

प्रसार भारती
(भारतीय प्रसारण निगम)
समाचार सेवा प्रभाग : आकाशवाणी
नई दिल्ली – 110001
ई मेल : आईटीयू.एनएसडी/एनआईसी.आईएन



Prasar Bharati
(Broadcasting Corporation of India)
News Services Division : All India Radio
New Delhi - 110001
E-mail : itu.nsd@nic.in

No. : NSD/IT/57/2011

Date : 2.2.2012

M/s. _____

As per list

Sub : Quotation for SITC (Supply, installation, testing and commissioning) of Surveillance CCTV system - regarding.

Dear Sir,

Please furnish your quotation for the SITC (Supply, installation, testing and commissioning) of Surveillance CCTV system and associated software and hardware as per the details and terms and conditions given in the attached specification. Tenders are invited in two-bid system, technical and commercial bid.

2. Submissions OF Quotations:-

Tenders are to be submitted in Envelope duly sealed with Red Lakh seal (Wax Seal) super scribed as **Quotation for SITC of Surveillance CCTV system.** This envelope shall further hold 2 envelopes as under:

Envelope No. 1: (Technical Bid)

- It shall contain Experience / performance of the firm in this area as mentioned in SITC document.
- All Technical details of material being supplied (make of the material, model, features, etc. of hardware and software of CCTV surveillance system and other documents as required in the specification including un-priced bill of material given in the specification.
- Draft of Rs 25,000/- in favour of Director General(News), News Services Division, All India Radio, New Delhi payable at Delhi as EMD.

Envelope No. 2: (Commercial Bid)

It shall contain the rates for items / works mentioned in the bill of material as given in the attached specification. Amount of each items and the total amount may also be worked out and mentioned clearly in words and figures. This envelope shall be super scribed "Envelope No. 2 Financial bids for SITC of surveillance CCTV system."

PLEASE NOTE THAT ANY TENDER BID WHICH IS SUBMITTED IN FORMAT OTHER THAN AS STATED ABOVE SHALL BE REJECTED.

The quotation should be sent in a sealed cover addressed to the undersigned room No. 224, New Broadcasting House, Parliament Street, New Delhi so as to reach on or before **17.2.2012 up to 1400** Hrs indicating:-

1. Material for which quotations are enclosed.
2. Reference of letter of enquiry.
3. Due date of opening of the quotation.

The quotation will be opened at **1500 Hrs. on 17.2.2012**, in the presence of such tenderers or their agents as may choose to attend. This office reserves the right to accept any quotation not necessarily the lowest. **The detailed terms and conditions of the quotations can be downloaded from our website "newsonair.nic.in"**

Yours faithfully,



(Gita Ram)

(Sr. Administrative Officer)
for Director General (News)

Website Supervisor, NSD, AIR, New Delhi for putting the tender document on Website.

**PRASAR BHARATI
(BROADCASTING CORPORATION OF INDIA)
NEWS SERVICE DIVISION, ALL INDIA RADIO, N. Delhi**

Specifications for SITC of Surveillance CCTV System

News Service Division, All India Radio intends to award contract for Supply, installation, testing and commissioning of a Surveillance CCTV System. The system should provide surveillance at the gates of main facilities inside the NBH building and should show the movements while entering as well as exiting from the main gates. The surveillance system at the gates should be wirelessly connected to the security/control room where the associated hardware and software should be installed for recording of 15 days as well as viewing purpose. The tenderer must visit the AIR site before submitting quotation.

Criteria:

- i. Wireless Equipment and camera should be from same OEM.
- ii. The camera and Video management software should be from the same OEM.
- iii. The bidder should be having their dedicated service and support team in India to instantly resolve and repair hardware as well as software issues.

1. GENERAL

- 1.1. **Eligibility condition:** Tenderer should have a minimum of two years of experience in this field. The bidders should have experience of executing similar projects involving SITC for Surveillance CCTV System. The bidders have to provide documentary proof of successful execution of at least two such projects (contact details with address and phone no.) in last 2 financial years.
- 1.2. The tenderer must submit the following along with tender, failing which the offer will be treated as incomplete and summarily rejected:-
 - a. A copy of this tender document duly signed by bidder in each page with company seal at the bottom is to be submitted by the tenderer as a token of acceptance of all the terms and conditions of the tender.
 - b. The bidders have to provide documentary proof of successful execution of two number of SITC for Surveillance CCTV of atleast 20 camera (contact details with address and phone no.) in last 2 financial years.
 - c. A copy of un-priced Bill of Material (BOM), Make, series no., Model no. and part nos. of offered equipment shall be quoted clearly. Any tender, showing ambiguity in above terms shall be treated as incomplete and it will be rejected.
 - d. Detailed printed literature, relevant to the offered equipment, giving complete electrical & mechanical data must be submitted.
 - e. An undertaking that tenderer shall attend any fault within 24 hours during guarantee period.

- f. Attested copies of the latest Income Tax Clearance and Sales Tax Registration Certificates in the proforma prescribed by the Government should accompany the tender. The Certificates should be in the name of the firm/individual quoting for the tender.
 - g. Draft of Rs 25,000/- in favour of Director General (News), News Services Division, All India Radio, New Delhi payable at Delhi as Earnest Money Deposit (EMD)
 - h. The offer of the firm shall be signed in ink on each page by the bidder.
- 1.3. The tenderer must ensure that the tender is technically and commercially complete in all respects and all the points have been complied fully. Incomplete tenders will be rejected without any notice to the tenderer.
- 1.4. Prices quoted by firm should be valid for period of 90 days from the date of opening of quotations.
- 1.5. The **Earnest Money Deposit** will be forfeited in case of lowest tenderer who withdraws his bid during the period of tender validity specified by the tenderer in the tender form or in case of successful tenderer, if tenderer fails to sign the Agreement or furnish the performance security deposits within the specified time. In case of unsuccessful tenderers the Earnest Money Deposit without any interest will be refunded within a month of the finalization of the tender on submission of advance stamped receipt.
- 1.6. The successful tenderer shall be required to execute an agreement on stamp paper of appropriate value within 10 days from the date of receipt of the notice of acceptance of tender or letter of intent. All costs involved therein shall be borne by the tenderer. In the event of failure on the part of the successful tenderer to sign the agreement within the above stipulated period the EMD will be forfeited and acceptance of the tender shall be considered as cancelled. The agreement will be based on accepted rates, price schedules and terms and conditions of this tender.
- 1.7. **Performance Security deposit:** shall be furnished by the successful tenderer @ 10% of the total value of the contract in the form of an Account Payee Demand Draft, Fixed Deposit Receipt from a Commercial bank, Bank Guarantee from a commercial bank in an acceptable form in favour of DG(NEWS), News Service Division, All India Radio, Delhi. Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligations (i.e. 14 months from the date of commissioning of the project). The security deposit will be forfeited against compensation for any loss resulting from the contractor for failure to complete its obligation under the contract including declining to enter into AMC after warrantee period as per approved rates. The security deposit shall be released after expiry of the warrantee period and AMC agreement is signed if desired by AIR . The security deposit so held by NSD will not earn any interest.

- 1.8. **Terms of payment** : The payments will be made after goods are received in good condition, installed in NBH, AIR premises and made fully operational by the supplier. 90 percent payment will be made after completion of the SITC of the system and balance 10 percent will be made after the warranty period of one year is over. Work tax/Income Tax at the prevailing rate shall be paid by the tenderer and the same will be deducted from the payment.
- 1.9. SITC would be completed within 45 days from the date of issue of letter of intent/acceptance of tender.
- 1.10. The prices should be inclusive of all taxes such as VAT, sales tax, service tax, local tax, Excise duty, freight and transport, risk insurance, packing, forwarding and installation of at AIR premises.
- 1.11. Rates and amount should be filled in both figures and words. Rates quoted by the contractor in item rate tender in figures and words shall accurately be filled in so that there is no discrepancy in the rates written in the figures and in words. However, if any discrepancy is found, the rate which corresponds with the amount worked out by the contractor shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but amount is not worked out correctly, the rate quoted by the contractor will be taken as correct and not the amount. If the amount of an item is not worked out by the contractor and it does not correspond with the rates written either in figures or in words then the rates quoted by the contractor in words should be taken correct.
- 1.12. Firm should also indicate the Annual Maintenance Contract charges for 4 years, if awarded to firm, after the expiry of Warranty (along with year wise breakup). NSD reserves the right for not awarding the AMC contract to the successful bidder. There is no binding on NSD to award the AMC contract to the successful bidder after the warrantee. However the price quoted for the AMC for 4 year period will be included for deciding the lowest bidder. Following conditions will also be applicable during AMC :
- The firm is to deposit 10 % of the AMC as Performance Security before taking AMC.
 - During AMC period any fault is to be rectified within 24 hours of reporting on telephone. Failing to rectify the fault within 24 hours will invite penalty @ Rs. 1000/- per day, which will be deducted from the performance security deposit. If the fault persists for more than 7 days whole amount of performance security deposit will be forfeited.
 - The payment to the firm will be made post quarterly on satisfactory working of the system.

- 1.13. The tenderer is advised to inspect the site to ascertain the nature of the site, access thereto, location of camera and control room, and to decide any additional items are required for installation of the system. The tenderer shall be deemed to have full knowledge of the site whether or not he actually inspects the localtion.
- 1.14. This office reserves the right to accept any quotation not necessarily the lowest. The office also reserves the right of increasing / decreasing the quantity of material depending on actual requirement
- 1.15. If required AIR may demand tenderers to demonstrate the functioning of IP cameras/ software during technical evaluation. The tenderer is to arrange the demonstration with in a week time at their cost.

2. **SCOPE OF THE TENDER:**

- i) **The Scope of this tender includes supply, installation, testing and commissioning (SITC) of :**
 - a. Indoor Fixed Dome Megapixel Network Camera with PoE and Day/Night Functionality Specifications at 16 locations.
 - b. Outdoor Megapixel Network Camera with weather proof casing and Day/Night Functionality Specifications at 19 locations.
 - c. Storage Server at 1 location.
 - d. Software- 1.
 - e. Port PoE Ethernet Switch (3 Nos) with 4 Nos. of SFP.
 - f. CAT 5e+ UTP cable 10,000 Mtrs. (approx.)
 - g. Patch Panel CAT 5e+ 3 Nos.
 - h. Outdoor Armoured Fiber cable approx 300 mtrs.
 - i. Fiber Panel Wall Mount Types (LIU) 3 Nos.
 - j. Fiber Adaptors / Couplers (as per requirement)
 - k. Patch Cords for Fiber (3 Nos.)
- ii) SITC will involve supply of items as per bill of material (BOM) as at Annexure-I. In addition to the items mentioned in Annexure-I, if any other hardware/software is required for making the systems fully functional, the same may clearly mentioned and also be included and quoted.
- iii) All the cables/PoE switches and mating connectors, brackets etc. required for implementation of system will be supplied by the tenderer.
- iv) The system shall be rugged and reliable for round the clock 24x7/365 days operation.
- v) The equipment shall work satisfactorily in tropical climate with dry temperature range from 0°C to 55° C and humid conditions upto 80% RH (non-condensing).
- vi) One complete set of instruction manuals for operation and maintenance of the system shall be supplied.
- vii) The tenderer shall be required to provide 2 days training to AIR staff on operation/ maintenance of the system and the training shall be free of cost.

3. **Technical Specifications**

3.1 **Outdoor Megapixel Network Camera with PoE and weather proof casing and Day/Night Functionality.**

- i) The network IP Camera shall be a fixed box high resolution megapixel camera having 1/2.5" CMOS sensor of greater than 4 MP
- ii) The Camera shall be an Outdoor fixed box type network IP Camera having day/night functionality.
- iii) The Camera shall work both in NTSC & PAL format
- iv) The camera shall have CS Mount lens (3.6 - 14 mm) with an angle of view greater than 80°.
- v) The camera should support Auto IR cut filter for Day & Night conditions.
- vi) The Camera should have external input & output for audio
- vii) The Camera shall have inbuilt microphone
- viii) The camera should support G.711 audio compression
- ix) The Camera shall support triple streaming in all of the three video codecs i.e. H.264, MPEG4 & MJPEG
- x) The Camera should have minimum resolution of 1920 x 1080 (1080p) & can also be set onto a lower resolution if required i.e. 1280 x 720 (720p), 720 x 480, 640 x 480, 352 x 288, 256 x 192.
- xi) The Camera shall support frame rate of 30fps for all resolution up to 720p
- xii) The Camera shall support multiple video streams i.e. Single, Dual & Triple
- xiii) The Camera should have image settings as Compression, Color, Brightness, Sharpness, White Balance, Exposure Control, Rotation, Mirroring, Fine Tuning of Behavior At Low Light, On Screen Display and Intelligent Privacy Masking etc.
- xiv) The Camera should have Inbuilt E-PTZ for Close Viewing with Sharp Zoomed Image
- xv) The Camera shall raise an alarm / events on Video Motion Detection & Network disconnect
- xvi) The Camera should also give alarm notification on Video Capture, File Upload, E-mail, Audio Out, Alarm Out.
- xvii) The Camera should have one alarm in & one Alarm out port

- xviii) The Camera wired interface should support RJ-45 10BASE-T/100BASETX Ethernet, PoE
- xix) The Camera shall have the option to support GSM connectivity using the data cards or GSM interface (optional)
- xx) The camera should support network protocols like IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, Bonjour, UPnP, SNMP V1/V2/V3, DNS, DynDNS, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP
- xxi) The camera should be capable of being powered up through PoE
- xxii) Its maximum power consumption should not be more than 12 Watt for Camera
- xxiii) The camera should support Micro SD card for onboard storage
- xxiv) It should have outdoor Ready to use mount
- xxv) It should support Video Out: 3x RCA Y/Pb/Pr, 1 x RCA CVBS
- xxvi) The Camera should work on extreme outdoor weather conditions with temperature range of 0° ó 55° C (32 ó 131° F) Humidity 20° ó 80° RH (Non-Condensing)
- xxvii) The camera should come with Power Supply, Table/Wall Mount Stand, Userø Manual, and Installation Guide etc.
- xxviii) IP-66 compliant weatherproof housing shall be provided with the camera.

3.2 Indoor Fixed Dome Megapixel Network Camera with PoE and Day/Night Functionality

- i. The network IP Camera shall be a fixed dome high resolution megapixel camera having 1/2.5ö CMOS sensor of greater than 4 MP
- ii. The Camera shall be an indoor fixed dome type network IP Camera having day/night functionality.
- iii. The Camera shall work both in NTSC & PAL format
- iv. The camera shall have an S Mount lens greater than 3.5 mm and less than 4 mm with an angle of view greater than 85⁰ and F number 1.4
- v. The camera should support Auto IR cut filter for Day & Night conditions.
- vi. The Camera should have input and output for audio
- vii. The Camera shall have inbuilt microphone
- viii. The camera should support G.711 audio compression
- ix. The Camera shall support triple streaming in all of the three video codes i.e. H.264, MPEG4 & MJPEG
- x. The Camera should have minimum resolution of 1920 x 1080 (1080p) & can also be set onto a lower resolution if required i.e. 1280 x 720 (720p), 720 x 480, 640 x 480, 352 x 288, 256 x 192.
- xi. The Camera shall support frame rate of 30fps for all resolution up to 720p
- xii. The Camera shall support multiple video streams i.e. Single, Dual & Triple

- xiii. The Camera should have image settings as Compression, Color, Brightness, Sharpness, White Balance, Exposure Control, Rotation, Mirroring, Fine Tuning of Behavior At Low Light, On Screen Display and Intelligent Privacy Masking etc.
- xiv. The Camera should have Inbuilt E-PTZ for Close Viewing with Sharp Zoomed Image
- xv. The Camera shall raise an alarm / events on Video Motion Detection & Network disconnect
- xvi. The Camera should also give alarm notification on Video Capture, File Upload, E-mail, Audio Out, Alarm Out.
- xvii. The Camera should have one alarm in & one Alarm out port
- xviii. The Camera wired interface should support RJ-45 10BASE-T/100BASETX Ethernet.
- xix. The camera should support network protocols like IPv4, IPv6, HTTP, HTTPS, FTP, SMTP, Bonjour, UPnP, SNMP V1/V2/V3, DNS, DynDNS, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP
- xx. The camera should be capable of being powered up through PoE
- xxi. Its maximum power consumption should not be more than 12 Watt for Camera
- xxii. The camera should support Micro SD card for onboard storage
- xxiii. It should have outdoor Ready to use mount
- xxiv. The Camera should work on extreme outdoor weather conditions with temperature range of 0° ó 55° C (32 ó 131° F) Humidity 20° ó 80° RH (Non-Condensing)
- xxv. The camera should come with Power adopter, and Installation Guide etc.

3.3 Software and Server Specification

The server should be able to run below mentioned software specifications and store recording for 30 days.

- i. The user with administrative rights shall create clients (users) and give access to the software client application based on predefined user access rights.
- ii. The system shall allow the recording, live monitoring and playback of video and data simultaneously.
- iii. The software shall allow for Archiving & deletion of recorded video on Schedule basis and on Low disk space etc.
- iv. Software shall also support:
 - a. Several simultaneous live picture connections of camera in network.
 - b. Programming of alarm-triggered automatic events in various alarms configuration.
 - c. Programming of automatic recording events on a network recorder.
- v. The software shall display dual H.264 video streams in real time simultaneously at frame rates ranging from 1 fps to 25 fps and resolution ranging from 1 CIF to 4CIF to megapixel resolution.

- vi. Each camera's bit rate, frame rate and resolution shall be set independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras.
- vii. The software shall provide automatic search and addition of video surveillance system network cameras.
- viii. The software shall provide drag & drop for the cameras on the system
- ix. The software shall also allow for
 - a. Live display of cameras
 - b. Live display of camera sequences.
 - c. Playback of recorded video
 - d. Instant Replay of live video
 - e. Configuration of system settings
- x. The software should be able to do video recording on any of the following options - inbuilt hard disks on the server, direct attached storage boxes attached to servers, network attached storage, storage area network etc.
- xi. 22" Monitor for viewing.
- xii. The software shall be able to select the required recording based on the time recording was activated, the duration of recording, operator activated recording, event activated recording, scheduled recording.
- xiii. The software shall offer a plug and play type camera discovery service with the function of automatically discover devices as they are attached to the network.
- xiv. Viewing of this recording shall be possible on authorized player which shall be provided by software manufacturer or in media player on computer utilizing a Window environment.
- xv. The software database servers shall not limit the number of network video recording servers which can be networked together to form video management and recording system.
- xvi. The software shall enable the client to dynamically create connections between cameras and clients and view live or recorded video on the digital VGA monitors (video, serial ports and digital I/Os).
- xvii. The software shall detect signal loss from the camera and have the capability to send alert to the user.
- xviii. The Virtual Matrix Switch shall have the capability of creating camera sequences and shall have capability up to hundreds of cameras.
- xix. The software shall provide alarm management module.

- xx. It shall be possible to search for recordings in the software by camera, date and time. If a data and time is specified, playback shall commence from that date and time. It shall be possible to playback more than one camera simultaneously.
- xxi. Video management software should also have following recording facilities
 - a. Software shall support recording of H.264 / MPEG4 / MJPEG video streams.
 - b. It shall support recording of video and audio for all the channels.
 - c. Software shall support triplex applications, recording, re-play and backup simultaneously.
 - d. It shall be compatible with windows Server OS for highest performance and reliability.
 - e. Software shall operate on open architecture and should not require any proprietary hardware.
 - f. Software shall be able to record minimum 64 different video streams or more simultaneously. It shall be accessible from any PC connected to the network.
 - g. The servers shall be connected to the network so that these can be placed at any location which has network access.
 - h. The software should be able to receive alarms of different types from equipment to start a recording. These alarms can be motion detection, video loss, and unified picture, trigger input etc.
 - i. The software alarm recording shall support pre-and post-alarm periods.
 - j. If software & server(s) operation are interrupted, like power disconnection and once the server(s) are restarted, these shall automatically resume recording of any cameras these were recording prior to the interruption.
 - k. It shall be possible to search for recordings in the software by camera, date and time. If a data and time is specified, playback shall commence from that date and time. It shall be possible to playback more than one camera simultaneously.
- xxii. Software Recording Module would also allow for
 - a. Recording at all resolution & all frame rate
 - b. Option to record I chunks of 30 min, 1, 2, 4 , 8 hours
 - c. Continuous and Scheduled Recording
 - d. Scheduled Recording by using the day/time calendar

- e. Switching of low frame rate (up to 1 fps) recording to normal frame rate in case of events or incident detection
- f. Ability to record at settings different from live view
- g. Available Disk Space
- h. Total Disk Space
- i. Storage Calculator
- j. Other settings like compression, frame rate, resolution etc.

xxiii. Software Live View Module should have following buttons:

- a. Camera Setting
- b. Snapshot
- c. Recording (Start / Stop)
- d. Refresh
- e. Full View
- f. Audio
- g. Volume
- h. Number of cameras added in a tabular form
- i. Cameras connected / disconnected
- j. Drag & Drop of any Camera to any matrix grid to start Video Streaming
- k. Pre-Configured Centralize views by user. Default View option for any user

xxiv. Software Playback Module should have following buttons:

- a. Intelligent Search based on camera, date & time, Motion Detection events, Video Analytic events
- b. Sorting Recordings camera and start or end date & time
- c. Play, Forward and Seek options
- d. Digital Zoom Option
- e. Slow and Fast playing

xxv. Software should also have centralize LAN / WAN streamer

- a. Centralize LAN/WAN streamer to forward one stream from camera to multiple users (either on LAN or WAN or both)
 - b. Low Bit Streaming on WAN. Configurable low Bit Stream in software
 - c. Mobile Streaming to view the video from a GPRS enabled phone
 - d. Dual stream function to stream the video from same camera at two different resolutions (LAN/WAN)
 - e. Ability to stream at HTTP and RTSP
 - f. Ability to stream at different bit rates (same as camera, low, very low bit rate for mobile devices)
- xxvi. Software should have strong user management & should support
- a. User based camera or camera group access
 - b. User Roles and levels
 - c. Login & Authentication
 - d. Add/Delete new users
- xxvii. Software should make logs on
- a. User Entered (configure & system actions)
 - b. Recordings Import/Export
 - c. Event Logs (Automatically / Manually)
 - d. Usage requirement analysis

3.4 TECHNICAL SPECIFICATIONS FOR RACK SERVER:-

- i. Server Type: 2 Socket Intel Processor based Server
- ii. Processor: 2 x Quad-Core Intel Xeon Processor E5620 (2.40 GHz, 12MB cache)
- iii. Chipset: Intel 5520
- iv. Memory: 8 GB ECC DDR3 @ 1333 MHz RAM (upgradable to 194 GB)
- v. HDD: 2 x 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port HDD
- vi. Storage Controller: Storage controller should support RAID 1,0
- vii. I/O Slots: Minimum 2 PCI Express slots
- viii. Optical Drive: DVD DW
- ix. Ethernet connectivity: 2 x 10/100/1000Base-T auto-sensing Ethernet ports At least one gigabit/gigabit port for management/service
- x. Form Factor: Rack Mounted 1U/2U
- xi. Power Supply: Redundant Power Supply

- xii. Operating System Support: Win 2008 standard

3.5 24 Port PoE Ethernet Switch (3 Nos) with 4 nos. of SFP

- i) Size 19ö Metal Case
- ii) Interface Specification
- iii) 24 Port, 10/100 BASE-TX PoE
- iv) 2 Port, 1000 BASE-T
- v) 2 Port Combo, 10/100/1000 BASE-T/ 100/1000SFP
- vi) Port Standards
- vii) IEEE 802.3u 100 BASE-TX Fast Ethernet , twisted pair copper
- viii) IEEE 802.3 10 BASE-T Ethernet, twisted pair copper
- ix) IEEE 802.3ab 1000 BASE-T Gigabit Ethernet, twisted pair copper
- x) IEEE 802.3z Gigabit Ethernet, fiber
- xi) Auto-negotiation
- xii) IEEE 802.3x Flow Control
- xiii) Switching Capacity 12.0 Gbps or better
- xiv) Forwarding Rate (64-Byte Packet) 9.0 Mpps or better
- xv) Packet Buffer Memory 512 KB
- xvi) Flash Memory 16 MB or better
- xvii) Forwarding method - Store-and-forward
- xviii) Power over Ethernet (PoE) port should compliant 802.3af and 802.3at standards
- xix) PoE Capable ports should support 13 watts per ports or better
- xx) Diagnostic LED for Power, Link/Activity/Speed per port
- xxi) MTBF 1,50,000 Hours or more
- xxii) Power input 100 to 240 VAC, 50 to 60 Hz Internal Universal Power supply
- xxiii) Operating temperature 0 to 40 °C or better

3.6 Cat 5e+ UTP Cable Specification (Aprox. 10,000 m)

- i) Mechanical
 - a. Outer Diameter 5.0mm 4 twisted pair
 - b. Conductor diameter : 0.51 mm (AWG) or better
 - c. Conductor Type : 24 AWG bare solid copper
 - d. PVC Jacket
- ii) Electrical
 - a. Characteristic Impedance : 100 + - 6 Ohm @ 1- 100 Mhz
 - b. DC Resistance 93 Ohm /km or better
 - c. Dielectric Strength 1500pF/km max. @ 1 KHz
 - iii) Compliances of TIA/EIA 568 & B2 standards
 - iv) Compliance of ISO/IEC-11801, Class D standards

3.7 Patch Panel Cat 5e+ Specification (3 Nos)

Patch panel for termination of horizontal and backbone cabling

- i) Mechanical
- ii) Size : 1U
- iii) Panel Material : Steel-full powder coated
- iv) Unshielded RJ 45
- v) Spring Contact
- vi) Electrical
- vii) Contact Resistance 20m Ohm (Max.) per contact
- viii) Voltage rating 72 Vdc max.
- ix) Current Rating 1.5 A max.
- x) Clear label Windows for port identification
- xi) Compliances of TIA/EIA ó 568 ó B2 standards
- xii) Compliance of ISO/IEC-11801, Class D standards

3.8 Outdoor Armoured Fiber Cable (Aprox. 300 m)

- i) Fiber Type : 50 Micron , Mitimode
- ii) 6 Core Fibers
- iii) Crush Resistance : 44 N/mm
- iv) Max. Attenuation (dB/km) : 2.5 (at 850 nm)
- v) 1 Gb Ethernet Distance : 600 m

3.9 Fiber Panel Wall Mount Type (LIU) (3 Nos)

- i) Powder coated Aluminium alloy
- ii) Cable gromments ó FR Grade Nylon
- iii) Splice Tray : Aluminium + ABS
- iv) 6 ports
- v) Lock and key for safety

3.10 Fiber Adaptors/ Couplers (As per requirement)

- i) Adaptor SC MM
- ii) Adaptor ST MM
- iii) Connector SC/LC MM
- iv) Connector ST MM
- v) Insertion Loss : < 0.3 dB Max.
- vi) Compatible Optical Fiber 50/125 um

3.11 Patch Cords for Fiber (3 Nos)

Patch cord ST-LC 3m , 50 MM

3.12 The connectivity between storage server in control room and IP cameras in various location is to be provided through PoE switches and cables.

The approximate requirement of the cable has been mentioned in the BOM.

The work is to be carried out as per details below:

- The firm is to get the layout /route of the cable/ fibre/ PoE switches approved from AIR before starting the work.

- The cables/ PoE switches are to be properly labeled/ tagged for identification.
- For laying/mounting of cable on wall proper structured cabling/conduiting should be done.
- For laying cables in trenches in Studio Block, NBH, the authorities must be consulted.
- PoE switches should be mounted ones.

4. WARRANTY

The complete system offered shall be warranted for a minimum period of one year for satisfactory service against any manufacturing defect or bad workmanship or any bug/defect in the software from the date of commissioning.

Support during warranty:-

The bidder has to provide comprehensive onsite support, which includes technical support and spares support. The tenderer shall attend any fault free of cost during guarantee period within 24 hours of reporting on telephone. Failing to rectify the fault within 24 hours will invite penalty @ Rs. 1000/- per day, which will be deducted from the performance security deposit/ or balance payment. If the fault persists for more than 7 days whole amount of performance security deposit/balance 10 % payment will be forfeited.

ANNEXURE-I

Bill of Material (BOM)

Sr. No.	Item	Qty.
1.	Indoor Fixed Dome Megapixel Network Camera with PoE and Day/Night Functionality Specifications (Rate may be quoted per unit)	16 No.s
2.	Outdoor Megapixel Network Camera with weather proof casing and Day/Night Functionality Specifications (Rate may be quoted per unit)	19 No.s
3.	Storage Server	1 No.
4.	Software	1 No.
5.	PoE switches (Rate may be quoted per unit)	03 Nos.
6.	Cables (CAT 5e) (Rate may be quoted per metre length)	1500 mtrs.
7.	Optical Fiber	300 Meters
8.	Conduit material (Rate may be quoted per unit)	As per requirement
8.	UPS (Rate may be quoted per unit)	As per No. PoE switches installed
9.	Installation of PoE Switches, IP/ Dome Cameras, Storage Server. (Rate may be quoted per Unit)	
10.	Laying charges of cables, along with conduit wherever required. (Rates may be quoted per metre length)	
	(a) Laying of CAT 5e cable in trench / false-ceiling	1000 Mtrs.
	(b) Laying of CAT5e cable cable in conduit	500 Mtrs.
	(c) Laying of Fiber Cable	300 Mtrs.
11.	AMC Charges after Warrantee	1 job
	a) 1st year	
	b) 2 nd year	
	c) 3 rd year	
	d) 4 th year	

Note: The approximate length of cable / fiber and conduit has been mentioned in BOM for deciding the lowest bidder. However the payment of cables/ fibers, conduit material, & laying charges will be paid as per actual. Firm may visit the site to assess the requirement of cable laying during any working day in office hours.