

Invitation for Expression of Interest

**Expression of Interest for 3-Tesla Magnetic
Resonance Imaging (MRI) scanner**



Eol: CNS/MRI/1/2015

Centre for Neuroscience
Indian Institute of Science
Bangalore 560012

December 2015

PREAMBLE AND INTRODUCTION

Created in the centenary year of IISc, the Centre for Neuroscience (CNS) at the Indian Institute of Science (IISc) was set up with the primary goal of understanding the structure, function and development of the brain in health and in disease. The Centre's faculty spans a wide range of disciplines to study the brain across different levels of organization using molecular, cellular, systems, cognitive and computational approaches.

Through this Expression of Interest (EoI), CNS is inviting technical proposals from bidders for establishing a state-of-the-art 3 Tesla Magnetic Resonance Imaging (MRI) facility for imaging brain structure and function in healthy human and patient populations, as well as neuroimaging in animal models. Bidders who have experience in supplying and installing MRI facilities and are meeting the stipulated bidders' eligibility criteria are welcome to participate in this initiative.

SCOPE OF WORK

CNS is inviting technical proposals from bidders to establish a 3-Tesla functional MRI facility suitable for high-resolution structural imaging, functional imaging, diffusion imaging and spectroscopy. The basic objective of the system would be to perform intensive research pertinent to neuroscience. The equipment shall be installed on a turnkey basis and include erection of the building for the system as specified. Key technical specifications are listed below.

Key technical requirements of the MRI scanner

- Actively shielded super-conducting magnet with operational field strength of **3 Tesla** for high-resolution conventional structural imaging, functional imaging, diffusion imaging and spectroscopy.
- Magnet bore to be sufficiently wide so that patient tube aperture, after positioning of gradient, shim and RF antennas is **60 cm** for comfortable patient study.
- High performance and highly stable shim system with global and localized manual and auto-shimming.
- Liquid helium supply for up to 10 years.

- Appropriate handling system for subject, including essential accessories for subject communication, emergency stop, closed circuit TV for subject monitoring.
- 32-channel (or higher) head coil compatible with simultaneous EEG-fMRI, TMS-fMRI and TDCS-fMRI systems.
- Neck and spine coil.
- Certification of approval for safe use with human and animal models (e.g. FDA approval) with documentation indicating proven safety record.
- Data acquisition in all three standard planes (axial, sagittal, coronal) and oblique and double oblique planes.
- State of the art Spin Echo and Gradient Echo sequences, Echo Planar imaging (EPI)-optimized sequences and sequences for Arterial Spin Labeling.
- System should have capability to perform proton spectroscopy 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.
- System should come with appropriate computing support for storage and processing.
- Accessories for wireless monitoring of physiological signals like ECG, pulse, pulse oximeter, respiratory, external signal triggering (interface for triggering input pulse from external source), MR-compatible pressure injector for perfusion imaging, contrast enhanced MR-angiogram & bolus tracking.
- Phantoms for structural, functional and diffusion imaging.

Desirable technical specifications

- High gradient strength and slew rates: gradient strengths as much as 80 mT/m, and slew rate as much as 200 T/m/s.
- High resolution diffusion weighted imaging (up to 256 directions) with support for HARDI and Diffusion Spectrum Imaging
- 6 degree of freedom online motion correction during BOLD data acquisition
- 64 channel (or higher channel count) head coil for specialized, high SNR imaging applications.
- Surface coil for imaging small volume tissue.
- Transmitter-receiver volume coil (minimum 15-channel) for imaging brains and spinal cord of primates and of small animals (e.g. rodents).

- Capability for 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.

BUILDING ON TURN-KEY ARRANGEMENT

The MRI system will be housed in a building (area approx. 6,000 sq. feet) constructed as per our requirements. The building with the running fully-operational MRI system shall be handed over to us in a turnkey basis. The requisite UPS unit should be included (minimum backup of 30 minutes), together with the generator unit and the Air-conditioning unit for the MRI building. Construction of the building will be as per the plan specified, and the building, fixtures and furniture shall be constructed to the satisfaction of, and in regular coordination with, our architects and the Project Monitoring Committee.

PRE-QUALIFICATION CRITERIA

- The bidder has to be either an OEM or authorised distributor of the proposed equipment. Necessary documentation to this effect has to be a part of the proposal.
- The bidder should be in a position to deliver the total turnkey solution and the proposal has to clearly reflect the competence and capability of the bidder in meeting this requirement.
- The bidder, in the last two years, should have supplied and installed at least one 3T MRI system for similar requirements. Documentary evidence to this effect has to be enclosed with the offer giving clear details of the installation and contact details of the purchaser.
- The Bidder should be a reputed Original Equipment Manufacturer (OEM) and/or its authorized direct distributor/dealer.
- In case a bidder is not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, installation, maintenance, repair obligations etc. during the warranty and post-warranty period or ensure a mechanism at place for carrying out the

supply, installation, maintenance, repair obligations etc. during the warranty and post-warranty period.

- The bidder or its representing agent should have a main/branch office at Bangalore to ensure satisfactory after sales service support.
- Document showing a minimum annual sales turnover of at least Rs. 100 Crores (Rupees Hundred Crores) during any two consecutive years out of the preceding three financial years.
- Solvency certificate (not older than twelve months) for Rupees Four Crores issued by scheduled/nationalized bank with which bidder holds the current account.

INSTRUCTIONS TO BIDDERS FOR SUBMISSION OF EoI

- The instructions mentioned should be read carefully by the bidders before submitting the technical proposal.
- The bidder shall bear all costs associated with the preparation and submission of EoI, and CNS, IISc will in no case be responsible or liable for these costs.
- Bidders should clearly indicate which of the technical specifications (key specifications or desirable specifications) they are able to meet or otherwise.
- CNS may ask for clarifications or further information to evaluate the Expression of Interests. If any information sought in this document is missing or not clearly specified by the bidder, it will be assumed that the bidder is not in a position to supply the information.
- CNS/IISc reserves the right to accept or reject any application or suggestions without assigning any reasons whatsoever.
- An undertaking (self certificate) is to be submitted that the Organization has not been blacklisted by any Central or State Government Department or Organization.

- Please note that all the pages of the Eol documents should be numbered, signed with date and seal of the Organization.
- The covering letter should be submitted on bidder's company Letter Head, along with the technical proposal.
- Queries/clarification required by the bidder for submission of the Eol documents should be sent to: office@cns.iisc.ernet.in on or before December 15, 2015. CNS will enable the bidder to interact/discuss with the respective faculty member to obtain necessary clarifications.
- Following the submission of Eol, bidders will be invited for a technical **clarification meeting and presentation** to a Technical Committee to be held on **December 24, 2015**.
- **The final Request for Proposal (RFP) will be issued only to those bidders who are short-listed in this Eol process.** The short-listing will be done by a Technical Committee based on the evaluation of the technical proposal, prior installations, and other details submitted by the bidder.
- The Committee reserves the right to add to, remove or alter these Eol technical specifications in the final RFP without assigning any specific reasons.
- Canvassing in any form would disqualify the bidder from further participation.

SCHEDULE FOR SUBMISSION OF Eol:

- The last date for submission of EOI document is: **December 17, 2015**
- All the pages of EOI document should be duly signed and stamped by the competent authority.
- The completed EOI document shall be submitted in a sealed envelope super scribing "Expression of Interest for the supply of 3T MRI system" on or before the date and time of submission to the office of:

**The Chairman,
Centre for Neuroscience,
Indian Institute of Science,
Bangalore 560 012**

CHRONOLOGY OF EVENTS

- ❖ Release of Eol : 10.12.2015
- ❖ Receipt of vendor technical queries
on submission of Eol : 15.12.2015, 5.00 p.m.
- ❖ Due date for submission of Eol : **17.12.2015, 5.00 p.m.**
- ❖ Clarification Meeting with vendors : **24.12.2015, 2.00 p.m.**