

HSCC/SES/IOT/AIIMS/2015

Dated: 28.04.2016

All Bidders

Amendment -X

Subject: Supply, Installation, Testing and Commissioning of Integration and Data Management System for Modular Operation Theatres at Surgical Block, All India Institute of Medical Sciences (AIIMS), New Delhi.

IFB No. : HSCC/SES/IOT/Surgical/AIIMS/2015

This has reference to above IFB No. for the Subject works.

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

The amended specification (Vol-IV) and BOQ (Vol-V) are attached.

Bidder should follow the tender terms & condition for the unanswered queries.

The bid submission date is extended from 02.05.2016 to 05.05.2016 and bid security should be valid for 180 days from the date of bid submission ie. from 05.05.2016.

All other terms & conditions remain unchanged.

Chief General Manager

For & on behalf of Director (AIIMS)

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES
NEW DELHI**

e- TENDER

FOR

**Supply, Installation, Testing & Commissioning of Integration and
Data Management System for Modular Operation Theatre at
Surgical Block at All India Institute of Medical Sciences, New Delhi**

VOLUME – IV

TECHNICAL SPECIFICATION

DECEMBER 2015



(Consultants & Engineers for Mega Hospitals & Laboratories)
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Tender No. HSCC/SES/IOT/Surgical/AIIMS/2015

TECHNICAL SPECIFICATION OF INTEGRATION AND DATA MANAGEMENT SYSTEM FOR OT

Scope of Works : Complete plan, design, supply construction, testing and commissioning of **Integration and data management system for Modular Operating Theatre** in accordance with the specifications, bill of quantities. The above works should also entail necessary Turnkey works including providing of free spare parts and service during Defect Liability Period.

1. DIGITAL DISPLAY MONITOR

- 1.1 Should have 2 nos. monitors not less than 26”.
- 1.2 Monitors should be high-definition medical graded flat panel LED color screen
- 1.3 Monitor 1 should be mounted on a boom arm ceiling suspended spring arm, Monitor 2 shall be mounted on the third arm of OT Light (Acrobat 3000) with VESA 100 attachment, both prewired with fiber optic cables and video cables.

2. AUDIO-VISUAL COMMUNICATION SYSTEM

- 2.1 The operating rooms should be connected to the Conference room for Full High Definition (1080p) video conferencing and Full High Definition live transmissions. Full High definition (1080p) Video Conferencing system to be installed in the OT for transmitting surgical images along with Bi-directional Audio-Video Communication between Operation Theatres, between Operation Theatre & Seminar hall and connecting Operation Theatre to anywhere in the world over IP (provided by hospital). Video Conferencing should be integrated with head wearing microphones of the surgeon along with amplifier- speaker of the OT for Audio from the far-site. All the LAN cabling along with Network required for Full High Definition Video Conferencing in the Operation Theatre and Seminar hall shall be provided by the Hospital.
- 2.2 The Audio/Video Router system should have the minimum following outputs. It should be able to integrate HD signal (e.g Room Camera) if available inside OT. It should have digital surgical time out verification check list. It should be able to manage the following Inputs and Outputs

S. No.	Input (Source)	Signal Type	Output (Destination)
1	Endoscopic Camera/Operating Microscope	DVI	Monitor-1
2.	In-Light Camera	DVI/HD-SDI	Monitor-2
3.	Room Camera	S-Video/DVI	Conference Room
4	4 C-Arm/Navigation System	VGA/DVI	Monitor-3
5	Microscope	DVI	Monitor-I
6	Patient vital sign	VGA	Archiving System
7	Archiving System-I	DVI	
8	Free for Future Use	DVI/VGA	
9	Free for Future Use	DVI/VGA	
10	Archiving system-II	DVI	

- 2.3 Audio – Visual system should receive the signal from different sources like Room camera, Endoscopy camera, Overhead camera, Archiving System and flat panel video connections
- 2.4 A pair of high quality echo cancellation active loudspeakers shall be installed within the Operating room along with wireless Mic. Suitable Audio mixer and Audio equalizer should be installed at a most suitable place. Suitable HD-SDI/Fibercable material and a patch panel should be offered as per the position of the Loudspeaker. Additionally this system should communicate with auditorium for one way video and two way audio and this system should be independent of the Video Conferencing system and Hospital LAN/IP. It should not use the CODEC of the video conferencing system. Wireless Mic to be integrated with Full High Definition Video Conferencing & speaker system for audio from the far site during Bi-direction communication. Speaker system should be capable to play music inside the OT.
- 2.5 The surgeon and his team should be able to do Bi-Directional Audio/Video communication from OT to Conference Room using Full High Definition Video Conferencing System.
- 2.6 An HD 1080P (Mobile/stationery) Video Conferencing system along with wireless Mic and speaker system should be offered for external communication from operating room in the Operation Room Complex. The system should be able to transfer high quality real time images and audio signals from multipoint at a minimum speed of 6-7 Mbps. The system should be compatible to both NTSC and PAL system with resolution up to XGA for transmission over the ISDN lines or IP Service. The conferencing system should be controlled via the touch screen/control of the integration/Video Conferencing system from the OT. A dedicated Full High Definition Video conferencing system shall be deployed in the seminar Hall which has to be integrated with Seminar Hall projector & Audio system. Suitable Number / Sets of Transmitters, Receivers and Cables, connectors and accessories should be offered as per the requirement.

3 CENTRAL CONTROL SYSTEM

- 3.1 Medical grade touch screen or tablet (10' or more) for controlling the AV communication, documentation and review/preview of Live images and video sequences from the OT (eg. Images from C-arm, endoscope, OR light camera and Microscope).
- 3.2 Should have provision to record the images and video sequences from OT.
- 3.3 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-7/8 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 includes CD/DVD, USB Flash Drive & Hospital network via separate 12" or more touch screen..
- 3.4 The system should be capable to route any running high-definition surgical videos, which is being recorded in it, onto any display device in an operating room.
- 3.5 It should have at-least 2 TB or more internal Hard Disk Drive (HDD) for in-system archiving. Also, it should have a feature of real time in-procedure DVD burning besides at-the-end procedure DVD burning.
- 3.6 WHO surgical safety check list should be provided.

4 HIGH DEFINITION MONITOR FOR IMAGE DATA MANAGEMENT SYSTEM

- 4.1 Should have individual Full high definition medical/Professional grade 42" or more wall mounted LED monitor, wall mounted (**to display images from PACS**)
- 4.2 It should be possible to call up and distribute Patient and image data to required monitors in the operating room.

5 CAMERA (PTZ) INSIDE OT'S

- 5.1 The bidder should install the room camera inside OTs
- 5.2 It should be Full High Definition, high speed cameras, with 20X-25X zoom lens, with pan tilt with power supply and reliable strong mounting assembly.
- 5.3 It should be integrated to the central control system.

6. OT LIGHT (LED) WITH CAMERA AND MONITOR ARM

Description: Dual Dome **LED** Surgical Lighting System with one dedicated Spring-Arm Suspension (Acrobat 3000) with VESA 100 attachment for Progressive Scan 26" Full HD Medical Grade Flat Panel (Monitor 2) and an Integrated In-Light HD Camera System mounted in the centre of the dome.

i) OT Light

- The light should be a compact LED surgical light with the lowest air shielding area and the best laminar flow index.
- Further Features : -
 - * Cold, infrared-free light to prevent tissue from drying out
 - * Lossless dimming
 - * Precise light distribution
 - * Shock and vibration proof construction
 - * Easiest maneuverability for the surgeon via the sterile grip
 - * Immediate 100% luminous power
 - * Light domes should incorporate reflectors for proper focusing of light beam
 - * Domes should use scratch resistant safety glass
 - * Number of LED in each head : 90 or more
 - * Average LED Life (hours) : 50,000
 - * Color Temperature : 3500K - 4800K (in Kelvins), Variable
 - * Illumination at 1 m (lux) : 1,60,000 per Dome
 - * Colour rendering index > 95
 - * Light-field Size : 20-30 cms
 - * Lighting Depth L1+L2 : 1100mm
- * Should have European CE / US FDA listing

OT Light Camera System

Description : Full High Definition Camera System should be integrated at the centre of one of the domes of this lighting system in order to capture images & video sequences of the surgical procedures.

Such a camera should have the following specifications:

- Signal to Noise Ratio (S/N Ratio) : <50 dB approx.
- Minimum Illumination : <3 lux
- Optical Zoom : 10X or more.
- Digital Zoom : 12X or more
- Power Supply : Through Light.
- Video Output : DVI, HD-SDI
- White Balance & Gain : Automatic/Manual

Such Surgical Light System Should be compliant with relevant European CE /US FDA Standards.

C. Flat Panel Monitor Arm

A Ceiling suspended Boom Arm system having a spring arm with Acrobat 3000 and VESA 100 or more adaptation should be supplied for mounting the 26" Full High Definition surgical flat panel (Monitor1) being provided by by integration vendor.

7. IN ADDITION TO THE ABOVE, FOLLOWING TURNKEY WORKS FOR INSTALLATION AND COMMISSIONING OF MODULAR OT ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR :

- The turnkey work includes all modifications to the built up space provided at the hospital site including civil modifications, electrical works, all cable trenches and railings wherever required, interior decoration, air conditioning duct and other related works of the integration of OT required for the smooth and efficient functioning of the centre. These works shall comply with all relevant safety and standards guidelines. The vendor is fully responsible for installation and commissioning of all equipment mentioned in the tender. Bidders are strongly advised to visit the site for assessment before the submission of tender offer. Demolishing, re-constructing, repainting and replacement, any demolition , reconstruction, necessary anti- microbial painting, replacement to provide complete integration of modular OT.
- Providing and fitting of all video cables for the integration and data management works for the OT.

In addition to the above mentioned equipment/appliances, if the contractor thinks it necessary to include any other equipment/appliances, accessories etc. for the integration of OT then that may be provided and any other necessary work required for satisfactory working of the integration of Modular OT and not mentioned

The sizes are approximate. Minor variations in sizes shall be acceptable subject to prior approval of the Engineer.

Note: All electrical accessories like cable wire, electrical outlets, switches etc supplied by the contractor should be fire proof of reputed make, certified for electrical safety.

- **Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of HSCC.**
- **The contractor should provide test certificate for all material used for integration of Modular OT**
- **The contractor should prepare and submit layout plans and Data Flow chart for integration of Modular OTs, Electrical Wiring and network, to HSCC for approval before beginning of supply and installation and As-built drawing after installation.**
- **The contractor shall be responsible for the complete works including submission of working drawing and walk through view.**
- **The contractor should provide complete Operation Manual/Equipment & parts manual/Service manuals for all systems and subsystems.**
- **The contractor shall bear the cost of Final electrical safety test, system test and calibration to be done by authorized person with test instruments.**
- **Training for 7 working days should be provided by the contractor.**
- **Third party quality certification of the integration items from SGS/TUV(sud)/Lloyds should be submitted by the contractor with contract No (Contract No. in the third party certificate should be mentioned).**

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**Supply, Installation, Testing & Commissioning of Integration and
Data Management System for Modular Operation Theatre at
Surgical Block at All India Institute of Medical Sciences, New Delhi**

VOLUME –V

BILL OF QUANTITY (BOQ)

DECEMBER 2015



(Consultants & Engineers for Mega Hospitals & Laboratories)
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PHONE : 0120-2542436, 2542437 FAX : 0120-2542447
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Tender No. HSCC/SES/IOT/Surgical/AIIMS/2015

BILL OF QUANTITY						
Package - Supply, installation, testing & commissioning of INTEGRATION AND DATA MANAGEMENT SYSTEM FOR OT and Defect Liability Period. Modular OT - (6th floor-6 Nos(1, 2,3,4, 5,6) 7th floor -6 Nos(1,2,3,4,5,6)						
PART-I						
Item No.	Description	Unit	Qty	RATE IN FIG in Rs	RATE IN WORDS in Rupees	AMOUNT in Rs.
1	2	3	4	5	6	7
1.0	DIGITAL DISPLAY MONITOR Complete with all accessories as per technical specification	Nos	24			
2.0	AUDIO-VISUAL COMMUNICATION SYSTEM Complete with all accessories as per technical Specification. Includes the following:	Nos	12			
2a)	Set of Microphone, Amplifier/mixer, and Speaker for each OT.	Nos	12			
2b)	Full High Definition Video Conferencing System System for OT Complex.	Nos	12			
2c)	Dedicated Full High Definition Video Conferencing system for Seminar Hall	Nos	1			
2d)	Digital Signal Processor with 12 or more number of inputs for echo & feedback cancellation along with mixing of audio from each OT & transmitting it to the auditorium.	Nos	1			
2e)	Full High Definition Video switcher 12 or more number of inputs along with Full HD cabling, transmitters/receivers for transmission from each OT & transmitting it to the auditorium.	Nos	1			
3.0	CENTRAL CONTROL SYSTEM Complete with all accessories as per technical specification	Nos	12			
4.0	HIGH DEFINITION 42" or more LED Monitor for Image DATA MANAGEMENT SYSTEM. Complete with all accessories as per technical specification.	Nos	12			
5.0	CAMERA (PTZ) INSIDE OT'S Complete with all accessories as per technical specification	Nos	12			
6.0	OT LIGHT (LED) WITH HD camera and Spring Arm Acrobat 3000 or more with VESA 100 or more. Complete with all accessories as per technical specification	Nos	12			
7.0	Ceiling suspended Boom Arm system having a Spring Arm with Acrobat 3000 and VESA 100 or more. Complete with all accessories as per technical specification	Nos	12			
7.0	Turnkey works- Complete with all accessories as per technical specification.	Lot	12			
SUB TOTAL Rs.						

PART-II							
Item No 1	Description	2	Unit 3	Qty 4	Unit Rate In Rs (in Figure) 5	RATE IN WORDS 6 In Rupees	AMOUNT 7 in Rs.
	Comprehensive Maintenance Charges for the complete INTEGRATION AND DATA MANAGEMENT SYSTEM FOR OT appliances including spares, repair or replacement of defective equipments/parts, tolls, tackles, accessories, consumables, labour charges etc. complete in all respect						
	1st Year		Job	1			
	2nd Year		Job	1			
	3rd Year		Job	1			
	4th Year		Job	1			
	SUB TOTAL Rs.						
	SUMMARY OF RATES QUOTED						
	TOTAL (PART-I)						
	TOTAL (PART-II)						
	Grand Total Amount (PART - I + PART - II) (in Figures) :-						Rs.
	In Words : Rupees						