

All Bidders

Amendment -X

Subject: Supply , Installation, Testing & Commissioning of Integration and Data Management System for Modular Operation Theatre at Indian Institute of Technology (IIT), Kharagpur.

IFB No. : HSCC/SES/IOT/IIT-Kharagpur/2017 dated 04.01.2018

This has reference to above IFB.

The following Amendment may be noted which shall be treated as part of the tender document and to be submitted duly signed & stamped along with tender.

	Bidders' queries	Amendment
1	To offer the latest 4K routing and archiving technology for transmission and acquisition of surgical videos and images, since this technology is already present and supersedes the now redundant HD (1920x1080p) technology and offers 4 times superior image resolution of the endoscopic image. It helps the achieve superior surgical outcomes and train their students to understand the deep and complex anatomical structures, clearly.	4K routing and archiving technology for transmission and acquisition of surgical videos and images to achieve superior surgical outcomes and train their students to understand the deep and complex anatomical structures, clearly. 4K Video and images are to be transmitted on SDI format.
2	The current technical specifications of the tender insist on a Audio/Video Router system with DVI-I video format which is not capable of managing the 4K videos and images. 4K Video and images are best transmitted on SDI format. Please amend the technical specifications of the Audio/Video Router system from The Audio/Video Router system should have the minimum following outputs. The router should be having 12x12 Digital and upgradable to 18x18 (DVI-I) with open architecture and upgradable to future input / output requirements. The routing system should be able to integrate HD signal (e.g. Room Camera) inside OT. The Audio/Video Router system should have the minimum following outputs. The router should be 20 x 20 (SDI) with open architecture. The routing system should be able to integrate the 4K,3D and HD signal (e.g. Room Camera) inside OT.	The Audio/Video Router system should have the minimum following outputs. The router should be having 12x12 Digital and upgradable to 18 X 18 (DVI-I/SDI) with open architecture and upgradable to future input / output requirements. The routing system should be able to integrate HD signal (e.g. Room Camera) inside OT. All the inputs of routing system should be able to integrate the 4K, 3D and HD signal (e.g. Room Camera) inside OT. Each OT should have its independent Router system and independent Video Conferencing System.
3	The Full High-Definition Dual channel Digital Documentation System for parallel recording of videos/stills from two Video sources should be a high-end computer system based on Windows embedded platform (for security purposes) designed specifically for recording, managing, and archiving surgical images and video in native full HD resolution. The captured full high-definition images & videos can be accessed from the hard drive for printing or saving onto multiple forms of external media which	The Digital Dual Documentation System for parallel recording of videos/stills from two Video sources should be a high-end computer system based on Windows embedded platform (for security purposes) designed specifically for recording, managing, and archiving surgical images and video in native 4K, 3D

	includes CD/DVD, USB Flash Drive & Hospital network It should be able to preview and simultaneously record views from two video sources parallel and archive as single patient file. Patient and image data should be able to call up and distributed to required monitors in the operating room.	and full HD resolution. The captured full high-definition images & videos can be accessed from the hard drive for printing or saving onto multiple forms of external media which includes USB Flash Drive & Hospital network It should be able to preview and simultaneously record views from two video sources parallel and archive as single patient file. Patient and image data should be able to call up and distributed to required monitors in the operating room.
4	Both Monitors on separate boom arm will enable greater movement and placement of the Monitors in the line of sight of Surgeon and Assistants and will improve viewing Capability and ergonomics of the OT.	Monitor 1 shall be at the boom arm and the Monitor 2 shall be fitted with surgeon pendant. Additional one boom arm is Deleted.
5	The routing system should allow selection of multiple views for simultaneous transmission in QUAD and PIP format. PACS dedicated PC has to be provided in each OT for suitable system to receive and transmit the PACS from OT.	The routing system should allow selection of multiple views for simultaneous transmission in QUAD or PIP format. PACS dedicated PC has to be provided in each OT for suitable system to receive and transmit the PACS from OT.
6	Static IP along with LAN network in the OT & seminar hall will be in the scope of Modular Vendor.	Static IP along with LAN network in the OT & seminar hall will be in the scope of Modular Vendor/Client.
7	A telephone system shall be connected to the system and shall allow the surgeon or his Assistant to make telephone calls by Dialling from the touch screen. The telephone system Should be controlled via the central control panel.	The touch panel of Integration system, Video Conferencing System is connected for surgeon to have bi-directional audio/video communication over IP. Another telephone system with Surgeon Control Panel to be provided by the Modular OT Vendor.
8	PTZ camera or Room status camera mounted on wall HDDVI (No upgrade card should be used) Native resolution of camera 1080p – Conference room)	Full High definition wall/ceiling mounted PTZ camera with optical zoom of 10X & more.
9	Provision to connect mobile video conferencing to be provided in the change room of resident, sister, faculty & sister in charge. Mobile video conferencing in a mobile cart to be provided to be used for bi-directional audio/video conferencing with Modular OT.	Two way communication of Audio should be provided from change room of Resident, Sister faculty and sister in-charge room. It shall be achieved used mobile video Video-Conferencing at the desired place.
10	Archiving System-II –DVI –(Should be dual channel recording system)	Archiving System-II –DVI /HDMI–Spare
11	All electrical accessories inside the OT like cable wire, Electrical outlets, switches etc supplied by the contractor should be fire proof of reputed make, certified for Electrical safety.	All electrical accessories inside the OT like cable wire, electrical outlets, switches etc supplied by the contractor should be fire proof of reputed make, certified for Electrical safety.
12	CENTRAL CONTROL SYSTEM 1. The Control Room should take live video feed for all input	All the bi-directional audio-video

	<p>signals from the OT and streams them into a single display for instant status updates. An intuitive touch screen system should allow streaming of multiple Independent Video Feeds</p> <p>2. There shall be a dedicated Server in the control room which shall facilitate bi-directional communication between OT-OT, OT-Doctors Lounge, OT-Conference Room, and OT- out Sideworld through video over IP. All OT's shall be conference Ready with ability having One OT to be in conference at a given point of time.</p> <p>3. All video transmission from OT-OT, OT- Doctors Lounge, OT-Conference Room, OT- Out Sideworld should be in true HD 1080P.</p> <p>4. OT-OT calling should be integrated with router system kept inside the OT and surgeon should be able to transfer audio video signal to the other OT through the touch screen of the integration system using VOIP.</p> <p>5. Each OT should have streaming encoders and decoders to facilitate the streaming of all the available video source to the control room and further ahead to the outside through VOIP.</p> <p>6. The Surgeon in the Operating Room should be able to see the Participants/Users which have logged into the OT.</p> <p>7. The Surgeon in the OT should be able to put the OT in Private Mode if relay of Video and connectivity is not required to a particular user or to all the users</p> <p>8. The Surgeon should have overriding powers to selectively display Video source to a Particular logged in User.</p>	<p>communication shall be done with video conferencing using IP</p> <p>To enable OT-OT, OT-Doctors Lounge, OT-Conference Room and OT- Outside World following to be offered:</p> <p>A) Each OT should be provided with Full High Definition Video Conferencing unit.</p> <p>B) Two nos Mobile VC unit to be provided so that it can have Bi-directional communication from Doctor's Lounge, Conference Room depending upon the availability of mobile VC Cart with any of the OT.</p> <p>C) Multi-Conferencing Server to be offered. It shall connect minimum 20 number of OT's using Video Conferencing simultaneously in Full High Definition (1080p).</p> <p>D) 20 number of Video clients/license for users on desktop & Laptops to be provided for communication with the OT.</p>
13	<p>Uncompressed video-over-IP technology for the digital operating room to flexibly route/distribute video and audio between OR's. Interactive audio and video exchange between OTs and Auditorium, Conference Hall, Seminar room, Board Room, Skills Lab for teaching purposes should be uncompressed. However, compressed video transmission provision through video-conferencing system should be provided to enable distant education / mentoring with remote destinations. The video-conferencing solution to be provided using High definition, High Band Width (more than 10MBPS) and inbuilt MultiConferencing Options with four or more remote locations in real time.</p>	Amended as per SI.No12
14	<p>1.The System shall allow central connectivity of all the OT's in the Hospital using Hospitals LAN Infrastructure.</p> <p>2. The System should do Inter –OT Transmission of Video Signals in True HD 1080p format and must be integratable with Router system. The System should be capable of Streaming True HD videos from each of the OR's to multiple locations like Conference room, Doctors Lounge and Auditorium etc. simultaneously.</p> <p>3. The Surgeon should be able to select and view different video sources in the OR's remotely through a browser based application</p>	Amended as per SI.No12

	<p>on laptop/desktop.</p> <p>4. The system shall provide minimum 50 User Licenses to allow multiple and simultaneous login of browser based application, based on user privileges and secure login details, to remotely view all video sources in the OR's. I.e. all 50 users having secure login IP should be able to select and view any video source from all the Video Signals of all the Integrated OT's simultaneously. Any User should be able to see Endo Cam, Inlight Cam, Room Cam, C-Arm, etc. video sources of any of the OT's at any given point of time.</p> <p>5. The system shall facilitate Tele -conferencing through Central Hub of all the connected OT's with Outside world by using a suitable codec.</p> <p>6. The system placed centrally shall be able to view auxiliary streams, like CCTV Camera views, of the Hospital.</p>	
15	<p>1. Streaming solution inside the OT, Integration Router system and Server in the Control Room should be from the same principle manufacturing company and should be a classified Medical Device.</p> <p>2. No off the shelf IT DVR solution should be provided.</p>	Amended as per SI.No12

The bid submission date is extended from 10.04.2018 to 17.04.2018 and bid security should be valid for 180 days from the date of original bid submission ie. from 12.02.2018.

All other terms & conditions remain unchanged.

Chief General Manager, HSCC (I) Ltd.
For and behalf of Director, IIT, Kharagpur