GOVERNMENT OF ASSAM
OFFICE OF THE DIRECTOR OF MEDICAL EDUCATION, ASSAM
SIXMILE, KHANAPARA, GUWAHATI-22

No.DME.E-689876/8 Dated ↓

Amendment-I

In reference to the IFB vide no. **ASTHA/MMCH/GD/03/01**, invited for Procurement Of Medical Equipment for MMCH –Package 1 (Lot 1 - MRI 3 Tesla, Lot 2 - Biplane Dsa System With Large Flat Panel Detector With Inbuilt Angiography and Intervention and Stereotactic Radiotherapy, Lot 3- 256-Slice Dual Energy Spectral High-End CT Scanner, Lot 4 - 64 Slice CT Scan Machine), certain amendments enclosed as Annexure-I, have been incorporated in the IFB document. Bidders are requested to take the note of these amendments prior to the submission of bid. Also, enclosed Annexure II contains the replies to the bidders' queries.

Directorate of Medical Education Assam

Amendment No. I (Annexure I)

OCB No.: ASTHA/MMCH/GD/03/01
For All Lots

Tender Clause Reference No	Existing (As per RFP)	Modified
IFB 4. i)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore

Amendment No. I (Annexure I)

OCB No.: ASTHA/MMCH/GD/03/01
Lot 1 - MRI 3 Tesla

Tender Clause Reference No	Existing (As per RFP)	Modified
Tender Heading	Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 32 channels RF system. The system should be totally new and should not contain refurbished or having recycled items.	Amended as: Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 48 channels/ Channel Independent RF system. The system should be totally new and should not contain refurbished or having recycled items.
Point 1.b	Length should be short with at least 70 cm bore diameter	Amended As: The bore size should be 70 cm or table top to Bore distance >= 40 cm (when table is inside) or Actual cross-sectional area inside the bore while table is inside should be similar to a 70 cm bore system. The minimum FOV – 50 X 50 X 50 cm in x,y & z direction.
3.a	Gradient System: Activity shielded Gradient System with strength of at least 44 mT/m with slew rate of 200T/m/sec The rise time should not be more than 250 microsecond to reach the maximum gradient strength	Amended as: Activity shielded Gradient System with strength of at least 44 mT/m with slew rate of 200T/m/sec. The rise time should not be more than 250 micro second to reach the maximum gradient strength. The maximum Gradient & Slew rate should be simultaneously achieved. GPA (Gradient Power Amplifier)>= 2.0 MW (Mega Watt)
3.e	Field of View should be at least 45 cm in all three axes.	Amended as: Field of View should be at least 50 cm in all three axes.
4.a	A fully digital RF system capable of transmitting power of at least 25 KW or more , Dual RF power amplifiers. System should be capable of Multi Transmit with Multi amplifier driving / True shape for better B1 homogeneity	Amended As: A fully digital RF system capable of transmitting power of at least 36 KW or more, Dual RF power amplifiers.eg. Multi Transmit, Multi Drive or True shape to be provided for better B1 homogeneity.

4.b	It should also have at least minimum of 32 independent ADC hardware RF channels with each having bandwidth of 1MHz or more along with	Amended as: It should also have at least minimum of 48 independent ADC hardware RF channels with each having bandwidth of 1MHz or Channel Independent Architecture or more along with necessary hardware to support

	necessary hardware to support Quadrature/CP array coils.	Quadrature/CP array coils.
5.h	The RF Coil: Breast Coil > = 16 ch or more	Amended as: Dedicated Breast Coil > = 8 ch
5.m	Endo cavitary Coil - Prostrate Study	Amended as: Deleted
5.j	Shoulder coil: a. Dedicated Shoulder coil – Multi channel - 1 No b. flex coils – 2nos. (One large and one small)	Amended as: MSK & Flex coil: a. Dedicated Shoulder coil – 12 channel or above b. flex coils – 2nos. Of 8 channel or above each (One large and one small) c. Dedicated Foot/Ankle coil - 16 channel or above
8.1	One server with 2 node with concurrent licenses to be supplied with the system. Licenses: 2 nos Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the systems simultaneously without any processing delay. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier. Hardware: Node: The vendor has to supply the hardware in the form of CPU and Medical grade monitor 18” or more of 2MP resolution. Hardware Server: The server (single/dual configuration) should have image storage capacity of at least 2.5 Tera bytes, minimum 20,000 concurrent slice processing power and at least 64GB RAM. The server hardware to be included with 21" or more TFT/LCD monitor with dual processor. DICOM 3.0 compatibility and interfacing with other modalities must be possible. The workstation shall have the resolution, software and all functionality of a stand-alone workstation	Amended as: One server with 2 node with concurrent licenses to be supplied with the system. Licenses: 2 nos. Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the systems simultaneously without any processing delay. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier. Hardware: Node: The vendor has to supply the hardware in the form of CPU and Medical grade monitor 24” or more of 2MP resolution. Hardware Server: The server (single/dual configuration) should have image storage capacity of at least 2.5 Tera bytes, minimum 16000 concurrent slice processing power and at least 64GB RAM. The server hardware to be included with 21" or more TFT/LCD monitor with dual processor. DICOM 3.0 compatibility and interfacing with other modalities must be possible. The workstation shall have the resolution, software and all functionality of a stand-alone workstation.

11 (cc)	Imaging Technique: Non-Contrast perfusion Imaging software like 2D/3D-ASL and its post processing should be offered.	Amended as: Non-Contrast perfusion Imaging software like 3D-ASL and its post processing should be offered Latest AI driven Acceleration Compressed sensing (for every anatomy 2D & 3D including in Cardiac) such as SmartSpeed 2D, 3D and altest AI Driven Reconstruction Alogorithm like DeepResolve Boost & Sharp/ SmartSpeed/ AIR Recon DL/DeepRecon to be included.
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five (5) years.	Amended as: The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five (5) years, and (ii) been sold a minimum of two (2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.

Amendment No. I (Annexure I)

OCB No.: ASTHA/MMCH/GD/03/01
Lot 2 - BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention and Stereotactic Radiotherapy

Tender Clause Reference No	Existing (As per RFP)	Modified
Heading	BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention and Stereotactic Radiotherapy	Amended as: BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention
1.4	All movements of the gantries should be controlled from the table side on the tableside as well as from the control desk.	Amended as: All movements of the gantries should be controlled from the table side on the table side
2.7	Fully ergonomic foot switch with both cordless and with cord option to be provided.	Amended as: Fully ergonomic foot switch with both cordless or cord option to be provided.
2.8	Gantry, collimator, table & injector operations should be possible from control room console without interrupting image review, hard copying, and archiving or image transfer functions.	Amended as: Gantry, collimator, table & injector operations should be possible from exam room without interrupting image review, hard copying, and archiving or image transfer functions
3.4	Voltage range – radiography kvp range should be 40 kvp – 125 kvp or more. Fluoroscopy kvp range to be 60 – 120 kvp or more. Output at 100 kvp to be 1000 mA or more.	Amended as: Voltage range – radiography kvp range should be 50 kvp – 125 kvp or more. Fluoroscopy kvp range to be 60 – 120 kvp or more. Output at 100 kvp to be 1000 mA or more
4.6	Anode heat storage capacity should be 5.0 MHU or more with advanced cooling mechanism for optimal heat dissipation & noiseless operation.	Amended as: Anode heat storage capacity should be 3.5 MHU or more with advanced cooling mechanism for optimal heat dissipation & noiseless operation
4.8	Fluoroscopy power (maximum continuous power) – tubes should provide at least 2.4 kW continuous output for over 30 minutes.	Amended as: Fluoroscopy power (maximum continuous power) – tubes should provide at least 2.2 kW continuous output.

4.12	Filtration & leakage radiation dose should be indicated in the offer. The tube should have inbuilt grid switching facility for suppression of leakage radiation	Amended as: Filtration & leakage radiation dose should be indicated in the offer. The tube should have inbuilt grid switching /Flat Emitter Technology facility for suppression of leakage radiation.
6	Flat panel detector system with 2k imaging capability for both detectors	Amended as: Flat panel detector system with 1k imaging capability for both detectors
6.1.1	Frontal flat detector should be 38 cm x 30 cm or bigger with 1920 x 2480 matrix elements or more.	Amended as: Frontal flat detector should be 38 cm x 30 cm or bigger with 2048 x 1536 matrix elements or more.
6.1.4	The spatial resolution should be 3.25 LP / mm or more.	Amended as: The spatial resolution should be 2.5 LP / mm or more.
6.1.5	Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 2048 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 2K imaging capabilities as an essential requirement.	Amended as: Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 1536 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1K imaging capabilities as an essential requirement"
6.1.9	Pixel size – should be 160 micrometer or smaller.	Amended as: Pixel size – should be 195 micrometer or smaller.
6.2.4	The spatial resolution should be at least 3.25 LP/mm or more.	Amended as: The spatial resolution should be at least 2.5 LP / mm or more
6.2.5	Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 2048 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1.5K or more imaging capabilities as an essential requirement.	Amended as: Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 1536 x 1536 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1.5K or more imaging capabilities as an essential requirement.
6.2.7	Pixel size – should be 160 micrometer or smaller.	Amended as: Pixel size – should be 195 micrometer or smaller.
7.1.3	Additional two medical grade monitors (19 inches each, total 2) in examination room for each plane as a backup during failure of 56-inch monitor. OR single 30-inch monitor (BARCO / Eizo / NEC or equivalent, total 1).	Amended as: Additional two medical grade monitors (19 inches each, total 2) in examination room for a backup during failure of 56-inch monitor. OR single 30-inch monitor (BARCO / Eizo / NEC or equivalent, total 1).

7.1.1	Large display monitor (ceiling suspended, 8-megapixel display matrix arranged as a 3840 x 2160 pixel array)-A 56-inch single color monitor with contrast ratio of 4000:1 (medical grade) using high definition LCD screen for display of multiple images in a variety of layouts (at least should allow six images for display of live, reference and subtracted image) with high-resolution flicker free display. It should support the native resolution of the large biplane flat detector using imaging chain of the high display monitor.	Amended as: Large display monitor (ceiling suspended, 8-megapixel display matrix arranged as a 3840 x 2160 pixel array)-A 52-inch single color monitor with contrast ratio of 4000:1 (medical grade) using high definition LCD screen for display of multiple images in a variety of layouts (at least should allow six images for display of live, reference and subtracted image) with high resolution flicker free display. It should support the native resolution of the large biplane flat detector using imaging chain of the high display monitor.
7.2.1	Monitor for control room-Single 30” dual HD medical-grade monitor for delivery of excellent quality images over the entire screen. The vendors should offer choice of display from multiple inputs simultaneously with different screen layouts. OR 2 latest technology LCD/ LED color monitors, one for each plane with high-resolution image display in the control room should be provided to display patient demographics as well as fluoroscopy images. ALL monitors should be at least 24 inches and of medical grade. Monitors should permit high resolution image display & undistorted viewing from any angle (wide viewing angle) in ambient lighting.	Amended as:2 latest technology LCD/ LED color monitors, one for each plane with high-resolution image display in the control room should be provided to display patient demographics as well as fluoroscopy images. ALL monitors should be at least 19 inches and of medical grade. Monitors should permit high resolution image display & undistorted viewing from any angle (wide viewing angle) in ambient lighting.
7.3.1	One radiological grade monitor (6MP BARCO coronicsfusion) with Z840 or equivalent work station with 23inch LED display (16GB or More RAM, dual processor) and one Dicom laser projector (add model). This should include the installation in the conference room. Please provide the details of the projector, screen and work station quoted	Amended as: One medical grade monitor (6MP BARCO coronics fusion) with Z840 or equivalent work station with 23inch LED display (16GB or More RAM, dual processor) and one Dicom laser projector (add model). This should include the installation in the conference room. Bidder to provide the details of the projector, screen and work station quoted.

8.7	Facility to use 3D image as a road map by superimposition of fluoro image (after automatic positioning of the c-arm to the angulations & collimation of the 3D) on the 3D image on the live monitor of the examination room at all angles	Amended as: Facility to use 3D image as a road map by superimposition of fluoro image (after automatic positioning of the c-arm to the angulations & collimation of the 3D) on the 3D image on the monitor of the examination room at all angles
8.10	It should be possible to perform serial acquisition at prefixed frame rate or manually vary the sequence. Radiation dose per frame in for optimal online acquisition of DSA at 2K resolution should be documented.	Amended as: It should be possible to perform serial acquisition at prefixed frame rate or manually vary the sequence. Radiation dose per frame in for optimal online acquisition of DSA at 1K resolution should be documented.
8.14	Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 Digital rotational Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 matrix should be available.	Amended as: Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 Digital rotational Digital rotational angiography facility at a speed of 40 degree/sec. or more with acquisition frame rate up to 25 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 matrix should be available.
8.17.2	Stereoscopic display of 3D reconstructed image on the workstation should be available.	Amended as: display of 3D reconstructed image on the workstation should be available.
8.43	Reconstructive zooming technique, Spine View, Calci View, Automated vessel analysis, Computer assisted Aneurysm Analysis (flow dynamics), Virtual Stenting, Catheter tip shape simulation & Automatic Voxel shift should be available	Amended as: Reconstructive zooming technique, Spine View, Calci View, Automated vessel analysis, Aneurysm Analysis (flow dynamics), Catheter tip shape simulation & Automatic Voxel shift should be available
9.9	Integrated laser guided biopsy guidance system	Deleted
9.1	Perfusion imaging for stroke evaluation: It should be possible to generate multiplanar CT like images from the 3D rotational data and also use the data for perfusion imaging	Deleted
9.11	Perfusion software should be provided	Deleted

9.12	The system should visualize blood flow patterns in the parent vessel and aneurysm sac and quantify blood flow rates in the parent vessel. Quantify the change in aneurysm flow immediately after flow diverter deployment	Deleted
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	Amended as: The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two (2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.

Amendment No. I (Annexure I)

OCB No.: ASTHA/MMCH/GD/03/01
Lot 3 - 256-Slice Dual Energy Spectral High End CT Scanner Technical Specification

Tender Clause Reference No	Existing (As per RFP)	Modified
1.1	Gantry Size >=70 cm	Amended as : Gantry Size >=78 cm
1.2	Scan Field (FOV) >=50 cm	Amended as: FOV >=50 cm & Dual Energy/Spectral FOV >=50 cm
2.2 & 3.2	mA Range : 20-1300 mA or better	Amended as : 20-825 mA or better
2.3	KV : 70-140 Kvp	Amended as : 80-135 Kvp
3.4	Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 7 MHU or more.	Amended as: Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 7.5 MHU or more
3.5	Tube Cooling Rate: Minimum cooling rate of 1.7 MHU/min or better	Amended as : Minimum cooling rate of 1.5 MHU/min (1500 KHU) or better
4.2	Scannable Range >=200 cm	Amended as: Scannable range >=180 cm
5.1.2	Scan time for full 360-degree rotation: <=0.33 sec	Amended : Scan time for full 360-degree rotation: <=0.27 sec
5.2.2.	Cardiac Imaging: Native Temporal resolution of 120 msec or better for mono-segment reconstruction by using latest technology	Amended as : Cardiac Imaging: Native Temporal resolution of 135 msec or better for mono-segment reconstruction by using latest technology
6.2	Dual Energy Application	Amended as: Cardiac capabilities clinical outcome as mentioned to be provided by either via Dual energy/spcetral or standalone applications
6.2.1	Liver VNC : Virtual non-contrast CT of the Liver, and also Liver Fat evaluation using dual energy method	Amended as : The equivalent clinical outcome to be shown either via Dual energy or standalone applications
6.2.5	Direct Neuro CTA	Amended as : The equivalent clinical outcome to be shown either via Dual energy or standalone applications
6.2.6	Direct Body CTA	
6.2.7	Vascular Plaque Characterization	
6.2.8	Lung Perfusion	
6.2.11	Pulmonary Embolization	
6.2.12	Dual energy virtual non calcium image : for evaluation of bone marrow pathology	Amended as : The equivalent clinical outcome to be shown either via Dual energy or standalone applications
8.2	Number of Detector Rows : Number of physically independent rows must be	Amended as : Number of Physical Number of physically independent rows must be

	128 or more	128 or more with at least 80 mm detector coverage (in Z direction).
Added Item:		Included additionally: AI based 3D Camera: AI based auto patient positing 3D camera to be offered. Justification: 3D AI camera enables precise automatic patient positioning and anatomical centering, reducing scan time, repeat scans, and radiation dose—thereby improving image quality, patient safety, and workflow efficiency.
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	Amended as: The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.

Amendment No. I (Annexure I)

OCB No.: ASTHA/MMCH/GD/03/01
Lot 4 - 64 Slice CT Scan Machine

Tender Clause Reference No	Existing (As per RFP)	Modified
Tender Heading	The offered CT Scanner system shall be of the latest state-of-the-art technology with independent 64 rows of detectors, capable of directly acquiring/generating a minimum of 64 slices per rotation. The system must support seamless integration with any PACS/HIS system and be fully DICOM- compliant. It should enable true isotropic volume acquisition with sub-millimeter spatial resolution. The quoted model must be certified by both USFDA and European CE, ensuring compliance with international safety and performance standards	Amended as: The system should be latest state of the art, independent 32 or more rows of detectors with direct acquisition/generation of at least 64 slices per rotation capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub millimeter resolution. The model quoted should be, US FDA and European CE certified.
B.ii	Power Output: 55 KW or More	Amended as : 50 KW or more
B.iii	Anode Heat Storage capacity of at least 7 or more MHU	Amended as : 5 MHU or More.
C.iv	X-Ray tube cooling rate minimum 1000 KHU or more per min	Amended as : X-Ray tube cooling rate minimum 800 KHU or more per min
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	Amended as: The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.

Annexure II- Replies to Bidder's Query

OCB No.: ASTHA/MMCH/GD/03/01
Lot 1 - MRI 3 Tesla

Tender Clause Reference No	Original Clause	Clarification / Suggestion by the Participants	AHIDMS Response
Tender Heading	Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 32 channels RF system. The system should be totally new and should not contain refurbished or having recycled items.	Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 32 channels RF system/Channel independent RF architecture. The system should be totally new and should not contain refurbished or having recycled items. Whole body 3 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 32 channels RF system. The system should be totally new and should not contain refurbished or having recycled items. Justification: 3 Tesla is the internationally accepted and technically correct nomenclature for MRI systems with a nominal magnetic field strength of approximately 3T. The term "3.0 Tesla" does not represent a distinct technical category and may lead to unnecessary ambiguity. The proposed amendment will not change the technical intent, clinical capability, or performance of the system. This specs provide latest generation system ensuring, current technology, upgradability & long-term clinical relevance. It will also ensure wider participation with latest system from each vendor. Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 48 channels RF system. The system should be totally new and should	Please refer Amendment No. I (Annexure I)

		not contain refurbished or having recycled items. Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 48 channels RF system. The system should be totally new and should not contain refurbished or having recycled items.	
1.b	Length should be short with at least 70 cm bore diameter	Length should be short (<=170 cm) with at least 65 cm bore diameter & Please mention the FOV – 50 X 50 X 50 cm .United Imaging Healthcare 3T MRI offers the largest effective scanning area (ACSA) among currently available systems due to its innovative table design, ensuring maximum patient comfort. Justification: - Although the bore is 65 cm, the actual usable space for the patient is greater than that of many 70 cm systems. -Thus, the 65 cm bore provides comparable or superior patient experience and diagnostic utility. -More importantly, Field of View (FOV) is the primary clinically relevant parameter rather than just bore diameter. The system supports a large FOV of up to 50 × 50 × 50 cm.This large FOV capability directly improves diagnostic accuracy, workflow efficiency, and enables advanced applications (whole-body imaging, vascular studies, etc.). Length Should be 162 cm or less and with 70 cm bore	Please refer Amendment No. I (Annexure I).
3.a	Gradient System: Activity shielded Gradient System with strength of at least 44 mT/m with slew rate of 200T/m/sec The rise time should not be more than 250 microsecond to reach the maximum gradient strength	Activity shielded Gradient System with strength of at least 44 mT/m with slew rate of 200T/m/sec The rise time should not be more than 250 micro second to reach the maximum gradient strength. GPA Power >= 2.0 MW Actively shielded gradient system with strength of at least 44 mT/m and slew rate of 200 T/m/sec, which should be achievable simultaneously across all axes. The rise time should not be more than 250 microseconds to reach the maximum gradient	Please refer Amendment No. I (Annexure I).

		strength	
3.e	Field of View should be at least 45 cm in all three axes.	Field of View should be at least 50 cm in all three axes.	Please refer Amendment No. I (Annexure I).
4.a	A fully digital RF system capable of transmitting power of at least 25 KW or more , Dual RF power amplifiers. System should be capable of Multi Transmit with Multi amplifier driving / True shape for better B1 homogeneity	A fully digital RF system capable of transmitting power of at least 36 KW or more , Dual RF power amplifiers or multi-port RF transmission. System should be capable of Multi Transmit with Multi amplifier driving / multi port for better B1 homogeneity. Justification: 25 kW RF transmitter is too little for a 3T MRI system. It should be at least 36 kW. Also requesting to remove company specific technology names, such as "Multi transmit (36 kW), Multidrive (30 kW) & Trueshape 43.2 kW) as they are not comparable in terms of capability. The Trueshape RF transmitter is available only with 60mT/m Gradient & 200 T/m/s Slew Rate platform A fully digital RF system capable of transmitting power of at least 36 KW or more, Dual RF power amplifiers. System should be capable of Multi Transmit with Multi amplifier driving / True shape for better B1 homogeneity.	Please refer Amendment No. I (Annexure I).
4.b	It should also have at least minimum of 32 independent ADC hardware RF channels with each having bandwidth of 1MHz or more along with necessary hardware to support Quadrature/CP array coils.	It should also have at least minimum of 48 independent ADC hardware RF channels with each having bandwidth of 1MHz or more along with necessary hardware to support Quadrature/CP array coils.	Please refer Amendment No. I (Annexure I).
5.a	32 channels or more head coil-capable of multi frequency MR spectroscopy (1H).	24 channels or more head coil-capable of multi frequency MR spectroscopy (1H).	IFB provision shall prevail
5. d	Spine Phased array coil 32 ch or more	Spine Phased array coil 24 ch or more	IFB provision shall prevail
5.h	The RF Coil: Breast Coil > = 16 ch or more	Dedicated Breast Coil > = 10 ch Breast coil 8 channel or more"	Please refer Amendment No. I (Annexure I).
5.m	Endo cavity Coil	Kindly Delete this point Kindly delete this point	Please refer Amendment No. I (Annexure I).

		Delete Please discard / erase the point from the given proposed Technical Specifications	
5.j	j. MSK coil: a. Dedicated Shoulder coil – Multi channel - 1 No b. flex coils – 2nos. (One large and one small)	j. Shoulder coil: a. Dedicated Shoulder coil 16 channel or more – 1 no, b. flex coils – 2nos. (One large and one small) Justification: The term “multi-channel” is generic and may lead to ambiguity during evaluation. For High image quality and faster speed.	Please refer Amendment No. I (Annexure I).
8.1	Workstation: One server with 2 node with concurrent licenses ……. Image storage capacity of 2.5 TB, minimum 20,000 concurrent slice processing power …..all functionality of a standalone workstation	Hardware Server: The server (single/dual configuration) should have image storage capacity of at least 2.5 Tera bytes, minimum 16,000 concurrent slice processing power and at least 96GB RAM. Justification: 20,000 Concurrent slices restricts our participation. Typical number of slices in whole body (200cm) MR scan ranges between 200 - 400 slices (max). For 2 client nodes operating concurrently assuming 4 sequences/protocols, 2 x 4 x 400 = 3200 max. slices per study. Hence, 16,000 slices is more than adequate processing power for 2 concurrent users asked in tender. One server with 2 node with concurrent licenses.....Image storage capacity of 2.5 TB, minimum 16,000 concurrent slice processing power..... all functionality of a standalone workstation	Please refer Amendment No. I (Annexure I).
8	Cardiac pacakge: Cardiac Package : One License: The workstation should have display of …… MRA with regular free upgrades in future. Calculation of.....tagging should be possible.	Two License: The workstation should have display of..... MRA with regular free updates in future under FCO (Field change order) . Calculation of ……. tagging should be possible. Remove (repetitive point)	IFB provision shall prevail
11	Imaging Technique : Non-Contrast perfusion Imaging software like 2D/3D-ASL and its post processing should be offered.	Non Contrast perfusion Imaging software like 3D-ASL and its post processing should be offered Justification: 3D ASL Provides entire brain volume in single acquisition which helps instroke, tumor & dementia imaging. 2D ASL only offers 5 slices & cannotmanage motion artifacts. Imaging Technique: Non-Contrast perfusion Imaging software like 3D-ASL and its	Please refer Amendment No. I (Annexure I).

		post processing should be offered.	
16.2.i	THIRD PARTY ITEMS 1. MRI Compatible Dual Syringe Pressure injector : Independent dual-Syringe Pressure injector with following Features; Nonferrous, automatic syringe size detection, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery Must be compatible with 5, 7.5 &10ml pre-filled contrast syringes and 50 ml syringes for both saline & contrast (20 Nos of 50 ml Syringes with 100 nos. of tube connectors should be provided) Must be able to observe progress of injection and view injection result	MRI Compatible Dual Head Pressure Injector	IFB provision shall prevail
16.3	MRI Compatible ECG electrodes (100 no.s Disposable Electrodes for MRI Image gating)	Request to kindly remove this point	IFB provision shall prevail
16.5	MRI Compatible Anesthesia Machine with integrated Ventilator, 2 vaporizer, circle absorber	Request to kindly remove this point	IFB provision shall prevail
16.6	One MRI compatible Multiparameter Vital Signs Patient Monitor of 5000 Gauss	One MRI Compatible Pulse Oximeter	IFB provision shall prevail

	Compliance in MRI Room and One Slave monitor in console room with following modules provision to monitor the followingHeart rate; ECG; . NIBP – Size of Cuffs (adult & pediatric neonatal); Respiration (Capnograph); Oxygen saturation – Pulse oximeter with adult, pediatric probe, and neonatal probes - 2 sets (with the spare probes), Should have plethysmograph perfusion factor; ETCO2 and ETAA (end tidal anesthetic agents); Temperature (adult and pediatric); All consumables required for Adult-10Set, Pediatrics-3Set, Neonates		
16.6.i	All consumables required for Adult-10Set, Pediatrics-3Set, Neonates	Request to kindly remove this point	IFB provision shall prevail
16.7.19	MRI compatible Suction Apparatus - 2 nos	Request to kindly remove this point	IFB provision shall prevail
1.f	Magnet should be shielded from external interferences. Smaller fringe field preferred 5 Gauss and 10 Gauss Line in X, Y, Z axis specify yours Quote value for 5 gauss and 10 gauss line. The 5	Magnet should be shielded from external interferences. Smaller fringe field preferred 5 Gauss Line in X, Y, Z axis specify yours Quote value for 5 gauss line. The 5 Gauss line will have to be marked	IFB provision shall prevail

	Gauss line will have to be marked		
1.h	Helium level monitoring equipment in the magnet and facility for appropriate quick shutdown of the magnet in the event of emergency.	"Facility for appropriate quick shutdown of the magnet in the event of emergency".	IFB provision shall prevail
5	The system body Coil integrated to the magnet must be quadrature / CP. In addition to this coil, following Coils (preferably be with equal number of elements as the channels) be quoted. RF coils in addition to main body coil (Transmit / Receive or receive coils) auto tune, array or no tune coils. Coils for the following applications should be available with the system. Circular polarized (CP) Array coils should included in the offer. Coil / RF design should support compatibility to coils manufactured by other manufacturers. Please specify the measures taken to prevent dielectric artifacts. (Quadrature design & EPI compatible) in addition to main body coil. All array coils should be compatible with parallel imaging techniques.	"The system body Coil integrated to the magnet must be quadrature / CP. In addition to this coil, following Coils (preferably be with equal number of elements as the channels) be quoted. RF coils in addition to main body coil (Transmit / Receive or receive coils) auto tune, array or no tune coils. Coils for the following applications should be available with the system. Circular polarized (CP) Array coils should be included in the offer. All array coils should be compatible with parallel imaging techniques. Please specify the number of channels and elements available for each coil. Please mention the true acceleration factor for each of the array coils".	IFB provision shall prevail

	Please specify the number of channels and elements available for each coil. Please mention the true acceleration factor for each of the array coils.		
5.e	Body phased array coils 32 channels of more (single or in combination) at least 45 cm z-axis coverage for imaging of abdomen, with at least 32 channels acquisition for body parts.	"Body phased array coils 16 channels or more (single or in combination) at least 45 cm z-axis coverage for imaging of abdomen, with at least 16 channels acquisition for body parts".	IFB provision shall prevail
5.g	Suitable Carotid coil.	"Kindly delete / remove this point completely from the existing prescribed Technical Specifications".	IFB provision shall prevail
Point 2 b Shim system	2 Shim system - b, Off-centre shimming should be possible.	2 Shim system - b, Off-centre shimming should be possible. 2nd Order Shim/ High Order Shim should be offered as standard. Justification: Second or higher order shim is mandatory to get artifact free homogeneous images, because 3T MRI is highly sensitive to small variation of inhomogeneity induced patient. https://mriquestions.com/uploads/3/4/5/7/34572113/siemens_brochure_on_shimming.pdf	IFB provision shall prevail
Pg no 102-point 10 EPI mode -f.	Complete Functional MRI of Brain package as standard. It should be a goggle-based system. (incl. of patient camera, goggles, headphones and all other related hardware).	Complete Functional MRI of Brain package as standard. It should be a LCD based system. Justification: Goggle based fMRI systems are no longer available	IFB provision shall prevail

point no 16 Accessories 2 (i)	MRI Compatible Dual Syringe Pressure injector: Independent Dual-Syringe Pressure injector with following Features; Non-ferrous, automatic syringe size detection, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery Must be compatible with 5, 7.5 &10ml pre-filled contrast syringes and 50 ml syringes for both saline & contrast (20 No's of 50 ml Syringes with 100 nos. of tube connectors should be provided) Must be able to observe progress of injection and view injection result.	MRI Compatible Dual Syringe Pressure injector: Independent Dual-Syringe Pressure injector with following Features; Non-ferrous, automatic syringe size detection, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery. (20 No's of 50 ml Syringes with 100 nos. of tube connectors should be provided) Must be able to observe progress of injection and view injection result. Justification: Pre-filled syringes are not available and also are not recommended for usage. Hence request you to kindly remove from specifications.	IFB provision shall prevail
2. Shim System: C	Auto shim (global and voxel shim) should take minimum time to shim the magnet with patient in position.	REQUEST TO NOT CHANGE Remarks: GE has patient specific, Region Specific & Anatomy Specific Auto-Shimming. Request you retain the point as mentioned in technical specifications.	
IFB 4. i)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore	The bidder or OEM should have relevant experience in providing diagnostic imaging/radiology services in healthcare institutions. Experience in MRI/ CT scan/ C-Arm/ Cath Lab /Digital Radiography or any other advanced imaging modality shall be treated as equivalent for the purpose of eligibility Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply	Please refer Amendment No. I (Annexure I).

	Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	described in Section 6 (Schedule of Supply)	
IFB 4. ii)	Minimum average annual turnover of Lot 1: INR 36 Cr Lot 2: INR 26 Cr Lot 3: INR 24 Cr Lot 4: INR 11 Cr calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years.	The turnover should be 22 Cr cumulative for all the lots to encourage wider participation. The turnover requirement may kindly be considered as ₹15 Crore cumulative for all the lots to encourage wider participation	IFB provision shall prevail
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.	Please refer Amendment No. I (Annexure I).
Nil		Also there are some changes which is need to be incorporate in the specification too as there are lots of discrepancies in the technical specification Certain corrections and modifications are required in the technical specifications, as there are discrepancies that need to be addressed.	Please refer Amendment No. I (Annexure I).
Section 6:		The estimated price taken for the lots seems to be in lower side as compare to the	No estimated price has been

Schedule of Supply		technical specification which also need some consideration from the respected office. The estimated price for the lots appears to be on the lower side in comparison to the technical specifications and may kindly be reviewed.	mentioned in the IFB documents.
Section1: Instructions to Bidders/ ITB 7.1		Also requesting to increase the representation submission date by 10-15 days as we need some time as OEM also need some time to give us the details specification. We request an extension of the bid/representation submission date by 10–15 days, as additional time is required to obtain detailed specifications from the OEM	Pursuant to the provision of ITB 7.1, 21(twenty one) days time has been provided to submit request for clarification which is considerable time.
Nil		Also requesting your office to keep a prebid meeting where one company should be given time at a single time to present there representation to avoid chaos. We also request your office to arrange a pre-bid meeting, where each company may be given a separate time slot to present their representations in an organized manner	No such provision are kept to avoid personal contact with any bidder with the procuring entity
Section 3: Evaluation and Qualification Criteria	Additional Point to include:	There should be one more clause where the OEM should have more than 450 installation in India. It is further suggested to include a clause requiring the OEM to have a minimum of 400 installations in India	No comments to offer against this suggestion

Annexure II- Replies to Bidder's Query

OCB No.: ASTHA/MMCH/GD/03/01
Lot 2 - BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention and Stereotactic Radiotherapy

Tender Clause Reference No	Original Clause	Clarification / Suggestion by the Participants	AHIDMS Response
Heading	BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention and Stereotactic Radiotherapy	BIPLANE DSA System with Large Flat Panel Detector with inbuilt Angiography and Intervention	Please refer Amendment No. I (Annexure I).
1.4	All movements of the gantries should be controlled from the table side on the tableside as well as from the control desk.	All movements of the gantries should be controlled from the table side on the tableside".	Please refer Amendment No. I (Annexure I).
2.7	Fully ergonomic foot switch with both cordless and with cord option to be provided.	Fully ergonomic foot switch with both cordless or cord option to be provided".	Please refer Amendment No. I (Annexure I).
2.8	Gantry, collimator, table & injector operations should be possible from control room console without interrupting image review, hard copying, and archiving or image transfer functions.	Gantry, collimator, table & injector operations should be possible from exam room without interrupting image review, hard copying, and archiving or image transfer functions".	Please refer Amendment No. I (Annexure I).
3.4	Voltage range – radiography kvp range should be 40 kvp – 125 kvp or more. Fluoroscopy kvp range to be 60 – 120 kvp or more. Output at 100 kvp to be 1000 mA or more.	Voltage range – radiography kvp range should be 50 kvp – 125 kvp or more. Fluoroscopy kvp range to be 60 – 120 kvp or more. Output at 100 kvp to be 1000 mA or more".	Please refer Amendment No. I (Annexure I).
4.6	Anode heat storage capacity should be 5.0 MHU or more with advanced cooling mechanism for optimal heat dissipation & noiseless operation.	The X-Ray should have anode heat storage capability of at least 4.0 MHU (actual Value) or more to run continuous for 6-8 hours without shutting off with appropriate anode heat dissipation rate. Justification: Kindly amend this point for wider participation.	Please refer Amendment No. I (Annexure I).

		Anode heat storage capacity should be 3.5 MHU or more with advanced cooling mechanism for optimal heat dissipation & noiseless operation".	
4.8	Fluoroscopy power (maximum continuous power) – tubes should provide at least 2.4 kW continuous output for over 30 minutes.	"Fluoroscopy power (maximum continuous power) – tubes should provide at least 2.2 kW continuous output".	Please refer Amendment No. I (Annexure I).
4.12	Filtration & leakage radiation dose should be indicated in the offer. The tube should have inbuilt grid switching facility for suppression of leakage radiation	Filtration & leakage radiation dose should be indicated in the offer. The tube should have inbuilt grid switching /Flat Emitter Technology facility for suppression of leakage radiation. Justification: Kindly amend this point for wider participation.	Please refer Amendment No. I (Annexure I).
6	Flat panel detector system with 2k imaging capability for both detectors :	Flat panel detector system with 1k imaging capability for both detectors	Please refer Amendment No. I (Annexure I).
		Flat panel detector system with 2k imaging capability	
6.1.1	Frontal flat detector should be 38 cm x 30 cm or bigger with 1920 x 2480 matrix elements or more.	Frontal flat detector should be 38 cm x 30 cm or bigger with 2048 x 1536 matrix elements or more".	Please refer Amendment No. I (Annexure I).
6.1.4	The spatial resolution should be 3.25 LP / mm or more.	"The spatial resolution should be 2.5 LP / mm or more".	Please refer Amendment No. I (Annexure I).
6.1.5	Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 2048 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 2K imaging capabilities as an essential requirement.	Amended as: Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 1536 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1K imaging capabilities as an essential requirement".	Please refer Amendment No. I (Annexure I).
6.1.9	Pixel size – should be 160 micrometer or smaller.	Pixel size – should be 195 micrometer or smaller".	Please refer Amendment No. I (Annexure I).
6.2.4	The spatial resolution should be at least 3.25 LP/mm or more.	The spatial resolution should be at least 2.5 LP / mm or more".	Please refer Amendment No. I (Annexure I).

6.2.5	Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 2048 x 2048 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1.5K or more imaging capabilities as an essential requirement.	Acquisition speed for DSA should be 0.5 frames / sec to 6 frames / sec or higher at 1536 x 1536 matrix or 10 frames / sec or higher at 1024 x 1024 matrix. The system should have of 1.5K or more imaging capabilities as an essential requirement".	Please refer Amendment No. I (Annexure I).
6.2.7	Pixel size – should be 160 micrometer or smaller.	Pixel size – should be 195 micrometer or smaller".	Please refer Amendment No. I (Annexure I).
7.1.3	Additional two medical grade monitors (19 inches each, total 2) in examination room for each plane as a backup during failure of 56-inch monitor. OR single 30-inch monitor (BARCO / Eizo / NEC or equivalent, total 1).	Additional two medical grade monitors (19 inches each, total 2) in examination room for a backup during failure of 56-inch monitor. OR single 30-inch monitor (BARCO / Eizo / NEC or equivalent, total 1)".	Please refer Amendment No. I (Annexure I).
7.1.1	Large display monitor (ceiling suspended, 8-megapixel display matrix arranged as a 3840 x 2160 pixel array)-A 56-inch single color monitor with contrast ratio of 4000:1 (medical grade) using high definition LCD screen for display of multiple images in a variety of layouts (at least should allow six images for display of live,reference and subtracted image) with high-resolution flicker free display. It should support the native resolution of the large biplane flat detector using imaging chain of the high display monitor.	Large display monitor (ceiling suspended, 8-megapixel display matrix arranged as a 3840 x 2160 pixel array)-A 52-inch single color monitor with contrast ratio of 4000:1 (medical grade) using high definition LCD screen for display of multiple images in a variety of layouts (at least should allow six images for display of live, reference and subtracted image) with highresolution flicker free display. It should support the native resolution of the large biplane flat detector using imaging chain of the high display monitor.	Please refer Amendment No. I (Annexure I).

		Large display monitor (ceiling suspended, 8-megapixel display matrix arranged as a 3840 x 2160 pixel array)-A 55-inch single color monitor with contrast ratio of 4000:1 (medical grade) using high definition LCD screen for display of multiple images in a variety of layouts (at least should allow six images for display of live, reference and subtracted image) with high-resolution flicker free display. It should support the native resolution of the large biplane flat detector using imaging chain of the high display monitor. Justification: Kindly amend this point for wider participation.	Please refer Amendment No. I (Annexure I).
7.2.1	Monitor for control room-Single 30” dual HD medical-grade monitor for delivery of excellent quality images over the entire screen. The vendors should offer choice of display from multiple inputs simultaneously with different screen layouts. OR 2 latest technology LCD/ LED color monitors, one for each plane with high-resolution image display in the control room should be provided to display patient demographics as well as fluoroscopy images. ALL monitors should be at least 24 inches and of medical grade. Monitors should permit high resolution image display & undistorted viewing from any angle (wide viewing angle) in ambient lighting.	2 latest technology LCD/ LED color monitors, one for each plane with high-resolution image display in the control room should be provided to display patient demographics as well as fluoroscopy images. ALL monitors should be at least **19** inches and of medical grade. Monitors should permit high resolution image display & undistorted viewing from any angle (wide viewing angle) in ambient lighting.	Please refer Amendment No. I (Annexure I).

7.3.1	One radiological grade monitor (6MP BARCO coronicsfusion) with Z840 or equivalent work station with 23inch LED display (16GB or More RAM, dual processor) and one Dicom laser projector (add model). This should include the installation in the conference room. Please provide the details of the projector, screen and work station quoted	One medical grade monitor (6MP BARCO coronicsfusion) with Z840 or equivalent work station with 23inch LED display (16GB or More RAM, dual processor) and one Dicom laser projector (add model). This should include the installation in the conference room. Please provide the details of the projector, screen and work station quoted	Please refer Amendment No. I (Annexure I).
8.7	Facility to use 3D image as a road map by superimposition of fluoro image (after automatic positioning of the c-arm to the angulations & collimation of the 3D) on the 3D image on the live monitor of the examination room at all angles	Facility to use 3D image as a road map by superimposition of fluoro image (after automatic positioning of the c-arm to the angulations & collimation of the 3D) on the 3D image on the monitor of the examination room at all angles	Please refer Amendment No. I (Annexure I).
8.10	It should be possible to perform serial acquisition at prefixed frame rate or manually vary the sequence. Radiation dose per frame in for optimal online acquisition of DSA at 2K resolution should be documented.	It should be possible to perform serial acquisition at prefixed frame rate or manually vary the sequence. Radiation dose per frame in for optimal online acquisition of DSA at 1K resolution should be documented.	Please refer Amendment No. I (Annexure I).
8.14	Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 Digital rotational Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 matrix should be available.	Digital rotational angiography facility at a speed of 50 degree/sec. or more with acquisition frame rate up to 30 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 Digital rotational Digital rotational angiography facility at a speed of 40 degree/sec. or more with acquisition frame rate up to 25 frames/sec. in 1024 matrix with facility for dynamic display of subtracted images in 1024x1024 matrix should be available.	Please refer Amendment No. I (Annexure I).
8.17.2	Stereoscopic display of 3D reconstructed image on the workstation should be available.	display of 3D reconstructed image on the workstation should be available.	Please refer Amendment No. I (Annexure I).

8.43	Reconstructive zooming technique, Spine View, Calci View, Automated vessel analysis, Computer assisted Aneurysm Analysis (flow dynamics), Virtual Stenting, Catheter tip shape simulation & Automatic Voxel shift should be available	Reconstructive zooming technique, Spine View, Calci View, Automated vessel analysis, Aneurysm Analysis (flow dynamics), , Catheter tip shape simulation & Automatic Voxel shift should be available	Please refer Amendment No. I (Annexure I).
9.9	Integrated laser guided biopsy guidance system	Request to kindly remove this point Justification: OEM Specific	Please refer Amendment No. I (Annexure I).
9.1	Perfusion imaging for stroke evaluation: It should be possible to generate multiplanar CT like images from the 3D rotational data and also use the data for perfusion imaging	Request to kindly remove this point Justification: OEM Specific	Please refer Amendment No. I (Annexure I).
9.11	Perfusion software should be provided	Request to kindly remove this point Justification: OEM Specific	Please refer Amendment No. I (Annexure I).
9.12	The system should visualize blood flow patterns in the parent vessel and aneurysm sac and quantify blood flow rates in the parent vessel. Quantify the change in aneurysm flow immediately after flow diverter deployment	Please deleted	Please refer Amendment No. I (Annexure I).
		Request to kindly remove this point Justification: OEM Specific	Please refer Amendment No. I (Annexure I).
10.15	1. Syringe pumps – 10 nos. to be supplied for controlled infusion of medication	Request to kindly remove this point	IFB provision shall prevail
10.16	2. Sterile, disposable, transparent covers for covering the table side operating module and Flat detectors for unhindered operations during the interventional procedures (n 2000- staggered supply)	Request to kindly remove this point	IFB provision shall prevail
	Electronic arterial pressure infusion pump with alarm and all accessories for intra arterial catheter irrigation (n–6)	Request to kindly remove this point	IFB provision shall prevail
	Portable US for enabling access in difficult cases with 2 probes: 1-microconvex & 1 linear. Mention the make and model	Request to kindly remove this point	IFB provision shall prevail

10.16	Sterile, disposable, transparent covers for covering the table side operating module and Flat detectors for unhindered operations during the interventional procedures (n 2000- staggered supply)	Request to kindly remove this point	IFB provision shall prevail
5.5	The collimator should have integrated dose measurement chamber in order to display skin dose on the live monitors in the lab.	"The collimator should have integrated dose measurement chamber in order to display dose on the live monitors in the lab".	IFB provision shall prevail
IFB 4. i)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	You have mentioned past order copies within the last Three (3) years, of at least Two (2) contracts each valued at INR 10.50 Crore for LOT-2. We request you to kindly amend the Past two order value as average INR 5 Cr to enable us to participate	Please refer Amendment No. I (Annexure I).
IFB 4. ii)	Minimum average annual turnover of Lot 1: INR 36 Cr Lot 2: INR 26 Cr Lot 3: INR 24 Cr Lot 4: INR 11 Cr calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years.	In the tender, the minimum average annual turnover over the last three (3) years given by you is INR 26 Cr for LOT-2. We request you to kindly amend the minimum average annual turnover as INR 20 Cr to enable us to participate in the tender.	IFB Provision shall prevail

Annexure II- Replies to Bidder's Query

OCB No.: ASTHA/MMCH/GD/03/01
Lot 3 - 256-Slice Dual Energy Spectral High End CT Scanner Technical Specification

Tender Clause Reference No	Original Clause	Clarification / Suggestion by the Participants	AHIDMS Response
1.1	Gantry Size >=70 cm	Gantry Size >=78 cm Gantry Size >=80 cm Gantry Size >=80 cm Gantry Size >=78 cm	Please refer Amendment No. I (Annexure I).
1.2	Scan Field (FOV) >=50 cm	FOV >=50 cm & Dual Energy/Spectral FOV >=50 cm	Please refer Amendment No. I (Annexure I).
2.2 & 3.2	mA Range : 20-1300 mA or better	10-1000 mA or better 20-825 mA or better 20-900 mA or better	Please refer Amendment No. I (Annexure I).
2.3	KV : 70-140 Kvp	80-140 Kvp 80-135 Kvp	Please refer Amendment No. I (Annexure I).
3.4	Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 7 MHU or more.	Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 7.5 MHU or more Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 8 MHU or more Tube Heat Storage Capacity : X-ray tube with minimum heat storage capacity (actual and not equivalent) of 7.5 MHU or more	Please refer Amendment No. I (Annexure I).
3.5	Tube Cooling Rate: Minimum cooling rate of 1.7 MHU/min or better	Minimum cooling rate of 1.6 MHU/min or better Minimum cooling rate of 1.5 MHU/min (1500 KHU) or better Minimum cooling rate of 3.25 MHU/min (3250 KHU) or better	Please refer Amendment No. I (Annexure I).
4.2	Scannable Range >=200 cm	Scannable Range >=180 cm	Please refer Amendment No. I (Annexure I).

5.1.2	Scan time for full 360-degree rotation: <=0.33 sec	Scan time for full 360-degree rotation: <=0.27 sec Scan time for full 360-degree rotation: <=0.28 sec Scan time for full 360-degree rotation: <=0.25 sec for all acquisition mode Scan time for full 360-degree rotation: <=0.27 sec	Please refer Amendment No. I (Annexure I).
5.2.2.	Cardiac Imaging: Native Temporal resolution of 120 msec or better for mono-segment reconstruction by using latest technology	Cardiac Imaging: Native Temporal resolution of 135 msec or better for mono-segment reconstruction by using latest technology Justification: For a 0.27 sec rotation (270 ms) – the NATIVE temporal resolution should be half – 135 ms Cardiac imaging- Native/multi sector Temporal resolution of 120msec or less for mono-segment reconstruction by using latest technology Justification:Multi Sector Recon combines with Multiple Cardiac Cycle from different heart beats helps in reconstructing improved cardiac temporal resolution with variable heart rate In Cardiac CT the challenge is with variable heart rate while capturing spectral coronary imaging & managing that in CT is big challenge	Please refer Amendment No. I (Annexure I).
6.2	Dual Energy Application	Please include Dual enegy/ Spectral cardiac Imaging	Please refer Amendment No. I (Annexure I).
6.2.1	Liver VNC : Virtual non-contrast CT of the Liver, and also Liver Fat evaluation using dual energy method	Remove Liver fat Evaluation ussing dual energy	Please refer Amendment No. I (Annexure I).
6.2.5	Direct Neuro CTA	Please add one additional line for each point “The same clinical outcome to be shown either via Dual energy or standalone applications” Jutsification: The proposed amendment — 'The same clinical outcome to be shown either via Dual Energy or standalone applications' — is a technically sound and clinically	Please refer Amendment No. I (Annexure I).
6.2.6	Direct Body CTA		
6.2.7	Vascular Plaque Characterization		
6.2.8	Lung Perfusion		
6.2.11	Pulmonary Embolization		

		neutral clarification. Equivalent clinical outcomes for neuro, body, and vascular applications can be achieved via both DECT-based and standalone post-processing software platforms. This ensures clinical outcome equivalence is the procurement benchmark rather than a specific hardware implementation, preventing brand-specific lock-in while preserving full diagnostic capability.	
6.2.12	Dual energy virtual non calcium image : for evaluation of bone marrow pathology	Please deleted the item	Please refer Amendment No. I (Annexure I).
8.2	Number of Detector Rows : Number of physically independent rows must be 128 or more	Number of Detector Rows : Number of physically independent rows must be 128 or more with at least 80 mm detector coverage. Number of detectors rows Number of physically independent detector rows must be 2 X 128 or more with at least 80 mm detector coverage. Justification: configuration (256 detector rows) enables higher z-axis coverage and increased slice acquisition per rotation, supporting faster volumetric imaging. Minimum 512-slices or more acquisition / generation / reconstruction by using minimum 256-physical independent detector rows	Please refer Amendment No. I (Annexure I).
14.4.7	Coronary Analysis Automatic coronary tracking and labelling, Coronary Plaque composition analysis, Single click stenosis measurement and coronary vessel tracing, It should be able to perform complete automated 3D processing of the coronary arteries	Spectral Coronary Analysis Automatic coronary tracking and labelling, Coronary Plaque composition analysis, Single click stenosis measurement and coronary vessel tracing, It should be able to perform complete automated 3D processing of the coronary arteries Justification: Inclusion of Spectral Coronary Analysis enhances conventional coronary evaluation by enabling advanced plaque characterization and improved tissue differentiation using spectral data. This provides: • Accurate identification of plaque composition	IFB provision shall prevail

		(lipidrich, fibrous, calcified) with higher confidence • Improved visualization of coronary arteries by reducing blooming artifacts from calcium • Enhanced assessment of stenosis severity with better lumen clarity • Quantitative analysis using iodine mapping and material decomposition • More reliable automated 3D coronary processing with improved diagnostic accuracy Thus, spectral-enabled coronary analysis significantly improves clinical decisionmaking and diagnostic confidence compared to conventional coronary analysis alone	
5.1.4	Spiral / Helical length : Spiral / Helical scan length 180 cm or more.	"Spiral / Helical length : Spiral / Helical scan length 175 cm or more".	IFB provision shall prevail
5.1.7	High Speed Spiral Acquisition : > 350 mm/s.	"High Speed Spiral Acquisition : > 150 mm/s".	IFB provision shall prevail
8.1	Number of acquired slices per rotation : Minimum 256-slices or more acquisition / generation / reconstruction by using minimum 128-physical independent detector rows.	"Number of acquired slices per rotation : Minimum 512-slices or more acquisition / generation / reconstruction by using minimum 256-physical independent detector rows	IFB provision shall prevail
12.2	Display : Two large minimum 19" high resolution LCD / LCD / LED monitors with a display on 1024 x 1024 or more.	"Display : Two large minimum 19" high resolution LCD / LCD / LED monitors with a display on 1024 x 1024 or more".	IFB provision shall prevail
12.5	Brain Perfusion : Minimum 8 cm or more of coverage or better	Brain Perfusion : Minimum 16 cm or more of coverage or better	IFB provision shall prevail
14.2	Minimum number of slices / users for concurrent processing : Minimum 40,000 slice rendering capabilities.	"Minimum 3 concurrent user processing".	IFB provision shall prevail
14.1.1	Hardware : Dell / HP / IBM Dual CPU; Window server 2008 / 2012 with 192 bit or better OS / Linux server with 64 bit or better OS, RAM–192 GB minimum; Data Disc:	"Hardware : Dell / HP / IBM Dual CPU; Window server 2008 / 2012 with 192 bit or better OS / Linux server with 64 bit or better OS, RAM–192 GB	IFB provision shall prevail

	RAID level 5; Graphical processing unit : 2xNVIDIA GPU or equivalent; Internal image storage must be minimum 10 TB.	minimum; Data Disc: RAID level 5; Graphical processing unit : 2xNVIDIA GPU or equivalent; Internal image storage must be minimum 4 TB".	
14.2.1	Monitors : Two monitors of Minimum 2.0 Megapixel or better Radiological Grade Monitor with each 3-client hardware, 2 KVA online APC UPS. Total 4 monitors & 2 x 2 KVA UPS.	"Monitors : One / Two monitors of Minimum 2.0 Megapixel or better Radiological Grade Monitor with each 3-client hardware, 2 KVA online APC UPS. Total 4 monitors & 2 x 2 KVA UPS".	IFB provision shall prevail
14.3 (a)	Basic Capabilities (Minimum 2 Concurrent Users for All Below Applications).	"Basic Capabilities (Minimum 3 Concurrent Users for All Below Applications)".	IFB provision shall prevail
14.4 (b)	Advanced Application (1 Concurrent Users for All Below Application).	"Advanced Application (3 Concurrent Users for All Below Application)".	IFB provision shall prevail
14.4.6	Segmentation : Automatic segmentation of solid and subsolid lung nodules, liver and general lesions.	"Segmentation : Segmentation of solid and subsolid lung nodules, liver and general lesions".	IFB provision shall prevail
14.4.12	Spectral Liver Volumetric : Complete Auto liver segmentation, Semi-automatic quantification and volumetric with tumor burden calculation.	"Spectral Liver Volumetric : Liver segmentation, Semi-automatic quantification and volumetric with tumor burden calculation".	IFB provision shall prevail
	Software Updates and Upgrades : All future software updates compatible with supplied hardware shall be free of cost during warranty and CMC period. The CT computing software system should offer built-in security controls to protect the system from vulnerabilities that can result in cyberattacks or inappropriate access to patient data. The built-in security should comply with the latest international standards of data security and encryption, as well as with existing regulations to protect personal and protected health information (e.g. GDPR, HIPAA, any local regulation), during the complete life of the system.	"Software Updates and Upgrades : All necessary future software updates compatible with supplied hardware shall be free of cost during warranty and CMC period. The CT computing software system should offer built-in security controls to protect the system from vulnerabilities that can result in cyberattacks or inappropriate access to patient data. The built-in security should comply with the latest international standards of data security and encryption, as well as with existing regulations to protect personal and protected health information (e.g. GDPR, HIPAA, any local regulation), during the	IFB provision shall prevail

		complete life of the system".	
	In addition to above clause, Mandatory HW and SW upgrade of the post processing server and post processing computer system at the end of every 5 years from the date of installation.	"In addition to the above clause, mandatory HW and SW upgrade of the post processing server and post processing computer system shall be provided as and when required".	IFB provision shall prevail
k	High resolution knee coil 8 channels or more; Tx & Rx.	High resolution knee coil 16 channels or more; Tx & Rx. Remarks: In a new generation 3.0T system should have a very good quality of MSK imaging. Hence it is recommended to specify higher coil channe	IFB provision shall prevail
8 Data Acquisition System- Latest Detector Configuration 8.1 Number of acquired slices per rotation	Minimum 256-slices or more acquisition/generation/reconstruction by using minimum 128-physical independent detector rows	Minimum 256-slices or more acquisition/generation/reconstruction by using minimum 128-physical independent detector rows with individual detector	IFB provision shall prevail
IFB 4. i)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	The bidder or OEM should have relevant experience in providing diagnostic imaging/radiology services in healthcare institutions. Experience in MRI/ CT scan/ C-Arm/ Cath Lab /Digital Radiography or any other advanced imaging modality shall be treated as equivalent for the purpose of eligibility Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	Please refer Amendment No. I (Annexure I).

IFB 4. ii)	Minimum average annual turnover of Lot 1: INR 36 Cr Lot 2: INR 26 Cr Lot 3: INR 24 Cr Lot 4: INR 11 Cr calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years.	The turnover should be 22 Cr cumulative for all the lots to encourage wider participation.	IFB Provision shall prevail.
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.	Please refer Amendment No. I (Annexure I).

Annexure II- Replies to Bidder's Query

OCB No.: ASTHA/MMCH/GD/03/01
Lot 4 - 64 Slice CT Scan Machine

Tender Clause Reference No	Original Clause	Clarification / Suggestion by the Participants	AHIDMS Response
3	The offered CT Scanner system shall be of the latest state-of-the-art technology with independent 64 rows of detectors, capable of directly acquiring/generating a minimum of 64 slices per rotation. The system must support seamless integration with any PACS/HIS system and be fully DICOM- compliant. It should enable true isotropic volume acquisition with sub-millimeter spatial resolution. The quoted model must be certified by both USFDA and European CE, ensuring compliance with International safety and performance standards	The system should be latest state of the art, independent 32 or more rows of detectors with direct acquisition/generation of at least 64 slices per rotation capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub millimeter resolution. The model quoted should be, US FDA and European CE certified Justification: All non-cardiac system with 32 rows of Detector producing 64 slices & offers all latest generation AI based dose reduction techniques, acquisition, Planning & post processing which suffice the tender requirements. The system should be latest state of the art, independent 32 or more rows of detectors with direct acquisition/generation of at least 64 slices per rotation capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub millimeter resolution. The model quoted should be, US FDA and European CE certified. The system should be latest state of the art, independent 32 or more rows of detectors with direct acquisition/generation of at least 64 slices per	Please refer Amendment No. I (Annexure I).

		rotation capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub millimeter resolution. The model quoted should be, US FDA and European CE certified.	
B.ii	Power Output: 55 KW or More	50 KW or more 70 KW or more	Please refer Amendment No. I (Annexure I).
C.iii	Anode Heat Storage capacity of at least 7 or more MHU	Anode Heat Storage capacity of at least 8 or more MHU Anode Heat Storage capacity of at least 5.3 or more MHU	Please refer Amendment No. I (Annexure I).
C.iv	X-Ray tube cooling rate minimum 1000 KHU or more per min	X-ray tube cooling rate minimum 1500 KHU per minute Justification: Higher dissipation rate is better so that the Tubes gets cooled & more cases can be done. Performance is always better with the longevity of the TUBE. Higher tube rating ensures better heat handling capacity, as nearly all X-ray energy is converted into heat, thereby improving tube longevity, enabling sustained high performance scanning, and enhancing overall system reliability	Please refer Amendment No. I (Annexure I).
2	The offered system must be based on a model launched on or after January 1, 2018, with latest- generation hardware and software platform. The bidder shall provide documentary evidence (such as manufacturer's product launch details or regulatory approval certificate) confirming the Launch date of the offered model.	The Model offered should be the latest High end under current production with Artificial Intelligence enabled Deep Neural Network Dose reduction technique. Should have slip ring technology. System must be 2021 FDA approved Justification: Every manufacturer will offer their latest launch Latest CT Scanners are equipped with Deep Neural Network AI based Dose Reduction Technique like Precise Image true fidelity,etc	IFB provision shall prevail
G	Data Acquisition System: ii The scanner should be capable of capturing 20 mm or more coverage in one gantry rotation,	At least 32 rows of independent detectors are required with Z-axis coverage of 20 mm or more Justification: Standards 20mm Detector width comes	IFB provision shall prevail

	along	with 32 rows of Detector with all the OEM.	
R	INSTALLATION & TRAINING: Qualified personnel nominated by the deptt, should be given application training by the vendor in India for 2 weeks as asked in the Tender Document.	Inhouse Training should be provided by the Supplier/Vendor for One week in a Quarter for One Year	Remarks: Could not locate in the bid document
Additional Point		Request you to kindly provide the site drawings/details so that we can do the Site Feasibility.	
A.i	Aperture : 70 cm or more.	"Aperture : 80 cm or more".	IFB provision shall prevail
B.iii	MA Range : 20 – 625 mA.	"MA Range : 20 – 300 mA".	IFB provision shall prevail
B.iv	KV Range : 70 – 140 kv or more.	"KV Range : 80 – 135 kv or more".	IFB provision shall prevail
C.i	Tube Voltage : 70 – 140 kV or more.	"Tube Voltage : 80 – 135 kV or more".	IFB provision shall prevail
J.ii	ii Statistical Evaluation for area/volume, S.D, Mean/Max and Histogram	ii Statistical Evaluation for area/volume, S.D, Mean/Max etc . Justification: We request this amendment for effective participation.	IFB provision shall prevail
J.iii	iii Distance & angle measurement, freely selectable, positioning of co-ordinate system, grid and image annotation.	iii Distance & angle measurement, freely selectable, positioning of image annotation etc Justification: We request this amendment for effective participation.	IFB provision shall prevail
B.iii X-Ray Generator:	MA Range:20-625 mA	mA Range:20-625 mA Remarks: There is no clinical limitation with 600mA in CT for entire head to toe exam. In GE system, Clarity imaging chain with new X-ray tube, Detector and IR technology overcome Image performance challenges such as noise, spatial resolution best in the industry 19LP/cm, low contract detectability or artifact.	IFB provision shall prevail

		Performix 40 Plus with liquid bearing tube realizes 0.35sec rotation speed in routine and enables 6sec in 1000mm, combined with high helical pitch 1.531. Designed as analog cable free between ASIC and Diode and has a capability to reduce electric noise. Designed for less heat generation, up to 90% compared with previous GE technology and all in one DAS / Detector. It has capability to reduce electric noise. Designed for less floor-noise, up to 44% compared with previous GE technology and it has capability to reduce electric noise. Optimized collimator with ability to reduce scatter noise. ASiR-V is the newest technology in GE's family of industry-leading iterative reconstruction techniques. ASiR-V allows healthcare providers to lower dose by 50 to 82% as compared to standard filtered back-projection (FBP) reconstruction at the same image quality+ASiR-V extends the advanced noise and dose reduction technologies of ASiR. Existing iterative reconstruction, such as ASiR, models the noise in a way that is adaptive to the mA, kV and body habitus of the patient. Short geometry BenefitFocus to Detector 95 cm Focus to Iso-center 54 cm Because of above mentioned features in GE system	

		600 mA is more than enough for scans.Therefore, we request to tender jury to make it 20-600mA.	
iv	KV Range:70-140 kv or more	KV Range:80-140 kv or more Remarks: This specific range of kV ask is again a vender specific which is restricting specification to another promising CT vendor to participate in this tender. GE offered equipment specially equipped with dedicated "Low Dose Protocols, Pediatric Color-Coded BMI Based Protocol & ASiR-V as an “Model Based Iterative Reconstruction Technology” which will reduce up to 82% radiation dose compared to low kV scan technique. 70-140KV or more technical point ask is for low kV technique scanning however this part can be easily handled by different techniques called “Broselow-Luten System And Color-Coding Kids” for the low dose CT scans which is inbuilt in GE CT Systems. It is recommended and stated in Journal of Cardiovascular Computed tomography (ELSEVIER) that- "Typically, 100e120 kV tube potential is sufficient for cardiac imaging in most patients. Increasing the tube voltage to 140 kV leads to a higher energy X-ray beam with better tissue penetration and a reduction in image noise, which may be necessary in very large patients. However,	IFB provision shall prevail

		increasing the tube voltage typically a increases radiation exposure proportional to the square of the tube voltage change.72 In smaller patients and children, reducing the tube potential to 100 or 80 kVp can substantially lower radiation exposure by 30- 50%, while maintaining adequate contrast-tonoise and diagnostic image quality. platforms supported by improved detector technology and specific tube designs that maintain the ability to use high tube currents at low tube potential permit coronary CTA at 70 kVp, although there is limited data on the diagnostic performance at this tube potential." Hence, WGE requesting to tender technical committee to kindly change the kV range from 70-140 KV or more into 80-140 kV or more to allow wider participation by multiple global reputed CT vendors in this Tender.	
C.i X-Ray Tube (essentially dual focus):	TubeVoltage:70- 140 kV or more	KV Range:80-140 kv or more	IFB provision shall prevail
E.i Spiral Acquisition:	Scan Time should be 0.50 sec or less for full 360-degreerotation	Scan Time should be 0.35 sec or less for full 360-degree rotation Remarks:a. Without ≤ 0.35 Sec Gantry rotation time, selection of “64 rows CT will become major challenge for “Head-To-Head” product comparison in this broad spectrum of tender requirement. All	IFB provision shall prevail

		major OEMs have 0.35 seconds gantry rotation times like: - Philips = Incisive Premium = 0.35second, - Fuji/Hitachi = Scenaria View = 0.35 second - Canon/Toshiba = Aquilian Prime = 0.35 second - GE = Revolution Maxima = 0.35 second & - Siemens = Somatom Go.Top = 0.33 second. b. Minimum scan time for a 360º rotation of ≤0.35 second gantry rotation readily available in the current 21st century of 128 -Slice CT gantry with all the major CT vendors. c. Faster Gantry Rotation Time Provide: i. Higher the Temporal Resolution of the system to freeze the organ motions to depict the minute & small structure/lesion in detail. ii. Motion free imaging to avoid repeat exam. iii. Deliver lower radiation dose. iv. Require low contrast volume & v. Reduce the motion artifact with excellent clinical output, which is very important in Emergency, Trauma, Pediatric, Ward & Breathless Patients CT. d. Please note that all 128-Slice CT equipment installed/procured by below organizations are all having 0.35 seconds rotation time capability. - PAN India By HLL, - 28-Unit 2021 order By DGAFMS, - 6-Unit 128-Slice CT Tender By HLL, - JLNMC Ajmer By HLL, - SPMC PBM Bikaner By HLL - PGIMER Chandigarh	

		- RMLIMS Lucknow - SGPGIMS Lucknow - JIPMER Puducherry - TMC Mumbai b. Further global guidelines do recommend 0.35 second gantry rotation time for true 64 Rows CT scanner. c. Standards of practice of CTCA for adult patients – Royal college of physicians (www.rcr.ac.uk) -page no. 9 section 7 d. (American College of Radiology ACR guidelines) - SCCT guidelines for the performance and acquisition of coronary computed tomographic angiography; (ELSEVIER) www.JournalofCardiovascularCT.com Page no. 2 – section 3.3 Hence, WGE is requesting to Guwahati tender technical committee to kindly chnge the gantry rotation time from 0.5 Sec into 0.35 sec or less for true 64 Rows CT manufacture participation in this regional reputed CT tender.	
G Data Acquisition System: i Detector-Capable of acquiring / generating 64 slices per 360	ii The scanner should be capable of capturing 20 mm or more coverage in one gantry rotation, along The Z-axis, using independent detector elements	The scanner should be capable of capturing 40 mm or more coverage in one gantry rotation, along The Z-axis, using independent detector elements. Remarks:As per American College of Radiology (ACR) and National Health Mission (NHM) GOI and global guidelines recommendations for 64 -slice CT scanners intended for comprehensive clinical use, the minimum effective Z-axis detector coverage	IFB provision shall prevail

degrees of rotation		is approximately 38 mm using independent detector elements. A specification of 38 mm or more aligns with these standards and ensures compliance with nationally and internationally accepted imaging benchmarks, whereas a 20 mm coverage reflects obsolete or entry-level detector architecture. Clinical Performance and Scan Efficiency Higher Z-axis coverage per gantry rotation directly improves: Faster volumetric acquisition Reduced total scan time Lower motion artifacts, especially in cardiac, neuro, trauma, and pediatric imaging Improved patient throughput, critical for high-volume public healthcare facilities In view of: ACR and NHM guideline intent (38 mm detector coverage),Clinical efficiency and patient safety considerations,Radiation dose optimization requirements,Alignment with current 64-slice CT technology, it is technically justified and recommended to amend the tender specification as follows: “The scanner should be capable of capturing 38 mm or more coverage in one gantry rotation, along the Z-axis, using independent detector elements.” A 20 mm detector coverage would require multiple rotations to image standard anatomical regions, increasing examination time and susceptibility to motion artifacts.	
Point B.iii) MA	20-625 mA	10-420 mA or more Remark:To broaden OEM participation. A mA	IFB provision shall prevail

Range:		range of 10-420 mA is clinically adequate for all standard 64-slice CT protocols. mA Range:20-625 mA Remarks: There is no clinical limitation with 600mA in CT for entire head to toe exam. In GE system, Clarity imaging chain with new X-ray tube, Detector and IR technology overcome Image performance challenges such as noise, spatial resolution best in the industry 19LP/cm, low contract detectability or artifact. Performix 40 Plus with liquid bearing tube realizes 0.35sec rotation speed in routine and enables 6sec in 1000mm, combined with high helical pitch 1.531. Designed as analog cable free between ASIC and Diode and has a capability to reduce electric noise. Designed for less heat generation, up to 90% compared with previous GE technology and all in one DAS / Detector. It has capability to reduce electric noise. Designed for less floor-noise, up to 44% compared with previous GE technology and it has capability to	

		reduce electric noise. Optimized collimator with ability to reduce scatter noise. ASiR-V is the newest technology in GE's family of industry-leading iterative reconstruction techniques. ASiR-V allows healthcare providers to lower dose by 50 to 82% as compared to standard filtered back-projection (FBP) reconstruction at the same image quality+ASiR-V extends the advanced noise and dose reduction technologies of ASiR. Existing iterative reconstruction, such as ASiR, models the noise in a way that is adaptive to the mA, kV and body habitus of the patient. Short geometry BenefitFocus to Detector 95 cm Focus to Iso-center 54 cm Because of above mentioned features in GE system 600 mA is more than enough for scans.Therefore, we request to tender jury to make it 20-600mA.	
Point F.i)	High contrast resolution should be at least 15 lp/cm for axial and spiral at 0-5% MTF with Full FOV	High contrast resolution should be at least 20 lp/cm for axial and spiral at 0-5% MTF with Full FOV Remark: While 15 lp/cm is a minimum acceptable threshold for older CT systems, modern 64-slice platforms consistently achieve 20-24 lp/cm. The	IFB provision shall prevail

		higher resolution directly benefits the spatial resolution.	
Point J:	Workstation client server architecture: 1 in numbers	Workstation client server architecture: 3 in numbers (3 concurrent licenses) Remarks: To improve workflow efficiancies , remove workflow bottlenecks during peak hours and for multidisciplinary complex cases	IFB provision shall prevail
Delivery Timeline Page no. 88 Section 6: Schedule of Supply	Within 3 months from the date from the day of signing of Contract.Supply will start after 7 days of signing of Contract and is to be completed within 3 months from the day of signing of Contract	Delivery Timeline 120 days from: a) Issuance of Supply order or b) Opening of confirmed & irrevocable Letter of Credit for 90% of Imported equipment Order or c) Release of 10% advance payment or d) Site availability along with Permanent Power & required statutory approvals whichever is later.Additionally, Installation period of 60 days from receipt of equipment at site. Justification: Permanent power and statutory approvals if any applicable are prerequisites for delivery of the equipment and it is not advisable to store the equipment in the incidence of site not being ready. Also, the LC as agreed in the tender along with advance payment need to be established for a contract to be effective. Therefore, delivery timelines should be linked with LC issuance / site handover / permanent power and statutory approvals. Delivery – 180 days from date of receipt of confirmed Purchase Order, Letter of Credit, Site	IFB provision shall prevail

		handover, required power termination at site, whichever is later.	
Payment Terms Page no.151 Point no. GCC 16.3 GCC 16.1 on page no. 163	Payment Terms Page no.151 Point no. GC 16.3 Payments shall be made promptly by the Purchaser, no later than 60 days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it. Payments for Supplies, Installation, Testing& commissioning and CAMC Charges shall be governed as follows: 1. For Supply, Installation, Testing & Commissioning: - (a) Advance Payment: 10% of the Contract Price excluding CAMC value within 28 days of signing of the Contract. Payment shall be made provided the Supplier presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee for an amount equal to the amount of the payment, and that shall be valid until the Goods are delivered. The security shall be in the form as specified in Section 9 (Contract Forms). In case supplier request for advance payment is not received by purchaser, same will be added to the next payment milestone.	Main equipment along with accessories Payment shall be made in the quoted currency in the following manner: i. Advance Payment: Ten (10) percent of the Contract Price shall be paid, upon signing of the Contract, within thirty (30) days after receipt of Proforma invoice and a bank guarantee for the equivalent amount valid until the Goods and Related Services are delivered and, in the form, provided in the Bidding Documents or another form acceptable to the Purchaser. ii. Against presentation of dispatch documents: Eighty (80) percent of the Contract Price shall be paid through an irrevocable letter of credit opened in favor of the Supplier in a bank in his country and upon submission of documents i.e TAX invoice, packing list, Copy of Lory receipt, warranty certificate, Insurance certificate. iii. On Final Acceptance: Ten (10) percent of the Contract Price shall be paid on submission of Final Acceptance certificate issued by the consignee. Justification: Advance payment to be released based on Proforma invoice as actual invoicing of equipment can be done only at time of dispatch. Kindly release 80% payment on presentation of dispatch documents. Dispatch of equipment is substantiated with multiple third-party records such	IFB provision shall prevail

	(b) On Completion of Delivery, Installation, Commissioning and Successful completion of 1st training on site after commissioning: The Purchaser shall pay the Supplier 80% of the Contract Price excluding CAMC upon submission of documents specified in SCC Clause 12.1. (c) 10 % of the Contract Price excluding CAMC received shall be paid after completion of the warranty period of 5 years. Purchaser may consider release of this payment milestone before due date provided supplier submit equivalent bank guarantee valid up to required period.	as insurance certificate, inspection agency etc. hence delivery is ensured. Payment release based on dispatch documents ensures seamless process and reduces procedural delays in getting relevant certificate / acknowledgment from end user. 100% payment will be released through inland irrevocable Letter of Credit for Imported and Local items both. 90% on Shipment and 10% on successful completion of the project	
Land Border		Please implement GFR 2017 rules in the tender for the compliance of Government Norms. Justification: General Financial Rules (GFRs) 2017 are a compilation of rules and orders by the Government of India to govern the management of public finances	As this is an Asian Development Bank funded project, procurement is governed by ADB guidelines and hence this clause is not applicable
Submission and Opening of Bids As per page number 23 and point no 23.1.	Required Confirmation	As per page number 23 and point no 23.1. - It has written that copy of the Technical Bids and price bid has to be submitted whereas at page no 37 point no ITB 22.1 says "In addition to the original Bid, the number of copies is: Not Applicable as it is an e-procurement." This creates an ambiguity hence please confirm	Please refer to 23.1(a) and 23.1(b) in the Section 2: Bid Data Sheet where ITB provision 23 has been modified.
Submission of Price Bid	Required Confirmation	As this is a online bid submission whether this is mandatory to submit Price bid in Physical Form	Please refer to 22.1, 23.1(a) and 23.1(b) in the Section 2: Bid Data Sheet

Hard Copies Submission	Required Confirmation	Please confirm the documents which needs to be submitted in physically	Please refer to 22.1, 23.1(a) and 23.1(b) in the Section 2: Bid Data Sheet
Page No 53, Technical Bid Submisison Sheet, point (b)	We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Integrity Principles and Guidelines (2015), both as amended from time to time.	Request to share the copies of these policies	Please visit https://www.adb.org/sites/default/files/institutional-document/32131/integrity-principles-guidelines.pdf for details
Page No 80 Form EXP – 1	Total Contract Amount	Please remove this requirement, the amount of contract can't be disclosed at the time bidding stage	These information must be provided which are linked to eligibility criteria
Page No 82 Form FIN 2	Size of Operation (Average Annual Turnover)	Please allow us to submit Average Annual Turnover in our format.	Bidder is requested to comply the IFB requirement which is mandatory.
BOQ	Addition request	Please provide options to quote Year wise CAMC prices	IFB Provision shall prevail
BOQ	Addition request	Please provide option to Site Preparation prices	IFB Provision shall prevail
BOQ	Addition request	Please provide option to Buyback prices	IFB Provision shall prevail
Page No 64, Price Schedule for Goods to be Offered from Outside the Purchaser's Country,	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination specified in BDS	Please confirm the currency type to be quoted here.	Please refer to Section 6: Schedule of Supply/BOQ in excel format under financial bid folder. Bidder may quote in any currency allowed in the BOQ format in excel
IFB 4. i)	Successfully completed as a main supplier within the last Three (3) years, of at least Two (2) contracts each valued at Lot 1: INR 14.50 Crore Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and	The bidder or OEM should have relevant experience in providing diagnostic imaging/radiology services in healthcare institutions. Experience in MRI/ CT scan/ C-Arm/ Cath Lab /Digital Radiography or any other advanced imaging modality shall be treated as equivalent for the purpose of eligibility Lot 1: INR 14.50 Crore	Please refer Amendment No. I (Annexure I).

	complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	Lot 2: INR 10.50 Crore Lot 3: INR 9.50 Crore Lot 4: INR 4.50 Crore with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply)	
IFB 4. ii)	Minimum average annual turnover of Lot 1: INR 36 Cr Lot 2: INR 26 Cr Lot 3: INR 24 Cr Lot 4: INR 11 Cr calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years.	The turnover should be 22 Cr cumulative for all the lots to encourage wider participation.	IFB Provision shall prevail
Section 3: Evaluation and Qualification Criteria 2.3.2 Technical Experience	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Five(5) years.	The Bidder shall demonstrate that the goods offered have (i) been in production for at least Five(5) years, and (ii) been sold a minimum of two(2) units of similar type and specification over the last three (3) years; (iii) been in operation for a minimum of Three (3) years.	Please refer Amendment No. I (Annexure I).

Sd/-
Directorate of Medical Education Assam

Digitally signed by
MANOJ KUMAR CHOUDHURY
Date: 20-06-2026 10:27:36