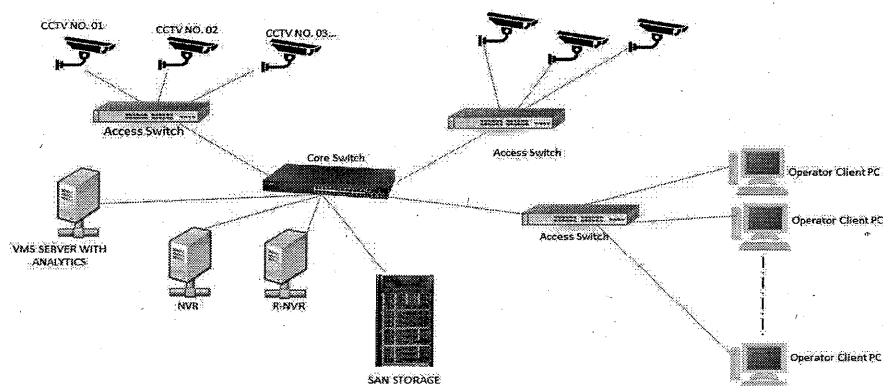

Above diagram is representative only. Not to scale and quantity.

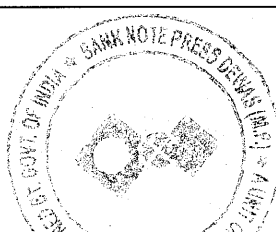## 6.35. Indicative Bill of Material & Items Specifications

Minimum Indicative Bill Of Material. The below mentioned bill of materials is minimum indicative and any item needed extra for overall completion of this turnkey based project would need to be provided by bidder without any additional/extra cost.

S. No.	Description	Qty. Minimum
1.	Bullet Type IP camera with mount & accessories 4K/12MP/8MP UHD IR	10 Nos.
2.	Bullet Type IP camera with mount & accessories 2 MP HD IR	231 Nos.
3.	PTZ Type IP camera with mount & accessories 2 MP HD IR	40 Nos.
4.	ANPR Camera	06 Nos.
5.	Camera License	290 Nos.
6.	VMS Software along with device & other requisite license	01 Nos.
7.	Management Server	01 Nos.
8.	Hotstandy Management Server	01 Nos.
9.	NVR Server	07 Nos.
10.	Redundant NVR Server	01 Nos.
11.	Analytics Server Hardware with requisite licenses	01 Nos.
12.	SAN Storage for 90 days archival backup for all 287 cameras	01 Nos.
13.	WorkStation Client Operator	16 Nos.
14.	WorkStation Client Management	01 Nos.
15.	Workstation Client for ANPR	01 Nos.
16.	Video wall hardware & software along with 40"- 43" LED Panel (20 nos.) with all accessories for erection and mount and associated cables and hardware	01 Nos.
17.	40"- 43"LED Display Screen apart from Video Wall for ANPR	01 Nos.
18.	L3 Core Switch 24 port with SFP	02 Nos.
19.	L2 Access Switch 24 Port POE+ with SFP	08 Nos. Or more as per site requirement
20.	8 Port POE+ Switch with SFP	45 Nos. Or more as per site requirement
21.	10 KVA UPS in with 2 hrs. backup (including Battery) UPS of Servers and Storage shall be in 1+1 mode.	08 Nos. Or more as per site requirement
22.	5 KVA UPS with 2 hrs. backup (including Battery) (Old Ink Factory Building)	01 Nos. Or more as per site requirement
23.	6U Rack	as per site requirement
24.	42U Rack	02 Nos.
25.	Pole rack outdoor	As per site requirement
26.	Endpoint Protection with 35 Client Antivirus license	01 Nos.
27.	Earthing	01 Nos.
28.	Miscellaneous items such as cable, LIU, Network Switch, Network Racks, Media Converter, CAT6 cable, HDPE PLB Pipe, 3 core power cables, Rack power boards, power	01 lumpsum
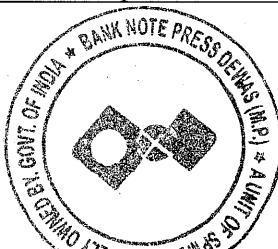
	distribution boards, Cable Trays, flexi pipe, casing capping industrial, pigtails, patch cable, 6 core OFC cables, MCB loaded boards, pipes, poles, rack patch panels etc. & any other items to complete the overall system installation & commissioning.	
29.	Installation, Commissioning, & other works as per tender document	01 activity

Camera Outdoor/Indoor 4K/12MP/8MP True Day/Night IR IP Bullet Color CCTV Camera		Compliance (YES/NO) Attach Datasheet
Offered Make & Model	*	
Form Factor	Bullet IP Surveillance Camera Enterprise Grade	
Image Sensor	1/3" CMOS/CCD or better. Progressive Scan.	
Resolution	4K/12mp/8mp or better	
Autofocus Lens varifocal	4.5-8 mm motorized focus or better and zoom lens (remotely it can be done). Autofocus. P-Iris.	
Video compression	H.265/H.264, MJPEG.	
Frame Rate	20 fps@4K or better.	
Day/Night Operation	True Day/Night capability with auto IR-cut filter.	
Night Vision	IR (Infra-Red). IR Distance - 50 meter or more.	
Min illumination	Color – 0.1 lux & B/W – 0 lux	
WDR	Yes. 120 dB or better. True WDR	
Noise Reduction	Yes.	
Ingress Protection Rating	IP66/NEMA 4x or better.	
Vandal Resistant	Yes.	
Vandal Rating	Yes. IK08 or better rating.	
Supported Web Browser	Supports Internet Explorer®/Chrome™ / Firefox® for configuration	
Enclosures, if required	Along with all accessories, mounting and housing to safeguard from dust and chemical and fumes. All are IP66/NEMA 4X and IK08 rating or better	
Compatibility/Interoperability	ONVIF conformant. ONVIF Profile S, G.	
Network Connectivity	IP Based. RJ45 10/100 MBPS or better	
On-board storage	Micro SD/ SD Card 128 GB. (Recording on on-board storage in case network failure) Storage Card to be provided along with camera	
Audio support & Compression	Yes. G.711/G.726/AAC. Full Duplex.	
Alarm	1 in/ 1 out or more	
Event Notification	Yes	

Text Overlay	Date & time, and a customer-specific text etc.	
Protocols	TCP/UDP/DHCP/HTTP/HTTPS/NFS/FTP/UPnP/DDNS/NTP/SNMP/SMTP/QoS/RTP	
Operating Temperature	0 to 60 degree Celsius.	
Operating Humidity	Humidity 10%–90% No Condensation	
Enclosures & Mount	Yes. To be provided along with cameras. OEM enclosures & mount as per site requirement. All enclosure with minimum IP66 & IK08 rating.	
Camera Remote Operation	All camera features, functions, configurations can be controlled remotely from central system over IP Network.	
Make	Sony, Axis, Pelco, Samsung, Honeywell, Tyco, Bosch or equivalent better	
Power Supply	POE	
Intelligent Video	The camera should have built in Video Motion Detection, Active Tampering Alarm	
Event Triggers	The camera should have event triggers for intelligent video, Edge storage events and external inputs	
General	Camera unit shall be of manufacturer's official product line, designed for commercial and/or industrial 24/7/365 use	
Cyber Security	The camera should have password protection, IP Address filtering, HTTPS encryption, IEEE 802.1x network access control, Digest authentication and User Access log	
	Camera should have signed firmware	
Certification	UL/EN, CE, BIS	

Camera Outdoor/Indoor 2MP/Full HD True Day/Night IR IP Bullet Color CCTV Camera		Compliance (YES/NO) Attach Datasheet
Offered Make & Model	*	
Form Factor	Bullet IP Surveillance Camera Enterprise Grade	
Image Sensor	1/3" CMOS/CCD or better. Progressive Scan.	
Resolution	2 Megapixel 1080P HD (1920 x 1080) or better	
Autofocus Lens varifocal	3-9 mm motorized Focus & Zoom or better. Remotely it can be done. Autofocus. P-Iris.	
Video compression	H.265, H.264, MJPEG or better	
Frame Rate	25/30 fps@1080p or better.	
Day/Night Operation	True Day/Night capability with auto IR-cut filter.	
Night Vision	IR (Infra-Red). Minimum 50 meter or more.	
Min illumination	Color – 0.1 lux & B/W – 0 lux	
WDR	Yes. 120 dB or better	
Noise Reduction	Yes.	
Ingress Protection Rating	IP66/NEMA 4x or better.	
Vandal Resistant	Yes.	
Vandal Rating	Yes. IK08 or better rating.	
Supported Web Browser	Supports Internet Explorer®/Chrome™ / Firefox® for configuration	

Enclosures, if required	Along with all accessories, mounting and housing to safeguard from dust and chemical and fumes. All with IP66/NEMA 4x and IK08 ratings or better ratings.	
Compatibility/Interoperability	ONVIF conformant. ONVIF Profile S, G.	
Network Connectivity	IP Based. RJ45 10/100 MBPS or better	
On-board storage	Micro SD/ SD Card 128 GB. (Recording on on-board storage in case network failure) Storage Card to be provided along with camera.	
Audio support & Compression	Yes. G.711/G.726/AAC. Full Duplex.	
Alarm	1 in/ 1 out	
Event Notification	Yes	
Text Overlay	Date & time, and a customer-specific text etc.	
Protocols	TCP/UDP/DHCP/HTTP/HTTPS/NFS/FTP/UPnP/DDNS/NTP/SNMP/SMTP/QoS/RTP	
Operating Temperature	0 to 60 degree Celsius.	
Operating Humidity	Humidity 10%–90% No Condensation	
Enclosures & Mount	Yes. To be provided along with cameras. OEM enclosures & mount as per site requirement. All enclosure with minimum IP66/NEMA 4x & IK08 rating or better	
Camera Remote Operation	All camera features, functions, configurations can be controlled remotely from central system over IP Network.	
Make	Sony, Axis, Pelco, Samsung Honeywell, Tyco, Bosch or equivalent better	
Power Supply	POE	
Intelligent Video	The camera should have built in Video Motion Detection, Active Tampering Alarm and ability to port third party applications on the edge.	
Event Triggers	The camera should have event triggers for intelligent video, Edge storage events and external inputs	
General	Camera unit shall be of manufacturer's official product line, designed for commercial and/or industrial 24/7/365 use	
Cyber Security	The camera should have password protection, IP Address filtering, HTTPS encryption, IEEE 802.1x network access control, Digest authentication and User Access log	
	Camera should have signed firmware	
Certification	UL/EN, CE, BIS	

Camera Outdoor/Indoor 2MP/Full HD True Day/Night IR IP PTZ Color CCTV Camera		Complia nce (YES/N O) Attach Datashee t
Offered Make & Model	*	
Form Factor	PTZ Outdoor Color IP Surveillance Camera Enterprise Grade	
Image Sensor	1/3" CMOS/CCD or better. Progressive Scan	
Resolution	2 Megapixel 1080P HD (1920 x 1080) or better	

Autofocus Lens varifocal	4.5-125 mm or more motorized auto focus & Zoom or better. Remotely it can be done.
Lens	Optical Zoom 30X or more Varifocal Lens. Focal Length of Lens: Upper Range shall be 125mm or higher
Digital Zoom	10x or better
Iris Control	Yes. Automatic
PAN TILT Adjustment	360-degree continuous PAN; 0 to 90 degree from horizontal plane
PAN & TILT Speed	1 degree/sec – 90 degree/sec or better
Preset Position	50 presets or more
Patrol Mode	Auto
Light Compensation	Back Light Compensation, High Light Compensation
Video compression	H.265/H.264 or better
Frame Rate	25/30 fps@1080p or better.
Day/Night Operation	True Day/Night capability with auto IR-cut filter. The camera should provide day/night functionality automatically switches to night mode in low-light scenes.
Min illumination	Color – 0.1 lux & B/W – 0 lux
WDR	Yes. 120 dB or better
Noise Reduction	Yes.
Ingress Protection Rating	IP66/NEMA 4x or better.
Vandal Resistant	Yes.
Vandal Rating	Yes. IK08 or better rating.
Supported Web Browser	Supports Internet Explorer®/Chrome™ / Firefox® for configuration
Enclosures, if required	Along with all accessories, mounting and housing to safeguard from dust and chemical and fumes. All are IP66/NEMA 4x and IK08 ratings or better.
Compatibility/Interope rability	ONVIF conformant. ONVIF Profile S, G.
Network Connectivity	IP Based. RJ45 10/100 MBPS or better
On-board storage	Micro SD/ SD Card 128 GB. (Recording on on-board storage in case network failure) Storage Card to be provided along with camera.
Audio support & Compression	Yes. G.711/G.726/AAC. Full Duplex.
Alarm	1 in / 1 out
Event Notification	Yes
Text Overlay	Date & time, and a customer-specific text etc.
Protocols	TCP/UDP/DHCP/HTTP/HTTPS/NFS/FTP/UPnP/DDNS/NTP/SNMP/SMTP/QoS/RTP
Operating Temperature	0 to 60 degree Celsius.
Operating Humidity	Humidity 10%–90% No Condensation
Enclosures & Mount	Yes. To be provided along with cameras. OEM enclosures & mount as per site requirement. All enclosure with IP66/NEMA 4x & IK08 rating or better.
Camera Remote Operation	All camera features, functions, configurations can be controlled remotely from central system over IP Network.
Make	Sony, Axis, Pelco, Samsung Honeywell, Tyco, Bosch or equivalent better
Power Supply	POE

Intelligent Video	The camera should have built in Video Motion Detection, Active Tampering Alarm and ability to port third party applications on the edge.	
Event Triggers	The camera should have event triggers for intelligent video, Edge storage events and external inputs	
General	Camera unit shall be of manufacturer's official product line, designed for commercial and/or industrial 24/7/365 use	
Cyber Security	The camera should have password protection, IP Address filtering, HTTPS encryption, IEEE 802.1x network access control, Digest authentication and User Access log	
	Camera should have signed firmware	
Certification	UL/EN, CE, BIS	

LPR/ANPR Camera		Compliance (YES/NO) Attach Datasheet
Offered Make & Model	*	
Form Factor	Bullet IP Surveillance Camera Industrial Grade	
Image Sensor	1/3" CMOS/CCD or better. Progressive Scan	
Resolution	4K/12mp/8mp or more	
Autofocus Lens varifocal	4.5-8 mm motorized focus and zoom lens (remotely it can be done) or better. Autofocus. P-Iris.	
Video compression	H.265, H.264, MJPEG.	
Frame Rate	20fps or better	
Day/Night Operation	True Day/Night capability with auto IR-cut filter.	
Night Vision	IR (Infra-Red). IR Distance - 50 meter or more.	
Min illumination	Color – 0.1 lux & B/W – 0 lux	
WDR	Yes. 120 dB or better. True WDR	
Noise Reduction	Yes.	
Built in Analytics	Yes	
Ingress Protection Rating	IP66/NEMA 4x or more.	
Vandal Resistant	Yes.	
Vandal Rating	Yes. IK08 or more rating.	
Supported Web Browser	Supports Internet Explorer®/Chrome™ / Firefox® for configuration	
Enclosure Ratings	Along with all accessories, mounting and housing to safeguard from dust and chemical and fumes. All with IP66/NEMA 4x and IK08 rating or better	
Compatibility/Interop erability	ONVIF compliant. ONVIF Profile S, G.	
Network Connectivity	IP Based. RJ45 10/100 MBPS or better	
On-board storage	Micro SD/ SD Card 128 GB. (Recording on on-board storage in case network failure) Storage Card to be provided along with camera	
Audio support & Compression	Yes. G.711/G.726/AAC. Full Duplex.	
Alarm	1 in/ 1 out or more	
Event Notification	Yes	
Text Overlay	Date & time, and a customer-specific text etc.	
Protocols	TCP/UDP/DHCP/HTTP/HTTPS/NFS/FTP/UPnP/DD NS/NTP/SNMP/SMTP/QoS/RTP	

Operating Temperature	0 to 60 degree Celsius.	
Operating Humidity	Humidity 10%–90% No Condensation	
Enclosures & Mount	Yes. To be provided along with cameras. OEM enclosures & mount as per site requirement. All enclosure with minimum IP66 & IK08 rating.	
Camera Remote Operation	All camera features, functions, configurations can be controlled remotely from central system over IP Network.	
Make	Sony, Axis, Pelco, Samsung, Honeywell, Tyco, Bosch or equivalent better	
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Cyber Security	The camera should have password protection, IP Address filtering, HTTPS encryption, IEEE 802.1x network access control, Digest authentication and User Access log	
	Camera should have signed firmware	
Certification	UL/EN, CE, BIS	

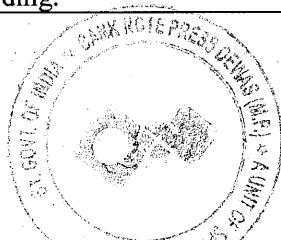| Video Management System Software along Device & other requisite Licenses		Compliance (YES/NO) Attach Datasheet
Make	Milestone/Genetec/Pelco/Equivalent	
Offered Model	*	
The video management system (VMS) specified is an enterprise-class distributed client/server-based IP video security solution that provides seamless management of digital video, audio and data across an IP network. The video management system shall be designed to work with ONVIF conformant 3rd party products as part of a total video security management system to provide full virtual matrix switching and control capability. The video management system consists of the following modules: management server, recording services, configuration client and operator clients. Video from other sites may be viewed from single or numerous workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed anywhere in the IP network. It shall include software/hardware components but not limited to – 1) Management Server 2) Recording Server 3) Failover Recording Server 4) Storage SAN 5) Event, alarm mgmt., log server 6) Video Analytics Server 7) Client processing server, 8) Management Client		

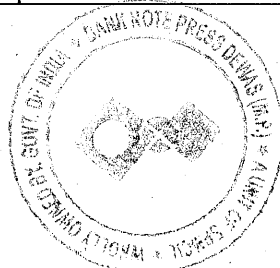|		
9) ANPR Server 10) Operator client application & web client. 11) Any other component in order to complete the project & make system functional		
ONVIF	The Software should confirm to the ONVIF Standards completely (viewing, recording, playback, management, Controlling, PTZ). The VMS shall support cameras conformant to ONVIF Profile S, G. It shall be possible to scan the network for ONVIF cameras.	
	VMS shall already support IP cameras from at least ten (10) major vendors. Bidders shall clearly list in their proposal the brands and models already integrated into VMS.	
	To facilitate the VMS system architecture, the BIDDER shall ensure that sufficient capacity is designed into the data communications & telecommunications infrastructure to deliver the required functionality, along with the ability to allocate and reserve resources (including bandwidth).	
License	*Perpetual. *All required Channel, Client, VMS, NVR, Storage, Analytics, Database, OS etc. license for complete operational system is to be provided under the scope of supply. *License shall not restrict no. of NVR. *Hot Standby Operation license if any. * All requisite license for completion of tender scope.	
Compatibility	Shall be compatible with supplied server and OS.	
No. of IP cameras	Limited 1000 nos. of cameras or more.	
NVR Support	Support up to 20 NVR.	
NVR Failover	Yes. Recording shall be taken by redundant NVR in case primary NVR fails or unavailable.	
Video Wall	Yes. Videowall of any make shall be supported without any additional license fee.	
Active Directory	Support for active directory user authentications.	
Operator Clients	Clients should be web based. If its application based, then bidder should provide user licenses for min. 20 users. (To be included in software cost itself). Client application and client player to be provided. The client software should also be able to install on windows environment. The client s/w shall able to support all the functionality provided by VMS. Number of concurrent client connections – Unlimited.	
Client Features, other	Support for 4 independently controlled displays from a single workstation Multi-level map navigation with live camera previews Encryption for client-server communications 1*1 to 5*5 matrix views Bookmarking of important video Video export capability (if user has authorization) Video playback by selecting date and time Create, Save, Manage shared and private views	
Map Function	Multi-Layer/level Map. Map to be provided by Bidder	
Max no. of users	Unlimited	

Alarm Manager	Yes. Alarm description with work instructions and optional initial owner of alarm, Time profiles for alarms, view triggered alarms, Alarm logging, Customizable sound notification, alarm priority levels, manage alarms (open, reassign, close, status, comment)	
Evidence Lock	Yes	
Metadata support	Yes	
Server-side motion detection	Yes	
	Secure HTTPS connectivity (on supported devices)	
Open Interface	The software shall operate on open architecture for integration with Video analytic, perimeter safety, access control, PA, ANPR (Number Plate Recognition System) and fire / safety systems based on open standards. Open application programming interface/software development kit (API/SDK) supports seamless integration with third-party applications. API/SDK kit to be provided. Exhaustive list of supported ANPR, PIDS and VIDEO ANALYTICS System to be provided.	
	Digital video surveillance control software should be capable to display and manage the entire surveillance system. It should be capable of supporting variety of devices such as cameras, video encoders, video decoders, PTZ controller, NVR, NAS boxes/Raid backup device etc.	
	The software is required to generate reports of stored device configuration. The control software is required to provide alarm and alarm log. The log shall be able to be achieved, printed and displayed using a device filter, a device group filter and/or a time window.	
	The system shall provide User activity log (audit trail) with user id, time stamp, and action performed, etc.	
	The administrator should be able to add, edit & delete users with rights. It shall be possible to view ability / rights of each user or the cameras which can be viewed & controlled as per the permission assigned by the administrator.	
	The system shall allow for live view, recording, playback and system configuration of the IP video system simultaneously.	
	The VMS shall provide the following: Automatic search and registration of components of proposed system on the network. They can be Cameras, Monitors, Alarm panels, NVRs.	
	Several simultaneous live picture connections of camera in network. It shall be capable of showing video pane layouts including 1x1, 2x2, 3x3, 4x4, 5x5	
	Number of days of backup to be retained should also be possible to set from software	
	Software must be capable of sending emails to the different users of CCTV system. Daily report shall be available on email to administrator.	
	For each camera set up bit rate, frame rate, and resolution shall be set independent of other cameras in the system.	

	Altering the setting of one shall not affect the settings of other cameras	
Logging	- System, Event, Audit, Alarm logging - User Audit logging	-
Video Retention	Unrestricted. Software system shouldn't restrict duration and should be subject to storage capacity.	
I/O and Events	Hardware configurable events (such as I/O input, motion, tampering, communication failure), Motion detection events (VMD in recording server), System error events (for example disk full), Manual / User defined events, Event-based device start/stop,	
PTZ Support	Yes. Preset positions per camera, Go-to preset on event, Preset patrolling	
Audio Processing	Yes.	
Video Processing	H.264/H.265, MPEG, MPEG-4, Metadata Support, Dual Stream (Live and Recording) for all attached devices	
Notification	Email notification for alarms, system events	
Configuration management	- Smart bulk configuration option allows simultaneous changes to the settings across multiple devices in few clicks. - Device scanning enables the fast discovery of camera devices using methods such as Universal Plug and Play, broadcast and IP range scanning. - System configuration wizards guide the user through the process of adding cameras, configuring video and recording, adjusting motion detection and configuring multiple users. - Automatic camera discovery.	-
Edge Storage	Edge storage shall secure that when a lost or broken connection is back up, the data stored on the camera's internal storage shall be retrieved and stored in the media database. Edge storage shall secure that after recovery from a malfunction it shall be possible to play back and view the video, and audio recorded by the device, while the malfunction persisted. VMS timeline shall be able to specifically designate any pending recording patches which are being fetched / yet to be fetched from the camera SD card.	
Storage Management	1. Network drive support 2. Storage definition and retention customization 3. Storage over view (used vs free)	
Time sync	Automatic time sync of cameras from the server	
User management	1. Centralized user management 2. User rights/authorization management 3. Basic user as well as Windows user 4. Microsoft active directory support	
NVR	1. No. of camera support per NVR appliance– 100 minimum. 2. NVR should be installed in failover architecture. If 1 NVR fails then recording service should be taken seamlessly by hot standby NVR without affecting the storage and recording.	

	3. Live Video Storage – 171 cameras for 7 nos. of days under RAID 6. 4. Support for H.265, H.264, MPEG-4, MJPEG compression formats.	
Video Analytics Hardware & Software	1. Tripwire - Detection of a person or vehicle crossing (or touching) a virtual line drawn in the camera field of view. 2. Trespass - Detection of a person or vehicle entering or exiting virtual area/zone drawn by the user. 3. Camera Tampering - Detection of camera tampering efforts by camera focus change or view obstruction or video cable cut. 4. Left Object Detection – Detection of any object left behind in the monitored zone by a moving agent such as the owner of the object or baggage. 5. Missing Object detection - Detection of object(s) removed from the monitored zone in the camera view 6. Crowd Detection - Measures the crowd level in terms of number of people occupying a specified region of interest in the camera field of view, provides live crowd count on screen. 7. Video Smoke Detection - Detects presence of smoke for both indoor & outdoor environments within only 5-10 seconds when it appears in the camera view and covers more than 10-15% of area 8. Video Fire Detection - Detects and alerts rapidly (in 5-10 seconds) against presence of fire in the camera view / monitored zone even when it is formed in 10-15% of the view 9. Multi Camera Tracking - Detects and tracks a specified person appearing with similar profile on multiple cameras in a network of cameras based on the object properties. It also shows a connection between the camera locations in a map. 10. Face Recognition & Face Verification - Matches the Face detected in the camera view with the registered faces in the database and sends alarms corresponding to match or mismatch 11. Exclusion Zone – To define a zone exclusion. 12. Real-time scene analysis and alarms based on user definable rules 13. Video Analytics Software shall be usable for both indoor and outdoor video scenes 14. Analytics software can be part of VMS or a separate sub-system. Vendor shall be responsible for providing all license, hardware, sub system & it's integration in order to provide the required analytic feature. 15. The Video Analytics software may work in a standalone application or in conjunction with VMS. Vendor has to design the system as there will be no performance issue. 16. Events have feature to set priority levels. 17. Live monitoring graphical user interface tool.	

	18. Video Analytics System shall include a Forensic search and retrieval tool that will allow: 19. Selection of an event or alarm, based on type, severity level, camera number, and date, time range for search 20. Selection of an object type for searching by camera and date and time 21. Video Analytics System shall present alarms with the following- 22. Real-time on-screen display with red alarm text 23. Real time audio Alarm alerts 24. Email alarm notification containing the key video frame and relevant data 25. Triggers to the compatible relay output cards. 26. The Intelligent Video Analytics System shall include a reporting tool which shall allow the user to generate interactive reports of event counts presented as tables or charts. The report formats shall include text, PDF, HTML and Excel data. 27. The Video Analytics System shall include an email report scheduler, which will periodically generate event count reports in a format specified by the user and email those reports to one or more recipients. 28. Video source specification: The system shall have feature to support video source from IP cameras of more than one make. List of supported cameras to be provided. 29. H/W & S/W along with License for the video analytics will be under scope of supplier.
Analytics License Quantity	The analytics licenses shall be floating kind of which means user can apply license to any cameras (limited to license no.) and change/apply it over time to another camera through software as per end user requirement. one camera shall support at least 2 analytics at a time. | ANALYTICS TYPE	CAMERAS QTY
Fire & Smoke Detection	40
Face Recognition	30
Trespassing	20
Camera Tampering	15
Missing Object	15
Tripwire	10
Crowd Detection	10
Multi Camera Tracking	All Cameras
Exclusion Zone	20	
Integration	1. PIDS integration shall be possible list of supported makes to be provided. 2. OPC interface (e.g. Fire Alarm System or any System that support OPC.)

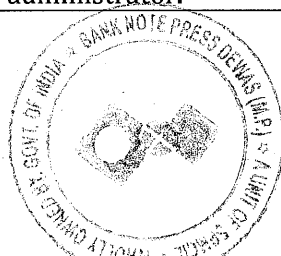| LPR/ANPR System/Software along with client station software		Compliance (YES/NO) Attach Datasheet
Make & Model	*	
Open Interface	The software shall operate on open architecture and shall be ONVIF Conformant.	
	Compatible with the supplied camera for LPR/ANPR	
	Compatible with the supplied VMS and NVR	
	System Should be able to integrate with the Video Management Software	
	The software shall able to monitor and recognized the number plate and driver photo in bi-directional vehicle flow at desired locations/Gates of Bank Note Press, Dewas	
	The system should and able to process and read number plate and driver image of vehicles with speed even up to 25 kmph.	
	The system in general shall capture Vehicles License Plate, Driver Face, Vehicle Color.	
	The system shall be robust to variation in license plates in terms of font, size, contrast and color and shall work with good accuracy.	
	Multi Lane Detection and able to detect more than one vehicle simultaneously	
	The system shall able to monitor and capture information from vehicle flow in both direction (IN and OUT movement at Gates)	
Record Retention	Retention Period for Video and Captured Images shall be 90 days. Minimum no. of captured image storage shall be 4 Lakhs for 90 days. Retention period of information analyzed from the video such as Vehicle Color information, License Plate Number etc. shall be minimum 5 years and can be extended subject to Database limitation & available storage.	
	The system shall be operational 24x7 basis	
	The system shall be controlled from Central command and control center of BNP	
	The system shall support real-time detection of moving vehicles (25 kmph) at the Gates, recording each vehicle at the Gates, reading and capturing its number plate, driver face, vehicle color, database lookup for no. from stored list and generate alarm/events as configured.	
	The system should automatically detect a vehicle in the camera view using video detection & activate the license recognition system.	
	The system shall perform OCR (optical character recognition) of the license plate characters for all types of vehicles (Two-Wheeler/Three-Wheeler/4-wheeler/Trucks/Lorry/Multi-Axle Vehicles etc.)	
	The system processing should be in real time i.e. recognition of license number plates shall happen instantaneously.	

	The System shall store High Quality JPEG image of vehicle and license plate and enter the license plate number into data base solution (The Application should be based on standard database solution) The captured OCR result and the image of (non) standard Number Plate should be displayed simultaneously. The picture should be stored with retention period of 90 days.	
	The system shall be robust to variation in License Plates in terms of font, size, contrast and color and should work with 90% accuracy in Standard Number plate and 75% accuracy in non-Standard Number plate	
	The system shall detect the color of all vehicles in the camera view during daytime /nighttime and label them as per the predefined list of configured system colors. The system, will store the color information of each vehicle along with license plate information for each transaction in the database	
Searching	The system shall have options to search historical records for post event analysis by the vehicle color or the vehicle color with license plate and date time combinations. The system shall provide advanced and smart searching facility of license plates from the data base. Searching by giving specific number/number in wild card format/, dates, vehicle category etc.	
	The system should have option to input certain license plates according to the hot listed categories like "Lost" "Wanted", "Suspicious", "Stolen", etc. by authorized personnel.	
	On successful recognition of the number plate, system should be able to generate automatic alarm to alert the control room for vehicles which have been marked as "Lost", 'Wanted", "Suspicious", "Stolen", "Expired". (System should have (provision/expansion option to add more categories for future need)	
	The system Shall enable easy and quick retrieval of snapshots, video and other data for post incident analysis and investigations.	
	The system usage shall be privilege driven using password authentication.	
License	Inclusive of all requisite licenses. License validity Perpetual. All required Channel, Client, VMS, NVR, Storage, Analytics, Database, OS etc. license for complete operational system is to be provided under the scope of supply.	
No of gates	Number of Gates where LPR/ANPR system is to be installed - 03 nos. RG Gate, AB Road Gate, Main Gate However, the system shall be scalable/ extendable and can be extended to other gates as per BNP requirement.	
Reports	1) Generate LPR reports in pdf, excel format with license plate information, video thumbnails of associated video, and a license plate close-up image.	

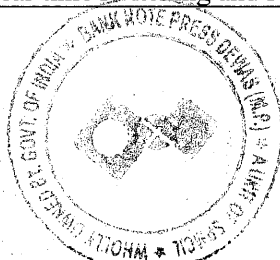|	

	Reports can be extracted based on date and time, LPR event list report, match list report.
	2) MIS Reports such as
	    a. Report of Vehicle Flow at each gates during last day or b/w two dates.
	    b. List of vehicles detected in each categories (Cars/Two Wheeler/HCV/LCV) b/w two dates and at particular gates.
	3) The system shall have option to save custom reports for subsequent use.
	4) Able to export report in PDF and Excel.	

Match List	Unrestricted number of match lists for correlation of recognized license plates (examples: employees, guests, stolen vehicles, VIPs).	
	Supports custom data as complement to license plate information, such as owner details, driver name, type of vehicle	
Action upon Events	Saves time by automating manual actions. Events can be generated on actual recognition or match with a specific match list. LPR events can for example control cameras, external peripherals such as boom barriers and gates or generate alarms	
Export & Import	Export and Import functionality of bulk data such as importing Employees Vehicles License Plate Information and exporting of list of license plate information captured by system in a day/week/month etc.	
No. of Users	10 or more.	
No. of Clients station	10 or more	
User management	Centralized user management User rights/authorization management Basic user as well as Windows user Microsoft active directory support	
Edge Storage	Edge storage shall secure that when a lost or broken connection is back up, the data stored on the camera's internal storage shall be retrieved and stored in the media database. Edge storage shall secure that after recovery from a malfunction it shall be possible to play back and view the video, and audio recorded by the device, while the malfunction persisted. VMS timeline shall be able to specifically designate any pending recording patches which are being fetched / yet to be fetched from the camera SD card.	
Storage Management	Network drive support Storage definition and retention customization Storage over view (used vs free)	
Configuration management	- Smart bulk configuration option allows simultaneous changes to the settings across multiple devices in few clicks. - Device scanning enables the fast discovery of camera devices using methods such as Universal Plug and Play, broadcast and IP range scanning.	

	- System configuration wizards guide the user through the process of adding cameras, configuring video and recording, adjusting motion detection and configuring multiple users. - Automatic camera discovery.	
Logging	System, Event, Audit, Alarm logging User Audit logging	-
I/O and Events	Hardware configurable events (such as I/O input, motion, tampering, temperature, communication failure), Motion detection events (VMD in recording server), System error events (for example disk full), Manual / User defined events, Event-based device start/stop,	
Video Processing	H.264/H.265, MPEG, MPEG-4, Metadata Support, Dual Stream (Live and Recording) for all attached devices	
Notification	Email notification for alarms, system events	
Alarm Manager	Yes. Alarm description with work instructions and optional initial owner of alarm, Time profiles for alarms, view triggered alarms, Alarm logging, Customizable sound notification, alarm priority levels, manage alarms (open, reassign, close, status, comment)	
Compatibility	Shall be compatible with supplied server and OS.	
	The software is required to generate reports of stored device configuration. The control software is required to provide alarm and alarm log. The log shall be able to be achieved, printed and displayed using a device filter, a device group filter and/or a time window.	
Audit Trail	The system shall provide User activity log (audit trail) with user id, time stamp, and action performed, etc.	
	The administrator should be able to add, edit & delete users with rights. It shall be possible to view ability / rights of each user or the cameras which can be viewed & controlled as per the permission assigned by the administrator.	
	The system shall allow for live view, recording, playback and system configuration of the IP video system simultaneously.	
	The VMS shall provide the following: Automatic search and registration of components of proposed system on the network. They can be Cameras, Monitors, Alarm panels, NVRs.	
	Several simultaneous live picture connections of camera in network. It shall be capable of showing video pane layouts including 1x1, 2x2, 3x3, 4x4, 5x5	
	Number of days of backup to be retained should also be possible to set from software	
	Software must be capable of sending emails to the different users of ANPR system. Daily report shall be available on email to administrator.	

	For each camera set up bit rate, frame rate, and resolution shall be set independent of other cameras in the system. Altering the setting of one shall not affect the settings of other cameras	
Active Directory	Support for active directory user authentications.	
Operator Clients	Clients should be either web based or application based, the bidder should provide client user licenses for min. 20 users. (To be included in software cost itself). Client application and client player to be provided. The client software should also be able to install on windows environment. The client s/w shall able to support all the functionality provided by system software.	
	Secure HTTPS connectivity (on supported devices) b/w server and field devices. All requisite SSL certificate registration, deployment and coordination in under scope of supplier.	
Integration	The system shall have option to be integrated with a boom barrier at gate on site.	

Video Wall Controller H/W along with 20 LED Panel		Compliance (YES/NO) Attach Datasheet
Parameter	Specs	
Offered Make & Model	*	
Video Wall Controllers	Display Controller to control up to 20 panels (2 x 10 formation) , with required outputs, in any matrix combination; Capable of taking universal/multiple inputs & outputs for video/data along with necessary wall management software; Dual Gigabit Ethernet Ports with support for additional adapters; DVI-D/HDMI Outputs; Support for Full HD resolution at full frame rate for all panels; Intel Xeon i7 64-bit processor with 16GB RAM or better; 1 TB HDD or more	
Video Wall Management Software	Support for Multiclient/console; Software enable user to display, multiple sources up to any size and anywhere on the display wall; auto source detection; Should support for Video, RGB, DVI, Internet Explorer, Desktop Application and Remote Desktop Monitoring Layouts; Built-in auto-layout scheduler; Multiple concurrent client support.	
	It shall feature a built-in high-performance scalar for the best image quality and shall switch between multiple sources and multiple displays easily	
	It shall have Seamless Switch feature which provides continuous video streams, real-time switching and stable	

	signal transmissions	
:	It shall have ESD protection for HDMI and support Dolby True HD and DTS HD master audio	
	The screen layout can be switched manually or automatically by the operator. It shall configurable to windows server and compatible to the Video management software	
Make of Screen	LG/SAMSUNG/PANASONIC/TOSHIBA/BARCO or equivalent	
Monitors/Screen/Panel		
Offered make & model	*	
General	Very narrow & black bezel (<1mm) CCTV Monitor suitable for continuous (24x7x365) use with MTBF of more than 80,000 Hrs;	
Screen Qty	20 screens of size 40inch-43inch" LED in 2x10 Matrix	
Resolution	1920x1080 or better	
Grading	Commercial grade running 24 x 7 mode	
Monitor Mounting & allied items and accessories	Mounting kits, Brackets & Supports to suit installation requirements. Including all items for successful commissioning and operation.	
Make of Screen	LG/SAMSUNG/PANASONIC/TOSHIBA/BARCO or equivalent	

Management Application Server & Hot standby Management Application Server		Compliance (YES/NO) Attach Datasheet
Make	HP / DELL / Other equivalent	
Form Factor	Rack Mount	
Model	*	
Processor	Intel Xeon Processor 2.8 GHz – 2 nos. or better	
RAM	DDR4 32 GB or more	
Internal Storage	OS/VMS – RAID-I 2*256GB SSD (Minimum)	
	At least 60% space should be free after OS & all application installation.	
Network Interface	4 nos. 1 Gbps or better	
Power Supply	Dual power supply for redundancy	
Operating System	Windows server 2016 standard 64 bit / Windows IoT Enterprise/Other or latest or better. License in name of BNP, Dewas.	
Graphics Adapter	Intel HD Graphics or any other to meet the performance & features of entire IP CCTV surveillance system.	
RAID Controller	Dual for redundancy	
RAID Cache	512 Mb or better	
RAID level Support	0/1/10/5/6	
USB	Yes	
Keyboard	Standard Qwerty full-stroke type	
Mouse	Wired optical mouse	
Monitor	20 /21 "LED Screen	
Mounting	The Server shall be mounted in standard 42U lockable racks.	

Communication Ports (Min)	Two USB Ports, Ethernet ports as required for the system configuration.	
Software	OS Licensed software Database licensed software VMS Software License. Health Monitoring Software with License. Server – client-based antivirus. Server antivirus software 1 license with 20 client licenses for entire duration of contact. (i.e. Endpoint Protection Software) MS Office 2019 Business or Latest Equivalent MS Office Suite	

*The above config are minimum indicative h/w config. Vendor has to ensure that it doesn't affect the efficiency/storage/performance of the application such as VMS, Analytics etc.

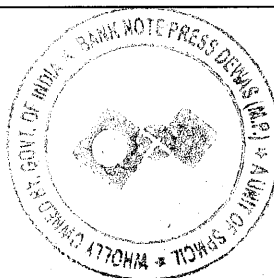| Network Video Recording Server & Redundant Network Video Recording Server		Compliance (YES/NO) Attach Datasheet
Make	HP / DELL / Other equivalent	
Form Factor	Rack Mount	
Model	*	
Processor	Intel Xeon Processor 2.8 GHz – 2 nos. or better	
RAM	DDR4 32 GB or more	
Internal Storage	OS/VMS – 2*256GB SSD (Minimum) with RAID 1 configuration.	
	At least 30% space should be free after OS & all application installation.	
	Live Video Storage – 45 cameras for 7 nos. of days under RAID 6. SAS (7.2K or better RPM)	
External Archiving	SAN	
Network Interface	4 nos. 1 Gbps or better	
Power Supply	Dual power supply for redundancy	
Operating System	Windows server 2016 standard 64 bit / Windows IoT Enterprise/Other or latest. License in name of BNP, Dewas.	
Graphics Adapter	Intel HD Graphics or any other graphics to meet the performance & features of entire IP CCTV surveillance system.	
RAID Controller	Dual for redundancy	
RAID Cache	512 Mb	
RAID level Support	0/1/10/5/6	
USB	Yes	
Keyboard	Standard Qwerty full-stroke type	
Mouse	Wired optical mouse	
Monitor	20 /21" LED Screen	
Mounting	The Server shall be mounted in standard 42U lockable racks.	
Communication Ports (Min)	Two USB Ports, Ethernet ports as required for the system configuration.	

| Software	OS Licensed software Database licensed software Software if any for failover from primary to secondary server. NVR Software. Health Monitoring Software with License MS Office 2019 Business or Latest Equivalent MS Office Suite Endpoint Protection Client Software	
Environment	Operating Temp – 5 degree Celsius to 40 degree Celsius	

*The above config are minimum indicative h/w config. Vendor has to ensure that it doesn't affect the efficiency/storage/performance of the application such as VMS, Analytics etc.

Analytics Server Hardware with requisite license		Compliance (YES/NO) Attach Datasheet
Make	HP / DELL / Other equivalent	
Form Factor	Rack Mount	
Model	*	
Processor	Intel Xeon Processor 2.8 GHz – 2 nos. or better	
RAM	DDR4 32 GB or more	
Internal Storage	As per application requirement	
Network Interface	Gigabit interface or better	
Power Supply	Dual power supply for redundancy	
Operating System	As per application requirement	
Graphics Adapter	Yes	
Mounting	The Server shall be mounted in standard 42U lockable racks.	
Communication Ports (Min)	Two USB Ports, Ethernet ports as required for the system configuration.	
Software	OS Licensed software Database licensed software, if any Health Monitoring Software with License Endpoint Protection Client Software	
Environment	Operating Temp – 5 degree Celsius to 40 degree Celsius	

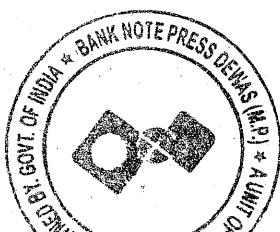| SAN Storage		Compliance (YES/NO) Attach Datasheet
Make	HP / DELL / Other equivalent	
Form Factor	Rack Mount	
CPU	To match the system overall performance	
Type	Enterprise storage solution (Surveillance Grade) for CCTV Surveillance System	

Controller	Hot Swappable Dual Controller in High Availability (Active-Active). In case of one controller failure, the takeover must be seamless and instant without any additional reconfiguration. Each processor should have at least dual Core Ivy Bridge Intel Xeon Processor or equivalent
Cache	The system should have minimum 16GB usable cache (Read & Write) across the two controllers with an ability to protect data on cache if the system fails and it results into controller failure. The cache on the storage should have battery backup. Cache shall be dynamically managed for both Read and Write operations
RAID	Storage System to be configured with RAID 6 protection and Global Hot Spares.
HDD Support	The Storage System should support the latest SSD, SAS and NLSAS Drives
License	All applicable software license to be provided which are required to complete the system & make system operational as per tender document.
Storage capacity	90 days retention period for the CCTV system cameras to be provided. It shall support to enhance the capacity by addition of storage disk. System will be running 24X7 basis.
Scalability	Storage Expansion Scalable storage
Storage operating system	The Storage should have embedded Operating Systems and there should be only one OS to provide the required Protocols. (It should not be a general-purpose OS such as Windows, Linux etc.) The OS should be of the same make as that of storage or as per OEM standard
Server Operating System support	Yes. Such as MS Windows server 2012, 2016, Redhat, Oracle, VM Ware
VMS Validation on the Storage System	The Proposed Storage System should be validated by the VMS Application OEM. The Validation white paper/document for the same to be submitted as a part for the Storage System Compliance documentation.
Storage Protocol	FC, iSCSI
No. of Recorders supported	6
Power Supply	Dual Redundant Power Supply
Environment	Operating Temp – 5 degree Celsius to 35 degree Celsius
Storage Management	Should have Graphic Use Interface (GUI) as well as command line interfacing. Must include real time performance monitoring tools giving information on CPU utilization, volume throughput, I/O rate and latency etc.
Redundancy	There should not be any single point of failure and should have following Redundant and hot swappable modules: disk drive, power supply, Fans.
	The storage system should have sufficient number of suitable ports to connect the servers, storage network etc.
	It should support NVR/VMS system running in N+1 or N+N failover.
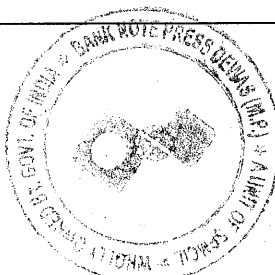
*The above configs are minimum indicative h/w config. Vendor has to ensure that it doesn't affect the efficiency/storage/performance of the application such as VMS, Analytics etc.
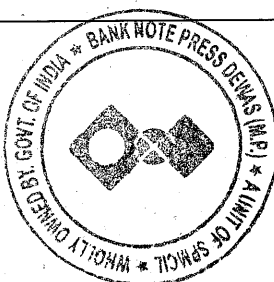
Workstation Client for Operator/Management		Compliance (YES/NO) Attach Datasheet Well
Form Factor	Tower	
Purpose	Operator Workstation for Monitoring	
Display Out	**To give display to 4 monitors (2 Led) simultaneously. HD display.**	
Processor	Minimum Intel XEON Processor Quad Core 2.4 GHz	
RAM	DDR4 8 GB or higher	
HDD	1 TB SATA	
Monitor	24-inch LED monitor Full HD	
	Keyboard	
	Optical Mouse	
Display Port Out	Minimum 2 HDMI, VGA Port	
USB	4 port	
Graphics	4GB Nvidia Graphics or better	
Network Interface	2 x 10/100/1000	
OS & Software	Microsoft windows 10 professional or equivalent higher version 64 bit MS Office 2019 Business or Latest Equivalent MS Office Suite Endpoint Protection Client Software Any other Software required to complete the Project	
Cabinet	Tower	
Make	HP/DELL/equivalent	

Workstation Client for ANPR		Compliance (YES/NO) Attach Datasheet Well
Form Factor	Tower	
Purpose	Operator Workstation for Monitoring	
Display Out	**To give display to 4 monitors (2 Led) simultaneously. HD display.**	
Processor	Minimum Intel XEON Processor Quad Core 2.4 GHz	
RAM	DDR4 8 GB or higher	
HDD	1 TB SATA	
Monitor	24-inch LED monitor Full HD	
	Keyboard	
	Optical Mouse	
Display Port Out	Minimum 2 HDMI, VGA Port	
USB	4 port	
Graphics	4GB Nvidia Graphics or better	
Network Interface	2 x 10/100/1000	
OS & Software	Microsoft windows 10 professional or equivalent higher version 64 bit	

	MS Office 2019 Business or Latest Equivalent MS Office Suite Endpoint Protection Client Software Any other Software required to complete the Project	
Cabinet	Tower	
Make	HP/DELL/equivalent	

24 Port L3 Core Switch Enterprise/Commercial Grade		Compliance (YES/NO) Attach Datasheet
Make	CISCO/JUNIPER/DELL/HP equivalent	
Model	*	
Layer 3 functionality	Yes	
Physical Port	24 nos. 10/100/1000 copper ports	
SFP with module loaded	4 SFP Port loaded. SFP make same as Switch make.	
POE/NON-POE	As per system requirement	
Auto Negotiations	Yes, for port speed & duplex mode	
Management	CLI, GUI, USB interface for taking backup of software release files configurations, Digital optical monitoring, Time Domain Reflectometry/ equivalent, DHCPv6, DNSv6, Telnetv6 and SSHv6, NTPv6 client and server, RMON 4 groups, SNMPv3, LLDP-MED, IEEE 802.3az, IPv4 and IPv6 support	
Security	• Should support ACL, SSL, Private VLAN • IEEE 802.1X Port Based Access control and Host based Access control and Guest Vlan • It shall support RADIUS/TACACS+ authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration. • It shall have IP-MAC-Port binding • Switch should be able to authenticate and access control based on MAC and web (Http or Https) • BPDU Attack Protection, ARP protection, IP Source Guard, Dynamic ARP Inspection and DOS Attack Prevention • It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic • Switch shall support 802.1Qbb Priority-based Flow Control (PFC).	
Performance	The switch data throughout performance shall meet the overall system requirement proposed by the bidder.	
Multicast features	Yes	
Use	IP CCTV Surveillance	

Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN, IEC & IEEE (IEC 61850 & IEEE 1613 Complaint) Switch should be CE,FCC,UL,VCCI certified	
Rack mount	Yes, with all accessories	
Operation	Both the core switch shall run in redundant mode. In case one fails, system should not stop and shall work on redundant core switch.	

24 Port L2 Network Switch Enterprise/Commercial Grade		Compliance (YES/NO) Attach Datasheet
Make	CISCO/JUNIPER/DELL/HP equivalent	
Model	*	
Layer 2 functionality	Yes	
Physical Port	24 nos. 10/100/1000 copper ports	
SFP with module loaded	2 SFP Port loaded. SFP make same as Switch make.	
POE/NON-POE	As per system requirement	
Auto Negotiations	Yes, for port speed & duplex mode	
Management	CLI, GUI, USB interface for taking backup of software release files configurations, Digital optical monitoring, Time Domain Reflectometry/ equivalent, DHCPv6, DNSv6, Telnetv6 and SSHv6, NTPv6 client and server, RMON 4 groups, SNMPv3, LLDP-MED, IEEE 802.3az, IPv4 and IPv6 support	
Security	Should support ACL, SSL, Private VLAN	
Performance	The switch data throughout performance shall meet the overall system requirement proposed by the bidder.	
Multicast features	Yes	
Use	IP CCTV Surveillance	
Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN, IEC & IEEE (IEC 61850 & IEEE 1613 Complaint)	
Rack Mount	Yes, with all accessories	

8 Port Network Switch Enterprise/Commercial Grade		Compliance (YES/NO) Attach Datasheet
Make	CISCO/JUNIPER/DELL/HP equivalent	
Model	*	
Layer 2 functionality	Yes	
Physical Port	08 nos. 10/100/1000 copper ports	
SFP with module loaded	2 SFP Port loaded. SFP make same as Switch make.	
POE/NON-POE	As per system requirement	
Auto Negotiations	Yes, for port speed & duplex mode	

Management	CLI, GUI, USB interface for taking backup of software release files configurations, Digital optical monitoring, Time Domain Reflectometry/ equivalent, DHCPv6, DNSv6, Telnetv6 and SSHv6, NTPv6 client and server, RMON 4 groups, SNMPv3, LLDP-MED, IEEE 802.3az, IPv4 and IPv6 support		
Security	Should support ACL, SSL, Private VLAN		
Performance	The switch data throughout performance shall meet the overall system requirement proposed by the bidder.		
Multicast features	Yes		
Use	IP CCTV Surveillance		
Electrical Approvals and Compliances	The switch shall Comply with the all national & international standards like EN, IEC & IEEE (IEC 61850 & IEEE 1613 Complaint)		
Rack Mount	Yes, with all accessories		

10/5 KVA or more ON-LINE Un-Interrupted Power Supply (UPS) with SNMP		Compliance (YES/NO) Attach Datasheet
Make	APC / EMERSON / DELTA / NUMERIC or Equivalent	
Model	*	
Capacity	*	
Input Voltage:	230V AC 50Hz	
Battery Backup	4 hours at full load	
Battery type	Sealed Maintenance free lead acid battery of reputed make.	
Configuration	Controlled full wave rectification	
Protection	Input under voltage and Input over voltage	
Operation	Parallel in N+N mode for server system i.e. centralized component. For other components, simple mode of operation.	
No. of UPS	BOM indicate minimum no. of UPS required. However, during implementation, if additional UPS are required the same has to be provided without any extra cost. Bidder shall quote for sufficient no. of appropriate capacity UPS including batteries to have the system run on N+N redundant power system i.e. N+N mode UPS System. N+N mode UPS is required only for server system i.e. centralized component.	

42U Rack		Compliance (YES/NO) Attach Datasheet
Make	APW/ Panduit/Valrack or equivalent	
Model	*	
Type	42U Floor Mount	
Cable Tray	Yes	
Door	Perforated/Toughened Glass	
Side Open/Side Panel	Yes	
Lock	Yes	
Ventilation	Top with FAN 4nos.	
Keyboard Tray	Yes	
4 Levelling legs	Yes	
4 Wheels	Yes. Lock position for wheels	
Cable Entry Provision	Top/Bottom	
Others	with all standard accessories including Fans, hardware, cable managers, electrical sockets with On/Off Switch and LED Indicators, 10 socket power strip on both side.	
Monitor Stand	Stand/lever to place Monitor	

6U Rack		Compliance (YES/NO) Attach Datasheet
Make	APW/ Panduit/Valrack or equivalent	
Model	*	
Type	6U Wall Hanging	
Cable Tray	Yes	
Door	Toughened Glass	
Door Lock	Yes	
Ventilation	Top with 2 nos. Fan	
Cable Entry Provision	Top/Bottom	
Others	with all standard accessories including Fans, hardware, cable managers, electrical sockets with On/Off Switch and LED Indicators, 5 socket power strip on both side.	

Pole Rack		Compliance (YES/NO) Attach Datasheet
Make & Model	*	
Type	2U/4U Pole Hanging, Rust Proof, All weather resistant	
Door	Metal Door with lock and key	
Door Lock	Yes	

Ventilation	Yes	
Cable Entry Provision	Top/Bottom	
Others	with all standard accessories including Fans, hardware, cable managers, electrical sockets with On/Off Switch and LED Indicators, 5 socket power strip on both side.	

ANTIVIRUS ENDPOINT PROTECTION SOFTWARE (01 nos. management license with 35 client(endpoint) license)		Compliance (YES/NO) Attach Datasheet
Make	Symantec/McAfee/QuickHeal or equivalent	
Model	*	
Server License (Management Console)	01	
Client License	35	
Antivirus Management	Yes	
Remote management	Yes	
Endpoint Device Management	Yes	
Patch/definition management & updation	Automatic from centralized management software	
Reporting	Yes	
License Period	Full Contract Period.	
Features	Malware Protection, Virus & Spyware Protection, Firewall, Network Threat Protection, Proactive Threat protection, Client Management, Web/Internet Security, Server Management Suites, Endpoint Security	
Suitable for	Both Windows 32 bit and 64 bit	

Earthing Pit and Connection		Compliance (YES/NO) Attach Datasheet
Earthing	As per IS 3043	
Consumables and Spares	Inclusive of all spares and consumables.	

Note : (a) Genuinely/Authenticity certificate needs to be provided from OEM for all major component used in the system at the time of supply.

(b)   All the products used in system needs to be malware/Bug free and declaration certificate needs to be provided by the firm at the time of supply.

7. SYSTEM HARDENING

7.1. Implements data security, network security and physical security measures and best practices for securing the NVR and its VMS software against cyber-attacks. This includes security considerations for the hardware and software of servers, clients and network device components of a video surveillance system.

7.2. Incorporates standards-based and best-practice-based security and privacy controls and maps them to each hardening recommendation.

7.3. Apply appropriate measures from manufacturer's system hardening guide.

7.4. Remove all default, installer, or temporary user accounts and passwords used during installation that are not part of End-user's final operational requirements.

7.5. Assign new passwords that are substantially different from factory default passwords to user accounts that match factory-default user accounts.

7.6. "No Malicious Code" undertaking letter by OEM's HQ. The OEM must not be barred by any Global CERT organization for malicious code or security threats.

7.7. The quoted equipment should neither support any backdoor interconnection / communication protocol, (such as the GB/T 28181 protocol), that requires sharing of information or data with any foreign government or agency. Documentary certification from OEM need to be given.

7.8. MAC address of IP cameras must be registered in the same name of OEM supplying the cameras.

7.9. CCTV Camera OEM should not be blacklisted by ONVIF.

7.10. **"Made in China" BOM item are not acceptable. The Bidder and OEM should provide undertaking for GFR Restrictions on procurement under rule 144 (xi) as per F No. 6/18/2019/PPD dated 23.07.2020.**

8. POC (Proof of Concept)

8.1. Proof of Concept (POC): Technically Qualified Bidder need to demonstrate below mentioned use cases with same quoted make and model as per their respective tender offer-

8.2. ONVIF conformant, adding 3rd party CCTV camera to their VMS.

8.3. Demonstration of IR feature.

8.4. Demonstration of limited Analytics as per tender specs.

8.5. The purpose/objective of the POC shall be to determine that the solution proposed by the bidder meets the overall functional & technical requirement of the project. Failing POC means, the firm is technically unsuitable. For POC, advance notice of 15 days will be given.

8.6. POC will be held at BNP, Dewas Location.

9. SUBMITTALS & DOCUMENTATION

9.1. Extensive documentation shall be provided on installation, operation, administration, programming details and maintenance of the various equipment. Three complete sets of hard copy & soft copy should be provided.

The documentation shall necessarily cover the following:

9.1.1. User, operation, administration and maintenance manuals (3 sets).

9.1.2. System configuration sheet for Server, Router, Switch etc. (3 sets).

9.1.3. Installation drawings, wiring charts, layout of cables etc. (3 sets).

9.1.4. Detailed Engineering Diagram, signal flow / cabling diagram indicating the complete cable routing and integration of the various equipment blocks, in the system (3 sets).

9.1.5. User and technical manuals of the items (1 set).

9.1.6. System test plan, calibration reports, preventive maintenance charts etc.

9.1.7. Bill of Materials

9.1.8. Test Certificates, Internal test reports etc.
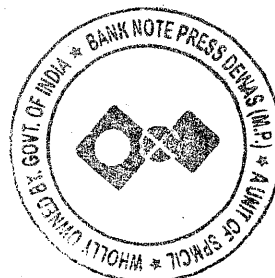
9.1.9. Software media along with license of all software's such as VMS, DB Server, OS License, Firmware.

9.1.10. One HDD containing all media and executable, API documentation, SDK & software.

9.1.11. Recovery disc of systems, if any.

10. INSTALLATION, COMMISSIONING

10.1.   The whole project is required to be completed on Turn- Key basis. Accordingly, Bidder is understood to have assessed and quoted for all the items required for successful completion of the Project. It will be the responsibility of the Bidder to provide such items on free of cost basis which are not quoted in the bid but otherwise required at the time of installation for completion and successful commissioning of the

10.2.   The successful Bidder shall offer the services of an installation Team which shall be responsible to install and commission the entire system. The whole project will be carried out directly under the supervision of OEM's / Authorized representative's technical team.

10.3.   Installation & Commissioning shall be treated as complete after installation of all the systems and sub-systems and issuance of FAT certificate.

11. TRAINING

11.1.   The contractor shall impart training to BNP Staff / CISF Security personnel at site for complete operation of the equipment and software for 6 nos. of days.

11.2.   The contractor shall impart training to BNP Staff at the site for operation & maintenance of the equipment/system/servers etc.

12. SAFETY

12.1.   The Principal Agencies to whom the job has been assigned by BANK NOTE PRESS, DEWAS will be primarily responsible for ensuring safety of all their employees working under them while they work inside Factory premises of the respective units.

12.2.   The Principal Agencies to whom the job has been assigned will be responsible for any act of the Contractor, which amounts to contravention of any provision of the Factories Act, 1948 and the respective Factories Rules under the Act.

12.3.   Electrical connection will be taken only with the written permission from the respective units. Any unauthorized connection which is found to be of imminent danger to the safety of the employees will be disconnected immediately.

12.4.   Every Contractor will ensure that their employees do NOT SMOKE inside the factory premises

12.5.   Every Contractor will ensure that the Hand Tools, other Equipment's, Ladders etc. are maintained in good working condition and will also ensure that they are safe and free from risk to the employees and their health.

12.6.   All the machines brought by Contractors for their work should be properly guarded/ maintained in proper condition for their safe working.

12.7.   For Working at Height, Welding Work, Gas Cutting work, Excavation Work, Working on Fragile Roof, Working on Electrical Lines or work of similar nature, the Principal Agencies and the Contractors will inform the Safety Department of the respective units in advance. In each case the "PERMIT TO WORK" (Blank Format) will be obtained by the Principal Agency / Contractor from Safety Department of the BNP.

12.8.   The Contractor shall provide good quality safety nets, tarpaulin, safety full Body Harness tie rope on rooftop for anchoring safety belts and safety helmets etc. for workmen. The work should be carried out within the area, which is 10% less than total covered area, by net.
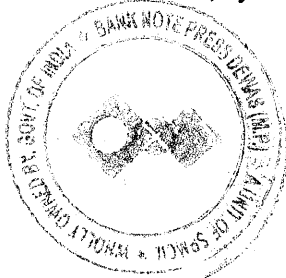
12.9.   One supervisors of the contractor will always to be present during work for close supervision. They will not leave the work site till completion of the work for any other work and to ensure that all the safety measures are followed strictly.

12.10.   All the Contractors will arrange for MEDICAL TREATMENT of their employees in case of serious injury.

12.11.   All the lifting machines, lifting tackles, chains, ropes, pulleys etc. will not be allowed to be used inside the Factory unless they are thoroughly examined and certified by the Competent person (as per Factories Act,1948) once in every six months. Such certificate(s) should be produced to the respective units before taking them inside the Factory.

12.12.   In case of any accident, the Principal Agencies and the Contractors will arrange to inform it to Safety Department of BNP immediately. They will also arrange to fill up the necessary forms and provide any information, as required by the BNP for submitting the same to the Industrial Safety & Health Dept. (i.e. concerned Inspector of Factories).

12.13.   Safe use of electricity will be responsibility of the Principal Agency and their Contractor.

12.14.   Proper "Earthing" should be provided to the Main Switch

12.15.   The source for tapping electrical supply will be shown to the Contractor. He will provide separate main switch, wires and cables of suitable capacity for welding set as per electrical load of the equipment. The wires/cable should be without joints.

13. <u>SECURITY</u>

13.1.   The contractor should scrupulously conform to the safety and security norms as stipulated by BNP while working in the security area.

13.2.   The contractor shall take all the precaution while executing this work. Protective gear such as safety helmets, boots, belts etc. shall be provided by the contractor at his own cost to all his workers at site. It shall be the responsibility of the contractor to ensure that such protective gear is worn at all times by all personnel working at site. BNP shall have the right to stop any person not wearing such protective gear from working on the site.

13.3.   BNP is a security organization and the Govt. declares the premise as Prohibited Area. Hence the contractor has to abide by the security rules of the Company. The contractor has to ensure the character and antecedent of the persons deployed. The contractor must be in a position to produce such documents whenever he is asked to do so. Details shall be furnished as per format when called for. The contractor has to issue printed photo identity card to its workers duly authenticated by the designated security officer of the Company. Contractor should apply for Gate Pass for labours, welding permission and material entry pass etc. as per approved format only, well in advance to avoid any delay in issue of Gate passes

13.4.   While applying for pass, contractor must enclose copy of address proof (Voters ID card or ration card or driving license or passport etc.) & valid police verification report for all the workers for which gate pass has been requested. The details shall be submitted in the prescribed format available from BNP.

13.5.   On award of the contract the contractor shall sign the Non-disclosure format and abide with that.

13.6.   Any worker of the contractor, if found by the Company as unsuitable or having doubtful integrity, shall be removed from the premises at the risk and cost of the contractor. The contractor shall vouch guarantee for the integrity of its workers.

13.7.   All the products used in system needs to be malware/Bug free and declaration certificate needs to be provided by the firm at the time of supply.
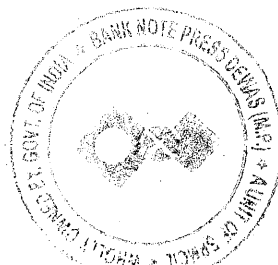
14. SECRECY

14.1. All maps, plans, drawings, specifications, schemes and the subject matter contained therein, and all other information given to the VENDOR by BNP shall be held confidential by the VENDOR, and shall remain the property of BNP and shall not be used or disclosed to third parties by the VENDOR for any purpose other than that for which they have been supplied or prepared. All such drawings and documents shall be returned to BNP upon completion of the work under the contract.

14.2. No copies, duplication, Photostat shall be retained by the VENDOR without the written consent of BNP. The VENDOR may disclose to third parties, upon execution of secrecy agreements satisfactory to BNP, such part of the drawings, specifications, or information, if such disclosure is necessary for the performance of the contract.

14.3. Maps, layouts and photographs of the plant including its surrounding regions showing the vital installation for national security of the BNP's country shall not be published or disclosed with the third parties, or taken out of the country without prior written approval of secrecy agreement satisfactory to the BNP with such third parties prior to disclosure.

15. SPARES

15.1. Vendor shall have to keep spares of items supplied such as IP Cameras, Network switches, power adapter etc. on premises of BNP during Warranty and CAMC Period.

15.2. No. of Cameras as spares – 05 nos., 1 no. of 24 Port L2 Managed Switch, 2 Nos. of 8 port Switch, Media Converter – 05 nos., Patch Cables – 10 pcs, MCCBS -15 nos.

16. FINAL ACCEPTANCE TEST & CERTIFICATE

16.1. Complete Supply and Installation as per specification and scope.

16.2. Complete documentation and license and media handover.

16.3. Checking of all features under working condition.

16.4. After successful installation, commissioning and trial run the actual performance of the system will be carried out for period of 15 working days in the presence of firm's representative conforming to the cameras configuration and technical specifications, as per contract signed mutually between the supplier & purchaser

16.5. Conformance to check Storage of 90 days: Camera storage estimation for 90 days based on 15 days archival storage and validating with available storage. Calculation sheet to be provided.

16.6. Maintaining spares inventory as per SPARES Clause.

16.7. Completion of work after following all standard safety and environment norms.

16.8. All the relevant certificates to specified standard is to be provided.

16.9. Upon satisfactory completion of final acceptance test, Bank Note Press shall issue Final Acceptance Certificate.

17. WARRANTY & COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

17.1. Complete system and its all components will be under warranty for 03 years from date of issue of final acceptance certificate including all consumables such as Battery, CMOS, UPS Battery etc.

17.2. The system shall be under comprehensive annual maintenance contract for a period of 5 years from the date of expiry of warranty. The AMC is comprehensive and inclusive of all spares and consumables such as Battery, CMOS, UPS Battery etc.

17.3. During Warranty and CAMC Period, Bidder shall maintain the system so that it is operational and running round the clock.

17.4.   The contractor shall provide Guarantee that every work executed under this contract shall be free from all defects and faults in materials, workmanship etc. and shall be of the highest grade and consistent with established and accepted standards for materials and workmanship of the type ordered and full conformity with the specifications and equipment shall satisfy its intended use.

17.5.   Workmanship and operation of all the equipment, accessories etc. supplied by the contractor shall be under warranty for a period of minimum 36 months from the date of taking over the system / issue of acceptance certificate of the system by the BNP at the site as mentioned in specifications. Contractor shall also provide the total maintenance of the equipment / systems during warranty & CAMC period at site.

17.6.   It shall be obligatory on the part of contractor to modify and/or replace any hardware and modify the operating, application and diagnostics software free of cost, in case of any malfunction is revealed during operation after taking over within the warranty period. Also, the contractor must do corrections and up gradation of the software during warranty & CAMC Period.

17.7.   During warranty & CAMC period, the Contractor has to deploy at least 2 service personnel from the date of handing over/final acceptance of the at BNP for assisting in smooth operation/maintenance/use of the system by various users and also for customizing configuration by way of proper selection existing software/hardware features of the IP BASED CCTV SURVEILLANCE SYSTEM. The service personnel shall be required to check the health of the system on daily basis and do maintenance work of the System.

17.8.   Supplier / Contractor shall periodically carry out Routine Preventive maintenance (Preventive Maintenance every 3 months) for the entire warranty & CAMC period starting from date of final acceptance. The service personnel (s) so deputed shall be qualified and fully conversant with the operation and maintenance aspect of the system and sub-systems of other vendors (e.g. switches, Workstations, UPS, Cameras, Racks etc.) supplied against this tender/purchase order. Report of periodic maintenance is to be submitted with BNP.

17.9.   The wages / salary of the service personnel shall be included in the cost of the project and the BNP will not separately pay any wages / salary to this purpose.

17.10.   Supplier shall have all the statutory and legal requirements for engaging manpower. BNP reserves right the verify the same.

17.11.   Supplier shall maintain vital spares at BNP to restore the system immediately in case of breakdown during warranty & CAMC period. During warranty & CAMC period, all defective / faulty items shall have to be replaced / rectified by the supplier without any additional cost.

17.12.   Any breakdown of the system or part of the system shall be attended immediately and resolved as per condition mentioned under "Penalty Clause for Lack of Service".

17.13.   During warranty & CAMC Period, Defective HDD i.e. Hard Disk (Not in RAID Configuration) has to be changed with working one on non-replacement basis. Defective HDD (non- RAID) will be kept with BNP.

17.14.   The Bidder shall maintain back to back agreement with the OEM's for proper maintenance of Server, PC's, CCTV Surveillance System Components, Software and UPS. The agreement shall remain valid during the warranty Period and CAMC period. Copy of Such Agreement to be provided to BNP.

17.15.   As Bank Note Press has shift operation, the resident service personnel may have to perform shift duty. The service personnel is also liable to work on holiday/Sunday (if services are required) and no additional amount will be paid.

17.16.   Bank Note Press is a security organization; hence supplier should submit valid police verification of the deputed service personnel. All security norms to be followed by the deputed resident service personnel.

17.17.   The service personnel should be qualified Degree/Diploma Engineer with an experience of not less than 2 (two) years in Computer/Electronics Hardware, Software & computer network maintenance. The Firm is required to provide evidence in dealing/maintenance in respect of qualification and experience, which would be checked by this Office to verify the suitability/competency of the service personnel.

17.18.   The resident service personnel provided by the firm shall not be changed frequently. However, if found incompetent by the officers of BNP, the Resident service personnel shall be changed by the vendor immediately.

17.19.	Educational Qualification for resident service personnel - Minimum ITI/Three Year Diploma (CSE, ECE, IT) or higher qualification such as B.Tech/B.E (CSE,ECE,IT)/BCA/ MCA/M.SC (IT,ECE, Computers)

17.20.	The bidder will be responsible for following all labor laws and safety procedures in respect of man power deployed by them in SPMCIL premises for the purpose of this project.

17.21.	Bidder will have to provide necessary tool kits to its deployed resources to perform their duties effectively.

17.22.	The deputed staff shall be considered under SKILLED category and all central govt. rates and rules shall be applicable. The deputed staff daily wages shall not be less than minimum wages of skilled category of central govt. during the period of contract.

17.23.	Bidder shall comply all statutory/legal requirements such as Minimum wages PF, ESI, Bonus and all related labor laws required for engaging the staff in order to deliver the service.

17.24.	Central Govt. labor laws shall be applicable for the contract.

17.25.	The successful bidder shall be responsible for compliance of all statutory provisions relating to Minimum Wages, Provident Fund, ESIC, Bonus etc. in respect of the persons deployed by it in BNP for the service delivery.

17.26.	The remuneration of the deployed staff must be credited to their bank account by the successful agency/bidder latest by 10th of every month. A penalty of Rs. 500/- per day and per person shall be imposed on the agency for failure to meet this deadline.

17.27.	The personnel deputed to BNP by the successful agency/bidder should be polite, cordial, positive and efficient while handling the assigned work. In case, the person employed by the successful agency/bidder commit any omission/commission that amounts to misconduct /indiscipline /incompetence, the successful agency will be liable to take disciplinary action against such persons including their removal from the work, if required by the BNP.

17.28.	If any mishappens during the contract period, contract delivery the successful bidder shall be held responsible. They shall not claim any amount from BNP.

17.29.	**Penalty Clause for Lack of Service** –

17.29.1	Complete system failure	1) For 1st 2 hours, no penalty if service resume within 2 hours 2) After 2 hours, penalty will be 10% of per day CAMC cost i.e, (Total CAMC Cost/365) for every 2 hours & thereafter. 3) *If this clause is applicable, no other clause for penalty will be applicable*
17.29.2	Service non-availability due to Network Devices & Servers	For 1st 2 hours, no penalty if service resume within 2 hours After 2 hours, penalty will be *"Per Day CAMC Cost / (No. of Server+ Switches)"* for every 2 hours and thereafter. *Per Day CAMC Cost = Total CAMC Cost/365*
17.29.3	Service non-availability due to any one or more UPS failure incl battery bank failure	For 1st 1-hour, no penalty if service resume within 1 hour. After 1 hour, penalty will be - *"Per Day CAMC Cost / (No. of UPS)"* for every 1-hour and thereafter. *Per Day CAMC Cost = Total CAMC Cost/365*
17.29.4	Service non-availability due to Camera Failure	For 1st 2 working days, no penalty if service resume within 2 working days. After 2 working days, penalty will be

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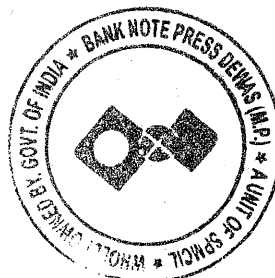
		"*Per Day CAMC Cost / (No. of CCTV Cameras)*" for every 1-day delay and thereafter. *Per Day CAMC Cost = Total CAMC Cost/365*

During warranty period, 1ˢᵗ Year AMC charge to be considered for calculating penalty cost. During AMC Period, respective year AMC charge will be considered for calculating penalty cost.

It may be noted that over & above the penalty, during the downtime all the responsibilities will lie on the successful contractor/bidder organization for any security issue happened due to system down.

18. STATUTORY COMPLIANCE

18.1 The engagement and employment of laborers and payment of wages to them should be as per existing provisions of various labor laws and regulations is the sole responsibility of the Contractor and any breach of such laws or regulations shall be deemed to be breach of the contract. BNP may ask the contractor to produce documents to verify that these provisions/laws are compiled by the contractor.

18.2 All wages allied benefits such as leave, ESI, PF, Gratuity, Bonus etc., shall be paid by the contractor and BNP shall not incur any liability or additional expenditure whatsoever for personnel deployed. Also, the contractor shall be made wage through bank account transfer/Cheque.

18.3 The Contractor shall abide by all labor laws, related to Employee Provident Fund & Miscellaneous Act 1952, ESI Corporation 1948, Workmen Compensation Act 1923, Payment of Wages Act 1936, Minimum Wage Act 1948 Industrial dispute Act 1947, Maternity Benefit Act 1961, Payment of Bonus Act 1965, Factory Act 1948 and other related applicable labor laws/codes. The details of EPF, ESIC in respect of their deployed staff shall be submitted by the Contractor to BNP along with the bills. The Contractor shall abide including but not limited to, matters relating to timely payment of wages and allowances, payment of minimum wages, payment of overtime, grant of leave, payment of workmen's compensation, working hours, safety, maternity benefits, holidays, framing of standing orders, disciplinary action against their employees, payment of provident fund contributions, payment of gratuities and payment of bonuses as per statutory rules. The Contractor shall submit periodical returns as may be specified from time to time.

18.4 The successful tenderer has to pay the minimum wages to its personnel / staff / members deployed as per the notification published by Central Govt., besides paying all other statutory payments. The successful bidder has to maintain all records and legal documents up dated as per prevailing statute and has to produce before the management / statutory authorities as and when asked for. Besides the successful bidder has to indemnify the BNP from all types of legal implications due to any negligence on the part of successful bidder and for which the Bank Note Press Dewas is not responsible.