



**JAMMU AND KASHMIR MEDICAL SUPPLIES CORPORATION LTD.**  
**(Public Sector Undertaking of Govt of Jammu & Kashmir)**

Corporate Head Office: 1<sup>ST</sup> Floor, Drug Store Building, Govt. Medical College, Bakshi Nagar, Jammu

Corporate Office Kashmir: 121, Green Avenue, Hyderpora, Opp. Al-Farooq Masjid, Srinagar

Telephone: 0191-2580842, Fax: 0191-2581845 (Jammu); Telefax: 0194-2432008 (Srinagar)

**Principal/Dean,**  
Government Medical College,  
Jammu/Srinagar.

No: - PS/MD/JKMSCL/Jammu/2018/1169-72.

Dated: 26/06/2018

**Sub: Rate Contract of 1.5 Tesla MRI Machine.....regarding.**

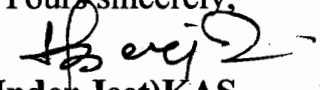
Madam,

Kindly find enclosed the copy of Rate Contract of 1.5 Tesla MRI Machine with the request that matching funds may kindly be placed at the disposal of J&K Medical Supplies Corporation Limited for procuring the same.

Matter may be given top priority.

**Enclosure: - As stated above (Rate Contract)**

Yours sincerely,

  
**(Inder Jeet)KAS**  
Managing Director

Copy to the: -

1. Principal Secretary to Government, Health & Medical Education Department, J&K, Civil Secretariat, Srinagar. : for info of factual position.
2. Director Finance, JKMSCL. : for information.
3. General Manager-Jammu (P&S) JKMSCL. : for info & follow up.
4. Office record file



# JAMMU AND KASHMIR MEDICAL SUPPLIES CORPORATION LTD.

(Public Sector Undertaking of the Government of Jammu and Kashmir)  
Corporate Head Office: GMC Complex, Bakshi Nagar, Jammu - 180001, Ph. 0191-2580842  
Corporate Office: 121-Green Avenue, Hyderabad (J&K)-190014: Telefax: 0194-2432008  
email: [enquiryjkmscl@gmail.com](mailto:enquiryjkmscl@gmail.com), [jkmsclepm@gmail.com](mailto:jkmsclepm@gmail.com); website: [www.jkmscl.nic.in](http://www.jkmscl.nic.in)

M/S Philips India Limited  
8<sup>th</sup> Floor DLF Cyber City,  
DLF Phase -3 Gurgaon

No: JKMSCL/2018/1154-68

Dated: 26-06-2018

Sub: Finalization of Annual Rate Contract for the procurement of "1.5 Tesla MRI Machine" - issuance of Rate Contract thereof.

Ref No. 1. NIT/JKMSCL/Mach/MRI/2017/277, dated 30.10.2017

2. Minutes of State Level Purchase Committee vide No. JKMSCL/MD/PS/2018/2636-50 dated 19.03.2018.

3. Your Reference No. 15/JKMSCL/MR/2214863 dated 18.12.2017.

Dear Sir,

The Jammu and Kashmir Medical Supplies Corporation J&K has approved the following item/item(s) under group "Machinery & Equipments" in your favour, as per the rates mentioned against each. The rate contract shall remain valid for a period of two year (24 Months) from the date of issuance of the Contract which may be extended for a period of 90 days with mutual consent of JKMSCL and successful bidder:

Name of the item	Description of work	Currency	Conversion	Rates without Taxes (US\$)	Rates after discount	Taxes/Duties	Rates with Taxes
1.5 Tesla MRI Machine alongwith turnkey as per NIT and technical specifications attached as Annexure I Model : Ingenia 1.5 T (GMC Jammu)	1.5 Tesla MRI Machine (A)	USD	63.72	Quoted rate : 1214472 Discount : 2000 Approved rate : US\$ 1212472	US\$ 1212472	Custom Duty : US\$ As per actual on the production of documentary proof	US\$ 1212472 + (Custom duty)
	Accessories (B)	INR	1.00			-	18666616
	Indian Items (C)	INR	1.00			-	8963339.31
	CMC (D) For 05 yrs	INR	1.00			-	24905799.00

For GMC Srinagar

Name of the item	Description of work	Currency	Conversion	Rates without Taxes	Rates after discount	Taxes/Duties	Rates with Taxes
1.5 Tesla MRI Machine alongwith turnkey as per NIT and technical specifications	1.5 Tesla MRI Machine (A)	USD	63.72	Quoted rate : 1214472 Discount : 2000 Approved	US\$ 1212472	Custom Duty : US\$ As per actual on the production of documentary proof	US\$ 1212472 + (Custom duty)

attached Annexure I Model : Ingenia 1.5 T (GMC Srinagar)	as				rate : US\$ 1212472		
	Accessories (B)	INR	1.00				18666616
	Indian Items (C)	INR	1.00				5086862.00
	CMC (D) For 05 yrs	INR	1.00				24526321.00

**Note :**

- i. As per the decision taken in the Purchase Committee meeting you are required to reduce the price reduced by US\$ 2000 as incorporated against part A (1.5 Tesla MRI Machine)
- ii. As per the decision taken in the meeting of the technical expert committee held on 28.02.2018, you shall provide Neuro Nordic Hard ware and Software for Functional MRI in lieu of Invivo Sensa Vue functional MRI and also Eye tracker from Neuro Nordic.

**Terms and Conditions:**

1. **Delivery Site :** Rate are CIP Govt. Medical College Jammu and Govt. Psy Hospital, Medical College Srinagar, J&K as per requirement.
2. **Validity :** The rate contract shall remain valid for a period of two years from the date of issuance of the Contract which may be extended for a period of 90 days with mutual consent of JKMSCL and successful bidder.
3. **Taxes:** As mentioned above. The Custom duty shall be paid as actual on the production of documentary proof.
4. **Warranty:** Five Years from the date of installation.
5. **Performance Security** You are further required to deposit the performance security equivalent to 5% of the total invoice value in the shape of Bank Guarantee in favour of FA/CAO, JKMSCL within seven days from the date of issuance of Purchase Order(s) from time to time.
6. **Supplies** Within 90 days from the date of issuance of Letter of Credit.
7. **Penalty** In case of extension in the delivery period with liquidated damages, recovery of liquidated damages shall be made at such rates, as given below, of value of stores which the bidder has failed to supply :-
  - (a) Delay up to one- fourth period of the prescribed delivery period – 2.5%
  - (b) Delay exceeding one fourth but not exceeding half of the prescribed delivery period – 5%
  - (c) Delay exceeding half but not exceeding three- fourth of the prescribed delivery period – 7.5%
  - (d) Delay exceeding three- fourth of the prescribed period -10%
  - (e) Fraction of a day in reckoning the period of delay in supplies shall be eliminated if it is less than half a day. The maximum amount of agreed liquidated damage shall be 10%.
8. **Installation :** Installation / commissioning and necessary training for upkeep of the equipment shall be provided free of cost.
9. **Availability of Spares:** Firm shall certify that the parts of the equipment shall remain available atleast for a period of **five years** after the year of expiry of warranty period of five years.
10. **Payments :** Payment for foreign currency portion shall be made in the currency specified in the contract in the following manner :
 


On Shipment :

100% payment shall be released against presentation of shipping documents against submission of Performance Bank Guarantee of 10% order value valid for a period of 68 months from the date of supply order and the same should be essentially submitted within 15 days of issue of supply order.

Or

90% payment will be released against presentation of shipping documents & balance 10% payment will be released after satisfactory installation certificate issued by the user department and against submission of Performance Bank Guarantee of 10% order value valid for a period of 62 months from the date of satisfactory installation certificate issued by the user department.

11. You have to certify that the rates mentioned above as quoted by your firm are the lowest rates applicable to all Govt./private Institution/PSU etc. of similar specifications and configuration. Variation found if any, during the rate contract period by the Corporation/Intending department or any other agency shall be the sole responsibility of the Contractor/Supplier/manufacturer/importer.
12. The supplies shall be executed by M/S Philips India Ltd. on behalf of Philips Medical System Nederland B.V. Boschdijk 525 5621 JG Eindhoven, The Netherland (Original Manufacturer). The local accessories and turnkey shall be executed by Indian subsidiary i.e Philips India Limited, C/o Expeditors International/Shanker Logistics Pvt. Ltd, Airport Cargo Logistics Centre Behind airport authority of India (Red) INR operational office, Near Raddison Circle, IGI Airport, New Delhi 110037 (India) as mentioned in the technical bid.
13. The supplier/manufacturer/importer shall ensure to supply the item(s) strictly as per specifications/sample(s) approved. Variations found, if any, in instant case/or in later stages by the Corporation/Intending department/any other agency which may lead to sub standard or Not of standard/approved quality, shall be the sole responsibility of the supplier/ manufacturer/ importer/contractor.
14. JKMSCL is at liberty to get the feedback from the end-user department regarding the functioning of the machinery & equipment supplied by your agency. Adverse report, if any, may lead to strict action against you under rules/terms & conditions of the NIT/guidelines issued by the Govt. from time to time.
15. **Comprehensive Maintenance Agreement:** You are further required to execute Comprehensive maintenance agreement before the release of payment.
16. **Orders shall only be placed on the basis of actual requirement and funds are available under the relevant Head of Accounts.**
17. Annexure A (Page No. 4 to 5) Turnkey Psychiatric Hospital Srinagar,  
Annexure B (Page No. 6 to 8) Turnkey Govt. Medical College Jammu and  
Annexure C, Specifications of 1.5 Tesla MRI Machine.  
**All the terms and conditions of the NIT, terms mentioned in the LOI and Agreement shall be part of the approved Rate Contract.**

  
(Inder Jeet), KAS  
Managing Director / TIA

Copy for information to the:

1. Principal Secretary to Govt., Health & Medical Education Deptt., J&K(Director, Board of Directors- JKMSCL).
2. Principal, Govt. Medical College, Srinagar (Kashmir) (Director, Board of Directors- JKMSCL).
3. Principal, Government Medical College, Jammu (Director, Board of Directors JKMSCL).
4. Principal, Government Dental College, Srinagar (Director, Board of Directors- JKMSCL).
5. Principal, Government Dental College, Jammu (Director, Board of Directors- JKMSCL).
6. Director General, Indian System of Medicines, J&K (Director, Board of Directors- JKMSCL).
7. Director, Family Welfare, MCH & Immunization, J&K (Director, Board of Directors- JKMSCL).
8. Director, Health Services, Jammu (Director, Board of Directors- JKMSCL).
9. Director, Health Services, Kashmir (Director, Board of Directors- JKMSCL).
10. Mission Director, NHM, J&K (Director, Board of Directors- JKMSCL).
11. Controller, Drug & Food Control Organization, J&K (Director, Board of Directors JKMSCL).
12. F.A/Chief Accounts Officer, J&K Medical Supplies Corporation Limited.
13. General Manager -J (Adm), J&K Medical Supplies Corporation Limited.
14. General Manager -K(P&S, IT), J&K Medical Supplies Corporation Limited.
15. Office file.

**TECHNICAL SPECIFICATIONS****A. Turnkey Scope for Site Preparation for Installation of MRI Equipment at Psychiatric Hospital, Srinagar****1. Modifications :**

Modifications of rooms to be done by the vendors as per attached layout plan in the tender :

Area	Flooring	Skirting/Dado	Walls	Ceiling
MRI Room	Water proof wooden flooring	Pre-laminated particle board panelling	Pre-laminated particle board panelling till false ceiling	Mineral Fiber Acoustical tile false ceiling
Console room	Vitrified tiles (600x600 mm)	NA	Pre-laminated particle board panelling till false ceiling	Mineral Fiber Acoustical tile false ceiling
MRI Cabinets/UPS Room	Vitrified tiles (600x600 mm)	Tiles upto 4 inch form floor level	Plastic emulsion paint on walls above dado	Mineral Fiber Acoustical tile false ceiling
Reporting Room	Vitrified tiles (600x600 mm)	Tiles upto 4 inch form floor level	Plastic emulsion paint on walls above dado	Mineral Fiber Acoustical tile false ceiling
Change Room	Vitrified tiles (600x600 mm)	Tiles upto 4 inch form floor level	Plastic emulsion paint on walls above dado	Mineral Fiber Acoustical tile false ceiling
Entrance	Vitrified tiles (600x600 mm)	Tiles upto 4 inch form floor level	Plastic emulsion paint on walls above dado	Mineral Fiber Acoustical tile false ceiling

**2. DOORS & WINDOWS :**

All doors in the area under scope should be partly glazed aluminium door with adequate thickness of glass except MRI Room door which should be a part of equipment. Proper signage for all the doors should be done.

Chiller base of adequate size and MS frame shall be provided by the vendor.

Anti-termite treatment to be done by the vendor.

**3. ELECTRICAL WORKS**

Main incoming cable from the mains shall be supplied by the Hospital Authorities up to the main distribution panel of the equipments located in the UPS room.

LT distribution with LT Panel provided with balanced distribution through adequate sized cables and copper wires in PVC concealed conduits should be provided by the vendor. Switch gear should be Siemens/L&T/English Electric/ABB.

All general lighting in the block except MRI Room should be LED lights (2x2 Ft size) (Make Philips or equivalent). Switches shall be Anchor/Roma make/Eq.

Lights in MRI Rooms should be Non magnetic MRI Compatible lights.

Free electricity and water for working and clear transport route for MRI (3 mx3m) shall be provided by the Hospital authorities for construction purposes at site.

Five Nos of Copper earthings should be provided by the vendor.

60 KVA temporary power to be provided by hospital for MRI till installation to be provided by the hospital.

#### 4. AIR CONDITIONING

The whole of the MRI under scope to be air conditioned by the vendor, Entire area under scope excluding reporting room and store area should be air conditioned with Ductable units by using micro-processor controlled air ductable split units and the outdoor condenser units to be kept outside or on the roof of the building. A/C units should be hot and cold type and should be of high quality branded like/Blue Star equivalent makes. Ducting layouts will be provided to the consignees. Adequate backup should be provided. (Equipment zone at 22±2 degrees and general zone at 24±2 degrees)

Additionally Hot and Cold type split unit air conditioner (1x2Tr) should be provided in the reporting room Make shall be Blue Star/Daikin.

#### 5. FIRE DETECTION AND FIGHTING

The complete area under this scope should be provided with the fire detection system using smoke and heat detectors below and above the false ceiling connected to main panel of the hospital at nearest port. To combat any accidental fire, 4 nos. portable fire extinguishers of powder type for fire classification ABC of 2.0 Kg & 1 no. MRI compatible fire extinguisher should be provided.

LAN switch and Networking cable with I/O should be provided

#### 6. FURNITURE

Following furniture of reputed make to be provided :

Chairs with castors and armrests (Godrej)	10 nos.
Work station table (Customised)	04 nos.
MRI Compatible patient trolley	01 no.
Ultrasonic pest repellent equipment	01 no.
Insect killer equipment	01 no.
Overhead Storage (3x0.4x0.6) (Customised)	03 nos.
MRI Compatible Metal Detector	02 nos.

##### Approved make list :

Wooden tiles : (Euro/Action or equivalent)

False ceiling : Armstrong/Sant Gobin/Eq

Paint : Asian paint/Nerolac/Berger

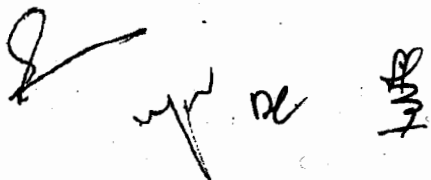
Vetrified Tiles : Kajaria/Eq

Ductable AC : Blue Star/Eq.

Split AC : Blue Star/Daikin/Eq.

Switches : Anchor/Leguard/Eq

Cables : Havels/Polycab/Finolux/Eq



**B. Turnkey Scope for Site preparation for installation of MRI Equipment at Govt. Medical College , Jammu****1. Modifications :**

Modifications of the rooms to be done by the vendor as per the attached layout plan/Site plan in the tender. It is the responsibility of the bidder to alter the site, to provide & finish the interiors of the rooms in all respects for successful installation & commissioning of the equipment to the satisfaction of experts.

Area	Flooring	Skirting/Dado	Walls	Ceiling
MRI Room	Water proof	Pre-laminated board panelling	Prelaminated particle board panelling till false ceiling	Mineral Fibre Acoustical Tile false Ceiling
Console Room	Fully Vitrified Tites (600 x 600 mm)	NA	Prelaminated particle board panelling till false ceiling	Mineral Fibre Acoustical Tile false Ceiling
Cabinet Room /UPS Room	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Reporting Room	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Change Room	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Entrance	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Waiting	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Corridor	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling
Toilets	Fully Vitrified Tites (600 x 600 mm)	Tiles upto 4 inch from floor level	Plastic emulsion paint on walls over dado	Mineral Fibre Acoustical Tile false Ceiling

There are two toilets in the layout site plan. Toilet Fixtures/ plumbing of Both Toilets is included in Turnkey. The Larger Toilet measuring 3.3 m x 3.27 m should include 2WC's, 2 Wash basins and 2 Urinals. Other smaller toilet measuring 3.30 m x 2.13m should include 2 WC's & 2 Wash basins.. The toilets should have adequate ventilation by exhaust fans (to be provided by vendor).

**2. Doors & Windows:**

All doors in the area under scope should be partly glazed aluminium door with adequate thickness of glass except MRI room which should be part of the Equipment. Proper signage for all the doors should be done. Chiller base of adequate size and MS frame shall be provided by the vendor. Anti termite treatment to be done by the vendor.

**3. Electrical Works**

Shifting of existing electrical panel to safe distance (9m) from MRI Room will be done by vendor in consultation with Executive Engineer (Mechanical/Electrical) GMC Jammu.

Main incoming cable from the mains shall be supplied by the vendor upto the main distribution panel of the equipment located in the UPS Room.

LT Distribution with LT panel provided with balanced distribution through adequate sized cables and copper wires in PVC concealed conduits should be provided by the vendor. Switch gear should be Siemens/L&T/English Electric/ABB/Eq.

All general lighting in the block except MRI Room should be LED lights (2 fts x 2fts) (make Philips or equivalent). Switches shall be Anchor/Roma/Eq.

Lights in MRI Room should be Non Magnetic MRI compatible Lights.

Free Electricity and water for working and clear transport route for MRI (3Mx 3M) shall be provided by the hospital authorities for construction purpose at the site.

Five nos. of Copper earthing should be provided by the vendor.

60KVA temporary power to be provided by hospital for MRI installation.

200 KVA compatible generator set (DG Set) of reputed firm.

#### 4. Air Conditioning

The whole of the MRI Area under scope (MRI Room, Console Room, Cabinet Room/ UPS Room, Reporting Room, Change Room, Entrance & Waiting Area ) to be air conditioned by the vendor, with ductable units by using microprocessor controlled air ductable split units and the outdoor condenser units are to be kept outside the building. A/C units should be hot & cold type and should of high quality brands like Bluestar, Voltas, Daiken, Hitachi or equivalent. Ducting layouts will be provided to the consignees. Adequate backup should be provided. (Equipment zone at 22+/- 2 degrees and general Zone at 24+/- degrees).

#### 5. Fire Detection and fighting

The complete area under this scope should be provided with the fire detection system using smoke & heat detectors below and above ceiling connected to main panel of the hospital at nearest port. To Combat any accidental fire, 4 nos. portable fire extinguishers of powder type for fire classification ABC of 2.0 Kg & 1 No. MRI compatible fire Extinguisher should be provided.

LAN Switch and networking cable with I/O should be provided.

#### 6. Furniture

Following furniture of reputed make to be provided by vendor:

Chairs with castor and Armrests (Godrej) 30 nos.

Work Station table (Customised) 03 nos

Customised, Wall units of LED boxes with customised

integrated Table tops with Storage Cabinets in Reporting Room

covering all four walls of the reporting room.

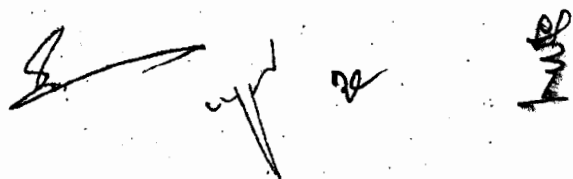
-4 nos. (4 means =1 unit covers entire length of one wall, so 4 nos./ units shall cover entire length of all four walls

Customised, Built in Wall units of LED Viewboxes with customised & integrated Table tops & overhead Storage Cabinets in Console Room along three walls (of the console room)

3 nos. (3 means =1 unit covers entire length of one wall, so 3 nos./ units shall cover entire length of three walls)

MRI Compatible patient trolley

1 nos





Ultrasonic pest repellent equipment.	1 nos
Insect killer Equipment	1 nos
MRI Compatible Detector	2 nos
Three Seater, Stainless Steel Chairs for Waiting Area	10 nos
Customised patient Examination Couch with Storage Cabinets	1 nos.

#### 7. Miscellaneous

(a) **Patient Token System:** Token system for patient queuing facility shall be provided. It should have LED lights display system for displaying the number being called and to be fixed in the waiting area as per end user's requirement.

(b) Public address system for calling patients with MIC and speakers should have following specifications:

1. 200 watts amplifier with USB input and FM Facility.
2. 5 numbers ceiling speakers and 2 numbers of cordless MICs of Public address system
3. Paging MIC.
4. Counter communication system and push to talk MIC
5. Restricted Entry Door with Biometric Sensor for MRI Entry

#### Approved make list

Wooden Tiles; (Euro/Action or Equivalent)

False Ceiling : Armstrong/Sant Gobin/Eq

Paint: Asian Paint/nerolac/Berger

Fully Vetrified Tiles: Kajaria/Eq

Ductable AC: Bluestar/Voltas/Eq

Split AC: Hitachi/ Blue Star/Voltas/ Daiken/Eq

Switches:Anchor/Lequard

Cables :Havels/polyCab/Finolux/Eq

## Tender Specifications for a 1.5 Tesla MRI Machine

### Technical Specification for the Procurement of 1.5 Tesla MR

The manufacturer/Vendor/Bidder must quote the latest State of the art 1.5 Tesla MRI System approved by FDA/CE/certifying authority, as per the specifications below. The manufacturer will guarantee the latest best available model (fulfilling the below specifications) in the segment (1.5 T MRI Scanner with 70 cm or more bore) quoted, at the time of delivery. The proof of availability of specifications detailed below should be made available in the tender, along with Tender Compliance Statement for each of the item. Wherever Parameters/values have been asked for the same should be provided. The quoted model of the MRI System by the vendor should meet the tender specifications as on the date of Technical Evaluation (TEC) of the tenders.

S. No.	Specifications	Detailed Specifications
1	<b>Magnet:-</b>	
		1.5 Tesla (Superconducting) Magnet with approximately 70 cm or more bore diameter.
	a) Field Strength	(i) Helium only 1.5 T(Superconducting) Magnet along with Magnet Power supply Facility for quick shutdown of the magnet in case of emergency.
	b) Field Stability over time	(i) Should have active shielding, external interference shielding with good field stability.  (ii) Mention the RF frequency of operation and the field drift.
	c) Homogeneity	(i) Best homogeneity possible should be given. Specify homogeneity in VRMS at 10 cm, 20 cm, 30 cm and 40 cm DSV and at maximum FOV achievable with the quoted scanner.  (ii) Should be very good for Single Voxel and CSI Spectroscopy.  (iii) Please specify the homogeneity at 40 cm FOV (guaranteed homogeneity).  (iv) Best and rapid automatic shimming for MRI and MRS.  (v) Quote the shim value at 10X10X10mm <sup>3</sup> and the time taken to shim for the best values in phantom.
	d) Magnet Bore	(i) 70 cm or more magnet bore diameter, after positioning of gradient, shim and RF coils.
	e) Active shielding/Fringe field	(i) Should be the latest in the industry. Quote fringe field values for 5 Gauss and 1 Gauss line.
	f) Ext. Shielding	(i)Ext. interference shield (sufficient to house the Magnet Anaesthesia and Physiologic Monitors) should be provided.
	g) Magnet Cooling System	(i) Should be efficient and have long time Helium hold.  (ii) Specify the boil off rate.  (iii) Devices for helium level monitoring in the magnet should be supplied.  (iv) Quench button should be installed in a prominent and accessible place, and during emergency magnet should be discharged by pressing the quench button (specify the time taken for the magnet to demagnetise).  (v) Liquid helium should be supplied during warranty period and during Comprehensive AMC.  (vi) The Vendor should include the Cold Head maintenance and replacement during warranty period and also during Comprehensive AMC.
	h) Shim System	(i) High performance and highly stable Shim System with global an dlocalised manual and auto-shimming for high homogeneity magnetic field required for imaging (MRI/EPI), single voxel spectroscopy (MRS), and spectroscopic imaging (MRSI).

	(ii) 3D shimming for volume imaging and CSI should be available.
	(iii) Auto shim (global and voxel shim) should take minimum time to shim the magnetic field with patient in position (specify the time for best shim values).
	(iv) Specify number of shim coils including higher order.
i) fMRI/EEG Synchronisation	(i) Vendor should provide port/trigger to allow the system to be synchronized to an fMRI System.
	(ii) Vendor should permit the tapping of clock output (with a spare port) for EEG Synchronisation.
<b>2</b>	<b>Patient Table (general features):-</b>
a) Patient Table (general features)	(i) Computer controlled subject table movement in vertical and horizontal direction.
	(ii) The Vendor should supply Dockable Table/Fixed Table/Table Top with dockable trolley for the main MRI patient table.
	(iii) Subject table should be able to take at least 150 kg load (both vertical and horizontal movement of the patient table should be able to handle the load of 150 kg).
	(iv) Emergency manual traction of the subject from the magnet should be possible during power failure/emergency situations.
b) Patient Monitoring	(i) Patient monitoring devices for ECG, respiratory, pulse rate, oxygen saturation, etc at the console. A comprehensive solution at patient side and at main console capable of gating the sequence protocols with respect to patient's heart (ECG) and respiratory rates. Remote display of gating signals should be provided on magnet and at console.
c) Patient Comfort Features	(i) Two-way patient communication with headphone, microphone and necessary accessories.
	(ii) Patient audio alarm.
	(iii) Proper Lighting and air flow in the gantry.
	(iv) Music System (complete set with speakers, with mounting and installation of the system and speakers in appropriate place).
	(v) One MR compatible wheel chair.
	(vi) Closed circuit TV and CCD Video Camera in Examination Room for patient monitoring (should not introduce artifacts in images)
	(vii) Provide other standard patient comfort devices with quoted system.
<b>3</b>	<b>Gradient System:-</b>
a) General	(i) Actively shielded gradient system in Z, Y, Z planes.
	(ii) Minimum gradient strength should be 40 mT/m or more along each axis and a slew rate of 200 T/m/s in each axis.
	(iii) Quote the minimum rise time at the maximum gradient strength offered.
	(iv) Quote the slew rate at the maximum gradient strength.
	(v) Specify the linearity of the gradients at full FOV.
	(vi) 100% duty cycle for full FOV.
b) Resolution Parameters	(i) Specify the minimum and maximum FOV achievable for the quoted MR System (should handle 10-450mm FOV in a single scan).
	(ii) Specify minimum slice thickness in 2D and 3D modes at 128X128, 256X256, 512X512 and 1024X1024 matrices (quote higher matrix resolution, if available).
	(iii) The system should be capable of performing single shot EPI (in 64X64, 128X128 and 256X256 matrixes) in the three orthogonal and also oblique planes.
	(iv) Effective cooling system for gradient coil and power supply for uninterrupted operation all through the year.
<b>4</b>	<b>RF Transmitter, Receiver, Coils:-</b>
	The vendor should quote the latest RF transmit technology available with them globally, as per the datasheet.

a) RF Transmitter	(i) A fully digital RF System capable of transmitting enough power (a minimum of 15 KW or more, please quote the value (Vendor should provide FDA approval/certificate).
	(ii) Specify maximum transmitter RF power (at 50 impedance) of the quoted system.
b) RF Receiver	(i) Optical/Digital RF receiver system with/high efficient RF receiver system/or its equivalent located on the magnet inside the shielded scan room.
	(ii) Minimum 32 independent RF receiver channels or channel independent.
	(iii) Please provide the list of coils/coil-combinations that use this configuration.
	(iv) Specify the RF receiver bandwidth for each channel.
	(v) The system should have necessary hardware to support quadrature phased array and flex coils.
c) RF Transmit technology	(i) Latest RF Transmit System.
d) SAR Limits	(i) SAR Limits should be as per FDA guidelines for all protocols including neuro/abdominal imaging.
e) Coil Technology	(i) Integrated coil technology, latest as available with the vendor to be quoted: Equivalent of TIM/GEM/dStream to be offered.
	(ii) Neurovascular coil (20-channel or more) for neurovascular applications. If separate neck coil can work in combination with head coil, then the neck coil is to be quoted, and the vendor should make sure NV application is satisfied.
	(iii) Spine array coil (32 channel or more).
	(iv) Body arraycoil/Phased Array Coil (stand alone or coil combination should give 32 channel or more acquisition).
	(v) Dedicated Knee imaging ( 08 Channel or more),
	(vi) Flex coils large and small for extremity imaging.
	(vii) Breast coil (08 channels or more)
	(viii) Dedicated Shoulder coil (08 channels or more)
	(ix) Dedicated foot/ankle coil
	(x) Dedicated wrist /hand coil
<b>5</b>	<b>Computer Control System:-</b>
a) Host Computer and Array Processors	(i) The vendor should supply the latest computer system along with the MR System, to handle all the latest applications available on the MR platform.
	(ii) Latest State-of-art computer system with sufficient RAM (8 GB or more) and computational speed to match the single shot Echo Planar Imaging (EPI), interactive angiogram, multi-planner three dimensional (3D) reconstruction, surface rendering and dynamic imaging, vascular imaging/angiography and adequate storage for images and other applications.
	(iii) Necessary image processor with sufficiently large RAM (a minimum of 8 GB or more) for ultra fast image reconstruction, capable of performing real-time image reconstruction.
	(iv) Total hard disk memory of minimum 200 GB dedicated for patient data (other than sequences, applications and other essential requirement).
	(v) Monitor 19" or more TFT monitor with enhanced graphics accelerator.
	(vi) One measurement (Main) console capable of data acquisition and all online calculations (as required for all sequences in the tender, section 8), post processing (as required for all applications in the tender, section 9) and filming in the required formats.

		(vii) Vendor should provide permanent licenses for the supplied pulse sequences and application software. Temporary licenses will not be accepted. Please specify this clearly in your offer as well in compliance sheet.
		(viii) All sequences, applications and products should be available as on the date of the TEC evaluation meeting.
6	<b>CD/DVD Archival:-</b>	
	a) CD/DVD Archival	(i) DVD RW Drive for writing of images, spectra and raw data along with the necessary software for reading the images and spectra on DVD/CD storing capabilities.
7	<b>Data Acquisition:-</b>	
		The System should be capable of 2D and 3D acquisitions in conventional, fast & ultra-fast spin echo and gradient echo modes so that real-time online images can be observed if needed. All the sequences that are available with the vendor at the time of quote/delivery should be provided as per their manual. The following should be offered.
	a) Data Acquisition	(i) 2D multi-slice imaging should be possible in all planes (axial, sagittal, coronal, oblique and double oblique).
		(ii) Up to 1024X1024 matrix acquisitions preferred for all applications. Wherever 2048 matrix available. Please mention.
		(iii) Half Fourier or other techniques to reduce scan acquisition time while maintaining adequate SNR.
		(iv) 3D volume, multiple contiguous slabs, multiple interleaved and multiple overlapping slabs.
		(v) Slice thickness in 2D and partition in 3D to be freely selectable.
		(vi) Dynamic acquisition (serial imaging) with capability to initiate scan sequences either from the magnet panel or from the console.
		(vii) Dynamic acquisition: number of repeat scans with delay time either identical time interval or selectable.
		(viii) Auto-slice positioning from the localizer images.
		(ix) Gating: Physiological signals like ECG, Pulse, Respiratory, External signal triggering (interface for triggering input pulse from external source). The provision should be available at the console also (for fMRI, EEG, etc).
		(x) Simultaneous acquisition, processing and display of image data in 2D multi-slice mode.
		(xi) Selection of voxels from oblique slices should be provided while doing MR spectroscopy.
		(xii) Flow: 1st and 2nd order flow artefact compensation.
		(xiii) Presentation slabs: a number of relocatable saturation bands fat signals in the measured image FOV, ROI selective (regional) fat suppression should also be given.
		(xiv) Graphic prescription.
		(xv) Fat saturation techniques: frequency selective RF pulses to suppress fat signals in the measured image FOV ROI selective (regional) fat suppression should also be given.
		(xvi) Magnetization transfer saturation: Off resonance RF pulses to suppress signals from stationary tissue in FOV.
		(xvii) Phase contrast capability in 2D and 3D mode.
		(xviii) Image intensity correction.
		(xix) Breath hold acquisition.
		(xx) Higher matrix acquisition capability in single shot EPI. Acquisition time, TR, TE and slice thickness should be clearly mentioned and supported by data sheet reference.
		(xxi) The vendor should offer multi coil acquisition in order to optimize throughout increase and increased effective FOV. Individual acquisition elements of every coil should be mentioned.
	b) Imaging Pulse Sequence	(i) All standard and special pulse sequences available at the time of quote/delivery should be offered and quoted in the bid.

	(ii) The system should be capable of selecting TR and TEs as per requirement in majority of the pulse sequences.
	(iii) Spin echo (SE): multi-slice single echo, multi-slice multi-echo (8 echo or more), SE with symmetrical and asymmetrical echo intervals and fast spin echo, MT-SE imaging sequence.
	(iv) Dixon TSE sequences for body, liver and any other applications available with the vendor.
	(v) Inversion recovery (IR): including short T1 modified IRSE,FLAIR, DIR (Double inversion Recovery).
	(vi) Gradient echo (GE): with transverse gradient/RF spoiling, and transverse gradient re-phasing, e.g., GRASE or equivalent etc. 3D gradient echo with shortest TR and TE, free choice of flip angle selection, while maintaining SNR.
c) Fast Sequences	(i) Fast spin echo and GE sequences in 2D and 3D mode with T1, T2 and PD contrast capable of acquiring maximum number of slices with a given TR a minimum TE, echo train length should be at least 128 or more in fast spine echo.
	(ii) Fast inversion recovery with spin echo.
	(iii) Fast gradient spin echo IR multi-slice-echo mode with maximum ETL. Sequences should incorporate RF focusing to acquire ultra-fast gradient spin echo.
	(iv) Fast gradient echo sequence should incorporate RF spoiling and other technique to acquire image in ultra-fast 2D and 3D modes.
	(v) Fat and water suppressed imaging sequences.
	(vi) EPI optimized sequences ( with and without fat suppression).
	(vii) For T1, T2, PD imaging, perfusion, regular diffusion values (at least 5b, 3 directions) EPI-FALIR, EP-IR, EPI-FLAIR diffusion tensor, EPI-MT-FLAIR, and diffusion studies.
	(viii) Suitable artefact/fat suppression techniques to be incorporated in the sequence to have optimum image quality.
	(ix) There should be capability of calculating ADC map (isotropic and anisotropy from the regular diffusion and tensor data).
	(x) DTI with MDDW or equivalent with a minimum of 12 and selectable up to 128 or more direction encoding (at least 16 b values, selectable/modifiable by user).
d) Optimized sequence packages or special application package	(i) The vendor must provide their specialized and optimized imaging sequences (with post, processing packages) for
	a) Neuro
	b) Body
	c) Oncology
	d) Cardiac
	e) Angio (including DSA approach, capturing arterial, capability and venous phases in a single acquisition with a single bolus).
	f) Ortho and MSK
	g) Liver (including 3D T1- fatsat for dynamic liver imaging).
	h) Paediatric
	i) Breast
	j) Prostate
	(ii) Smart exam/smart Brain/Ready Suite/equivalent technique should be quoted in all available imaging packages. Please list other applications available with the vendor, which are part of standard or basic package.
e) Neuro	(i) All T1 (2D, 3D), T2 (2D, 3D), IR(2D, 3D), Dual IR (2D, 3D) Sequences.

	(ii) Sequence for internal ear imaging for visualization of fine structures like cranial nerves (appropriate sequences like CISS, etc or equivalent). Mention the sequences provided.
	(iii) 3D sequences for internal auditory canal imaging.
	(iv) Dynamic imaging of pituitary using appropriate sequence.
	(v) Whole spin T1, T2, IR sequences.
	(vi) Whole neuro examination with automatic planning, scanning and post-processing, like, Smart Exam/Auto Align/Ready for Brain/etc are to be provided, integrated exam planning should be possible. All filming, viewing and export options should be provided.
	(vii) Silent MRI for neuro protocols including T1W, T2W imaging without any loss of image quality on all sequences (like Neuro Silent/Silenz, or equivalent), with noise less than 80 db. The quiet scanning should be without loss of SNR and without prolongation of scan time.
	(viii) 2D quantitative ASL for neuro applications and/or 3D quantitative ASL for neuro applications.
f) Angiography	(i) MR Angiography: 2D/3D TOF, 2D/3D Phase contrast (with and without gating) and magnetization transfer saturation, black blood angiography for cerebral, pulmonary; abdominal and peripheral vessels.
	(ii) For peripheral moving table angiography should be offered covering hip to limbs to be examined in one go with high resolution and high SNR.
	(iii) Bolus tracking software package.
	(iv) Sequences for breath hold angiography with contrast enhancement.
	(v) Sequences for time resolved angiography with contrast kinetics.
	(vi) ECG triggered non-contrast angiography.
	(vii) Contrast bolus tracking (including single shot whole body MRA, interactive and automatic tracking etc.).
	(viii) Perfusion study in organ systems like brain, etc. with T1 perfusion with permeability maps, and quantitation of rCBF/rCBV/MTT etc. with colour maps.
g) Diffusion/DTI	(i) Sequence package for diffusion including DTI (tractography) study in organs like brain and spine.
	(ii) There should be capability of calculating ADC map (isotropic and anisotropic from the regular diffusion and tensor data).
	(iii) MR diffusion tensor imaging package with tractography.
h) Body Imaging	(i) Flow quantification in vessels and CSF, hepatobiliary system.
	(ii) Optimized breath hold sequences for abdominal studies including angiogram.
	(iii) MR Cholangiography and Pancreatography: Specialized sequences and processing to perform MRCP.
	(iv) Pulmonary 2D/3D MRA sequence, including single breath hold sequence.
	(v) MR ventriculography, cisternography, myelography.
	(vi) Single sequence to acquire four different contrast (in-phase, out-of-phase water only, fat only) like Dixon. The same technique should be used in other sequences for dynamic angiography.
	(vii) Dixon for whole body applications.
	(viii) Parallel acquisition techniques including new sequences. Specify the technique used and the factor by which the acquisition time is reduced for similar acquisition with and without parallel imaging technique. Mention the sequences.
	(ix) Flow quantification packages for CSF with dynamic CSF flow imaging, aqueduct and spinal canal.
	(x) Radial/Spiral Pulse sequences for ultrafast imaging.
	(xi) Suitable artefact/fat suppression techniques to be incorporated in all the sequences to have optimum images quality.
	(xii) A sequence for differentiation of fluid and cartilage in ortho applications (sequence like DESS or equivalent).

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	(xiii) Susceptibility artefact correction techniques to be incorporated in all the sequences to have optimum image quality.
i) SWI	(i) Sequences for susceptibility imaging (like SWI/SWIP/eSWAN, etc).
j) Artifact removal	(i) Metallic artefact reduction sequence/techniques.
k) Motion correction	(i) Sequence for in-line motion correction for uncooperative patients/children (with software and acquisition-sequences like BLADE, PROPELLAR, Multivane-XD or equivalent).
	(ii) Sequence with ultra shot TE(optional).
	(iii) Sequences for nullifying CSF pulsation artifacts.
	(iv) Sequence enabling prospective motion correction in quick time and in real time during fMRI.
	(v) Sequences employing arterial spin labelling (ASL) technique including 2D quantitative ASL for neuro applications and/or 3D quantitative ASL for neuro applications.
	(vi) Volume acquisitions for neuro applications.
l) MR Spectroscopy	(i) System should have capability to perform multiplanar single voxel and multi-voxel MR spectroscopy.
	(ii) Proton MRS sequence for single-voxel acquisition, with selectable fat/lipid saturation bands, options of water saturation (e.g. VAPOR, CHESS, etc.) with all post-processing software for brain, breast, prostate applications including plotting of spectra, transfer of raw MRS data etc.
	(iii) Proton Multi Voxel CSI[2-D and 3-D] acquisition and metabolite mapping with all necessary RF sequences (and post-processing algorithms) with all post-processing software for brain applications including plotting of spectra.
	(iv) Water and lipid suppression independently and both simultaneously (water and lipid suppression) in automated sequences should be provided for brain applications including plotting of spectra.
<b>8</b>	<b>Post Processing and Evaluation:-</b>
	Licences of all the post processing and evaluation packages as asked in the tender should be provided.
a) MPR	(i) Multi-planar reconstruction (MPR) in any arbitrary plane including curved planes with freely selectable slice thickness and slice increments.
	(ii) Surface reconstruction and evaluation on reconstructed images with minimum time.
	(iii) MIP in displaying in cine mode 2D and 3D mode, targeted/segmented MIP in any orthogonal axis with minimum processing time and capable of displaying in cine mode.
b) ADC, Perfusion, etc.	(i) Evaluation and display of diffusion images, ADC map, fMRI in reference of EPI optimized sequence.
	(ii) Perfusion image evaluation with time intensity graph and other statistical parameters.
	(iii) ASL quantitative analysis for 2D ASL and/or ASL quantitative analysis 3D ASL data.
	(iv) Evaluation package for calculating rCBV, rCBF, MTT, perfusion map, corrected CBV calculation; Fusion of perfusion map with contrast enhanced 3D T1 images etc. Mention the package/software offered with brochure.
	(v) Flow quantification and evaluation for vascular (high & low) CSF, bladder outlet and cine display.
c) BOLD Analysis	(i) Evaluation of functional images of brain with appropriate statistical algorithms, colour display and overlay on base anatomical images.
	(ii) Software for evaluation of functional mapping [BOLD evaluation] and neuro-metabolite mapping.
d) Tractography	(i) Post-processing package for DTI and Tractography, estimation of ADC, FA (Lamba-parallel, perpendicular separately and combined), Fiber tracking, fiber statistics, and display of fiber tracks on anatomical images(s).
e) Spectroscopy	(i) Full post-processing for single-voxel MRS, CSI (multi-voxel MRS), metabolite mapping with colour coding (metabolic images), for brain, breast, prostate.



		(ii) Post processing should include FFT, base line correction, curve optimization, automatic phase correction, metabolite imaging, spectral mapping, magnetic resonance spectroscopic imaging (molecular imaging) with naming and peak integral values for all in-vivo metabolites.
9	<b>Quality Assurance and Phantoms:-</b>	
	Quality Assurance and Phantoms	(i) Phantoms for routine quality assurance for all coils (including body coil).
10	<b>MR Compatible Patient Monitor:-</b>	
	MR Compatible Patient Monitor	(i) MR compatible cardiac and physiological monitor with ECG, NIBP, SPO2, EtCO2, Temperature features for paediatric and adult applications (with all accessories for five years).
		(ii) The system should be compatible with 3 T MRI systems as well as it would be used with other MRI systems in case of need/emergency.
11	<b>MR compatible anaesthesia machine (for Paediatric and Adults use) with dual vaporisers (for Paediatric and Adults use) with dual vaporisers (for Sevoflurane, Desflurane), and other accessories:-</b>	
		The system should be compatible with 3 T MRI systems (minimum 1000 Gauss line) should be, antistatic, heavy frame & base with good quality castors with front brakes, with following features:
		a) Three gas model viz Oxygen, Nitrous Oxide and Air.
		b) Should be compact, ergonomic, easy to use and easy to maintain.
		c) Should have separate fresh gas outlet for use 1 open circuit.
		d) Machine should have flow meters for Oxygen, Nitrous Oxide and Air. Emergency Oxygen flush should be available. There should be facility to select oxygen-air or oxygen-nitrous oxide with the help of a separate switch or knob.
		e) Dual flow sensing capability at inhalation and exhalation ports.
		f) Should have paramagnetic/galvanic cell oxygen sensors. In case of galvanic cell sensors, the firm should supply free sensors for the entire warranty period of 5 years. In case of paramagnetic sensors, the firm shall ensure that there is no down time during repair of these sensor (if necessary) and provide a standby alternative.
		g) Shall have back-up Oxygen Control with provides and independent fresh gas source and flow meter control in case of failure.
		h) Pressure regulators shall be of modular design.
		i) Should have Oxygen fail safe device & an auxiliary built in oxygen flow meter.
		j) Electronic or Mechanical Hypoxic Guard to ensure minimum 25% Oxygen across O2-N2O mixtures.
		k) Oxygen Failure Warning by audible alarm should be provided.
		l) The Consumables like appropriate length of circuit, tubing's, lines, etc. should be provided for adults, pediatric and neonates for a period of one year.
	a) Vaporizers	a) Facility of mounting minimum two Vaporizers, latest technology, key filler, selectatec type, tool free installation, meaning any vaporizer of our choice can be mounted at will with interlocking facility. It should be preferably of same make as that of machine.
		b) Temperature, pressure and flow compensated with high accuracy of delivered concentration of volatile aesthetic agent. Should be maintenance free.
		c) Two Vaporizers should be supplied (Desflurane, Sevoflurane).
	b) Ventilators	a) The Machine should have an integrated Anesthesia Ventilator System, facility to vary respiratory parameters and should be able to ventilate adult and pediatric patients including infants.
		b) Ventilator should have controlled, Manual, Spontaneous modes and provision for PEEP.
		c) Tidal volume (inspired and expired) respiratory rate, I:E ratio, minute volume Airway Pressure & FiO2 should be continuously displayed.
		d) Should have Tidal Volume and fresh gas compensation mechanism.
		e) Audio-Visual alarms for high and low settings of pressure, volume and disconnection should be present.
		f) Tidal Volume (VT) 20-1500ml (Volume Control), Rate atleast 4-80 BPM.
		g) Inspiratory/Expiratory ratio (I:E) 2:1 to 1:6 & peak flow-100 to 120/min.

		h) Ventilator should have at least 30 min rechargeable battery backup for ventilator.
		i) Machine should have an integrated breathing circuit with circle absorber of good quality, easy to clean, autoclavable, fewer parts to reduce leaks.
		j) Machine should have mounting capability of one O2 and N2O pin-indexed cylinder.
		k) Adult autoclavable (2 sets) breathing circuits & one paediatric circuit to be provided.
		l) The machine should be equipped with AGSS.
		m) Anaesthesia Workstation should be USFDA approved.
<b>12</b>	<b>MR Compatible Pressure Injector with Consumables:-</b>	
		a) MR Compatible Pressure Injector (Medrad make).
		b) Consumables for adults. Pediatric and neonates (tubing, syringes, 100 sets).
<b>13</b>	<b>General Accessories, Supplies and Provision:-</b>	
	a) General Accessories, Supplies and Provision	(i) Two quantity: MR compatible Non-Magnetic I-V stand.
		(ii) Two quantity: Digital Patient Weighing Scale (in the range between 0 to 200 kg).
		(iii) MR compatible storage carts and wall mounted cabinets.
		(iv) Coil cabinet to be provided.
		(v) Network cable and other required materials for the complete installation to be provided by the supplier.
		(vi) Provision for external trigger (of the sequence) near the console.
		(vii) Five Revolving Chairs (Godrej Make) with ergonomic support.
		(viii) Tables for the MRI console.
		(ix) Two (quantity) MR compatible oxygen cylinders (for the anaesthesia system).
		(x) Uninterrupted power supply (UPS) with sufficient capacity (appropriate rating as required with a minimum of 160 KVA or more) for 30 minutes (or more) back up of the full load MR system and its accessories during patient MR imaging.
	b) Functional Imaging	(i) Functional Imaging with package for BOLD imaging and processing package to be offered as standard. Complete NORDIC f-MRI solution including Audio/Visual Projection System with Head Phone with excellent Noise Suppression. Binocular Eye Tracker camera integrated with visual system to be offered (To be supplied as per the decision taken in the meeting held on 28.02.2018)
<b>14</b>	<b>Training:-</b>	
	a) Training	(i) Advanced training to be provided by the vendor at the site for Faculty, Residents, Students and Radiographers, so as to benefit the latest applications available on the system. The basic training should be for a minimum period of 2 weeks. Training on advanced applications (including cardiac) should also be provided for a minimum period of 2 weeks. Further training to be provided by the vendor (4-6 weeks) after the users have started using the application(s) regularly or any time after 6 months of installation 2 Technicians (MRI), 2 Faculty (Radiologist) at reputed premier institute.
<b>WARRANTY PERIOD POST GUARANTEE ANNUAL COMPREHENSIVE MAINTANCE CONTRACT (CMC):</b>		
<b>1</b>	The Post Warranty (after 5 years) CMC should be comprehensive and should include helium and cold head (repair and/or replacement) + labour + spares for the complete system which included all the accessories supplied such as UPS, etc. (including all consumables like batteries for UPS etc.) and maintenance for another 5 years. This CAMC should be quoted in Indian rupees.	
<b>2</b>	The desired up-time during post-warranty CMC is 95% of 365 days (24 hrs. basis) along with the penalty clause that in case the down-time exceeds the 5% limit, extension of the post-warranty CMC period by the twice the excess down time period.	
<b>3</b>	All local items should be quoted in Indian Rupees. Other Items should be quoted in dollars only, to have uniformity. The technical and financial bids should be separate.	