

**DEPARTMENT OF RADIODIAGNOSIS AND IMAGING
INSTITUTE OF MEDICAL SCIENCES
BANARAS HINDU UNIVERSITY**

Corrigendum – 04

This is in reference with the tender with the following details:

Tender Reference Number **BHU/RD&I/2018-19/014**


Tender I.D **2018_BHU_330419_1**

Titled **Supply of 3 T MRI equipment on turn-key basis in
Deptt. of Radiodiagnosis & Imaging, Institute of Medical Sciences,
BHU, Varanasi**

Published on Date **24.04.2018**

A modification in the technical bid along with certain corrections in financial clause as appended. Please note that the corrigendum has the acceptance of all our technical experts (official E.Mails of external experts are also appended).

The amendment in technical bid is as follows:


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Banaras Hindu University
बनारस हिन्दू विश्वविद्यालय

BID DOCUMENT (e – Procurement - CORRIGENDUM)

Supply of 3 T MRI equipment on turn-key basis
in Deptt. of Radiodiagnosis & Imaging
Institute of Medical Sciences
BHU, Varanasi



DEPTT. OF RADIODIAGNOSIS & IMAGING
INSTITUTE OF MEDICAL SCIENCES
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Weerisham

A. Anish Kumar

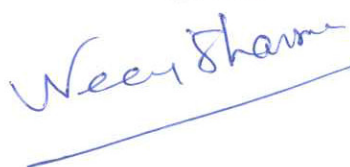
Head, Department
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CORRIGENDUM

Clause no.	Tender specification	Amendment
<p>SCC – Section VIII Payment Term- GCC 16.1</p> <p>Page No -64</p>	<p>Payment for Goods supplied from abroad: Payment of foreign currency portion shall be made in Indian Rupees in the following manner:</p> <p>(i) On Shipment: Ninety (90%) percent of the Contract Price of the Goods shipped shall be paid through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country, upon receiving equipment in good condition and documents specified in GCC Clause 13.1 under Section-VII.</p> <p>(ii) On Acceptance: Remaining (10%) percent of the Contract Price of Equipment received shall be paid within thirty (30) days of receipt of the equipment upon submission of claim supported by the acceptance certificate issued by the Purchaser by bank draft/wire transfer.</p>	<p>Payment for Goods supplied from abroad: Payment of foreign currency portion shall be made in Foreign currency in the following manner:</p> <p>(i) On Shipment: Ninety (90%) percent of the Contract Price of the Goods shipped shall be paid through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country, against dispatch documents specified in GCC Clause 13.1 under Section-VII.</p> <p>(ii) On Acceptance: Remaining (10%) percent of the Contract Price of Equipment shall be paid within thirty (30) days of receipt of the equipment upon submission of claim supported by the acceptance certificate issued by the Purchaser by bank draft/wire transfer.</p>
<p>SCC – Section VIII GCC 28.3 Point (b)</p>	<p>b) Pay liquidated damages to the Purchaser with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be 1% per week of actual value of the equipment (maximum 10%).</p>	<p>(b) Pay liquidated damages to the Purchaser with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be 1% per week of actual value of the equipment (maximum 10%).</p>



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Preamble	<p>Vendor should take the responsibility for executing AERB certification with site approval and all procedures till the license of operation is awarded. Renewal of certification till the equipment is under CMC shall be the responsibility of the vendor. All major components of equipment should be from the same vendor only.</p> <p>Department shall provide necessary help and document in facilitating the same.</p>	<p>Vendor will support to facilitate consignee for getting AERB certification however the responsibility for applying for all the certification/licenses including operational license will be with consignee through it's registered eLORA account.</p>
<p>3. j) Technical Specifications 4. RF SYSTEM – is fully digital broad band solid state system with auto-tuning</p>	<p>Broad Band RF receiver with at least 32 channel system in transmitter as well as receiver side with number of independent receiver channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image. Receiver Bandwidth for superior RF performance (> 1 MHz). Receiver to support 12 or more elements of parallel acquisition coils, compatible with parallel imaging techniques with Scan time reduction factors of at least upto 4 or more in 2D & 3D sequences.</p> <p>A RF system should have the facility of transmitting enough power (please quote the value) (as per FDA guidelines), and the operating frequency should cover 1H, and 31P nuclei (for multinuclear spectroscopy of 1H/31P). All items required to perform multinuclear spectroscopy including the sequences should be quoted as a standard. The coil needed for P31 should be quoted as optional.</p>	<p>Broad Band RF receiver with at least 32 channel system in transmitter as well as receiver side with number of independent receiver channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image. Receiver Bandwidth for superior RF performance (> 1 MHz). Receiver to support 12 or more elements of parallel acquisition coils, compatible with parallel imaging techniques with Scan time reduction factors of at least upto 4 or more in 2D & 3D sequences.</p> <p>A RF system should have the facility of transmitting enough power (please quote the value) (as per FDA guidelines), and the operating frequency should cover 1H, and 31P nuclei (for multinuclear spectroscopy of 1H/31P).</p>
3. Technical Specifications	Provide a CLIENT SERVER SYSTEM with 3TB	Provide a CLIENT SERVER SYSTEM with 3TB

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<p>8. WORKSTATION a.</p>	<p>storage & 20,000 concurrent slices as standard scope of supply along with equipment. Concurrent user license for all applications . DICOM 3.0 compatibility and interfacing with other modalities must be possible. The Client / Nodes shall have the resolution, software and all functionality of a stand-alone workstation (Dexus, Intelligence Portal, Syngo, via. Etc. or higher. CONFIGURATION : 1 no. Server and 2 no.s Clients/Nodes. User license for each of the applications to be provided as standard for concurrent use on all nodes and the console (where applicable). Licenses: 3 nos. Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the clients/ nodes simultaneously without any processing delay. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier. Hardware: Client / Node: CPU unit , minimum 32GB RAM , Medical grade monitor of 2MP resolution & size - 18" or more , mouse, keyboard. Hardware Server: The server (single/dual configuration) should have image storage capacity of at least 2.5 Tera bytes, minimum 20,000 concurrent slice processing power and at least 32GB RAM. 21" or more TFT/LCD monitor.</p>	<p>storage & 20,000 concurrent slices as standard scope of supply along with equipment. Concurrent user license for all applications . DICOM 3.0 compatibility and interfacing with other modalities must be possible. The Client / Nodes shall have the resolution, software and all functionality of a stand-alone workstation (Dexus, Intelligence Portal, Syngo, via. Etc. or higher. CONFIGURATION : 1 no. Server and 2 no.s Clients/Nodes. <u>User license for each of the applications to be provided as standard for concurrent use on nodes and the console as follows - the applications mandating inline processing should have licenses on online console only while all other off-line applications should have licenses on both the off-line nodes only.</u> Licenses: Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the clients/ nodes simultaneously without any processing delay. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier. Hardware: Client / Node: CPU unit , minimum 32GB RAM , Medical grade monitor of 2MP resolution & size - 18" or more , mouse, keyboard. Hardware Server: The server (single/dual configuration) should have image storage capacity of at</p>
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Uday Sharma

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		least 3 Tera bytes, minimum 20,000 concurrent slice processing power and at least 32GB RAM. 21" or more TFT/LCD monitor.
11. POST PROCESSING AND EVALUATION	a. Post processing of all purchased sequences to the most advanced level should be provided as a standard. Most advanced neuroimaging post processing soft-ware should be provided including processing of resting brain fMRI, DTI,DKI, all types of perfusion imaging, CSF flow analysis, all types of spectroscopy.	a. Post processing of all purchased sequences to the most advanced level should be provided as a standard. Most advanced neuroimaging post processing soft-ware should be provided including processing of resting brain fMRI, DTI, all types (T1 and T2*) of perfusion imaging, CSF flow analysis, all types of spectroscopy.
3. Technical Specifications 8. WORKSTATION d.	All necessary latest software including post-processing software (with calculation of all metrics available with the vendor) for all offered / purchased sequences including evaluation for resting brain fMRI, perfusion (T1 & T2*), diffusion, DTI with fiber-tracking, DKI,T1/T2/T1 Rho mapping, BOLD, metabolite mapping, CSF Flow analysis and other associated post processing like MIP, MPR, inter/intra-modality image fusion / subtraction software of any two of above (especially DTI with fMRI) surface reconstruction should be provided. Please provide step wise guideline videos & booklet of each post processing software at no added cost of a DVD. (In case the vendor does not have the facility for DKI and T1Rho mapping at present and plans to offer in near future, then the same to be provided from your side as soon as you provide it in India to any other institution/researcher, at no added cost to BHU. In case the vendor	All necessary latest software including post-processing software (with calculation of all metrics available with the vendor) for all offered / purchased sequences including evaluation for resting brain fMRI, perfusion (T1 & T2*), diffusion, DTI with fiber-tracking, T1/T2 mapping, BOLD, metabolite mapping, CSF Flow analysis and other associated post processing like MIP, MPR, inter/intra-modality image fusion / subtraction software of any two of above (especially DTI with fMRI) surface reconstruction should be provided. Please provide step wise guideline videos & booklet of each post processing software at no added cost of a DVD. DTI and Tractography post-processing should include estimation of ADC, MD, FA (Lamda- parallel, perpendicular separately and combined), Fiber tracking, fiber statistics, and display of fiber tracks on anatomical image(s).

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	wants to provide these under a research agreement the university shall consider the option)	Voxel-based morphometry for segmentation and quantification should be included. Facility for cross reference viewing over various sequences should be available as a standard.
10. Imaging Sequences – Fast sequences	f. Fat and water suppressed imaging sequences including the sequence which should give 4 contrast (in phase, opposed phase, fat and Water) images in a single acquisition to be quoted as standard. EPI optimized sequences for T1, T2, PD imaging. Perfusion, regular diffusion values (5b values, 3 directions), EPI-FLAIR. CPI-IR, IPI-FLAIR diffusion tensor. EPIMT-FLAIR, tensor diffusion (5b values in minimum in six directions) for diffusion studies. Suitable artifact/fat suppression techniques to be incorporated in the sequence to have optimum image quality. There should be capability of generation of ADC map (isotropic and anisotropy from the regular diffusion and tensor data). Facility of online generation of ADC map should be there. Optimized sequence package for special applications.	f. Fat and water suppressed imaging sequences including the sequence which should give 4 contrast (in phase, opposed phase, fat and Water) images in a single acquisition to be quoted as standard. EPI optimized sequences for T1, T2, PD imaging. Perfusion (T1 and T2*), regular diffusion values (5b values, 3 directions), EPI-IR, EPI-FLAIR, EPI-FLAIR diffusion tensor, EPI-MT-FLAIR, DTI (16b values in minimum in 128 directions) for diffusion studies. Suitable artifact/fat suppression techniques to be incorporated in the sequence to have optimum image quality. There should be capability of generation of ADC map & eADC Map (isotropic and anisotropy from the regular diffusion and tensor data). Facility of online generation of ADC map should be there. Optimized sequence package for special applications.
10. Imaging Sequences – Fast sequences	l. Perfusion study in organ systems like kidney, brain, heart etc. Evaluation package for calculating CBV, CBF, MTT, Vep, Ktrans perfusion map etc. Post-processing of perfusion should be available in console also.	l. Perfusion study in organ systems like kidney, brain, heart etc. Evaluation package for calculating rCBV, rCBF, MTT, Vep, Kep, Ktrans perfusion map etc.

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Aditya
6/12/18
(Tender inviting Authority)
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