



टाटा सामाजिक विज्ञान संस्थान Tata Institute of Social Sciences

Deemed University under Section 3 of the University Grants Commission Act (UGC), 1956

Request for proposal (RFP) Ref No.: TISS/CC/NIT/2016/135

30th April 2016

INVITATION OF BIDS IN TWO BID SYSTEM FOR PROCUREMENT, INSTALLATION AND MAINTENANCE OF IP BASED CCTV CAMERA SURVEILLANCE SYSTEM USING OFC NETWORK SYSTEM AT TISS, MUMBAI CAMPUS

The Tata Institute of Social Sciences invites sealed bids in **two bid system** (Technical bid and Financial bid separately) from vendors registered with DGS&D and satisfying the prescribed qualifications indicated here in for supply, installation and maintenance of CCTV cameras of prescribed specifications as listed in the Annexures at various locations in its Mumbai Campuses. The main campus at Mumbai has two locations with separate entry points identified as the Main Campus and Naoroji Campus.

The sealed envelopes (**separately sealed for technical and financial bid**) must be super scribed with the above title, RFP number and the date of opening of the bids. The bids shall be addressed and sent to the following address **on or before 3 p.m. on 10TH May, 2016** on any working day between 10.30 a.m. and 5.30 p.m.

The Assistant Registrar (Purchase & Stores)
Tata Institute of Social Sciences
V.N. Purav Marg, Deonar,
Mumbai -400 088
Phone: 022-25525230
Email:roja@tiss.edu

Any technical queries regarding the bids shall be addressed to:

Mr. V. Sivakumar
Systems Manager, Computer Centre,
Tata Institute of Social Sciences

V.N. Purav Marg, Deonar,
Mumbai – 400 088
Phone: 022-25525293
Email: siva@tiss.edu

Important note: Bids received after the closing time and date will not be considered valid. Bids not following two-bid system are liable to be rejected.

The RFP is being issued with no financial commitment and the Institute reserves the right to change or vary any part thereof at any stage including the option for AMC. The Institute also reserves the right to withdraw/cancel the RFP should it become necessary at any stage.

The scope of work, technical specifications, bill of materials and tentative locations shall be as detailed in the Annexures to this RFP. The scope of work includes identification and justification of the locations which is best suitable for the installation in consultation with the Security Officer which would be approved by the Registrar/Director of the Institute.

The Institute may propose to increase the number of cameras or locations at any other campuses of the Institute on the same price quoted during the implementation phase, the vendor should be in position to do installation for additional locations/ campuses as well.

Bidders are advised to carefully read and understand the Annexures containing the scope, specifications and requirement of materials. The material requirements are measured to the approximate and it may vary. The bidders should provide the separate cost for the material supply and the services and the applicable taxes for the same in detail in the bid as per the attached annexures.

General terms and conditions:

1. The company/firm submitting the bid must be registered with the Director General of Supplies and Disposals (DGS&D).
2. A complete profile of the company shall be submitted with the technical bid.
3. The audited statement of accounts of the last three financial years must be submitted.
4. Income tax returns for the last three years shall be submitted.
5. Profile of key personnel involved in this supply and installations.
6. Bidders must have designated office/ single point of contact in Mumbai. Address of the same must be submitted with the bid.
7. The bidder must submit the Manufacturer's Authorization Form (MAF) for the quoted cameras, and Video Management Software (VMS) along with Camera license and shall also submit undertaking to integrate the proposed new cameras and the Video Analytics on the existing VMS as licenses.
8. The successful bidder has to obtain necessary security passes, etc. for his personnel to enter the premises.
9. Successful bidder has to arrange for all necessary tools, measuring equipment for carrying out the job.
10. Successful bidder has to arrange for their own accommodation and transport during implementation, warranty and Post warranty support periods.

11. All onsite personnel stationed by the vendor for operations and maintenance of the entire solution will have to be certified by respective OEMs and the documentary proof is to be furnished.
12. The bidders or his sub-contractor must possess valid electrical contractor license from the appropriate Govt. (Central/State) authority or else must have tie-up with an Electrical Firm having the requisite electrical contractor license. Bidder shall submit an undertaking with their offer that the said tie up shall remain valid till completion of the installation and commissioning jobs.
13. The bidder should have experience in SITC of CCTV Surveillance System in any Central/State government establishment/office or university or state /central public sector d organizations (Work order copy along with satisfactory completion report to be submitted for last 5 yrs).
14. Bidder should have an average turnover of Rs 50 Crores in last 3 yrs
15. Bidders should have an average turnover of Rs 8 Crores in the business of CCTV Surveillance system in last 5 Years.
16. TISS would prefer the Bidders who shall propose CCTV Cameras & VMS from the same OEM as deployed now and details on this TISS can be provided on request basis.
17. Each page of the bid document must be signed by the bidder.

Registrar

SCOPE OF WORK & TECHNICAL SPECIFICATIONS

SCOPE OF WORK:

The successful bidder will be responsible for implementing the entire project on a turnkey basis along with integration to the existing facility of CCTV System. The jobs to be carried out by the successful bidder are:

1. Set up a single-mode fiber optic network to connect the CCTV cameras to the central control room, any other location & Satellite monitoring stations. This will include
 - a) Trenching,
 - b) Conduiting through HDPE pipes (underground).
 - c) Conduiting through GI pipes from ground level to junction box.
 - d) Laying of FO cable.
 - e) The cable route must be properly marked with concrete markers at every 50 meters. The text to be written on each marker will be finalized at the time of implementation.
2. Install and set up the CCTV cameras as per the list.
3. Integration of additional Camera licenses in the Existing Video Management Server & Recording Server at central control room for CCTV with all necessary monitoring services from 1st day of installation.
4. AMC of supplied equipments, post warranty shall be undertaken by bidder the price of the same shall be indicated in the Price Bid, however the successful bidder will be chosen by TISS based on the Base Price and the AMC quoted.
5. Replacement of all defective equipment during warranty and AMC periods.
6. Supply of all hardware, software and any required accessories to complete the entire project.
7. The CCTV system must have the facility to connect over network to the central control room. The camera footage must be saved locally in the NVR at each remote location and the central control room must have the capability and Provision to pull/ access the saved data over the network.
8. All electrical power supply jobs required to provide power to the equipment will be the responsibility of the successful bidder.
9. If maintenance is required at the power tapping point from the internal power supply, the vendor's personnel will inform Electrical Engineering Department and ask for shutdown.
10. While working in the electrical circuit including poles and cables, the vendor's personnel shall use PPE and follow all safety practices as per CEA regulations.
11. The tools and tackles, transportation etc. required for operation and maintenance of the entire system shall be arranged by the vendor.
12. Available power supply from TISS: 230 V, AC, 50HZ, single phase.

Power shall be fed to the UPS through an isolating device having, overload, short circuit and earth leakage protection for the safety of devices and lives. Power will be available in a single point.

13. Voltage, frequency and phase available will be 230V, 50 Hz, single phase. The party will make appropriate arrangement like increasing the size of cable, step up devices etc. for getting required quality of power for camera devices.
14. The party will tap power from nearest available power node at installation in a single point. Power may be available in an outdoor unit like feeder pillar, overhead line etc. In that case the party shall have to mount the isolating device with overload, short circuit and earth leakage protection in an IP 65 enclosure. The box shall be fixed in a safe place. The cable shall be connected using appropriate size lugs and glanding have to be done at cable entry/outgoing point with appropriate size gland.
15. In case power is available in an indoor installation, in that case also isolating device shall be mounted in an enclosure of IP 43. All cable connection shall be done using lug, glands etc.

ANNEXURE I**TECHNICAL SPECIFICATIONS****CAMERAS:**

Item No 1. IP Fixed Indoor Camera (Specification for High Performance Colour Day-Night Fixed Dome IP Camera (Indoor):		
Sl. No.	Material Description	Vendor/ Contractor's Compliance
1	High Performance Colour Day-Night Fixed Dome IP Camera with	
	i) Sensor:1/3 inch, type-CCD/CMOS.	
	ii) Pixels 1280x 1080 minimum	
	iii) Sensitivity 0.3 lux IR OFF and 0.0 lux IR ON.	
	iv) Video resolution : 1080p,720p,480p,240p (configurable)	
	v) Frame Rate:30 fps	
	vi) Night Vision: Minimum 15 meter capability.	
	vii) Lens type :Varifocal, auto iris with 2.8-10 mm lens	
	viii) Audio : Line-in Line-out jack	
	ix) Audio Compression : G.711	
	x) Camera Setup/Control Via Web browser	
	xi) Camera to function on PoE as per IEEE 802.3.af	
	xii) Video compression H.264, MJPEG/MPEG.	
	xiii) Ethernet 10-Base T/100 Base-TX, auto-sensing, half/full duplex,RJ45	
	xiv) Protocols: RTP, UDP, TCP, IP, HTTP, HTTPS, FTP, DHCP, IGMP, ICMP, SMTP, SNMPv1, RTSP, iSCSI, UPnP, IPv4, IPv6, QoS.	
	xv) PoE : IEEE 802.3af Compliant	
	xvii) Operating Temperature 0°C to 40°C	
	xviii) Humidity : 0% to 90% or better	

	xix) Mount : Suitable vandal resistant mount for wall and ceiling. Others: * The quoted camera must be of ONVIF standard and have UL and FCC Certifications. * Camera Housing & Lens should be from the same OEM. * Enclosure (housing for cameras) must be vandal resistant * Camera housing(indoor/outdoor),Mount Adapter, Adds H/V adjustability Wall Mount for housing must be provided.	
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Item No 2. Outdoor PTZ Dome Camera (Specification for High Performance Colour Day-Night Outdoor PTZ Dome Camera)

2	High Performance Colour Day-Night Outdoor PTZ Dome Camera with	
	i) 1/4-in.-type CCD/CMOS or equivalent	
	ii) Sensitivity day mode 0.5 lux and night mode 0.01 lux	
	iii) 30x optical zoom and 12x digital zoom.	
	iv) Wide Dynamic Range (WDR): Minimum 60 dB and Sodium Vapour White Balance mode.	
	v) Dual recording-iSCSI and SD card. Minimum 32 GB SD Card to be provided.	
	vi) Effective Picture Elements- PAL: 440,000	
	vii) Lens 30x Zoom	
	viii) Focus-Automatic	
	ix) Optical Zoom Field of View 1.7° to 57.8°	
	x) Video Output 1.0 Vp-p, 75 Ohm	
	xi) Gain Control Auto/Manual	
	xii) Electronic Shutter Speed 1/1 to 1/10,000 sec.	
	xiii) Signal-to-Noise Ratio (SNR) >50 dB	
	xiv) White Balance	
	xv) Camera Setup/Control Via Web browser	
	xvi) Pan Range 360° continuous	
	xvii) Tilt Angle minimum 10° above horizon	
	xix) Video compression H.264, MJPEG/MPEG.	
	xx) GOP Structure IP, IBP, IBBP	
	xxi) Resolution- (Horizontal x Vertical, PAL/NTSC):4CIF/D1 704 x 576/480 (25/30 ips, or 50/60 fields/s for interlaced fields)	
	xxii) Ethernet 10-Base T/100 Base-TX, auto-sensing, half/full duplex,RJ45	
	xxiii) Protocols: RTP, UDP, TCP, IP, HTTP, HTTPS, FTP, DHCP, IGMP, ICMP, SMTP, SNMPv1, RTSP, iSCSI, UPnP, IPv4, IPv6, QoS.	
	xxiv) Ingress Protection Rating:Standard-IP66,NEMA 4X	
	xxv) Operating Temperature 0°C to 50°C	
	xxvi) Humidity : 0% to 90% or better	

	xxvii) Mount : Pendant arm mount and pole mount adapter Others: * The quoted camera must be of ONVIF standard and have UL and FCC Certifications. * Camera Housing & Lens should be from the same OEM. * Enclosure (housing for cameras) must be vandal resistant * Camera housing(indoor/outdoor),Mount Adapter, Adds H/V adjustability WallMount for housing must be provided.	
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Annexure II

Network Active Components

Item No 1. Core transport switch (Layer-3)

1	Port Density	
	24:port 10/100/1000x Gigabit ports, 2/4 x 1000BASE:X SFP combo ports and Switch for back bone high speed Ethernet, Should support Active - Active Clustering VSS or equivalent technology for high availability and quick resiliency	
	The proposed VSS or equivalent technology should support high availability for both Layer 2 and Layer 3 Including for IP Multicasting applications	
	Performance	
	Forwarding Rate: 95Mpps	
	Switching Fabric: Min 128 Gbps or better	
	Full environmental monitoring of PSUs, fans, temperature and internal voltages, with SNMP traps to alert network managers in case of any failure	
	IEEE Standards	
	IEEE 802.1Q Virtual LANs	
	VTP or Equivalent technology	
	CDP or Equivalent technology	
	Resiliency	
	Resiliency in the Core 10G ring as per the IEEE 802.17 / RPR / ERPS or equivalent technology providing the convergence time as per the standards specified above	
	Loop Protection and Loop Detection	
	Routing	
	Should support Static and RIP routes from day 1	
	Should support OSPF routes and OSPF v3 from day 1	
	IPv6 routing and management without changing the base hardware	
	Multicast Support	

Internet Group Management Protocol v2 /v3 and MLD	
Security	
802.1 x supports with Dynamic Vlan. Should seamlessly integrate with the proposed Radius server solution.	
Private VLANs providing security and port isolation	
Should support MAC address filtering and MAC limiting functionality.	
Switch should provide the ability to monitor events and take corrective action proactively	
The switch should support detection of Denial of Service (DoS) attack.	
Wire speed Access control lists	
Dynamic ARP , IP Source guard and DHCP snooping inspection	
Radius / TACACS +	
Quality of Service	
Policy based QoS features	
Control plane traffic prioritization	
WRED / SDWRR or equivalent queuing technology	
Management	
Out of band Ethernet management port and console management port	
Port mirroring and sFlow	
Optical Digital Diagnostics Monitoring (DDM) in accordance to the open standard specification SFF : 8472 or equivalent	
An External memory card like USB or equivalent , allowing switch firmware, configurations to be stored for backup and distribution to other switches	
Electrical Approvals and Compliances	
Restrictions on Hazardous Substances (RoHS) Compliance	
Energy Efficient Ethernet compliant (EEE) compliance	

Item No. 2: Access layer switches		
2	Hardware Specifications	
	24 * 10/100/1000 - T POE+ with Min 2*1G SFP + Ports	
	Performance Specifications	
	Min 20 Gbps of switching capacity or better	
	Min 14.88 Mpps Switching throughput or better	
	VLAN	
	IEEE 802.1Q tagged	
	Port-based	
	Up to 256 groups	
	Should support MAC address filtering and MAC limiting functionality.	

	Switch should provide the ability to monitor events and take corrective action proactively	
	Quality of service	
	IEEE 802.1p tagging	
	Port-based priority	
	Four priority queues per port	
	Management	
	Web-based configuration	
	Discovery support	
	SNMP trap view	
	LLDP	
	Firmware upgrade by FTP and HTTP	
	Configuration backup/restore by FTP and HTTP	
	SNMPv1/v2c/v3	
	Management IP: DHCP client for Web	
	Management and static IP setting	
	RSTP	
	IP Multicast Support (IPv4)	

Annexure III

Network Management Software

Item No. 1: Network Management Software		
1	Automatic topology discovery and creation of network maps for Layer 3 and Layer 2 network , All the available VLANs	
	Should have high level Network Inventory polling capability for IP Network nodes, All available line cards , Modules , ports , Physical links , VLAN interfaces and all the other SNMP capable devices in the network	
	Should have powerful administration control	
	Detailed performance monitoring and management	
	Should have extensive fault management capabilities with Real time Event and Alarm notifications , System Logs and Audit trails	
	Creation and management of security and QOS policies	
	Scheduled Device configuration back-up and restore functionality	
	Automatic Detection of configuration changes for easy trouble shooting and Isolation	
	Should support 3rd party devices and end points	
	Should have the functionality of Group provisioning / Scheduled configuration roll out management	
	Should have the ability to perform scheduled or Unscheduled network wide software or Firmware upgrades	
	Should have the ability to customize the NMS dash boards as per the requirements of INS	
	Should have the ability to perform / create group of devices for applying same task	
	Should have extensive Event notification capability	
	Should provide the flexibility to the network administrator to assign task to an Individual network engineer and assign ownership / track the status of the issue resolution	
	Should have extensive centralized trouble shooting tools in built	

	The NMS solution should be preferably from the same Active switching vendor , in case vendors proposing for 3rd party NMS solution should provide all the interop reports certified by both the NMS vendor and Active switching vendor on seamless interoperability	
	All the required Hardware / Software licenses for the NMS solution should be proposed by the bidder	

Annexure IV

SERVERS & CLIENT WORKSTATIONS

Item No. 1: VMS Server Hardware		
1	Each server will support 60 cameras of 1 MP	
	Processor - Intel E5-2620 Xeon 6 core or equivalent	
	Memory - Minimum 12 GB	
	Hard disks (for live database) - 300GB x6 on RAID 10 SAS drives at 15000 rpms	
	OS- Windows 2008 Enterprise Edition 64 bit	
	OS Drive - 2 X 300 GB SAS/ SATA at 10000rpms	
	Network Card - 2x1Gbit/s network cards with separate segment for cameras and viewing station	
	Raid Controller - 512MB battery backed raid controller	
	The archive storage should be in RAID 5 configuration and can be of SATA HDDs.	

Item No. 2: Client Workstation		
2	Handle up to 100 cameras per monitor	
	Processor - Intel Core i7-4770K @ 3.50GHz	
	Memory - Minimum 12 GB	
	Hard disks - 2 X 120 GB SATA at 7200 rpms	
	OS- Windows 7/8, 64bit	
	Network Card - 1Gbit/s network card	
	Graphic card of minimum 1 GB memory (The newer i7 processors use the HD3000 and HD4000) WHQL Certified..	

Item No 3. RECORDING SERVER (NETWORK ATTACHED STORAGE SERVER)		
3	i) OS: OEM defined, embedded Operating System	
	ii) Capacity: Hot swappable SATA - II Server Class SATA hard disk drives. Loaded with 34 TB Storage with RAID 5 configured.	
	iii) Support of Network File Protocols (FTP, ISCSI,	

	SNMP etc)	
	iv) LAN Ports: 2 x RJ45 10 / 100 / 1000 Mbps (GbE) Ethernet LAN Ports	
	v) RAID SUPPORT: Hardware / Software based RAID with RAID 0,1,5 and 10.	
	vi) Power Supply: Redundant and hot-swappable Power supply modules with redundant & hot swappable fan modules	
	vii) Warranty: 3 years comprehensive OEM Warranty	

ANNEXURE V**PASSIVE COMPONENTS**

Item No. 1: Technical Specification for Single Mode Fiber Optic cable		
1	6/12 Core - 9/125 Micron Single Mode Outdoor Fiber Cable	
	Type of Cable : OS1 Single mode	
	Optical Properties	
	Attenuation	
	at 1310 nm $\leq$ 0.34 dB/KM	
	at 1550nm $\leq$ 0.22 dB/KM	
	Maximum Tensile Strength Short term : 1000N	
	Maximum Crush resistance Short term : 2000N/10CM	
	Operating Temperature : -10° C to + 70°C	
	Sheath : UV Stabilized HDPE	
	Over all Cable Diameter : 9.5 mm- 10 mm	
	Fibre Tube Identification : Single Tube	
	No. Of Elements : 5	
	Fibre Protection(Tubes) : Polybutylene terephthalate(PBT)	
	Peripheral Strength Member : Two Steel Wires	
	Mass(Nominal) : 95 Kg/Km	
	Core Wrapping : Polyethylene Terephthalate	
	Inner Sheath : Polyethylene	
	Armouring : Copolymer Steel tape Armor	
	Sheath : HD Polyethylene (UV Stabilized)	
	Water Blocking : Thixotropic Gel	
	ROHS Complaint	
	ISO/IEC 11801 : 2002 -2nd Edition, Type OS1	
	ITU-T REC G 652D spec for Low Water Peak fiber, TIA 568, EIA 455	
	AS/ACIF S008; AS/NZS 3080	
	Max. Bending Radius (during installation) : 20D	
	Max. Bending Radius (during full load) : 10D	
	Life of Cable: The minimum expected life of the cable is not less than 25 years.	

Item No 2: Technical Specification for Fiber LIU		
2	Metal Box	
	19" Rack Mountable Cabinet	

	Cold Rolled Steel Construction	
	Material: Powder Coated Steel Body.	
	Accommodation : 24 port for SC and 48 Port for LC Interface	
	Fusion Splice/Mechanical Splice	
	6 Rubber Grommets are provided at cable entry points for tight sealing	
	Dimensions : 45mm H x 485mm W x 255mm D	
	LIU Should be provided with Lock & Key	
	ROHS Compliant	

Item No. 3: Technical Specification for CAT6 Patch Cord		
3	Standards: Should meet or exceed TIA/EIA 568B, ISO Category 6 Performance Requirements.	
	Jacket : Low Smoke Zero Halogen Sheath (LSZH)	
	Boots : Transparent Boot	
	4 Pair 24 AWG stranded copper wire	
	Bend radius : 4 X O.D	
	Operating Temperature : -20 ° C to 60° C	
	Compatible for 568 A & 568 B wiring	
	Fire Propagation test : CSA FT1,IEC 60332-1,IEC61034	
	Operating Life : 750 Mating Cycles	
	Length : 1 Mtr/2 Mtr/3 Mtr/5 Mtr/10 Mtr/20 Mtr	
	UL Listed & ETL Verified	
	Standards : CAT 6- TIA-568-C.2,ISO/IEC 11801:2002	
	ROHS Compliant	
	25 Years Warranty	

Item No. 4: Technical Specification for OS1 Patch cords		
4	100% Factory Tested - Guaranteed performance	
	LSOH Jacket Standard - Reduces toxic/corrosive	
	Sheath : LSZH	
	ROHS Compliant	
	Standards	
	ISO/IEC 11801, ANSI/TIA/EIA 568.C.3-2000, ANSI/TIA/EIA-492, TELECORDIA GR-409, ICEA-596	
	Mechanical Characteristics	
	Cordage O.D.: 2.0mm +/- 0.1mm x 4.1	
	+/- 0.2mm	
	Buffer Diameter: 900Um	
	Primary Coating : 245um	
	Strength Member: Aramid Yarn	
	Jacket Material: LSOH IEC 61034-1 & 2,	
	IEC-60332-1, IEC-60754- 1 & 2	
	Minimum Bend Radius: Install: 3.0cm. Long Term :	
	2.0cm	

	Operating Temperature: -30°C to +70°C	
	Cladding - OD (um) : 125+/- 1	
	Mode Field Dia : 9.0um +/- 0.4um @1310nm	
	Max. Attenuation @ 850nm : 3.5 dB/Km	
	Max. Attenuation @ 1300nm : 1.5 dB/Km	

Item No. 5: Technical Specification for CAT6 UTP Copper cable		
5	23 AWG Annealed bare solid copper, CAT-6 UTP Cable	
	PAIRS Color code: Blue / White-Blue, Orange / White-Orange, Green / White-Green, Brown / White - Brown	
	Type Of Conductors: 4 pair 23 AWG Conductors and star separator.	
	Cable Pull Tension Thread & FR Grade PVC	
	Jacket : Fire Retardant PVC	
	Frequency : Characterized to 600 MHz	
	Standard length: 305 Mtrs (1000 ft.)	
	Standards: UL Listed,ETL Tested & Verified	
	Gigabit Requirements': Should meet or exceed Gigabit Ethernet requirements at 100 Mtrs.	
	Insulation : Polyethylene	
	Jacket : Flame Retardant PVC	
	Performance Characteristics- Category 6 EIA/TIA 568.C.2	
	ETL Verified up to 400 MHz	
	ROHS Complaint	
	25 years Warranty	

Item No. 6: Technical Specification for 24 Port UTP Patch panel		
6	Standards:	
	ETL Verified and CAT 6 Component Compliance.	
	Rear Cable Manager :	
	Metal Rear Cable Manager with Perforations should be supplied along with the panel	
	Material : Cold rolled steel	
	Coating : Powder Coating	
	Dust Cover on the I.O:	
	To avoid dust contaminants.	
	Wire Accommodation : 22-24 AWG	
	Plastic Housing : Polycarbonate,UL 94V-0 rated	
	Compatibility:	
	Individually removable RJ 45 Port and compatible with STP, Fiber& Coax.	
	Jack Contact Plating : 50 Micron Gold/100 Micron Gold	
	RJ 11 & RJ 12 Compatible	
	UL Listed	

	ROHS Compliant	
	25 Years Warranty	

Item No. 7: Technical Specification for CAT6 Patch Cord		
7	Standards: Should meet or exceed TIA/EIA 568B, ISO Category 6 Performance Requirements.	
	Jacket : Low Smoke Zero Halogen Sheath (LSZH)	
	Boots : Transparent Boot	
	4 Pair 24 AWG stranded copper wire	
	Bend radius : 4 X O.D	
	Operating Temperature : -20 ° C to 60° C	
	Compatible for 568 A & 568 B wiring	
	Fire Propagation test : CSA FT1,IEC 60332-1,IEC61034	
	Operating Life : 750 Mating Cycles	
	Length : 1 Mtr/2 Mtr/3 Mtr/5 Mtr/10 Mtr/20 Mtr	
	UL Listed & ETL Verified	
	Standards : CAT 6- TIA-568-C.2,ISO/IEC 11801:2002	
	ROHS Compliant	
	25 Years Warranty	

Item No. 8: Technical Specification for Weather Proof Enclosures/Junction Boxes		
8	Junction Box : Suitable for external use in all weather conditions	
	Protection Class : IP-66	
	Paint : Anticorrosive epoxy paint, shade light grey	
	Gasket : Neoprene Rubber	
	Cables Glands / Plugs : Suitable FLP/ WP brass, nickel coated Single compression cable glands and plugs shall be provided with the junction box	
	Cable Entries: Suitable size & number of entries required for the system to be provided. Spare cable entries shall be blinded.	
	Earthing: The junction box shall be provided with external earthing lugs.	
	Certification: As per applicable standards in India; IS certified.	

Item No. 9 : Rack for Core Switch System		
9	19 Inch, 42 U, Floor mounted Network rack	
	Top ventilated with minimum two fans fitted on top cover.	
	Should have back and front door, removable sides and front door should be transparent with lock and key facility.	
	Fitted with power distribution strip(s) with at least 3 nos. of 5/15 amps power ports (Indian type).	
	Cable manager for routing cables inside the rack and Caster Wheels on base for movement.	

	Item No. 10: 1 KVA Line Interactive UPS	
	Rated Power-1 KVA	
	Type - Line Interactive	
	Backup Time-120 minutes on full load	
	Input Voltage range-160V to 275V or better	
	Input Frequency-50 Hz+- 6% or better	

Item No. 10: Armoured power cable		
10	FRLS Power cable shall be of Minimum 2 Core X 8 mm ² multi stranded, high conductivity, Aluminium conductor and GI wire armored.	
	No. of Cores -2, 8 Sq mm	
	Voltage Grade -1.1 KV grade,	
	Insulation type - XLPE/PVC	
	Requirement - Fire retardant	
	Armoured with steel/GI wire/strip	
	Conductor- Al	

Item No. 11: HDPE Cable Duct		
11	Overall Diameter (OD): 40mm	
	Inner Diameter (ID) : 33-35mm	
	Wall Thickness : 2.5 to 3 mm	
	Hydraulic Characteristic : PN6 category or better	
	Density : 910 to 960 Kg/m ³	

Annexure VI**LIST OF APPROVED MAKES:**

Sl. No.	Components	Approved Make	Reference
1	Camera, Lens, Camera Housing and mounting Accessories, NVR	Mobitex, Axis, Pelco, Bosch, Sony	Annexure-I of Technical Specification
2	Active Network Components	Cisco, Juniper, Allied Telesis, HP	Annexure-II of Technical Specification
3	Network Management Software	Cisco, Juniper, Allied Telesis or equivalent	Annexure-III of Technical Specification
4	VMS Server Hardware	IBM, HP, Lenovo, Dell	Annexure-IV of Technical Specification
5	Client Workstation	HP, Dell, IBM, Lenovo	
6	Monitor	Sony, Samsung, Panasonic and LG	
7	Network Attached Storage Server	Lenovo, Iomega, Netgear	
8	Video Management Server Software	Milestone, Mindtree	
9	Passive Components	Molex, Tyco	Annexure-V of Technical Specification
10	UPS	APC, Numeric, Emerson, Consul, CyberPower	
11	Racks & Enclosures	Rittal, Hoffman, Netrack, APW, APC	
12	PVC Conduits	ISI makes	

Annexure VII

Bill of Materials and associated services

These items shall be as per the detailed specifications provided in the Annexures I to V.

S.No	DESCRIPTION OF MATERIALS	QTY	UNIT	COST
CAMERA				
1	Megapixel IP Dome Camera with 2.8 to 10mm lens , Auto IRIS and Remote Zoom with inbuilt IR illuminators , PoE enabled	4	Nos	
2	Outdoor 3MPx with 5-50mm Varifocal lens , DC mount, Auto IRIS, IR filter based specific for Number plate recognition	6	Nos	
3	IR Bullet type Megapixel IP Camera with 2.8 - 10 mm lens integrated -- PoE enabled (Camera for Capturing the Driver Face Shot for ANPR)	2	Nos	
4	Outdoor , 2MPx , 30x Optical Zoom PTZ Camera with endless Pan for Parking Area	3	Nos	
5	External IR Illuminators for Main Gates and Wicket Gate, with 60-70 mtr Coverage, DC/AC operated.	3	Nos	
STORAGE				
6	RAID 5 Configured 32 TB usable NAS with Modular Structure	1	Nos	
SWITCHES				
7	Layer-2 , Manageable Switch , PoE grade with SFP FO module slots	10	Nos	
8	Central Fiber Switch @ Control Room, as per Star Topology: advanced Layer 2/3/4 enterprise-class switches, 24x Gigabit SFP ports including 12 dual personality 10/100/1000 ports for copper Ethernet connectivity.	1	Nos	
9	SFP FO Modules , Multimode or Single Mode Grade	20	Nos	
PASSIVE EQUIPMENTS				
10	Network Racks for Switches	8	Nos	
11	12 port LIU Loaded	8	Nos	
12	24 Port LIU Loaded	3	Nos	

13	24 Port UTP Patch Panels with 8 Keystones Loaded	8	Nos	
14	Camera Licenses (Software if any)	15	Nos	
15	STP Cables in 500 Mtrs Reel	1	Nos	
16	Single Mode 6 Core Fiber Armoured Type*	2500	Mtr	
17	HDPE Pipes for FO Laying 40mm OD*	2500	Mtr	
18	Casing Capping/PVC Conduiting for Indoor Cabling*	250	Mtr	
19	Pole Mounting with Accessories for Camera PTZ and Gates	3	Nos	
Installation and Commissioning Services				
20	Digging Laying & Installation Charges*	2500	Mtr	
21	Road Crossing inside the Campus	6	Nos	
22	Installation & Commissioning	1	Ls	
Annual Maintenance Charges				
24	Annual Maintenance Charges for 5 years with the deputation of one full time Engineer during the period of warranty and AMC. Please note the annual maintenace charges to be clearly mentioned for the next 5 years. A separate contract will be signed for the AMC with agreed terms and conditions	1	Ls	

Automatic Number Plate Recogn. System @ Main Gates			
25	ANPR Management cum Application Server with DB	1	No

*Pl. note the charges involved in digging and supply of accessories will be calculated in actuals.

Annexure VIII

Locations & Requirements

Sr. No.	Installation Location	Unit	Camera Type
1	Main Campus - Women's Hostel 1	1	Dome Megapixel IP Camera with 2.8 mm to 10mm varifocal lens
2	Main Campus - Hostel Phd	1	
3	Main Campus - Hostel 2	1	
4	Main Campus - Hostel 4	1	
5	Main Campus - Entrance Front View Shot	1	Outdoor Box type Megapixel IP Camera (VariFocal lens 5-50mm) or equivalent-- PoE enabled - IP 66 rated, Weather Proof
6	Main Campus - Entrance Rear View Shot	1	
7	Naoroji Campus - Entrance Front View Shot	1	
8	Naoroji Campus - Entrance Rear View Shot		
9	Wicket Gate - Entrance Front View Shot	1	
10	Wicket Gate - Entrance Rear View Shot	1	
11	Main Campus - Entrance Driver View Shot	1	IR Bullet type Megapixel IP Camera with 2.8 - 10 mm lens integrated -- PoE enabled
12	Naoroji Campus (New) - Entrance Driver View Shot	1	
13	Main Campus - Parking Area Cum Fence Wall	1	High-speed PTZ Camera with 20x Optical Zoom and HD Video
14	Old Campus - Near ATM for 360 Deg Coverage	1	
15	New Campus - Hostel Junction	1	
	Total Cameras	15 Nos.	

APPENDIX-1**FORMAT FOR SUBMISSION OF THE TECHNICAL COMPLIANCE**

S.No	Technical specification	Compliance (Yes / NO)	Remarks	Make & Model	Reference Documents with website Link
1	Equipment Details				

APPENDIX- 2

FORMAT FOR SUBMISSION OF COMMERCIAL BIDS

A. Equipment/Active Component - System								
S. No.	Description	Make	Part No.	Qty	Unit Price	Amount	Taxes	Net Price
1								
2								
3								
Total								

B. Passive Components								
S. No.	Description	Make	Part No.	Qty	Unit Price	Amount	Taxes	Net Price
1								

C. Installation & Commission :						
S. No.	Description	Qty	Unit Price	Amount	Taxes	Net Price
1						
Grand Total (A+B+C)						

APPENDIX- 3

FORMAT OF PRE-BID QUERIES & EVALUATION CRITERIA CHECKLIST

FORMAT FOR PRE-BID QUERIES:

[illegible]