



Running Contract Details	
Equipment Name	MR Simulator
Running Contract Valid Till	10-06-2026
Tender Ref No	KMSCL/EP/T519/1663A/2023
Tendered Quantity	2
Supplier Name	M/s Siemens Healthcare Private Limited
GST No	33AAVCS8021P1ZM
Installation & Delivery Period	20 Week(s)
Up-time / PM vist	95% & 2 Visits per year
Warranty period	5 Years

Supplier`s Details		
Address	Contact Details	
Seethakathi Business Centre No.272/688 5th Floor Anna Salai Chennai - 600 006	Contact Person	B V Rahul, K Unnikrishnan
	Phone	0484 4028622/04466784169
	Mobile No	+91 98406 22623, +91 85899 99606
	Email	rahul.b_v@siemens-healthineers.com, unnikrishnan.k@siemens-healthineers.com

Item-wise Price Details				
#	Item Details	Unit Rate (Incl.all taxes & charges)	Service Charges (Through KMSCL)	Grand Total
1	<b>MR Simulator</b> <i>Model &amp; Make : Magnetom Sola (CN)/Siemens Healthineers</i>	134894217.92 Incl.GST :12%	9948448.57	144842666.49
2	<b>MR-RT Planning Functionality including Lasers</b>	18276812.96 Incl.GST :12%	1347914.96	19624727.92
3	<b>Additional Workstation</b>	1300000.1 Incl.GST :18%	91000.01	1391000.11
4	<b>MR compatible pressure injector with syringes</b>	2290000.16 Incl.GST :12%	168887.51	2458887.67
5	<b>Full system UPS</b>	3179999.7 Incl.GST :18%	222599.98	3402599.68
6	<b>Dry Imager</b>	660000.32 Incl.GST :12%	48675.02	708675.34
7	<b>IV stand (MR compatible)</b>	30000.32 Incl.GST :18%	2100.02	32100.34

Item-wise Price Details					
8	Patient trolley (MR compatible)		89999.78 Incl.GST :18%	6299.98	96299.76
9	Music and PA system with speakers		49560 Incl.GST :18%	3469.2	53029.2
10	Hand held metal detector		39999.64 Incl.GST :18%	2799.97	42799.61
11	Metal detector door		1289999.6 Incl.GST :18%	90299.97	1380299.57
12	Wheel Chair (MR Compatible)		110000.1 Incl.GST :5%	8653.34	118653.44
13	Fire extinguisher MR compatible		50000.16 Incl.GST :12%	3687.51	53687.67
14	MR Compatible Stethoscope		50000.16 Incl.GST :12%	3687.51	53687.67
15	Post Processing Workstation		20161782.08 Incl.GST :18%	1411324.75	21573106.83
16	MR-RT Planning Positioning accessories, patient couch		10123186.96 Incl.GST :18%	708623.09	10831810.05
17	ACR Phantom		609999.82 Incl.GST :18%	42699.99	652699.81
			<b>193205559.78</b>	<b>14111171.39</b>	<b>207316731.17</b>
Annual / Comprehensive Maintenance Charges (Exl.Tax)					
Rate	6 <sup>th</sup> Year	7 <sup>th</sup> Year	8 <sup>th</sup> Year	9 <sup>th</sup> Year	10 <sup>th</sup> Year
<b>MR Simulator</b>					
Labour					
Comprehensive	8,08,000.00	84,84,000.00	89,08,200.00	93,53,610.00	98,21,291.00

### Other terms & conditions

1. The supplier shall execute an agreement with the purchaser as per tender conditions (agreement format is given in the tender document).
2. The supplier shall submit performance security amounting to 5.00% of the value of the supply order.
3. The labour & comprehensive charges of equipment after the completion of warranty period is finalized by KMSCL as mentioned above.
4. Since discount rate is not applicable for equipment under Running Contract of KMSCL, purchase/supply order can be issued directly to supplier at the given rate with tax & other charges (exclusive of KMSCL service charges).
5. If purchase/supply order is issued directly to the supplier, KMSCL service charge need not be paid. But the copy of the said order may be forwarded to KMSCL for information.

## Technical Specification

### Equipment :MR Simulator

1	<b>MRI Simulator- 1 No</b>
1.1	General
1.1.1	Name of Work/ Description of Item: Technical specification of 1.5 Tesla Magnetic Resonance Imaging & virtual simulation for Radiation Therapy
1.1.2	Name of Work/ Description of Item: Technical specification of 1.5 Tesla Magnetic Resonance Imaging & virtual simulation for Radiation Therapy
1.1.3	Please specify the manufacturer and model of all 3rd party supply equipment and software
1.1.4	Please quote latest State-of-the-art equipments
1.1.5	Yes or No should be mentioned in compliance report and additional information like part number/Catalogue /Make /Model /Brand of the item quoted should be provided in detail.
1.2	Name of Equipment / Model Please Specify
1.2.1	List down the model name of the subsystem/ major component
1.2.2	Year of launch internationally
1.2.3	Year of launch in India
1.3	<b>MAGNET</b>
1.3.1	1.5 T active shielded super conductive newer designed magnet not older than 2016. Magnet should be short and non-claustrophobic to ensure highest patient comfort.
1.3.2	It should have at least 70 cm patient bore with flared opening
1.3.3	Magnet length should be less than 190 cm.
1.3.4	Guaranteed Homogeneity of magnet should be less than or equal to 0.75 ppm at 40 cm DSV
1.3.5	The magnet should be well ventilated and illuminated with built in 2 way intercom for communication with patient.
1.3.6	Magnet should have touch display for information on Coil connectivity, physiological curves, start scan, switching off Alarms, Automatic transfer from any vertical position to
1.7	<b>SHIM SYSTEM</b>
1.7.1	High performance, highly stable shim system with global and localized automated shimming for high homogeneity magnetic field for imaging and spectroscopy.
1.7.2	Auto shim should be available to shim the magnet with patient in position
1.8	<b>GRADIENT SYSTEM</b>
1.8.1	The gradient should be such that the peak amplitude of min 44 mT/m and slew rate of min 200 T/m/s.
1.8.2	The system should have efficient and adequate Eddy current compensation
1.9	<b>RF SYSTEM</b>
1.9.1	A fully digital RF system capable of transmitting power of at least 15KW.
1.9.2	It should have at least 48 numbers of independent receiver channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial Image.
1.9.3	It should support Parallel acquisition techniques with a factor of up to 4 or more.
1.9.4	Should allow remote selection of coils and / or coil elements. Magnet should have touch display for information on Coil connectivity
1.10	<b>PATIENT TABLE</b>
1.10.1	The table should be fully motorized, computer controlled table movements in vertical and horizontal directions and RT Compatible ( Flat Table Top).
1.10.2	A CCTV system with colour LCD display to observe the patient should be provided: Moving table angiography should be possible.
1.10.3	There should be a hand held alarm for patients

1.11	COMPUTER SYSTEM /IMAGE PROCESSOR / OPERATOR CONSOLE
1.11.1	The main Host computer should have a 19 inches or more high resolution LCD TFT color monitor with 1024 x 1024 matrix display
1.11.2	The system should have image storage capacity of 100 GB for at least 2,00,000 images in 256x256 matrix.
1.11.3	The reconstruction speed should be at least 1300 or more for full FOV 256 matrix.
1.11.4	The main console should have facility for music system for patient in the magnet room. The system should have DVD / CD / flash drive archiving facility. The system should be provided with auto DVD writer.
1.11.5	Two way intercom system for patient communication.
1.12	MEASUREMENT SYSTEM
1	Largest Field of View should be at least 50 cm in all three axis.
2	The measurement matrix should be from 128x128 to 1024x1024.
3	Minimum 2D slice thickness mm should be equal to or less than 0.5
4	Minimum 3D slice thickness mm should be equal to or less than 0.1
1.13	COIL SYSTEM
1.13.1	The main body coil integrated to the magnet must be Quadrature / CP. In addition to this following coils should be quoted
1.13.2	Head / Neck Coil 20 ch or more, capable of high resolution neuro-vascular imaging
1.13.3	Spine Array/Matrix Coils for thoracic and lumbar spine imaging - 32 Channel.
1.13.4	Body Array/Matrix coil for 32 channel Body Imaging in a single FOV.
1.13.5	Dedicated Shoulder Coil atleast 16 ch.
1.13.6	Dedicated Knee coil with at least 16 channels
1.13.7	Flex coils Large and Small with atleast 16 channels
1.13.8	The system should continuously monitor the RF coils used during scanning to detect failure modes. RF coils should not require either set up time or coil tuning; Multi coil connection for up to 4 or more coils simultaneous scanning without patient repositioning i.e. like TIM/ GEM/D stream coil combination should be quoted as standard. The coil system should permit coverage of at least 200 cm to scan patient from Head to toe without repositioning of patient or reconnecting of coils.
1.13.9	Suitable Coil Storage Cart should be supplied for keeping the supplied coils.
1.14	APPLICATION SEQUENCES
1.14.1	The system should have basic sequences package with Spin Echo, Inversion Recovery, Turbo Spin Echo with high turbo factor of 256 or more, Gradient Echo with ETL of 255 or more, FLAIR.
1.14.2	Single slice, multiple single slice, multiple slice, multiple stacks, radial stacks and 3D acquisitions for all applications.
1.14.3	Single and Multi shot EPI imaging techniques with ETL factor of 255 or more
1.14.4	Fat suppression for high quality images both STIR and SPIR.
1.14.5	The system should acquire motion artifact free images in T2 studies of brain in restless patients (Propeller 3.0, Multivane XD, Blade etc)
1.14.6	Dynamic study for pre and post contrast scans and time intensity studies
1.14.7	MR angio Imaging: Should have 2D/3D TOF, 2D/3D PC, MTS and TONE, ceMRA, Facilities for Accelerated time resolved vascular imaging with applications like TWIST/ 4DTraks/Tricks sequences.
1.14.8	Fat and water excitation package. Diffusion Weighted Imaging, with at least b value of 5000 or more.
1.14.9	Bolus chasing with automatic and manual triggering from fluoro mode to 3D acquisition mode with moving table facility.
1.14.10	Non contrast enhanced peripheral angiography for arterial flow with QISS/Trance/ Inhance sequences
1.14.11	The system should have basic and advanced MRCP packages including free breathing and 3D techniques.

1.14.12	The system should have facility for flow quantification of CSF, vessel flow and hepatobiliary system.
1.14.13	processing/post-processing software including color metabolite maps should be available on main console. Complete prostate spectroscopy hardware and applications should be provided.
1.14.14	Advanced Cardiac Applications: VCG gating, Morphology/wall motion; Cine perfusion imaging; Myocardial viability imaging; Arrhythmia rejection techniques, Advanced Cardiac Ventricular Measurement Analysis; Cine Cardiac Tagging Techniques; Coronary artery techniques; real time interactive imaging, 2D/3D fast field echo/balanced/steady state techniques and evaluation package on workstation
1.14.15	Perfusion imaging of brain (ASL 2D/ 3D)
1.14.16	Susceptibility weighted imaging with phase information (i.e. SWI/SWIp/eSWAN 2.0)
1.14.17	Multi Direction DWI and DTI with minimum of 128 directions(Complete package including quantification and tractography software). Prospective motion correction enabled software preferred.
1.14.18	High resolution imaging for inner ear
1.14.19	Small FOV Diffusion like FOCUS, ZOOMiT, Zoom Diffusion. (if available to be quoted separately. Not taken for evaluation)
1.14.20	Breast Spectroscopy like BREASE, GRACE, Breast Spectro. (if available to be quoted separately. Not taken for evaluation)
1.14.21	Cartilage Assessment like CARTIGRAM, MAPiT, Cartilage Assessment. (if available to be quoted separately. Not taken for evaluation)
1.14.22	Free Breathing Abdominal Imaging like IDEAL/FreeziT . (if available to be quoted separately. Not taken for evaluation)
1.14.23	Liver Imaging Package with Iron Quantification like IDEAL IQ/Liverlab etc. (if available to be quoted separately. Not taken for evaluation)
1.14.24	Bone Imaging. (if available to be quoted separately. Not taken for evaluation)
1.15	Imaging pulse sequences:
1.15.1	Sequences with gradient wave modification for extremely quiet imaging without compromise on slew rate or peak amplitude or acquisition time should be offered as standard. List the sequences which are included in this package and the estimated sound levels. The sound levels of these sequences should not exceed 85 dB.
1.16	Latest Technologies:
1.16.1	Technology to automatically detect breathing patterns as soon as the patient lies on the table for simplified workflow and minimize user interaction for respiratory triggered scans like BioMatrix Respiratory sensor or Vital eye or equivalent.
1.16.2	Display on the magnet along with use of artificial intelligence to accelerate exams by accurate patient positioning
1.17	MR - RT Planning - Optional
1.17.1	MR - RT Planning with excellent soft tissue contrast for target delineation, and density information for dose calculation. <b>Should be quoted optionally. Please quote the price separately.</b>
1	System should be capable of performing MR RT planning along with the following Software and Hardware to be used for EBRT, Brachytherapy, Proton Therapy treatments.
2	Synthetic CT generation
3	Auto contouring
4	System should have gradient distortion correction as standard.
5	1. MR RT planning for Brain, Head & Neck, Prostate, General Pelvis, should be standard,.
6	Following Customized protocols/sequences for RT imaging should be provided.
	a. T1 3D
	a. T2 3D
	a. <b>3D for efficient susceptibility artifact reduction in metal implants</b>
	a. T2 2D TSE/FSE with 3d Point DIXON fat suppression for Brain, Head & neck and Spine
	a. Istropic high resolution fast 3D Brain imaging.
	a. Real-time 4 f/s FFE motion monitoring.

	a. 3D GER/FFE for internal Marketing.
	a. DICOM MR.
	2.MR-RT Patient Couch Top
	a. Flat table top with all functionalities for proper patient positioning for RT planning should be provided- CIVCO, Orfit, or Qfix
	a. Patient up to 200kg should be supported.
	a. Standard indexing should be available.
	a. Easy positioning capability should be available.
	a. Please specify the other information in detail.
	3.MR RT Imaging Coils
	a. Standard posterior/spine coil (if available to be quoted separately. Not taken for evaluation)
	a. Dedicated height adjustable/Tillable Anterior coil for high resolution imaging with no obstruction in seeing laser guides.
	a. 1 nos. Standard Flex coils should be provided if not provided under the coil section.- RT Compatible.
	a. Oncology Support Assembly for Head/Neck, Flex Coils for Neuro, Body & Pelvic Imaging. (if available to be quoted separately. Not taken for evaluation)
	4.Geometric QA analysis software
	a. Software should be provided to analyze to accuracy of the geometry.
	a. Please specify the full details of the QA package.
	5. MR compatible LAP / CYRPA / Gammex laser system should be provided
	6.MR only simulation
	a. Please provide whether the system can be used for MR- only simulation for patients with Brain and General Pelvis cancer which enables the visualization of the lesion.
	a. If yes please specify the details such as attenuation calculation, marker visualization, auto segmentation, export to TPS, Geometry accuracy, etc.
	7.R Immobilization devices
	1. MR Compatible 3-pin Lok-bar
	1. Head Positioning accessories
	1. Pelvis positioning accessories
	1. Overlay head and Neck positioning
	1. Postfix Head & Neck positioning package
	1. Knee –Fix Cushion
	2. Feet –fix Cushion
	1. Open RT Head/Neck coil & positioners
	1. Adaptor for all coils
	1. Oncology Pelvic coil support
	1. ACR Phantom
1.18	ADDITIONAL WORK STATION / CLIENT SERVER ARCHITECTURE
1.18.1	Client server architecture-server with 3 clients for 3 users (Dexus, IntelliSpace Portal, Syngo.via, etc. or higher) capable of rendering 16000 images. Workstation hardware should be industry standards and should be the latest with the vendors
1.18.2	Hardware Server: The server should have storage capacity of at least 2.5 Tera bytes, minimum 16000 concurrent slice processing power and at least at least 96 GB RAM, Win 2019 Server OS, and at least 10-core Intel Xeon Gold 2.5GHz CPU. 21" or more TFT/LCD monitor

1.18.3	Hardware: Client / Node: CPU unit, minimum 16 GB RAM, Medical grade monitor of 2MP resolution & size - 21" or more, mouse, keyboard.
1.18.4	<b>1. Below applications should be offered for the server:</b>
1.18.5	1a. Basic post-processing software including MIP, MPR, surface reconstruction and volume rendering technique, Image fusion, 3D evaluation
1.18.6	<b>2. 2 concurrent license for each applications</b>
1.18.7	2a. Neuro perfusion quantification,
1.18.8	2b. Advanced cardiac evaluation(EF, Calculation, Wall motions, analysis) including cardiac perfusion analysis with Bulls eye plot,
1.18.9	2c. Processing of 2D/3D CSI data with color metabolite mapping,,
1.18.10	2d. Quantification of CSF flow data
1.18.11	2e. Advanced diffusion and DTI enabling the representation of diffusion paths of the human brain based on diffusion tensor imaging
1.19	Other Information
1.19.1	Export capability: Ethernet & TCP/IP consistent
1.19.2	DICOM-RT Ready
1.19.3	Should be interfaced with Hospital Information system (HIS) including the ROIS and RAS
1.19.4	Should be interfaced with Centricity PACS system from GE for Diagnostic scan images
1.20	ROIS Connectivity
1.20.1	Data transfer to ROIS network, HIS
1.21	MR compatible pressure Injector system
1.21.1	State-of-the-art pressure contrast injector single head with 100 syringes (provide make and specifications).
1.22	UPS
1.22.1	MR system and all workstations
1.22.2	UPS ( Emmerson /APC/Eaton/ Reputed make)
1.22.3	Battery back up of 15 mts