

18-02-2020

Amendment No. 01**Sub: Amendment to the referred tender enquiry****Ref.: Tender Enquiry Document HITES/PCD/PMSSY-IV/11/CAD/19-20 dated 31-Jan-2020**

Following changes are being incorporated in the above referred Tender Enquiry Document.

SECTION VII**Technical Specification**

Tender Page & Para	TENDER SPECIFICATION	READ AS
Item No 01 Bi-Plane Cardiovascular & Neuroangiography System with DSA		
Pg 44	Latest state of the art, bi plane floor and ceiling mounted C-arm/G-arm Cardiovascular & Neuro-angiography system with flat detector technology digital imaging system for adult and pediatric diagnostic and interventional cardiovascular procedures, including valvuloplasty and vascular angiography and neurovascular applications and online DSA.	The system must be latest generation with latest introduction to the market , state of the art, bi plane floor and ceiling mounted C-arm/G-arm Cardiovascular & Neuro-angiography system with flat detector technology digital imaging system for adult and pediatric diagnostic and interventional cardiovascular procedures, including valvuloplasty and vascular angiography and neurovascular applications and online DSA.
Pg 45 Para 4.2	The X-Ray tube should have Anode heat storage capacity of at least 2.0 MHU or more to run continuously for 6-8 hours without shutting off.	The X-Ray tube should have Anode heat storage capacity of at least 5.0 MHU or more to run continuously for 6-8 hours without shutting off with appropriate anode heat dissipation rate
		Added para: 4.3 X ray tube must have Secondary grid switching in both fluoro & cine
Pg 45 Para 6.6	System should have on-line & off-line validated coronary analysis and ventricle analysis programme. The software should have Auto calibration facility for stenosis measurement with geometrical and densitometry calculations. The analysis should be possible from table side in the examination room and from the control room.	System should have on-line & off-line validated coronary, ventricle & Vascular analysis programme . The software should have Auto calibration facility for stenosis measurement with geometrical and densitometry calculations. The analysis should be possible from table side in the examination room and from the control room.

Tender Page & Para	TENDER SPECIFICATION	READ AS
Pg 46 Para 7.1	The monitor display should be offered with single TFT monitor of 56" or minimum 8 megapixel resolution. Facility of simultaneously display of at least 8 images source inputs (analogue/digital) should be available to display reference image, patient hemodynamic monitoring, 3D acquisition imaging and images from other sources like CT/MR. The monitor display system should be ceiling suspended and should allow flexibility in having different image layouts of desired/different format sizes.	The monitor display should be offered with single TFT monitor of 55" or minimum 8 megapixel resolution. Facility of simultaneously display of at least 8 images source inputs (analogue/digital) should be available to display reference image, patient hemodynamic monitoring, 3D acquisition imaging and images from other sources like CT/MR. The monitor display system should be ceiling suspended and should allow flexibility in having different image layouts of desired/different format sizes.
10	CATH LAB Recording System (Electro-Physiology and Hemodynamic Recorder)	
Pg 48 Para 10.1.e	Time and amplitude measurement with electronic calipers	Time and amplitude measurement
Pg 48 Para 10.4	Necessary interface and viewing facility with the large 56" display monitor in the examination room and console room.	Necessary interface and viewing facility with minimum 55" display monitor in the examination room and console room.
Pg 48 Para 10.6	EP Work station (Electrophysiology Stimulator & RF Ablator system should be provided.)(price to be quoted separately)	Electrophysiology Stimulator & RF Ablator system should be provided from same manufacturer. (price to be quoted separately)
Pg 48	12 Accessories to be supplied: Para 12.1 to 12.12	Deleted
		Added para:12. Essential Accessories : Note: BOQ will be modified accordingly
		1. Foot switch for fluoroscopy and acquisition
		2 Ceiling suspended operation lamp.
		3 Lead glass (120 x 100cm) (as per international radiation protection standard)
		4 Radiation shield ceiling and table mounted/suspended. (as per international radiation protection standard)
		5 High power contrast injector (floor/ceiling mounted) with 200 syringes.

Tender Page & Para	TENDER SPECIFICATION	READ AS
		6 Radiation protective apron (BIS/US FDA Approved/European CE; Lead-Free, light weight) of high quality with hangers: (Total quantity 20: Front type - 10, Wrap around – 6, Two-piece type - 4 and Lead Cap - 4). It should be state of art light weight with a lead equivalent of 0.5mm.
		7 Two hanger stands to hold 5 apron each and two wall mounted hangers to hold 5 aprons each.
		8 Thyroid guards 10 in number with lead equivalent of 0.5mm
		9 Lead spectacles 10 in numbers.
		10 Lead lined gloves: Two pairs
		11 Intercom between exam room and control room.
		12. One Laser Network Printer of high resolution (at least 1200 dots per inch) with minimum 128MB memory and 1200 dpi should also be offered for high quality image printing.
		13 ETO sterilizer: of approved make at least 4.5 cu ft. – One (Price to be quoted separately)
		14. Intra-aortic balloon pump (IABP) system – One. State of art, latest, imported model with two gas cylinders and two balloons. (Price to be quoted separately)
		15 ABG Machine: One no. for measuring Hb, electrolytes, bicarbonate, Po ₂ , Pco ₂ and oxygen saturation etc. during cardiac catheterization complete with all accessories like rinse solution, calibration solution etc for at least 100 procedures. (Price to be quoted separately)
		16. On line UPS for completed cath lab with back up of at least 30 minutes. Emergency lighting should also be on UPS.
		17 Should meet all national and international safety standard and comply with BARC and AERB guidelines

Tender Page & Para	TENDER SPECIFICATION	READ AS
		18 Defibrillator with external pacer(BIS/US FDA/European CE with 4 digit notifying body no) : 1 Nos
		19 Act machine: 1 Nos
		20. Anaesthesia Workstation: Compact three gas Anaesthesia workstation with an integrated Ventilator for infants/pediatric to adult patients, Airway Monitor and Anaesthesia Monitor. (BIS/US FDA Approved/European CE with 4 digit notifying body no) . (Price to be quoted separately)
		Added para: Radiation Protection
		1. The system should have integrated computer controlled (preferably automatic) X-Ray Beam filtering with copper filters of various size from 0.2 mm to 0.9 mm to reduce soft radiation for fluoroscopy and acquisition mode. Please list the special filters available.
		2. The system must have latest generation software/hardware packages for radiation safety of operator and patient with documentation of radiation dose per fluoroscopy/cine time like ALURA CLARITY or CARE & OPTIC or similar other equivalent.
		3. System should meet all National & International safety standards & comply with BARC & AERB guidelines.
Item No 02 Single plane cardiovascular Catheterisation with digital subtraction angiography lab		
Pg 55	Latest state of the art single panel floor mounted flat detector technology cardiovascular angiography and digital imaging system for diagnostic and intervention cardiovascular procedures with digital subtraction angiography (DSA). The system should be US FDA or European CE Approved. The lab must have the following specification.	The system must be latest generation with latest introduction to the market, state of the art single panel floor/ceiling mounted flat detector technology cardiovascular angiography and digital imaging system for diagnostic and intervention cardiovascular procedures with digital subtraction angiography (DSA). The system should be BIS/ US FDA or European CE Approved. The lab must have the following specification.
Pg 55 Para D.2	Anode heat storage capacity at least 2.4 MHU or more	The X-Ray tube should have Anode heat storage capacity of at least 5.0 MHU or more to run continuously for 6-8 hours without shutting off with appropriate anode heat dissipation rate

Tender Page & Para	TENDER SPECIFICATION	READ AS
	Suggested by the bidder	X ray tube must have Secondary grid switching in both fluoro & cine
Pg 56 Para E.6	The DQE of detector should be > 75%	The DQE of detector should be >= 75%
F	Digital Image system	
Pg 56 Para 2	Gray scale depth of at least 8 bit pixel should be possible at all farm speed	Gray scale depth of at least 8 bit pixel should be possible at all frame rate
Pg 56 Para 4	Medical grade large high definition display (app 56 inches) to display live, reference, 3D,CT like image, Hemodynamic and EP waveforms with layout selection from table side control or separate touch screen module in exam room	Medical grade large high definition display (55" or more) to display live, reference,3D,CT like image, Hemodynamic and EP waveforms with layout selection from table side control or separate touch screen module in exam room
I	HEMODYNAMIC AND EP STATION (Price to be quoted separately):	
Pg 58	Time and amplitude measurement with electronic calipers	Time and amplitude measurement
Pg 58 Para I.7	Stimulator and RF ablator	Electrophysiology Stimulator & RF Ablator system should be provided from same manufacturer. (price to be quoted separately)
	Essential accessories	
Pg 59 Para 20	Anaesthesia Workstation: Compact three gas Anaesthesia workstation with an integratedVentilator for infants/pediatric to adult patients, Airway Monitor and Anaesthesia Monitor. (US FDA Approved/European CE with 4 digit notifying body no) . (Price to be quoted separately)	Anaesthesia Workstation: Compact three gas Anaesthesia workstation with an integratedVentilator for infants/pediatric to adult patients, Airway Monitor and Anaesthesia Monitor. (BIS /US FDA Approved/European CE with 4 digit notifying body no) . (Price to be quoted separately)
Pg 59 Para 23	The system must have latest generation software/hardware packages for radiation safety of operator and patient with documentation of radiation dose per fluoroscopy/cine time	The system must have latest generation software/hardware packages for radiation safety of operator and patient with documentation of radiation dose per fluoroscopy/cine time like ALURA CLARITY or CARE & OPTIC or similar other equivalents.
		Added para: Knee controlled hand free scrub station with disinfectant/ soap dispenser.-1 Nos BOQ will be modified accordingly

Tender Page & Para	TENDER SPECIFICATION	READ AS
		Added para: Fire extinguisher Dry CO2 ABC type as required for the building safety. 2 Nos. BOQ will be modified accordingly
Item No 03 High End Echocardiography system (4D ECHO)		
Pg 65 Para 6	System should be supplied with the 2KVA online UPS	System should be supplied with the 2KVA online UPS with 30 min backup
Pg 66 Para 12	Should be able to perform advanced quantification measurements like strain & Strain rate quantification. Should measure the myocardial velocity and derives the strain rate and strain along user-defined M-lines, Capable of drawing up to 3 M-lines at a time, Capable of sub-dividing each M-line into 8 sub-regions or according to user defined sub-region sizes, Point of interest tool obtains values from any point on the M- mode display. In addition to the tissue Doppler based strain system should have 2D based strain like VVI, AFT and TMQ should be offered. These should be offered both on the system and on a licensed workstation. OFF-CART workstation (both licensed hardware and licensed software) should be quoted and highlighted in the technical bid.	Should be able to perform advanced quantification measurements like strain & Strain rate quantification. Should measure the myocardial velocity and derives the strain rate and strain along user-defined M-lines, Capable of drawing up to 3 M-lines at a time, Capable of sub-dividing each M-line into 8 sub-regions or according to user defined sub-region sizes, Point of interest tool obtains values from any point on the M- mode display. In addition to the tissue Doppler based strain system should have 2D based strain like VVI, AFT and TMQ/CMQ should be offered. These should be offered both on the system and on a licensed workstation. OFF-CART workstation (both licensed hardware and licensed software) should be quoted and highlighted in the technical bid.
Pg 66 Para 21	Following Transducers (Frequency tolerance +/-2MHz) should be supplied with the system	Following Transducers (Frequency tolerance +/- 1MHz) should be supplied with the system
Pg 66 Para 21.1	4D (Live 3D) Echo matrix transducer for adult 4D (Live 3D) with frequency ranging from 1-5±1 MHz. This probe must support for exceptional 4D (Live 3D) image quality on the matrix array transducer to simultaneous display of two real-time live highquality image planes. This transducer should have either single crystal technology or pure wave technology for excellent Image quality on difficult to image patient. Please mention the crystal technology used in the transducer. Systems offered with normal transducers for adult echo are liable for rejection.	4D (Live 3D) Echo matrix transducer for adult 4D (Live 3D) with frequency ranging from 1-5±1 MHz. This probe must support for exceptional 4D (Live 3D) image quality on the matrix array transducer to simultaneous display of two real-time live high quality image planes. This transducer should have either single crystal technology or pure wave technology or matrix or equivalent for excellent Image quality on difficult to image patient. Please mention the crystal technology used in the transducer. Systems offered with normal transducers for adult echo are liable for rejection.

Tender Page & Para	TENDER SPECIFICATION	READ AS
Pg 67 Para 21.7	Paediatric 2D TEE probe 1 no	Paediatric 2D TEE probe 1 no (Optional)
		Added para: Linear Probe with 3-12 Mhz
Item No 04 Echocardiography System with Advanced 2D Facility		
Pg 68 Para 2.1	Latest generation Electronic Phased array Colour Doppler system with Minimum 50000 Electronic independent channels. System should be DICOM ready and capable of being interfaced with HIS/RIS/ PACS.	Latest generation Electronic Phased array Colour Doppler system with Minimum 5,00,000 Electronic independent channels. System should be DICOM ready and capable of being interfaced with HIS/RIS/ PACS.
Pg 68 Para 3.1	Latest generation Electronic Phased array Colour Doppler system with Minimum 50,000 Electronic independent channels	Latest generation Electronic Phased array Colour Doppler system with Minimum 5,00,000 Electronic independent channels
Pg 68 Para 4.e	Separate TEE probe for adult and pediatric echocardiography	1. Adult TEE Probe - 1 no 2. Pediatric TEE probe - 1 no (Optional item, price to be quoted separately)
Pg 68 Para 9	Frame rate should be 500 FPS or more	Frame rate should be 1000 FPS or more
Pg 68 Para 14	Monitor should be 15" or more, high-resolution colour Monitor.	Monitor should be 21" or more , high-resolution colour Monitor.
Item No 05 Portable Echocardiography System		
Pg 71 Para 8	Should have maximum color Doppler frame rate of 750fps .Should have an on –board workstation for storage and review of all exams i.e. 2D Doppler, Loops etc.	Amended as: Should have minimum color Doppler frame rate of 750fps .Should have an on –board workstation for storage and review of all exams i.e. 2D Doppler, Loops etc.
Pg 72 Para 21	4D TEE adult probe with appropriate 4D software (Optional)	4D TEE adult probe with appropriate 4D software
BOQ.7	4D TEE adult probe with appropriate 4D software (Optional)	4D TEE adult probe with appropriate 4D software
Item No 06 TMT Machine (Stress test system)		
Pg 73 Para 3.4	Display of real time 12 lead diagnostic qualities ECG waveform, average complexes beat of all 12 leads with superimposed color comparison along with digital value of ST level and slope. Print the graph on the recording paper.	Display of real time 12 lead diagnostic qualities ECG waveform, average complexes beat of all 12 leads with superimposed color comparison along with digital value of ST level and slope. Print the graph on the recording paper either on thermal paper or A4 paper.

Tender Page & Para	TENDER SPECIFICATION	READ AS
Pg 73 Para 3.11	Heavy Duty Treadmill: Noise free Treadmill with speed ranging from 0.5 to 20 kmph and grade of 0 – 22%. The system and treadmill should be from the same manufacturer.	Heavy Duty Treadmill: Noise free Treadmill with speed ranging from 1.3 to 15 kmph and grade of 0 – 22%. The system and treadmill should be from the same manufacturer.
Pg 74 Para 4	Defibrillator	Deleted
Pg 74 Para 4.1	Defibrillator should be Bi- Phasic, light weight and latest model	Deleted
Pg 74 Para 4.2	Should monitor vital parameters and display them	Deleted
Pg 74 Para 4.3	Should print the ECG on thermal recorders.	Deleted
Pg 74 Para 4.4	Should work on both Manual mode upto 200J or more and Automated external defibrillation (AED) mode up to 150 J or more.	Deleted
Pg 74 Para 4.5	Should be capable of doing synchronized & asynchronized cardioversion	Deleted
Pg 74 Para 4.6	Should be capable of doing synchronized & asynchronized cardioversion	Deleted
Pg 74 Para 4.7	Should have defibrillator testing facility	Deleted
Pg 74 Para 5	Digital NIBP	Integrated automated BP measurement with stress test system
Pg 74 Para 7.1	The treadmill and software should be USFDA /European CE (with 4 digit notified body number).	The treadmill and software should be BIS /USFDA /European CE (with 4 digit notified body number).
		Added Para: Suitable Trolley - 1 no
BOQ.6	NIBP 1 Nos	Integrated automated BP measurement with stress test system - 1 no
BOQ.7	Defibrillator Bi- Phasic 1 Nos	Deleted
BOQ .8	Added para	Suitable Trolley - 1 no
Item No 07 Holter system with work station		
Pg 75 Para 7.c	T wave alternans	Deleted
Pg 76 Para 17.1	3 Digital recorder should have 128 samples/sec/channel for recording and storage 1000/sec/channel for VLP.	3 nos Digital recorder per workstation; should have 128 samples/sec/channel for recording and storage 1000/sec/channel for VLP.

Tender Page & Para	TENDER SPECIFICATION	READ AS
Pg 76 Para 19	Product should have European CE with 4 digit notifying body no/USFDA Approved certificate to be provided.	Product should have European CE with 4 digit notifying body no/USFDA /BIS Approved certificate to be provided.
Item No 10 Ambulatory BP Monitor		
Pg 81 Para 3	Display Range : 0 - 300mmHg	Display Range : 25 - 260 mmHg
Pg 81 Para 4	Measurement Range: Systolic 60 - 280mmHg (min. division: 1mmHg) Diastolic 40 - 160mmHg (min. division: 1mmHg) Pulse 30-200bpm (min. division: 1bpm)	Measurement Range: Systolic 60 - 260 mmHg (min. division: 1mmHg) Diastolic 40 - 160mmHg (min. division: 1mmHg) Pulse 40 -200bpm (min. division: 1bpm)
Pg 81 Para 11	Weight: <250gm	Weight: <250gm including batteries
Pg 81 Para 13	Cuffs: Adult Cuffs, Left Arm (7.9" - 12.2" (20-31cm) (Included) Large Cuffs, Left Arm (11" - 14.2" (28-36cm) (Included) Small Cuffs, Left Arm (5.9" - 8.7" (15-22cm) (Included) Adult Cuffs, Right Arm (7.9" - 12.2" (20-31cm) (Included) Large Cuffs, Right Arm (11" - 14.2" (28-36cm) (Included)	Cuffs (Total 6 nos per system): Adult Cuffs(7.9" - 12.2" (20-31cm) - 2 nos Large Cuffs (11" - 14.2" (28-36cm) - 2 nos Small Cuffs (5.9" - 8.7" (15-22cm) - 2 nos
Pg 81 Para 18	Monitor:32" LCD/LED	Monitor: 23" or more LCD/LED
		Added para: Suitable Trolley 1 no
		Added para: 5 recorders per system
Item No 11 Tilt Table		
Pg 82 Para 4	Table should tilt min 80 degree	Table should tilt 12-85 degree
Pg 82 Para 5	tilt tables motor should have 12- 14 mm/sec speed at unloaded and 6 -7 mm/sec speed at full load.	Tilt tables motor should have 12- 14 deg/sec speed at unloaded and 6 -7 deg/sec speed at full load.
Pg 82 Para 12	Table should have work table attachment.	Tilt Table should have patient weight carrying capacity of 150 kg.
	Note: Wherever quality standards like US FDA/European (with 4 digit notified body) is mentioned, it will be read as BIS/US FDA/European CE (with 4 digit notified body no)	

All other contents of the tender enquiry including terms & conditions remain unaltered.

Note:

- i. **Prospective Bidders are also advised to check the website regularly prior to the closing date and time of online submission of bids.**