

**AMENDMENT-II**

**Ref.: IFB No. HSCC/SJH/Medical Equipment/2016/31 Dated 23.06.2017**

Sub.: Procurement of Medical Equipment for New Emergency Block & Super- Specialty Block at Safderjung Hospital, New Delhi.

It is informed that for Item no.1, 3 Tesla MRI Unit (1no.) and Item No. 3 Syringe Infusion Pumps (272no.), their Pre-bid Meeting queries submitted to Safderjung Hospital are being examined and amendments are awaited. It is proposed to extend the bid submission date from 21.07.2017 to 28.07.2017

Regarding Item No. 2, Digital Flat Panel Radiography System (1no.), its amended Specifications have been received from Safderjung Hospital, which are mentioned below. Its approved Site Layout Plan has also been received from Safderjung Hospital which is attached.

The amendment is to be issued for Item No. 2, Digital Flat Panel Radiography System (1no.) and it is proposed to extend the bid submission date from 21.07.2017 to 28.07.2017.

**REVISED / AMENDED SPECIFICATIONS FOR DIGITAL FLAT PANEL RADIOGRAPHY SYSTEM**

Latest state of the art Fully digital radiography system. Mention the year of introduction of the quoted model in the International market.

The quoted model (and not the individual components) should be US FDA and CE approved. In the system 2 out of 3 major components (Tube, detector, and generator) should be manufactured by the quoting vendor themselves. Mention the manufacturer of the third component and provide the MoU with the other party for the same. Vendor should have experience of supplying and maintaining similar DR equipment in the last 5 years in major government hospitals. (Certificates of supply and satisfactory performance to be enclosed Other certificates are not acceptable).

A) The quoted model should have AERB type approval certificate. In case the model is being imported for the first time NOC from AERB must be available & AERB type approval certificate must be obtained within 8 weeks of installation by the vendor who receives the order.(Vendor must give undertaking for obtaining AERB type approval certificates with tender quotation.

Fully digital radiography system with two Flat panel detectors with Cesium Iodide Scintillator and with Automatic Exposure control (AEC) capable of performing exposure in vertical, horizontal and oblique positions to perform all skeletal body (Upright and Lying down) radiographs. The unit should be completely integrated along with auto features in quality control & performance, AEC, APR, fully automated positioning system with autotracking for horizontal table and for vertical stand studies.

B) Detailed Specification of X-Ray Flat Panel Detectors (Quote the latest model of flat panel detectors)

Note: The Technical Specifications should be supported by compliance statement with page number of original Technical Data Sheet and any additional information from the manufacturer.

- 1 Use of matrix flat panel imager (Radiography).
  - 2 Name of the Detector model and manufacturer to be provided.
  - 3 Assembling should be Monolithic panel/tiles.
  - 4 Active Matrix Flat Panel detectors should be based on Indirect Conversion process
  - 5 Scintillate material used for flat panel detector should be Thallium doped Cesium iodide (CsI:TI).
  6. Semi Conductor material (Photodiode) should be Amorphous Silicon.
  7. Charge Read Out should be Thin Film Transistor Array (TFT Array).
  8. Detector Size should be 40 cm x 40 cm or more (more will be preferred).
  9. Array Size be 2000x2000 pixel or more.
  10. Pixel Pitch should be 0.2 mm or less.
  - 11 Image depth should be 14 Bits or more.
  12. Detector Quantum Efficiency (DQE) should be at least 65%
  13. Tube assembly movements to be automatically synchronized with both the horizontal and vertical detectors movement.
  14. Two Digital flat panel detector systems with detector fixed & integrated into the Bucky table as well as wall stand.
- Due to extensive workload a sturdy system is necessary, therefore wireless or tethered detector is not acceptable.  
Wireless detector is also not acceptable due to risk of theft and damage.
15. Mention the weight of the detector.
  16. System warm up time should be mentioned.

C) Specification of Acquisition Work station:

17. Monochrome LCD monitor with protect panel from dust and scratches.
18. Manufacturers name and model to be provided.
19. Viewing angles (Horizontal & Vertical): 170 Deg. or more.
20. Size of Monitor (diagonal) 19" or more.
21. Mouse control & touch screen display.
22. Mention all the standard accessories to be supplied with the monitor.
23. Hard disc storage: 4000 or more images.
24. Post Acquisition, Image processing and Display: Mention the time.
25. The system should have auto protocol select.

D) X-Ray Table Specification :

26. Four way motor driven floating horizontal table top of carbon fibre or its equivalent, compact bucky table with digital flat panel detector should be provided.
27. Mention the range of vertical, horizontal and longitudinal movements of the table.
28. Removable grid for SID of 100 cms for horizontal table applications.
29. Maximum patient weight - 200 kgs or more.
30. Table Top length: 200 cm or more.
31. Foot switches for – adjusting height, longitudinal movement side to side movements and for locking.
32. Automatic detector alignment should be possible on the table.

E) Vertical Stand

33. Vertical movement: Motorized with foot switch facility.
34. The vertical movement to be servo coupled to the movement of the X-Ray tube (simultaneous movements).
35. Provide two removable grids with Grid Ratio of 12:1 or more.

36. Motorized Tilting vertical detector facility should be available from (-20) to (+90) degrees).
37. Maximum height from the floor to the centre of detector should be more than 175 cm.

F) Ceiling Mounted X-Ray Tube

38. X-Ray tube suspended on a telescopic column.
39. The movement of X-Ray tube should be motorized and should be possible in all directions: Specify the travel range and angulations in degrees.
40. It should have capability of manual override.
41. Provision for control panel on patient side.  
It should have autopositioning and autotracking function.

G. X-Ray Generator

42. a) Invertors Type Constant Potential high Voltage Generator (High Frequency X-Ray Generator) Microprocessor controlled with constant output and low ripple frequency.
- b) Power: 80 KW or more.
- c) 1000mA at 80kv or more according to IEC standard.
- d) Automatic exposure control with 3 or 4 chambers.
- e) overloading protection should be available.
- f) minimum exposure time should be 1 milli sec or less.

H) X-Ray Tube

- 43) Mention the make of the X-Ray tube.
- 44) A dual focus Rotating anode with high speed of 8000 rpm or more, compatible with the provided generator.  
Focal spots of following sizes-  
Large-1.2mm or less.  
Small 0.6 mm or less.
45. Anode Heat storage capacity 300 KHU or more.
46. Inherent filtration to be provided. Tube protection against overload should be available. Please specify tube rotation at vertical and horizontal axes.

i) Filter and collimator

- a) It should have Inherent filtration.
- b) Mention details of added filtration.
- c) Square collimation –automatic type
- d) Display of collimation.
- e) Rotation of +/- 45 degrees or more.

J) Advanced Clinical Application Facility :

47. Auto Image stitching / image pasting soft ware and necessary hardware on vertical and horizontal bucky, for complete spinal column, extra long leg image & other long body parts, should be a standard feature in the machine.

K) Two additional Workstations for Image viewing, Post Processing, reporting and documentation : Qty (2 Nos.)

- High Speed processor based workstation 2.4 GHz or higher processing speed with post processing capability. The workstation should have 8 GB RAM or more. It should have its independent memory & hard disk of at least 1 TB. It should have a high resolution medical grade 2 MP monitor of size 21" or more capable of simultaneously viewing or performing post processing functions. Both Workstations should be configurable with Digital X- Ray or Digital fluoroscopy System & all other Imaging equipments in New Emergency block of any make. Latest operating system should be available.

48. Addition of Anatomical markers.

49. Demographic Correction.

50. Image Annotation.

51. Window and Level adjustment.

52. Electronic Collimation.

53. Magnification, Image Rotation.

54. Application for comparison with standard (Look up) tables should be available. Should have CD and DVD writing facilities.

It should support storage of images on CD or DVD.

System should be DICOM 3 or higher version. It should have features to connectivity to any network in DICOM format.

Easy integration and networking should be possible with any other existing future networking including other modalities, HIS, RIS and PACS at no extra cost.

Accessories

55. Dry chemistry camera of 500 DPI or more should print at least 3 sizes of films at one time i.e. 10x8, 10x12, 10x14, 14x14, 14x17 inches. 500 films of 14x17 size should be supplied along with camera. It should be capable of being networked with all modalities of all other Imaging equipments in New Emergency block of any make.

56. Compression belt (Pediatric and adult) (2 each).

57. Patient hand grip.

58. Patient support bar for vertical stand to be provided.

59. Lead Glass 120 cm x 100 cm to be provided.

60. Provide Voltage stabilizer for the entire system including both workstation.

61. UPS of appropriate rating along with batteries (with half hour back up) for the acquisition workstation of reputed brand to be provided.

62. Radiation protection equipment:

a. light weight lead aprons -5,

b. gonad shields-4 ( 2 Adult, 2 Pediatric)

c. lead goggles-4

d. thyroid shield -4.

63. PA system for calling patient.

64. lead aprons hanging unit – small size for 5 aprons.

65. Necessary furniture like table for operating console ,4 standard and two revolving office chairs, examination stool and foot step.

L) Other Terms and Condition

66. Some specification which are not qualified, the buyer reserves the right to evaluate the specification based on the details given by the firm.

67. The equipment should be under comprehensive warranty for 5 years for all items for which order is placed including turnkey works from the date of successful installation and handing over with an uptime warranty of 98% and extension of warranty period by double the down time in excess of 2%.

68. Please quote Comprehensive maintenance Contract (Including X-Ray Tube and detector) and all other items for which order is placed including turnkey works for next 5 years after successful completion of warranty with 98%uptime and extension of CMC period by double the down time in excess of 2%.

69. All software up-gradation will be provided free of cost to the institute as and when available

70. Operating manual & service manual along with schematic diagram to be provided

71. There will be an agreement between the buyer and seller for comprehensive maintenance contract at the time of finalization of purchase of equipment.

72. Only principal or their authorized principal agents should participate in the tender. Principal manufacturer will have to give an undertaking of availability of spares as well maintenance of services for 10 years in case there is any change of local agent.

73. Company should provide adequate application training of at least one month or as long as required to the Radiologists & Technical staff.

74. All the civil, Electrical alternation / fixation pertaining to the installation of the machine will be the responsibility of the firm.

L) Accreditation and Quality Certification

75. The quoted model should be AERB type approved and CE & US FDA certified. (as detailed in A of the Technical specification)

76. The Bidder must have been in business of Flat Panel Detector equipment for at least last five years with supply/installation in major government hospitals. (enclose copies of supply order and satisfactory performance reports)

M) For Digital Flat Panel Radiography System

77. The new latest,amended layout plans (with dimensions) allocated has already been uploaded earlier. Air-conditioning of appropriate strength/capacity (tonnage) in the area as required shall be done. Additional standby split air conditioner(s) of appropriate strength/capacity (tonnage) to be fixed in the main equipment rooms.

78. Civil work: In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor as shown in the layout plan after approval by the **Atomic Energy Regulatory Board (AERB)** shall be executed as per approved makes specified in Amendment no. XX dated 04.2.2016.

The walls of whole Complex should be finished acrylic/plastic emulsion (for approved makes refer Amendment no. XX dated 04.2.2016) and should be finished with vitrified tiles (for approved makes refer Amendment no. XX dated 04.2.2016) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.

The flooring in the Fluoroscopy/DR complex should be as per **AERB regulations**. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (for approved makes refer Amendment no. XX dated 04.2.2016). Colour as approved by Purchaser/HSCC shall be provided.

Whole area of Complex as in the layout plan approved by the **AERB** shall be finished with fire resistant false ceiling material (for approved makes refer Amendment no. XX dated 04.2.2016).

All the doors should be provided with necessary fittings with hydraulic type door closures (for approved makes refer Amendment no. XX dated 04.2.2016) and with Mortised locks (for approved makes refer Amendment no. XX dated 04.2.2016).

Main door of the complex in the corridor shall be in glazed aluminium powder coated with adequate thickness of glass with etching work wherever required. Colour of aluminium powder coating shall be got approved from Purchaser/HSCC before execution of works.

Lead Glass window of adequate size will be fixed as per **AERB guidelines** in the console room. Proper signage both external and internal to be done.

79. Electrical work: The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes mentioned in Amendment no. XX dated 04.2.2016. The electrical works should have minimum two separate earthing with copper plate to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.

Amendment to be issued will be uploaded on websites [www.tenderwizard.com/HSCC](http://www.tenderwizard.com/HSCC) & [www.hsccltd.com](http://www.hsccltd.com).

All other tender terms and conditions remain unchanged.

Medical Superintendent  
VMMC& Safdarjung Hospital

MODIFIED THE RADIOLOGY DEPARTMENT AS PER THEIR REQUIREMENTS ON 07-10-2016.

REMODIFIED THE RADIOLOGY DEPARTMENT AS PER THEIR REQUIREMENTS ON 08-02-2017.

*Handwritten:* 12/17/17  
12/17

