

Amendment No.1**Date: 17.10.2018****Subject: Amendment no. 1 to the Tender Enquiry Document****Ref: (i) Tender Enquiry No.: HITES/PCD/PMSSY-IV/04/RAD/18-19 dated 27.09.2018**

The pre bid meeting of the above referred tender enquiry was held on 10.10.2018. Based on pre-bid discussions following amendments are being incorporated in the tender enquiry document.

Section VII
Technical Specifications

Schedule No. 01 - MRI 3 T		
Para	TENDER SPECIFICATION	READ AS
Page 48	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. The system should be totally new and should not contain refurbished or having recycled items. Silent scanning (noise level <80dB) to be enabled as standard
	MAGNET	
Page 48	Physiological signal display on Gantry	The vendor should quote model with physiological signal display on gantry if available
	Gradient system	
Page 48	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.	Activity shielded Gradient System with strength of at least 44 mT/m at slew rate of 200T/m/sec to be achieved simultaneously for the same FOV & preferably low linearity . The rise time should not be more than 250 micro second to reach the maximum gradient strength.
	RF coils	
Page 49	Suitable Coil / Coil combination (Max 2) for Peripheral Angiography 32 channels or more; with coverage of 80cm or more.	Dedicated coil/coil combination for peripheral angiography of 32 or more channel with coverage of 80cm or more
Page 52	Imaging sequence b. Spin echo (SE); multi-slice single echo, multislice multi-echo (B echo or more) with minimum TR and TE. SE with symmetrical and asymmetrical echo intervals: MT-SE imaging sequence.	Amended as: b. Spin echo (SE); multi-slice single echo, multislice multi-echo (B echo or more) with minimum TR and TE. SE with symmetrical and asymmetrical echo intervals: MT-SE imaging sequence. Compress Sensing & Simultaneous Multislice Imaging should be available
Page 52	Fast sequences f. Fat and water suppressed imaging sequences including the sequence which should give 4 contrast (in phase, opposed phase. FAT and Water) images in a single acquisition to be quoted as standard. EPI optimized sequences for T1, T2, PD imaging. perfusion, regular diffusion values {5b, 3 directions), EPI-FLAIR. CPI-IR, IPI-FLAIR diffusion tensor. EPI-MT-	f. Fat and water suppressed imaging sequences including the sequence which should give 4 contrast (in phase, opposed phase. FAT and Water) images in a single acquisition to be quoted as standard. EPI optimized sequences for T1, T2, PD imaging. perfusion, regular diffusion values {5b, 3 directions), EPI-FLAIR. CPI-IR, IPI-FLAIR diffusion tensor. EPI-MT-FLAIR, tensor diffusion (5b

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	FLAIR, tensor diffusion (5b values in minimum in six directions) for diffusion studies. Suitable artifact/fat suppression techniques to be incorporated in the sequence to have optimum image quality. There should be capability of generation of ADC map (isotropic and anisotropy from the regular diffusion and tensor data). Facility of online generation of ADC map should be there. Optimized sequence package for special applications.	values in minimum in six directions) for diffusion studies. Suitable artifact/fat suppression techniques to be incorporated in the sequence to have optimum image quality. There should be capability of generation of ADC map (isotropic and anisotropy from the regular diffusion and tensor data). Facility of online generation of ADC map should be there. Optimized sequence package for special applications. Small focus DWI should be standard
	ACCESSORIES	
Page 55	7. MRI compatible syringe pump – 2 Nos	7. 3.0T MRI compatible syringe pump – 2 Nos
Page 55	One MRI compatible Multiparameter Vital Signs Patient Monitor of 5000 Gauss Compliance in MRI Room and One Slave monitor in console room with following modules provision to monitor the following	One MRI compatible Multiparameter Vital Signs Patient Monitor of 5000 Gauss Compliance / 1.5 meter from isocentre compliance in MRI Room and One Slave monitor in console room with following modules provision to monitor the following
Page 55	b. ECG	b. wireless ECG
Page 55	f. Oxygen saturation – Pulse oximeter with adult, pediatric probe, and neonatal probes - 2 sets (with the spare probes), Should have plethysmograph perfusion factor.	f. Oxygen Saturation- wireless Pulse oximeter with adult, pediatric probe, and neonatal probes - 2 sets (with the spare probes), Should have plethysmograph perfusion factor
		Added para: j. IBP module - 2nos
Page 55	16. Metal detectors: i. Hand held metal detector- 02 nos. ii. Walk through Metal detector - 01 no iii. Walk through Metal detector with multiple sensor and multiple location LED (Zone III type) - 01 no (Optional)	16. Metal detectors: i. Hand held metal detector- 02 nos. ii. Walk through Metal detector - 01 no iii. Walk through Metal detector with multiple sensor and multiple location LED (Zone IV type) - 01 no (to be installed at the entry door to the patient preparation area and must allow passage of patient trolley)
Page 55	TRAINING Qualified personnel nominated by the deptt, should be given application training by the vendor in India for 2 weeks	Qualified personnel nominated by the deptt, should be given application training by the vendor in India for 4weeks
	SITE MODIFICATION WORK	
Page 57	Anti static Vinyl flooring within the Magnet room Providing and laying approved quality , colour, design and shade fully homogeneous 600 x 600 mm(thickness to be specified by the manufacturer) vitrified tile flooring (Marbonite or Granamite, confirming to IS code 15622 with water absorption less than 0.08%) flooring in pattern as detailed in drawing or as directed by the EIC and grouted with matching colour approved quality readymade grout,curing, cleaning etc to required line level etc. all complete at all leads, lifts and heights to the entire satisfaction of the EIC. Providing and fixing 2-3mm thick POP protection over	Anti static Vinyl flooring within the Magnet/gantry room. The rest of the MRI area - Providing and laying approved quality , colour, design and shade fully homogeneous 600 x 600 mm(thickness to be specified by the manufacturer) vitrified tile flooring (Marbonite or Granamite, confirming to IS code 15622 with water absorption less than 0.08%) flooring in pattern as detailed in drawing or as directed by the EIC and grouted with matching colour approved quality readymade grout,curing, cleaning etc to required line level etc. all complete at all leads, lifts and heights to the

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	polythene covering sheet to flooring areas till handed over and cleaning, etc all complete as per drawings & specification and as directed by EIC with 100mm tile skirting to match in MRI room , console room , equipment room , patient preparation room, reporting room , patient waiting area and radiologist room. Note: Mode of measurement (Finished surface area of the tiles shall be measured and paid. Rate shall be inclusive of providing and laying levelling course, PVC spacers,providing and applying epoxy grout and no additional payment shall be made for wastages).	entire satisfaction of the EIC. Providing and fixing 2-3mm thick POP protection over polythene covering sheet to flooring areas till handed over and cleaning, etc all complete as per drawings & specification and as directed by EIC with 100mm tile skirting to match in MRI room , console room , equipment room , patient preparation room, reporting room , patient waiting area and radiologist room. Note: Mode of measurement (Finished surface area of the tiles shall be measured and paid. Rate shall be inclusive of providing and laying levelling course, PVC spacers,providing and applying epoxy grout and no additional payment shall be made for wastages).
	Plumbing work	
Page 57	I. All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make. II. Copper pipes to be used for plumbing the Chiller to the MRI	No change
	AIR CONDITIONING:	
Page 58	i. Total capacity of the Air-Conditioning (ductable + split) for the entire MRI scan centre area should be at least 15 TR.(incl. standby airconditioning) ii. Ductable package air conditioners and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. . The Air conditioning should be designed with standby provision to function 24 hours a day.a) iii. The outdoor units of AC should have grill coverings to prevent theft and damage. iv. Ventilation is required in toilet.	i. Total capacity of the Air-Conditioning (ductable) for the entire MRI scan centre area should be at least 18 TR.(incl. standby airconditioning) with humidity control between 55-60 % RH ii. Ductable package air conditioners units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. . The Air conditioning should be designed with standby provision to function 24 hours a day. iii. The outdoor units of AC should have grill coverings to prevent theft and damage. iv. Ventilation is required in toilet.
	Miscellaneous:	
Page 58	4 Dry chemical power type fire extinguisher of 5kgs capacity, with initial filling in brand new cylinder with power coated finish, fitted with Gun metal union, high pressure CO2 gas cartridge, discharge hose, wall mounting bracket etc. complete, confirming t IS:2171 of approved make & complete as directed by EIC.	4 Dry chemical power type fire extinguisher of 5kgs capacity, with initial filling in brand new cylinder with power coated finish, fitted with Gun metal union, high pressure CO2 gas cartridge, discharge hose, wall mounting bracket etc. complete, confirming t IS:2171 of approved make & complete as directed by EIC. 5 kg MRI compatible fire Extinguisher - 2 nos to be also supplied
	STANDARD AND SAFETY Should be FDA or European CE approved product.	Offered model should be European CE with 4 digit notified body no or US FDA approved. Copy of certifications should be submitted with bid
		Added para under site modification work: Fire Detection system(consisting fire panel,

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		smoke & heat detectors, hooters, response indicators etc.) for the entire MRI area
		Added para in accessories: MRI room Oxygen deficiency level monitor 1 no (price to be quoted separately)
		Added para in accessories: MRI compatible transport ventilator 1 no (Price to be quoted separately)
		Added para in accessories: MRI compatible wheel chair 1 no (Price to be quoted separately)

Schedule No. 02 - CT Scan - 256 Slice		
Para	TENDER SPECIFICATION	READ AS
	Gantry:	
Page 61	The Minimum scan time for a 360 Degree rotation should be less than or equal to 0.35 seconds.	The Minimum scan time for a 360 Degree rotation should be less than or equal to 0.28 seconds or better
Page 61	The Scan field of view (FOV) in acquisition mode should be at least from 200 mm to 500 mm with intermediate Steps for scanning different anatomies.	The Scan field of view (FOV) in acquisition mode should be at least from 250 mm to 500 mm with intermediate Steps for scanning different anatomies.
	X ray Section:	
Page 61	The mA range available should be between 20 to 800 mA or more with increments in steps of not more than 10mA.	The mA range available should be between 20 to 740 mA or more with increments in steps of not more than 10mA.
Page 61	The X ray Tube should be essentially Dual Focus. The heat storage capacity should be 7 MHU or equivalent. Specify the method and technique of cooling.	The X ray Tube should be essentially Dual Focus. The heat storage capacity should be at least 5.5 MHU or equivalent. Specify the method and technique of cooling.
	Detectors:	
Page 62	The Console offered should be the Latest Multi tasking Processors and a menu driven platform with a RAM size of at least 4 GB.	The Console offered should be the Latest Multi tasking Processors and a menu driven platform with a RAM size of at least 8 GB .
Page 62	Workstations & Server: A multimodality client server architecture based solution with minimum concurrent 24000 slices rendering capacity, with 64GB RAM with storage of minimum 2TB and Additional online storage of 10 TB on the server. Client hardware specification- 2no.s Workstation with two licences : dual quad core processor, 16 GB RAM, 1TB hard drive, DVD Writing with medical grade monitor of minimum 2 MP resolution & 3 button mouse.	Workstations & Server: A multimodality client server architecture based solution with minimum concurrent 24000 slices rendering capacity, with 64GB RAM with storage of minimum 2TB and Additional online storage of 10 TB on the server. Client hardware specification- 2no.s Workstation with two licences : dual quad core processor, 16 GB RAM, 1TB hard drive, DVD Writing with medical grade monitor of minimum 2 MP resolution & 3 button mouse. The server client solution offered should be OEM
Page 62	DUAL ENERGY APPLICATIONS to be provided as standard: Renal Calculi Characterisation & Gout.	DUAL ENERGY APPLICATIONS to be provided as standard: Specify technique used - Rapid kV switching or dual source

Schedule No. 02 - CT Scan - 256 Slice		
Para	TENDER SPECIFICATION	READ AS
		<p>specify FOV for dual energy application Minimum 2 nos of concurrent users should be possible Renal Calculi Characterisation, Gout, Cardiac including myocardial perfusion, Lung perfusion & pulmonary emboli dedection, Vascular plaque characterisation, Virtual NCCT, Direct Neuro CTA, Contrast vs blood differentiation, Monoenergetic imaging, Tissue differentiation (tendon ligament), Endo leak assesment</p>
	Application	
Page 63	Should have iterative reconstruction technique for X Ray dose reduction.	Should have model based iterative reconstruction technique (VEO/ADMIRE/IMR) for X Ray dose reduction.
Page 63	Lead Glass as per AERB norms : 120 x 90 cm or more	Lead Glass as per AERB norms : 200 x 100 cm
Page 63	Offered model should be European CE or US FDA approved. Copy of certifications should be submitted with bid	Offered model should be European CE with 4 digit notified body no or US FDA approved. Copy of certifications should be submitted with bid
Page 63	On Site Training for a period of Two Weeks.	On Site Training for a period of 4Weeks.
	Civil Works	
Page 64	Active and passive room shielding for magnetic, fringe field should be provided as per the requirement of the equipment.	Deleted
Page 65	Dual Head Pressure Injector 1 no	Syringeless triple head pressure injector with extravasation detection technology 1 no
	The cost of Site Modification for the area of 1000 sq.ft and Air-conditioning of Tonnage 10 TR will be considered for Ranking / Evaluation purpose.	The cost of Site Modification for the area of 1000 sq.ft and Air-conditioning of Tonnage 15 TR will be considered for Ranking / Evaluation purpose. Total capacity of the Air-Conditioning (duct-able) for the entire CT scan centre area should be at least 15 TR.(incl. standby airconditioning) with humidity control between 55-60 % RH
		Added para under site modification work: Fire Detection system(consisting fire panel, smoke &heat detectors, hooters, response indicators etc.) for the entire CT area

All other terms and conditions of the tender enquiry remain unaltered.