

3-TESLA MAGNETIC RESONANCE SPECTROMETER SYSTEM
Centre for Neuroscience, Indian Institute of Science, Bangalore 560012

Date of Tender Announcement : October 27 2016

Pre-bid meeting : 3:00 PM on Thursday November 3, 2016
@ Centre for Brain Research, IISc

Deadline for submission : 5:00 PM, Tuesday, November 22, 2016

Validity of the tender : 3 months from date of submission

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The objective of the system would be to perform intensive research on magnetic resonance imaging and spectroscopy pertinent to neuroscience. The equipment shall be installed on a turnkey basis and include erection of a suitable facility for the system. The system should consist of the following.

1. MAGNET

- 1.1. Actively shielded super-conducting magnet with an operational field strength of 3 Tesla ($\pm 10\%$) suitable for high-resolution structural imaging, functional imaging, diffusion imaging and spectroscopy.
- 1.2. Magnet bore wide enough so that patient tube aperture is at least 60 cm for comfortable patient positioning.
- 1.3. High performance and stable shim system with global and localized manual and auto-shimming for high homogeneity magnetic field for imaging (MRI/fMRI), magnetic resonance spectroscopy (MRS).
- 1.4. Auto shim (global and voxel) should take minimum time to shim the magnet with patient in position.
- 1.5. Total number of shim coils, details of higher order shimming provided to be specified.
- 1.6. Helium level monitoring in the magnet.
- 1.7. Liquid helium to be supplied for 10 years.

2. GRADIENT SYSTEM

- 2.1 High performance FDA-approved gradient system, with active shielding in X, Y, Z and other planes, that must be capable of simultaneously achieving a maximum gradient strength of 80 milliTesla/meter with a slew rate of 200 Tesla/meter/sec along each axis with a 100% duty cycle for full FOV.
- 2.2 Effective cooling system for gradient coil and power supply.
- 2.3 Efficient and adequate provision for eddy current compensation.
- 2.4 Capable of performing single shot EPI including conventional and fluoroscopic imaging in all planes (X,Y,Z).

3. M.R SPECTROSCOPY

- 3.1. Hardware and software capability for proton spectroscopy (^1H) and multinuclear spectroscopy (^{31}P , ^{13}C), along with optimized sequences and software for post processing and evaluation, including single-voxel/multi-voxel/global spectroscopic estimation quantitatively.
- 3.2. Sequence and protocol for CSI phosphorous spectroscopy using proton decoupling and NOE.
- 3.3. Water suppression ability.

4. RADIOFREQUENCY SYSTEM

- 4.1 Number of RF receiver channels, their technical specifications and the maximum number of elements/channels it can support in an RF coil should be specified.

- 4.2 High receiver bandwidth for EPI applications to be specified.
- 4.3 Broadband RF system. RF power to be adequate for high resolution imaging with acceptable power deposition (SAR check) in conventional and single shot EPI mode.
- 4.4 Capability for parallel imaging and multiband acquisition (specify technical details such as reduction of acquisition time and SNR degradation).
- 4.5 Interface for adding on 3rd party RF coils to be specified.
- 4.6 Support for adding quadrature phased array and flexi coils to be specified.

5. RADIOFREQUENCY COILS

- 5.1 One 64-channel head/neck coil for brain imaging.
- 5.2 Additional head/neck coil compatible with simultaneous EEG-fMRI, TMS-fMRI and TDCS-fMRI systems (specify physical dimensions of the coil and technical details).
- 5.3 Neck array coil and spine array coil.
- 5.4 Volume coil for imaging primate and small animal brains.
- 5.5 Body coil.
- 5.6 Flexible surface coil for localized tissues such as visual cortex.
- 5.7 For each coil (5.2-5.6) specify the best available.
- 5.8 Coil storage cart.

6. DATA ACQUISITION SYSTEM

- 6.1. Capable of 2D and 3D acquisitions in conventional, fast & ultra-fast spin echo and gradient echo modes
- 6.2. Capability for observing images online in real-time, if needed.
- 6.3. High matrix acquisition capability in single shot EPI.
- 6.4. Acquisition time, TR, TE and slice thickness should be clearly mentioned and supported by data sheets.
- 6.5. Data acquisition in all three standard planes (axial, sagittal, coronal) and oblique and double oblique planes.
- 6.6. Breath hold acquisition.
- 6.7. 1 TTL-compatible programmable spare line to be provided.
- 6.8. Gating systems for wireless monitoring of physiological signals like ECG, pulse, pulse oximeter, respiratory, external signal triggering i.e. interface for triggering input pulse from external source.
- 6.9. Head motion sensor with 6-degrees of freedom measurement, with online correction of image acquisition based on subject movement Specify for each imaging sequences and axes, the type of motion correction available.
- 6.10. Automatic Voxel/FOV placement for consistent placement of MRS voxels to be specified.
- 6.11. Ability to replicate and automate scan parameters and sequences to minimize inter-scan variability for a single subject (specify details and sequences supported).
- 6.12. Magnetization transfer saturation: OFF resonance RF pulses to suppress signals from stationary tissue in FOV.
- 6.13. 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.
- 6.14. Phase contrast capability in 2D and 3D mode. Image intensity correction.
- 6.15. Online Artifact reduction/image enhancement/filtering to be specified.

6.16. Dynamic acquisition (serial imaging) with capability to initiate scan sequences either from the magnet panel or from the console.

7. IMAGING SEQUENCES

- 7.1 Sequences for structural imaging, BOLD imaging (including EPI sequences), Arterial spin labelling, Perfusion imaging, T1 and T2 maps, non-contrast and contrast-enhanced MR angiography.
- 7.2 Provision for B0 phase + magnitude map.
- 7.3 High resolution whole brain diffusion tensor imaging, minimum of 256 directions, along with tractography software (specify maximum available number of directions and other technical details).
- 7.4 Capability for calculating ADC map (isotropic and anisotropy) from the regular diffusion and tensor data.
- 7.5 Specify all details for Fast sequences with SE and GE sequences in 2D and 3D mode, Fat suppression sequences, water excitation sequences and Dixon-type sequences.
- 7.6 Provision of obtaining k-space data, and raw and unprocessed images.
- 7.7 All standard & advanced sequences available, as well as in-progress sequences that can be made available through the research agreement to be specified.

8. POST PROCESSING AND EVALUATION SOFTWARE

- 8.1. Software for evaluation of functional images of brain with appropriate statistical algorithms, color display and overlay on base anatomical images.
- 8.2. Software to conduct behavioural experiments in the scanner (specify)
- 8.3. Software for evaluation of functional mapping [BOLD evaluation] and neurometabolite mapping.
- 8.4. Image filtering, coregistration and Image fusion software. Specify what modalities can be co-registered.
- 8.5. Voxel-based morphometry
- 8.6. 3D Multiplanar reconstruction (MPR) in any arbitrary plane including curved planes with freely selectable slice thickness and slice increments.
- 8.7. 3D Surface Reconstruction and evaluation.
- 8.8. Maximum Intensity Projection (MIP) in 2D and 3D mode, targeted/segmented MIP in any orthogonal axis with cine mode.

9. HOST COMPUTER AND ARRAY PROCESSORS

- 9.1. High-performance computer system suitable for the technical requirements of the scanner, data acquisition, imaging sequences, online display and post-processing with capability to access scanner logs.
- 9.2. Online display of acquired raw images during scan.
- 9.3. Reconstruction and visualization console especially for diffusion imaging (DTI) e.g. for online tracking for voxel placement
- 9.4. Support for exporting data in multiple formats (specify)
- 9.5. Dual DVD write drive for writing of images, spectra and raw data along with the necessary software for reading the images and spectra on DVD/CD ROM.
- 9.6. High speed USB/Firewire ports for writing of images, spectra and raw data.
- 9.7. Compatible with data archiving systems (specify how this can be implemented)

10. SUBJECT HANDLING SYSTEM

- 10.1. Necessary accessories for subject comfort, which should include: Subject communication, MR compatible padding, syringe/infusion pump, lighting, non-magnetic IV stand, etc.
- 10.2. Computer controlled subject table with movement in vertical and horizontal direction.
- 10.3. Subject table should be able to take at least 150 kg load. Emergency manual traction of the subject from the magnet. Audio alarm operated by the subject should be provided.
- 10.4. Remote display of gating (physiological) signals.
- 10.5. MR-compatible subject trolley
- 10.6. Close circuit color TV and color CCD video camera for patient monitoring.

11. ACCESSORIES

- 11.1. MR-compatible high resolution (24-inch or higher) display system with RF shielding
- 11.2. MR-compatible noise-reducing stereo headphones
- 11.3. MR-compatible 4-key response system (2 nos, one for each hand)
- 11.4. MR-compatible pressure injector for double barrel perfusion imaging, infusion pumps, contrast enhanced MR angiogram & bolus tracking. Name and model of injector offered to be mentioned.
- 11.5. Hardware for synchronizing scanner acquisition with stimulus display and responses.
- 11.6. Integrated thin client system for access to all of the vendor supplied software for 10 virtual workstations with 2 sets of active neuro applications. Specify the technical specs of each thin client, number of simultaneous users or licenses and the capability of each license, and the cost per license.
- 11.7. All the necessary interconnecting interfaces, cables, modules and other hardware and software to fully integrate the system to operational status.
- 11.8. All necessary interconnecting cables, interfaces, RF filters and waveguides for integrating MR-compatible EEG-fMRI, TMS-fMRI and TDCS-fMRI systems.
- 11.9. Temperature and humidity control systems for optimal scanner performance.
- 11.10. Integrated PACS system for archival and storage with a minimum capacity to archive at least one full year of imaging data i.e. at least 10TB.
- 11.11. Phantoms (for all types of imaging & spectroscopy) including structured phantoms for calibration and quality assurance as per AAPM standard for SNR in different coils, spatial resolution, magnetic field inhomogeneity, eddy current compensation, RF power inhomogeneity measurement, AAPM recommended distortion measurement phantoms.
- 11.12. Hand held metal detectors & other MR safety equipment (2 Nos.).
- 11.13. MRI-compatible fire extinguisher
- 11.14. Facility for quick shutdown of the magnet in case of emergency.
- 11.15. All consumables should be provided for the guarantee period (excluding contrast agents).
- 11.16. Customer runnable diagnostic software: for quality assurance and fault finding
- 11.17. System should have built-in remote service diagnostics.

- 11.18. Specify how quality assurance will be ensured as per AAPM standards for SNR for different coils and nuclei, spatial resolution, magnetic field in-homogeneity, eddy current compensation, RF power and in-homogeneity measurement.
- 11.19. MRI monitoring systems: SAR monitoring, gradient and RF coil temperature monitoring

12. PERSONNEL

- 12.1. An on-site MRI physicist/engineer with at least three years of proven experience with MRI technology should be available immediately on call at the facility for the duration of the guarantee period to assist in system maintenance, troubleshooting and research.

13. FACILITY & TURN-KEY ARRANGEMENT

- 13.1. The vendor shall provide a separate facility for housing the MRI system (2,500 sq feet x 2 floors) that is constructed for optimal performance of the scanner with suitable provisions for patient/subject preparation and data archiving and installing thin client systems (including power, LAN and Wifi).
- 13.2. The facility must be equipped with a suitable true-online UPS unit with a minimum backup of 30 minutes as well as an alternate power supply to run the scanner for longer durations in the absence of power.
- 13.3. The facility must be equipped with suitable air-conditioning and humidity control devices to ensure optimum scanner performance.
- 13.4. The vendor shall identify a suitable location for the facility that is optimal for stable operation of the scanner, including liquid Helium circulation and quench duct routing.
- 13.5. The vendor is required to obtain all necessary certifications essential for the building.
- 13.6. The detailed plan for the facility shall be finalized in consultation/coordination with a committee constituted for this purpose.
- 13.7. The facility including the fully-operational MRI system shall be handed over to us on a turnkey basis.
- 13.8. The facility should adhere to the norms specified by the American College of Radiology, which is followed worldwide. These are detailed in the publication by the Expert Panel on MR Safety, titled “ACR Guidance Document on MR Safe Practices: 2013”, published in the Journal Of Magnetic Resonance Imaging 37:501–530 (2013). This MR-safety document is available online at the American College of Radiology website: <http://www.acr.org/quality-safety/radiologysafety/mr-safety>
- 13.9. The total cost of the facility should be quoted separately but will be part of evaluation of the commercial bid.

14. OTHER ITEMS

- 14.1. The cost of the MRI system, facility and that of each accessory to be quoted separately.
- 14.2. The vendor must submit a signed compliance document mentioning whether their scanner meets each and every specification detailed above.

- 14.3. Technical and financial bids should be submitted separately.
- 14.4. The award of the tender will be decided by the institute as per price of the complete system. All insurance charges shall be borne by the vendor.
- 14.5. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in Indian Rupees.
- 14.6. The specifications mentioned shall be understood to be the minimum required. Additional technical and research features suitable to our requirements shall be given due reference.
- 14.7. Vendors that submit qualifying technical and financial bids are required to send competent representatives from the sales and technical divisions for further negotiations.

OPTIONAL ACCESSORIES (TO BE QUOTED SEPARATELY)

IMAGING PHANTOMS

- Imaging Phantoms (including structured phantoms and brain striatal [polyurethanetissue equivalent] anthropomorphic phantoms with separate tissual compartments, for quantitative imaging, fillable with MRI signal producing solutions.
- MRI lesion detection phantom (e.g. Harpell phantom).
- ADNI phantom (Magphan phantom or similar)
- AAPM recommended distortion measurement phantoms.

RADIOFREQUENCY COILS

- Head/neck coil for brain imaging (specify best available)
- Wrist coil (specify best available)
- Finger coil (specify best available)
- Flexible coil for imaging limbs (specify best available)

EYE TRACKER

- MR-compatible monocular eye tracker (60 Hz).

MISCELLANEOUS

- A total of 100 MR-compatible syringe/infusion pump, MR-compatible pressure injector for double-barrel perfusion imaging, contrast-enhanced MR angiogram & bolus tracking. Name and model of pumps and injectors offered to be specified.
- Spare MR-compatible wireless gating system for physiological monitoring (identical to the one quoted in main specifications)
- Spare MR-compatible response system (identical to the one quoted in the main specifications)
- MR-compatible patient trolley

SPECIFIC TERMS AND CONDITIONS

The following requirements should be specifically adhered to by the vendor, and a separate compliance document should be given regarding adherence to each point below.

1. GUARANTEE PERIOD

- 1.1. The equipment, which includes the fully functional unit and all coils and accessories supplied (such as UPS, AC, Generator with 20% extra capacity in addition to the power requirements of the equipment, etc.) should be guaranteed against defects in manufacturing and workmanship. The Helium Supply and cold head repairs (including replacement, if needed) should be included in the warranty period.
- 1.2. The vendor should take care of all external and internal services and the day-today running of UPS, AC and alternate power supply on 24 hour basis with manpower during the warranty period.
- 1.3. During the guarantee period, a cumulative uptime of 95% of 365 days (24/7 basis) will be ensured by the vendor. The company takes the responsibility for ensuring 95% uptime of all the components and equipment, including the third party items supplied and included in the project.
- 1.4. The vendor must specify the Service Level Agreement (SLA) that will be adhered to throughout this period, which includes the uptime guarantee, periodicity of measurement, and mean time to restore operations in the event of failure.
- 1.5. During the period of warranty the vendor is required to take full responsibility to re-commission the system in the event of magnet quench for whatsoever reasons. Note that any Liquid Helium loss due to quenching or due to any other causes during the guarantee period shall be borne by the firm.
- 1.6. During the warranty period the vendor will also undertake the responsibility to maintain UPS system including batteries.
- 1.7. In case the down time exceeds the 5% limit, a penalty will be imposed consisting of extension of the warranty period by three days for every day of downtime during the first 7 days, which will be doubled to one week for every subsequent day of downtime after the first week of downtime.
- 1.8. Performance Bank Guarantee: The vendor shall give his acceptance along with performance guarantee of 10% of order value in the form of Bank Guarantee Bank Guarantee shall be executed as per the following condition: It should cover the delivery period and subsequent 62 months after successful installation and demonstration of stable performance of the equipment. In the event of the delivery/installation/stable performance is delayed the Bank Guarantee shall be extended for the corresponding period.

2. POST GUARANTEE ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT (CMC)

- 2.1. The post-guarantee (after 5 years) comprehensive maintenance contract (CMC) for the complete system will start after expiry of the warranty period as per agreed terms and conditions.
- 2.2. CMC includes labour and repair and/or replacement of spare parts for the complete system including all consumables and sealed units, liquid Helium and cold head, all the

accessories supplied such as Generator, AC, etc. excluding consumable like films, printer cartridges, ECG leads, for a period of five years after the expiry of warranty period.

- 2.3. The contract will also include the re-commissioning of the system in the event of magnet quench for whatsoever reasons. Note that any Liquid Helium lost due to quenching or due to any other causes during the guarantee period shall be borne by the firm.
- 2.4. The maintenance contract will also cover comprehensive maintenance (labour and spares) for UPS including batteries.
- 2.5. System spare parts availability should be guaranteed for at least 10 years from the delivery of the system.
- 2.6. The desired cumulative up-time guarantee is 95% of 365 days (24 hrs basis) along with the above-mentioned penalty clause in case the machine is found not to be working for reasons other than force majeure conditions.
- 2.7. The rate of post warranty CMC should be offered by the vendor for at least five years. The amount due each year on account of the CMC will be paid biannually.
- 2.8. The cost of CMC from 11th year shall be fixed at the time of financial bid opening.

3. WARRANTY

- 3.1. The complete system is to be under warranty period of 5 years including free supply of spare parts, liquid helium and labour from the date of functional installation, commissioning and acceptance. Note that any Liquid Helium loss due to quenching or due to any other causes during the guarantee period shall be borne by the firm.
- 3.2. During the period of warranty the supplier is required to take full responsibility to re-commission the system in the event of magnet quench for whatsoever reasons.
- 3.3. During the warranty period the supplier will also undertake the responsibility to maintain UPS system including batteries.

4. REPLACEMENT OF DEFECTIVE ITEMS

Items found not acceptable or missing should be replaced by the vendor free of cost including the forwarding and insurance expenses. Replacement of parts that become defective during installation and warranty should be arranged free of cost through the Indian associate of the vendor including all incidental charges.

5. MAINTENANCE

- 5.1 Automatic performance of Quality Assurance (QA) procedure on a daily basis (SNR, Uniformity, Slice thickness, Contrast, geometric distortion and resolution) or performance evaluation through a package shall be mandatory.
- 5.2 Vendor should provide remote calibration and diagnostic services for QA & troubleshooting throughout the lifetime of the scanner.

6. DOCUMENTATION

- 6.1. Two sets of operational/service/application manuals are to be provided along with the equipment.
- 6.2. Detailed documentation on various sequences, spectroscopy, application software and evaluation software etc. are to be provided and the same must be updated regularly for next 10 years as and when these are released.

- 6.3. Vendor is required to ensure mailing of product/research newsletters released from their R&D sites to our institute on a regular basis. This is to keep this centre abreast of the latest developments taking place in system technology and research techniques.
- 6.4. The vendor is to provide a tender compliance sheet by giving all the necessary specifications, which should be supported by printed documentation sheets and certification of each item. In the absence of such documentation, a letter from the principals of the company should be provided.

7. SOFTWARE UPGRADATION

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

8. RESEARCH COOPERATION

The firm is required to provide work in progress packages to us for research trial as for their other research sites. The firm should provide an exhaustive list of the areas in imaging and spectroscopy in which research input and cooperation will be available to us. The firm should extend demonstrated cooperation regarding design and implementation of novel hardware and software inputs as required by the user, such as newer tailor made coils and pulse sequences, pre- and post-processing, phantom development (digital and physical phantoms), synthesis of spectroscopy and imaging (magnetic resonance spectroscopic imaging), multimodal consolidation with other modalities such as computed tomography, emission tomography, molecular imaging etc. Specific proposal regarding research collaboration will be submitted subsequently for consent and counter signatures of the principals on the research proposal.

9. DELIVERY, INSTALLATION & COMMISSIONING

- 9.1 The facility should be built and the MRI system should be delivered, installed and functionally commissioned within 9 months from the date of receipt of confirmed supply order or from the time of handing over the site whichever is later. The supply of the items will be considered as effected only on satisfactory commissioning and inspection of the system and inspection of all the items and features/capabilities tested by the institute. After successful installation and inspection, the date of taking over of the entire complete running MRI system by the institute shall be taken as the start of the warranty period.
- 9.2 Maximum time to supply all the hardware and software agreed upon in the tender quotations and in the subsequent technical and financial negotiations should be agreed upon.
- 9.3 *Delivery period.* The delivery schedule for the supply of the MRI scanner and other accessories stipulated in the scope of supply should be clearly indicated in the technical bid. The delivery of the equipment shall be within 30 days of completion of the Civil Structure/ building that houses the MRI scanner. Failure to adhere to this delivery schedule, shall attract the penalty at the rate indicated as per the Liquidated Damages section below.
- 9.4 *Liquidated Damages.* In case of failure to supply, install or maintain the equipment within the stipulated period, the bidder shall be liable to pay liquidated damages, at the rate of half percent per week reckoned on the contract price of that portion of the contract

which is delayed subject to a maximum of 10 percent, and shall be recovered from the performance bank guarantee.

10. CUSTOM CLEARANCE

The Institute will furnish the necessary papers for the import of items into India, necessary custom duty exemption certificate and other supporting documents to facilitate the import of the items.

11. TRAINING

- 11.1. The vendor, at their expense, will arrange for an application specialist, immediately after the installation and commissioning of MRI system, to demonstrate the capabilities/features of the system and also to impart training to the Institute staff.
- 11.2. The vendor, at their expense, shall provide initial specialized training at our site by a research scientist and an engineer from the vendor's international R&D Centre or from an internationally renowned centre; the training shall cover the state of art research application, functional and diffusion imaging and spectroscopy, together with system operation and first line maintenance of the system, system and application software, along with developmental aspects such as pulse sequence programming [including pulse program language] for modifications and development of user defined sequences, coil designing and fabrication for various application purposes, etc.
- 11.3. The travel, boarding and lodging expenses of the above scientist and engineer shall be borne by the vendor and this training should be completed before handing over the MRI system to the Institute.

12. MODE OF SHIPMENT

The consignment must be air-lifted, insured and transported to the installation site by the supplier.

13. PAYMENT TERMS

- A. Equipment.** The payment for the equipment will be made through Letter of Credit for 100% of the equipment value.
 - 13.A.1) No advance Payment shall be made.
 - 13.A.2) 50% of the purchase order value will be released after presentation of the shipping documents & inspection certificate issued by the IISc authority after inspection of the equipment & accessories at the site of installation.
 - 13.A.3) 30% of the purchase order value will be paid after the successful completion of the installation and commissioning of the Equipment including Accessories.
 - 13.A.4) 20% of the purchase order value will be paid within 6 months from the date of installation & successful operation of the Equipment after commissioning and clearance of inspection note jointly signed by the authorized End-User & by the Vendor.
- B. Building.** 100% of the building cost will be paid after handing over of the building.

14. MISCELLANEOUS TERMS AND CONDITIONS

- 14.1. It should be the responsibility of the vendor to ensure that the MRI scanner machine arrives precisely at the time when the building is nearing completion.
- 14.2. Early import of the MRI scanner by the bidder resulting in demurrage charges should be avoided. No demurrage charges will be paid by IISc. In the event of early arrival of equipment, the vendor shall be responsible for the safe custody of the equipment and IISc shall not be liable for any damages to the equipment during this period. It shall be the sole responsibility of the vendor/ bidder, to ensure harmony in installation of the equipment within the civil structure in coordination of the vendor.
- 14.3. **Indemnification of IPR.** The bidder shall protect indemnify and save harmless the purchaser, against all liabilities, including cost expensed, claims, suits or proceedings at law, growing out of or in connection with any actual or alleged intellectual property rights infringement and will defend or settle at the Bidder's own expense any such claims, suits or proceedings. The Purchaser shall notify the bidder in writing of any such claim, suit, action or proceeding coming to his attention as promptly as practicable. If, after such notice, the bidder acknowledges that this contract applies with respect to such claim, then the bidder is entitled, to immediately take control of the defense and investigation of such claim and to employ and engage attorneys. The Purchaser shall co-operate in all reasonable respects, with the Bidder, in the investigation, trial and defense of such claim. In addition, any appeal arising there from, provided, however, that the purchaser may, at his sole discretion, choose to participate through his attorneys or otherwise, in such investigations, trials and defenses of such claim and any appeal arising there from.
- 14.4. **End of Life (EOL) Product.** Bidders must quote for the latest equipment and make sure that no quoted equipment including hardware/software should come to an end of life within next **five years** from the date of handing over the equipment to IISc. The bidders must submit a certification from the respective company on their letter head in support of Non-EOL of the equipment. Noncompliance to this would result the rejection of the bid.
- 14.5. **Resolution of Dispute and Arbitration.** If any dispute arises between the parties hitherto during the subsistence or thereafter in connection with the validity, interpretation, implementation, breach of any provision of the contract or regarding and including a question as to whether the termination of the contract by one party hitherto is legitimate, both parties hitherto shall endeavor to settle such dispute amicably. The matter shall be referred to an Arbitrator appointed by mutual consent of both parties and the provisions of the Indian Arbitration Act and Conciliation Act of 1996 as amended from time to time shall apply to such arbitration. The agency expressly agrees that the arbitration proceedings shall be held at IISc Bangalore. In case any agency wants to take the dispute to a court of law after arbitration award as aforesaid, it is clearly understood that only a court of law in Bangalore shall have the Jurisdiction.