Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

ENQUIRY

To,

Dear Sir,

Subject: Enquiry for the Supply, Installation and Commissioning of Centralised CCTV surveillance software

Scope of Work:
Supply, Installation and Commissioning of Centralised CCTV surveillance software

Sealed tenders are invited under 2 cover system from reputed OEM, Registered and Licensed Vendors for Job Contract at International Centre for Theoretical Sciences, Survey No. 151, Shivakote, Hessarghatta, Bangalore - 560089 (India).

The Technical and Price Bids shall be submitted simultaneously in two cover (sealed) system. The proposals shall be evaluated in two stages: (1) Technical and (2) Price. Technical evaluation will be carried out and those vendors who qualify in the technical evaluation will be eligible for Price Bid opening. Thereafter Financial proposal shall be evaluated. The Commercially Lowest Bidder shall be the first preferred Vendor for the Award of Order

Important Instruction: The bids shall be enclosed in an envelope and sealed duly marked "Enquiry for Supply, Installation and Commissioning of Centralized CCTV surveillance software at ICTS Campus," Ref No. ICTS/TIFR/RFQ/65/2018-19; and addressed to "Administrative Officer" at the address given below. The bids are liable to be rejected if the sealed envelope is not addressed to "Administrative Officer" with Tender Ref No. and Item Description. Offers delivered in person shall be deposited in the Tender Box kept in the Office. If the bids are sent through courier or mail, it should reach by submission date and time and ICTS will not be responsible for any delay.

The tenders should be submitted in two sealed covers. This tender will be evaluated under 2 cover bid system as described above.

I. The First sealed cover - **COVER I** should be superscribed "Technical Bid" and should contain:

1. Pages 1 to 3 of this enquiry duly sealed and signed.
2. Technical Specifications of the product quoted for
3. **MAF (Manufacturer's Authorization Form) Certificate**

II. The Second sealed cover - **COVER II** superscribed 'Price Bid' should contain the Financial bid.

Tender Criteria:

1. The bidder should submit the MAF (Manufacturer's Authorization Form) Certificate along with the quotation. Bids without MAF Certificate will be disqualified.
2. Financial bids, if enclosed with the technical bids in Cover 1 will lead to automatic disqualification of the bid.
3. All warranty and support must be serviced directly by the Developer. ICTS requires that there be a SPOC from OEM who is responsible for all issues between ICTS and the OEM.

Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

4. The bidder should have executed atleast two similar installations of the proposed software and proof of the same should be enclosed with the technical bid.
5. Vendor should specify the system requirement to record live video from 150 IP cameras in D1 resolution at 30 frames per second along with 3 remote/surveillance monitoring with playback video streaming feature in the technical bid.

Terms & Conditions:

The center being public funded research institution is entitled for GST @ 5% vide notification No. 47/2017-Integrated Tax (Rate) and No.45/2017-Central Tax dated 14-11-2017. Necessary Certificate will be provided along with the order.

The bids/ quotation addressed to **"International Centre for Theoretical Sciences – TIFR"**. You are requested to superscribe our enquiry number and due date on the envelope.

All duties, taxes, surcharge and cess as currently applicable must be stated in your quotations, separately. Otherwise your quote is liable to be rejected.

1) **DUE DATE FOR SUBMISSION OF QUOTATION AGAINST THIS ENQUIRY IS 10/01/2019 till 15.00 Hours.**
2) QUOTATIONS RECEIVED AFTER THE DUE DATE SHALL BE REJECTED.
3) Vendors can quote in USD also. OEM should provide Warranty, Support & Service locally.
4) The Validity of your quotation should be for **60 days from the date of financial bid opening.**
5) Your quotation should include 1 year warranty. 3-year (1 + 2) and 5 year (1+4) warranty is optional but mandatory to quote. Please quote this as a separate item below the quote.
6) Delivery to be made to ICTS-TIFR (at vendor's own arrangement). Transit Insurance should be done up to International Centre for Theoretical Sciences-TIFR, Survey No. 151, Shivakote Village, Hesaraghatta Hobli, Bangalore North – 560089.
7) TDS on GST will be deducted at the prescribed rates as per notifications 50/2018 and 51/2018 – Central Tax, dated: 13 Sep 2018.
8) Delivery Period: 4 weeks from the date of acceptance of the purchase order and Installation within 2 weeks from delivery.
9) Liquidated damage: In case the item is not supplied within the agreed delivery schedule and after a grace period of 07 days, then liquidated damages will be imposed automatically and will be deducted from the bill of the vendor at the rate of 0.5% per week, subject to a maximum of 10% of the order value.
10) **Payment:** Within 15 days after delivery, acceptance & satisfactory installation.
11) Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees. The decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore. The provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time shall apply. The Courts in Bangalore shall have exclusive jurisdiction to deal with any or all disputes between the parties.

For and on behalf of International Centre for Theoretical Sciences-TIFR

Authorized Signatory

Administrative Officer - IV
International Centre for Theoretical Sciences
Tata Institute of Fundamental Research
Survey No. 151, Shivakote, Hesaraghatta Hobli, Bangalore - 560 089.

International Centre for Theoretical Sciences – TIFR
Survey No. 151, Shivakote Village
Hesaraghatta Hobli
Bangalore (North) – 560 089
Ph: 080 4653 6027 Email: purchase@icts.res.in
GSTIN : 29AAATT3951F2ZB

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FINANCIAL BID

Please let us have your lowest Quote for the following:

Sl. No	Item Description	HSN/ SAC Code	Qty	Rate per unit Rs.	Amount Rs.
1.	Supply, install | commission of Software for IP CCTV software license to expandable min 300 cameras, **loaded with min 150 camera licenses**,min 2 user licenses, Virtual Matrix capability, Audio capability, video analytics (Vehicle direction monitoring,Left luggage monitoring) Maps and alarm management etc. with One-year Care Plus for VMS Base License Application training of VMS to IT (Technical) and Security Staff (Operational) Configuration of existing CCTV IP Cameras(56 Nos) and new cameras (Approx 90 Nos) with VMS for 24*7 recording in D1 Resolution with playback video streaming feature. Setup of 2 Surveillance Monitoring Stations on systems provided by us Support and onsite warranty : OEM one year comprehensive onsite warranty and support. Details software requirement. • The Video Management System shall be a fully distributed solution, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors. The Video Management System shall offer centralized management of all devices, servers and users and must empower a flexible rule-based system driven by schedules and events. • VMS shall already support IP cameras from at least fifty (50) major vendors. Bidders shall clearly list in their proposal the brands and models already integrated into VMS. • To ensure openness, VMS and cameras may or may not be from the same manufacturer. • VMS shall support installation and ability to run on virtualized windows servers • VMS shall have API based integration with the major camera vendors in order to support features such as, Multi-streams, SD Card storage sync, Camera based supported Edge Analytics, Camera I/O support, Camera Audio support • VMS manufacturer shall provide their SDK (or any other integration means) libraries and documentation) to ensure a seamless integration with any other system		1 No.		

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	• VMS shall be open to any standard storage technologies integration. • VMS shall be open to any video wall system integration. • VMS shall have the possibility to integrate external Video Analytics systems. • The VMS system shall be a scalable client – server architecture built using well known operating systems • The VMS system shall enable recording to be done at the aggregation sites and shall allow the local Control center to import selected videos on demand. • Aggregation site types shall be categorized according to function and size. • 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). • The VMS data communications and telecommunications network shall use a suitable transport medium and associated cabling and data transmission infrastructure that will support real-time video display of cameras at the nominated operations centers. The type of transmission network shall be determined by the BIDDER. • The VMS system shall be compatible to single and multiple processor servers. The server processor & hardware shall be optimized in all cases. • The VMS system shall cluster the processing & memory load across several machines. The failure of any one server in the solution shall not cause a failure in the entire system. • The VMS system device drivers shall be stored separately to the central core application to ensure any instability in 3rd party SDKs do not affect the core application. • The VMS management server shall be able to intelligently scan an IP network for new devices (cameras or servers) along with automatic model detection. • Network infrastructure and installation are the responsibility of the Bidder. Network components both active and required for the successful implementation of the video surveillance detailed in this tender shall be provided by the Bidder. The network infrastructure shall meet the streaming requirement of the project without any bottlenecks. The network infrastructure shall support **UDP multicast, UDP unicast** and TCP transmission. • The VMS system shall provide an integrated secure, scalable and easily accessible software-based solution for the management of the existing & future physical security infrastructure				

Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

	• The VMS system shall provide a powerful and efficient management interface for all the security systems across all monitored sites. • The Video Management System shall be a fully distributed solution, designed for limitless multi-site and multiple server installations requiring 24/7 surveillance with support for devices from different vendors. The Video Management System shall offer centralized management of all devices, servers and users and must empower a flexible rule-based system driven by schedules and events. • The Video Management System shall contain recording servers used for recording video feeds and for communicating with cameras and other devices. The recording servers shall process the recordings and playback the video streams. • The management server shall allow access to a system manager from where the administrator can configure and manage all servers, cameras and users. • The system shall allow the management server to be installed on multiple servers within a **cluster of servers** ensuring that another server in the cluster automatically takes over in case the first server fails. • The Video Management System shall support installation and ability to **run on virtualized Windows servers.** • The Video Management System shall allow an unlimited number of cameras to be connected to each recording server and an unlimited number of recording servers to be connected to each management server across multiple sites. • The Video Management System shall support a versatile rule system including scheduled or event-driven actions with numerous options . • The Video Management System shall support Microsoft Windows XP Professional, Microsoft Windows Server 2003, Microsoft Windows Server 2008, Microsoft Windows Vista (Business/Enterprise/Ultimate) and Microsoft Windows 7 (Business/Enterprise/Ultimate) with the latest patches and service packs installed. The system must use DirectX and .NET Framework. • The Video Management System software shall include **multicast and multi-streaming** support. • The Video Management System shall include **automatic camera discovery.** • The Video Management System shall support archiving for optimizing recorded data storage through unique data storage solutions by combining performance and scalability with cost efficient long-term video storage. • The Video Management System shall incorporate fully integrated matrix functionality for distributed viewing of any camera in the system from any computer with the **client viewer.**				

Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

	• The Video Management System shall support full two-way audio between clients and remote devices. Two-way audio integration shall support the following features and functions: • The Video Management System software shall provide fast evidence export by exporting in video to various formats, including video from multiple cameras in encrypted native database format with an included viewer. • The Video Management System shall show full awareness of the system through audit logs and show user activity through comprehensive logs. • The Video Management System shall include support for a frame work data module designed to **integrate multiple third party Video Content Analysis (VCA) solutions seamlessly into client viewer environments.** • The Video Management System shall include a Software Development Kit (SDK) that offers important capabilities for integrating the Video Management System with third party software and applications. • The Video Management System shall include a stand-alone viewer application to be included with video exported from the client viewer application. The viewer application shall allow recipients of the video to browse and playback the exported video without installing separate software on their computers. • The Video Management System shall include support for Active Directory to allow users to be added to the system. Use of Active Directory requires that a server running Active Directory, acting as a domain controller, to be available on the network. • The Video Management System shall be designed to support each component on the same computer for efficiency in smaller systems, or each component on separate systems for large system deployments. **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 **Bookmarking** • A bookmarking feature shall be included in the Video Management System, allowing the client viewer users to mark incidents on live and/or playback video streams. **Privacy Masking** ○ The Video Management System shall support privacy masking. The VMS should have an option for permanent or Liftable Masking. **Optimized Video Archiving**				

	○ Administrators shall be able to select a storage container for each device and move a device from one storage container to another, or move all recordings inclusive archives to the new storage container, or delete them all. ○ Administrators shall be provided with an overview of the defined storage containers, their archives with path, and free and used space on the drives for each device, including the used storage space in the recording database, and in archives. ○ Video Management Software shall allow to optimize the writing performance of the storage by distributing the real time recording performance on the recording servers internal disk initially for at least 24 hours and archive at different schedule to SAN/NAS/DAS from recording servers. BIDDER should specify the number of Internal disk required for each recording server depending on the camera numbers. ○ Video management software shall also have ability to optimize bandwidth requirement on cloud based storage solution by Recording at local site recording server for at least 24 hours and archive to cloud on schedule basis from different recording servers at different time profile in order to utilize minimum bandwidth. **Multi-streaming Support** ○ The recording server must accept, display and record individual streams of video from each camera that supports it, for example, display a stream in H.265, H.264 format and record another stream in MPEG4 format. The intent of this functionality shall be providing independent streams of video from the camera to the server with different resolution, encoding and frame rate. ○ Multi-streaming support shall allow the system to be configured with H.265, H.264 with a high frame rate for live viewing and shall allow the system to be configured with high resolution H.265, H.264 at low frame rates for recording and playback. ○ The system shall allow recorded video to be recorded at 8fps. **SNMP Support** ○ The system shall act as an SNMP agent which can generate an SNMP trap as a result of rule activation in addition to other existing rule actions. ○ The system shall be able to utilize Microsoft Windows SNMP Service for triggering of SNMP traps. **NAT Firewall Support** ○ The system shall support port forwarding, which must allow clients from outside of a Network Address Translation (NAT) firewall to connect to recording servers without using a VPN. ○ Each recording server shall be mapped to a specific port and this port must be forwarded through the firewall to the recording server's internal IP address. **Management Server Redundancy**				

Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

	○ The management server shall provide a resilient system solution based on Windows Server Clustering, to secure maximum uptime. **Alarms Support** ○ The alarm support shall allow for continuous monitoring of the operational status and event-triggered alarms from servers, cameras and other devices. ○ The alarm support shall provide a real-time overview of alarm status, or technical problems, while allowing for immediate visual verification and troubleshooting. **Matrix Functionality** ○ The system shall include an integrated matrix solution for distributing video to any computer with the client viewer installed. A computer on which the matrix-triggered images can be shown must be known as a matrix recipient. ○ The client viewer shall provide remote users with a comprehensive suite of features: ○ It shall be possible to view live video from cameras on the surveillance system from 1 to 100 per view. ○ It shall be possible to playback recordings from cameras on the surveillance system, with a selection of advanced navigation tools, including an intuitive timeline browser. ○ It shall be possible to create and switch between an unlimited number of views, each able to display video from up to 100 cameras from multiple servers at a time. The system shall allow views to be created which are only accessible to the user, or to groups of users based on 37 different layouts optimized for 4:3, 4:3 Portrait, 16:9 and 16:9 Portrait display ratios. ○ It shall be possible to access views of cameras on any PC with a client viewer application installed. ○ It shall be possible to use multiple screens as well as floating windows for displaying different views simultaneously. ○ It shall be possible to quickly substituting one, or more of a view's cameras with other cameras.. ○ It shall be possible to view images from several cameras in sequence in a single camera position in a view – a so called carousel. ○ It shall be possible to view video from selected cameras in greater magnification and/or higher quality in a designated hotspot. ○ It shall be possible to receive and send video through the matrix functionality. ○ It shall be possible to include HTML pages and static images (for example, maps, or photos) in views. ○ It shall be possible to control PTZ cameras. ○ It shall be possible to use digital zoom on live as well as recorded video. ○ It shall be possible to activate manually triggered events.				

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	○ It shall be possible to activate external outputs (e. g. lights and sirens). ○ It shall be possible to use sound notifications for attracting attention to detected motion. ○ It shall be possible to get quick overview of sequences with detected motion. ○ It shall be possible to get quick overviews of alerts. ○ It shall be possible to quickly search selected areas of video recording for motion. ○ It shall be possible to skip gaps during playback of recordings. ○ It shall be possible to configure and use several different joysticks. ○ It shall be possible to print images, with optional comments. ○ It shall be possible to copy images for subsequent pasting into word processors, email, etc. ○ It shall be possible to export recording (for example, for use as evidence) in AVI, JPEG and database formats. ○ It shall be possible to use pre-configured as well as customizable keyboard shortcuts to speed up common actions. ○ It shall be possible to insert overlay buttons, for example, for activation of speakers, events, outputs, movement of cameras etc. ○ It shall be possible to use a sequence function that lists thumbnail images representing recorded sequences from an individual camera or all cameras in a view. ○ It shall be possible to use a forced playback mode allowing the user to playback recorded video from inside the 'live' mode while viewing 'live' video. ○ The client viewer shall support the use of 3-axis USB joysticks for control of pan, tilt, zoom and auxiliary camera functions. ○ The client viewer shall support the use of multimedia control devices, which are capable of emulating keystrokes, for the efficient review of recorded video. ○ The client viewer shall support the use of keyboard shortcuts for control of standard features. It shall allow the user to program numerical keyboard shortcuts for camera views. The shortcut number shall be displayed with the view description in the live and playback displays. The shortcut shall allow the user to change views with 2 to 3 keyboard entries. ○ The client viewer shall support Nvidia GPU based video decoding to improve video rendering performance and up to 75% reduction in CPU load of the workstation running Client software. The use of Nvidia GPU based video rendering shall also make client ready for 4K/UHD camera technology. ○ The operator shall have the ability to use digital zoom where the zooming is performed in the image only on any number of cameras simultaneously. This functionality shall be the default				

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	for fixed cameras. The use of digital zoom shall have no effect on recording, or other users. **Map Functions** ○ Built-in map function in the client viewer shall provide an intuitive overview of the system and shall offer integrated access to all system components. ○ Map function shall be able to use standard graphical file formats including: jpg, gif, png, tif, etc. ○ It shall be possible to use any number of layered maps, and it shall be possible to easily drag-and-drop and point-and-click definition of cameras, servers, microphones, speakers, I/O devices, hot-zones, and PTZ camera presets. ○ Hot zones shall be allowed for intuitive navigation between different map levels. ○ Map function shall support instant camera preview when moving the mouse pointer over a specific camera. ○ Map function shall support central overview of the surveillance system via an alarm list containing alarm indicators of high, medium or low prioritized alarms. Furthermore the alarms shall be categorized by the following states; new, in progress, on hold, or closed. Alarms must be possible to acknowledge by right-clicking elements on maps. **Remote Client Viewer** ○ The web-based remote client viewer shall offer live view of min 12 cameras, including PTZ control with joystick, fisheye (360 degrees) cameras and event/output activation. The playback function shall give the user concurrent playback of min 12 recorded videos with date, alert sequence, or time searching. ○ The web-based remote client viewer shall offer quick overviews of sequences with detected motion. ○ The web-based remote client viewer shall be able to generate and export evidence in AVI (movie clip) and JPG (still image) formats. ○ The system shall support the use of separate networks, VLANs, or switches for connecting the cameras to the recording servers providing physical network separation from the clients, and facilitate the use of static IP addresses for the devices. ○ The system shall support H.265, H.264, MPEG-4 (Part 2), MPEG-4 ASP, MxPEG, and MJPEG compression formats for all analog cameras connected to encoders, and all IP cameras connected to the system. ○ The system shall support dual-streaming cameras and shall cover the following compression formats: H.265, H.264, MPEG-4 (Part 2) and MJPEG. ○ The recording server shall utilize high performance ISCSI, SCSI, SAS and SSD disk drives for online recording storage and shall allow the use of lower cost SATA drives for the RAID				

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	arrays for online archive storage. Use of online archiving shall ensure that data always is readily available. Use of tape-backup systems shall not be acceptable. ○ The system shall allow the frame rate, bit rate and resolution of each camera to be configured independently for recording. The system shall allow the user to configure groups of cameras with the same frame rate, bit rate and resolution for efficient set-up of multiple cameras simultaneously. ○ The recording server(s) shall have the ability to support multiple Network Interface Cards (NIC) and shall support connection to the cameras on a network separate from the client viewer, management server and system manager. ○ The recording server shall have the ability to accept the full frame rate supplied by the cameras, while recording a lower frame rate yet still shall make the higher frame rate available to the clients for live viewing. ○ The Recording server shall have the ability to handle Video Motion detection on Nvidia GPU to optimize the server requirement. **Remote Mobile App** ○ Shall be available on internet as an application for compatible smartphone and Tablets ○ Shall support Android as well as Apple IOS softwares, with respective smartphones ○ Full screen video supported, cameras shuffle from left to right or right to left supported ○ Digital pinch to zoom supported ○ Control of PTZ from mobile app ○ Use of the mobile device's camera as a camera in the VMS **Licensing** ○ VMS shall have simplified licensing module with single base license which may include Unlimited Management and Recording servers across multiple sites. ○ VMS shall support unlimited Thick clients, Web Clients and remote clients whenever and where ever required for free of cost without any activation needed. ○ VMS shall have licensing based on Camera MAC ID and not server-based licenses. Any replacement of faulty camera should not affect the total available licenses. ○ VMS shall allow parallel / DR site recording of single camera without any additional license cost. Note: Vendor should specify the system requirement to record live video from 150 IP cameras in D1 resolution at 30 frames per second along with 3 remote/surveillance monitoring with playback video streaming feature in the technical bid				
2.	IP Camera Device License (onVif) with One-year Care Plus		150 No.		

Ref No: ICTS/TIFR/RFQ/65/2018-19 **Date: 20/12/2018**

	Sub Total				
	Add: GST				
	Total Amount in Rupees				
Optional but mandatory to quote:					
	Additional Warranty for the quoted items 3 Years(1+2 Years) comprehensive onsite support & warranty from OEM				
	5 years (1+ 4 Years) comprehensive onsite support & warranty from OEM				

Signature, Name, Address and
Seal of the proprietor / Managing Partner etc.

Name: Seal of the Company:

Designation:

Signature: Date:

For and on behalf of International Centre for Theoretical Sciences-TIFR

Authorized Signatory

Administrative Officer - 'C'
International Centre for Theoretical Sciences
Tata Institute of Fundamental Research
Survey No. 151, Shivakote,
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