

REQUEST FOR BUDGETARY ESTIMATE

Ref.: HSCC/PUR /MEA-AFGHANISTAN/Med. Eqpt./2023/02 dated 17.08.2023

HSCC (India) Ltd. intends to invites **On-line bids/GeM** from eligible bidders, in single stage two bid system for supply, installation, testing, commissioning & handing-over of MRI & CT Scan Machine, Medical Equipment for **Afghanistan** for items with the Technical Specifications are annexed at **Annexure-I**.

It is requested to submit the Budgetary Estimate of the Equipments in Company Letter Head, as per the single page format enclosed at Annexure-II, in both Hard & Soft Copy latest by 21.08.2023 at following address:

**General Manager (Projects)
HSCC (India) Ltd.,
E-6(A), Sector-1,
NOIDA (U.P.) – 201 301.**

Please note that MII guideline shall be followed while procuring the items and soft copy may be send on following e-mail ID:

t_nath@hsccltd.co.in
suresh_kumar@hsccltd.co.in

GM (Projects),
HSCC (I) Ltd,
(A Govt. Of India Enterprises)

3.0 TESLA MRI Machine

Qty-01No.

Technical Specifications

1. Whole body 3.0 Tesla Magnetic Resonance Imaging system optimized for higher performance in cardiac and neurological examinations with short superconducting magnet, high performance gradients and digital Radio frequency system. The system should have 32 channels RF system. The system should be totally new and should not contain refurbished or having recycled items. Silent scanning (noise level <80 dB) to be enabled as standard.
2. **Magnet**
 - 2.1. 3.0T active shielded super conductive magnet with best homogeneity. Field stability over time should be < or equal to 0.2 ppm/hr.
 - 2.2. Length should be short with at least 70cm bore diameter.
 - 2.3. It should have facilities of better illumination ventilation and designed to avoid patient claustrophobia.
 - 2.4. The homogeneity of the magnet should be mentioned in relation to 10, 20, 30, 40 cm DSV. Automatic shimming in phantom should be better than 3.5ppm in 40 DSV.
 - 2.5. The manufacturer has to specify up to what FOV gradient linearity is maintained.
 - 2.6. Magnet should be shielded from external interferences. Smaller fringe field preferred 5 Gauss and 10 Gauss Line in X, Y, Z axis specify yours quote value for 5 gauss and 10 gauss line. The 5 Gauss line will have to be marked.
 - 2.7. Cryogen vessel to be of Helium only with appropriate super thermal shielding and refrigeration facility for minimum Helium boil-off, specify the Helium tank capacity and boil-off rate.
 - 2.8. Helium level monitoring equipment in the magnet and facility for appropriate quick shutdown of the magnet in the event of emergency.
 - 2.9. Helium refill time should not be less than 2years. Please mention the helium refill time.
 - 2.10. Noise level inside the examination room should be minimum as possible.
 - 2.11. The manufacturer has to specify db level.
 - 2.12. The vendor should quote model with physiological signal display on gantry.
 - 2.13. Built - in 2 way Intercom facility to communicate with patient is required.
 - 2.14. Emergency helium release button should be provided at least in two places [inside MR examination room and console room].
3. **Shim System**
 - 3.1. High performance and highly stable shim system with global and localized manual and auto- shimming for high homogeneity magnetic field for imaging. Specify time for shimming. The manufacturer has to specify the number of shim coil used.
 - 3.2. Off-centre shimming should be possible. Possible High order (2nd Order)
 - 3.3. Auto shim (global and voxel shim) should take minimum time to shim the magnet with patient in position.
4. **Gradient System**
 - 4.1. Activity shielded Gradient System with strength of at least 40 mT/m at slew rate of 200T/m/sec to be achieved simultaneously for the same FOV & preferably low linearity.
 - 4.2. The rise time should not be more than 225 micro second to reach the maximum gradient strength. Simultaneously application of peak amplitude and slew rate. Duty cycle at maximum and minimum strength at full peak should be 100%.
 - 4.3. These true slew rates should be available in each axis independently, for overall better duty cycle performance of the gradient.

- 4.4. The Gradient system should have provision for eddy current compensation. The manufacturer has to mention level of Eddy current compensation in %.
- 4.5. Field of View (FOV) should be at least 45 cm in all three axes.
- 4.6. Minimum TE & TR in 2D/3D should be specified in relation to the sequences.
- 4.7. Minimum Slice Thickness in 2D & 3D should be specified in relation to the sequences.
- 4.8. Echo Train length in both Spin echo and Gradient Echo should be at least 255 or more.
- 4.9. The measurement matrix should be from 128x128 to 1024x1024 in both 2D and 3D imaging as well.

5. RF system

- 5.1. With RF Uniformity and signal homogeneity.
- 5.2. A fully digital RF system capable of transmitting power of at least 25 KW or more, Dual RF power amplifiers. System should be capable of Multi Transmit with Multi amplifier driving / True shape for better B1 homogeneity.
- 5.3. It should also have at least minimum of 32 independent ADC hardware Channel independent RF channels with each having bandwidth of 1MHz or more along with necessary hardware to support Quadrature/CP array coils.
- 5.4. It should support Parallel acquisition techniques like ASSET/SENSE/iPAT with a factor of at least 9.

6. RF Coils

- 6.1. The system body Coil integrated to the magnet must be quadrature /CP.
- 6.2. In addition to this coil, following Coils (preferably be with equal number of elements as the channels) be quoted. RF coils in addition to main body coil (Transmit / Receive or receive coils) auto tune, array or no tune coils. Coils for the following applications should be available with the system.
- 6.3. Circular polarized (CP) Array coils should include in the offer.
- 6.4. Coil / RF design should support compatibility to coils manufactured by other manufacturers.
- 6.5. The manufacturer has to specify the measures taken to prevent dielectric artifacts.(Quadrature design & EPI/DTI compatible) in addition to main body coil as well as true acceleration factor for each of the array coils.
- 6.6. All array coils should be compatible with parallel imaging techniques and compatible for FMRI projection. Integrated coil technology equivalent to TIM / GEM / DSTREAM.
- 6.7. 32 channels or more head coil-capable of multi frequency MR spectroscopy (1H).
- 6.8. Neurovascular coil of 16 channels or more.
- 6.9. Wrist coil of 16 channels or more.
- 6.10. Spine phased array coil 32 channels or more.
- 6.11. Body phased array coils 32 channels of more (single or in combination) at least 45 cm z-axis coverage for imaging of abdomen, with at least 32 channels acquisition for body parts.
- 6.12. Breast coil 16 channel or more. Fully functional spectroscopy and capable of taking breast biopsy).
- 6.13. Shoulder coil:
 - a) Dedicated Shoulder coil – Multi channel – 16 or more.
 - b) Flex coils – 2nos. (One large and one small).
- 6.14. High resolution knee coil 16 channels or more; Tx & Rx.
- 6.15. High resolution foot/ ankle coil – 16 channels or more.
- 6.16. Endocavitary Coil – For Prostrate Study.

7. Patient Table

- 7.1. The table should be fully motorized, MRI Compatible computer controlled table movement in vertical and horizontal directions.
- 7.2. Position accuracy should be +/- 1.0 mm or better.
- 7.3. Should be able to take at least 140 kg load.

- 7.4. The table should have facility for manual traction in case of emergency.
 - 7.5. Cushions and other patient comfort accessories. All parts of the table should be protected from liquid spill.
 - 7.6. The table should have patient hand-held alarm system.
 - 7.7. Bolus chasing with automatic/continuous moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 sec for CE-MRA.
- 8. Computer System Image Processor / Operator Console**
- 8.1. Computer should be latest in the industry, fast and efficient to handle application on MR Platform.
 - 8.2. One colour console for acquisition, all calculations, post processing etc Console must have full colour with user define protocols with programmable inter scan delay.
 - 8.3. Necessary image processor with large RAM (8 GB or more) for ultra-fast real time image reconstruction. Pulse Sequence Software to be included.
 - 8.4. Computational Speed to match the single shot Echo Planar Imaging (EPI). Interactive angiogram, multi-planar three dimensional (3D) reconstruction, surface rendering, dynamic Imaging, vascular Imaging/angiography. Functional imaging, DTI etc.
 - 8.5. The main host computer should have at least 18-inch or more TFT/LCD/LED type colour monitor with enhanced graphic accelerator.
 - 8.6. The main console should have integrated/ dedicated facility for music system for the patient in the magnet room.
 - 8.7. Filming and adequate storage for images and other applications.
 - 8.8. Total hard disk memory to be sufficient to store at least or more than 250,000 images of 256 x 256 matrix data size (2 TB or more). Systems offering higher' storage will be preferred. The system should have CD/DVD archiving facility on the main console and workstation.
 - 8.9. DVD write/CD Read/Rewrite 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. Provision for archival of k-space data and raw (unprocessed) images.
 - 8.10. There should be a provision of retrieval of the reconstruction data (raw files) in an user friendly manner.
 - 8.11. DICOM interface to hook DICOM dry/laser camera capable of storing printing 1024 x 1024 matrix size images at least in 16 format without loss of digital resolution. Lifetime licenses for all the acquisition software packages.
- 9. Workstation**
- 9.1. One server with 2 node with concurrent licenses to be supplied with the system.
 - 9.2. Licenses: 2 nos
Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the systems simultaneously without any processing delay.
 - 9.3. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier.
 - 9.4. Hardware: Node: The vendor has to supply the hardware in the form of CPU and Medical grade monitor 18" or more of 2MP resolution.
 - 9.5. Hardware Server:
 - a) The server (single/dual configuration) should have image storage capacity of at least 4 Tera bytes and provision for enhancement upto 20TB; minimum 20,000 concurrent slice processing power and at least 64GB RAM and provision for further enhancement.
 - b) The server hardware to be included with 21" or more TFT/LCD monitor with dual processor. DICOM 3.0 compatibility and interfacing with other modalities must be

possible. The workstation shall have the resolution, software and all functionality of a stand-alone workstation.

- 9.6. All necessary software including post-processing software for all offered applications including evaluation for Fmri, perfusion (ASL, T1 perfusion and T2* perfusion), diffusion, DTI with fibre tracking, cardiac evaluation, and other associated post processing like MIP, MPR, surface reconstruction should be provided.
- 9.7. Level 3 network switch (32 nodes) or latest and provide necessary networking and configuration assistance with existing PACs, HIS & RIS.
- 9.8. The workstation should have the following features:
 - a) Cardiac perfusion analysis, quantitative T1 mapping, with colour metabolite mapping, quantification of the CSF flow data.
 - b) Image Fusion software should be provided for Inter-modality and Intra- modality fusion.
 - c) Software for vascular properties like IAUC, KEP as standard.
 - d) DSA images should be viewable in Subtraction mode.
 - e) Necessary and adequate hardware and software for sending and receiving the patient data {text + images}.
 - f) Printing of films should be possible from both main console and workstation.
 - g) Workstation should also be able to function independent of the main console.
 - h) Capability to calculate colour display of real MTT, real CBV, and real CBF.
 - i) Compatibility with data from other MRI system for post processing.
 - j) Output in the form of jpeg, avi / equivalent formats should be possible.
- 9.9. Cardiac Package: The workstation should have display of Cardiac cine images in movie mode with rapid avi creation and should have comprehensive cardiac post processing software including for coronary.
- 9.10. MRA with regular free upgrades in future. Calculation of ventricular area and volume, stroke volume, ejection fraction and relative ejection fraction, Time volume diagram generation, filling rates and myocardial wall motion, Graphic display of output calculation of flow and velocity parameter with colour coded display of velocity parameters. Diffusion tensor Imaging, 3D myocardial tagging should be possible.
10. **Data Acquisition**
 - 10.1. 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.
 - 10.2. 2D multi-slice imaging should be possible in all planes (axial, sagittal, coronal, oblique and double oblique).
 - 10.3. Minimum 512 x 512 matrix acquisition for all applications.
 - 10.4. Half Fourier or other techniques to reduce scan acquisition time while maintaining adequate SNR, 3D volume, multiple contiguous slabs, multiple interleaved and multiple overlapping slabs.
 - 10.5. Slice thickness in 2D and partition in 3D to be freely selectable.
 - 10.6. Dynamic acquisition (serial imaging) with capability to initiate scan sequences either from the magnet panel or from the console.
 - 10.7. Dynamic acquisition number of repeat scans with delay time either identical time interval or selectable.
 - 10.8. Auto slices positioning from the localizer images.
 - 10.9. Maximum off-centre positioning both anterior-posterior and lateral direction and should be selectable.
 - 10.10. Gating: physiological signals like ECG, pulse, respiratory, external signal triggering (interface for triggering input pulse from external source).
 - 10.11. Simultaneous acquisition, processing and display of image data in 2D multi slice mode.
 - 10.12. Selection of voxel from oblique slices should be possible while doing spectroscopy.

- 10.13. The application software for image smoothing and edge sharpness etc. for improvement in image resolution should be included.
- 10.14. Artifact reduction/motion correction techniques/imaging enhancement/image filtering/image subtraction/addition multiplication/division techniques.
- 10.15. Flow 1st and 2nd order flow artifact compensation.
- 10.16. Presentation slabs: a number of relocatable saturation bands to be placed either inside or outside the region of interest.
- 10.17. Magnetization transfer saturation: Off resonance RF pulses to suppress signals from stationary tissue in FOV phase contrast capability in 2D & 3D mode.
- 10.18. Breath Hold Acquisition for Cardiac and Abdominal Imaging must be possible.
- 10.19. Fat saturation techniques: frequency selective RF pulses to suppress fat signal in the measured image FO. ROI selective (regional) fat suppression should also be given.
- 10.20. Image intensity correction.
- 10.21. Breath hold acquisition.
- 11. **EPI mode**
 - 11.1. Single and multi-shot EPI imaging techniques.
 - 11.2. Data acquisition in all three standard planes (axial, sagittal coronal) and oblique and double oblique planes.
 - 11.3. Multi-coil acquisition in order to optimize throughput increase and increased effective FOV. Individual acquisition of coil should be mentioned.
 - 11.4. 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.
 - 11.5. BOLD, SWI, T2 Perfusion (with all post processing licenses as standard).
 - 11.6. Complete Functional MRI of Brain package as standard. It should be a goggle based system (including patient camera, goggles, headphone and all other related hardware).
- 12. **Imaging sequences**
 - 12.1. The system should be capable of selecting TR and TEs as per requirement in majority of the pulse sequences.
 - 12.2. Spin echo (SE); multi-slice single echo, multislice multi-echo (B echo or more) with minimum TR and TE. SE with symmetrical and asymmetrical echo intervals: MT-SE imaging sequence. Compress Sensing & Simultaneous multi slice imaging should be available for static and dynamic organs.
 - 12.3. Inversion recovery (IR) including short TI, modified IRSE, FLAIR, DIR (Double Inversion Recovery) MT and FLAIR.
 - 12.4. Gradient echo (GE) 3D gradient echo with shortest TR and TE, free choice of flip angle selection while maintaining SNR.
- 13. **Fast sequences**
 - 13.1. Fast spin echo in 2D and 3D mode T1, T2 and PD contrast capable of acquiring maximum number of slices with a given TR a minimum TE. Echo train should be at least 128 or more in fast spin echo mode.
 - 13.2. Half Fourier acquisition capabilities should be available with/ without diffusion gradients and in combination with fast spin echo.
 - 13.3. Fast gradient spin echo, IR multi-slice multi-echo mode with maximum turbo factor Sequences should incorporate RF focusing to acquire ultra-fast gradient spin echo.
 - 13.4. Fast gradient echo sequence should be provided to acquire images in ultra-fast 2D and 3D mode.
 - 13.5. 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, 3 directions}, EPI-FLAIR. CPI-IR, IPI-FLAIR diffusion tensor. EP1-MT- 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. Small focus DWI should be standard.

- 13.6. MR angio: 2D/3D TOF, 2D/3D Phase contrast (with and without gating) magnetization transfer saturation, black blood angiography for cerebral, pulmonary, abdominal and peripheral vessel For peripheral angio moving table angiography should be offered so that complete limb can be examined in one go. Bolus tracking software package should be offered. Sequences for breath hold angiography with contrast enchainment should also be offered.
- 13.7. NON Contrast Angiography like Native, Inhance, Trance for whole body applications to be quoted as standard.
- 13.8. Contrast bolus tracking (including single shot whole body MRA, interactive and automatic, etc. (Contrast / Fluoro enhanced).
- 13.9. The system should have the Hydrogen, Single Voxel spectroscopy, Multivoxel, multislice 2D, 3D Spectroscopy and also the Chemical shift imaging in 2D/3D. The complete processing / post- processing software including colour metabolite maps should be available. J2. Full comprehensive cardiac sequences which includes:-
 - a) MR cardiology package for evaluation of heart in long and short axis with black blood cardiac imaging.
 - b) Package for- prospective and retrospective gating, etc.
- 13.10. Advanced Cardiac Applications: morphology, wall motion, perfusion imaging myocardial viability imaging, Myocardial tagging, Cardiac functions including EF, ED/ES volume, Cardiac output, and wall thickness. This processing can be done in workstation and console.
- 13.11. Sequence package for diffusion study including DTI (tractography) in organs like brain, kidney, muscle, heart etc if available. Unavailable techniques to be provided as and when available without any additional cost.
- 13.12. Perfusion study in organ systems like kidney, brain, heart etc. Evaluation package for calculating CBV, CBF, MTT, perfusion map etc. Post processing of perfusion should be available in console also.
- 13.13. Sequences for MRI imaging of joints with Metal implants like WARP/Maverick should be offered.
- 13.14. Hardware and sequences post processing software for MR Elastography of abdomen.
- 13.15. Contrast Kinematics like TWIST / TRICKS - XV/ 4DTRAK or equivalent should be offered.
- 13.16. Image fusion should be offered.
- 13.17. Whole body imaging of 200 cm should be offered.
- 13.18. Programming environment under research agreement should be offered for creating and modifying pulse sequences and working on the system.
- 13.19. Flow quantification in vessels and CSF, Hepatobiliary system.
- 13.20. MRI Neuro functional imaging sequence including BOLD/ Mosaic etc. Flow Quantification Packages for CSF with dynamic CSF flow imaging and sequence for nullifying CSF pulsation artefacts. Automated Brain volume quantification and synthetic MRI.
- 13.21. Optimized breath hold sequences for abdominal studies including angiogram.
- 13.22. Sequence package for functional mapping of brain.
- 13.23. Internal ear imaging - 3D acquisitions like CUBE, SPACE, VISTA.
- 13.24. Susceptibility Weighted imaging should be provided as essential.
- 13.25. High SNR even in small FOV should be available. (Specify the details of the smallest FOV and the technique).
- 13.26. Non Contrast perfusion imaging software like 2D/3D-ASL and its post processing should be offered.
- 13.27. MR Cholangiography and Pancreatogram: Both breath-hold and respiratory triggered, Specialized sequences and processing to perform MRCP.
- 13.28. Pulmonary 2D/3D MRA sequence, including single breath hold sequence.

- 13.29. MR Ventriculography and Cisternography, Myelography, Cartilage mapping and myocardial mapping.
- 13.30. Parallel acquisition technique such as SENSE/SMASH/ASSET/ GRAPPA , iPAT, ARC and other new sequences to be quoted as standard.
- 13.31. The manufacturer has to specify the factor by which the acquisition time is reduced for similar acquisition with and without parallel imaging technique. A scan time reduction factor 4 for head, body, cardiac, angio and ortho application is required.
- 13.32. Flow quantification packages for CSF with dynamic CSF flow imaging, aqueduct, and spinal canal In-line motion correction for uncooperative' patients/pediatric applications, that is motions/patient movement correction sequence and algorithm (not just faster scanning or parallel imaging).
- 14. Imaging Sequences**
MRS: Proton (1H) MRS- Single voxel (SV), Multi-voxel CSI -2D and 3D- in both short and long TE.
- 15. Post Processing And Evaluation**
- 15.1. 3DMultiplanar reconstruction (MPR) in any arbitrary plane including curved planes with freely selectable slice thickness and slice Increments.
- 15.2. 3D Surface reconstruction and evaluation on reconstructed images with minimum time.
- 15.3. MIP in 2D and 3D mode, targeted/segmented MIP in any orthogonal axis with minimum processing time and capable of displaying in cine mode.
- 15.4. Full cardiac evaluation Operator selective or automatic contour mapping and calculation of Cardiac parameters like wall thickness, stroke volume EF, filling rate myocardial wall motion including display of data in label, graph and in cine mode with standard cardiology reporting set in Bulls eye method. Blood flow quantification, velocity mapping, pressure gradient quantification shunt quantification, regurgitation calculation, stenosis blood flow, etc. These should be usable on main or on the work station. Evaluation and display of diffusion images, fMRI reference of EPI optimized sequence.
- 15.5. Full Perfusion imaging with necessary post processing with time intensity graph and other statistical parameters.
- 15.6. Flow quantification and evaluation for vascular (high and low). CSF, bladder outlet and cine display Full Fledged Advanced Functional MRI: Whole brain coverage using high temporal resolution T2* - weighted BOLD) imaging Single-shot EP1 for multi-slice imaging Complete fMRI processing software, Automatic real-time processing of functional BOLD MR data sets into functional activation map.
- 15.7. Full post processing for SVS, CSI, metabolic mapping with colour coding for Brain, Breast, Liver & Prostrate, Heart.
- 15.8. Image statistics: measurement of distance, area, volume (2D and 3D), angle, SD, mean, image addition subtraction, multiplication, division, interpolation, segmental, threshold, histogram (ROC) Evaluation features like zoom, rotation, scroll, image synthesis, multi-point T1 and T2 calculation (more than 8) window searching, text dialogues graphics. Sorting, searching, archiving, recalling, etc.
- 15.9. The CCTV system with LCD display to observe the patient.
- 16. UPS**
- 16.1. The system should be provided with the suitable UPS system for the complete system (MR + accessories except Chiller) with at least 30 minutes back up. Should be capable of 200KVA or more.
- 17. Documentation**
- 17.1. The dry imager system should have digital DICOM 3.0 dry chemistry camera with resolution of 16 bits/ 500 dpi or more. The system should have at least three online film sizes and should be capable to print on any of the 8 X 10, 10 X 12, 14 X 17 sizes. The system should be freely configurable by the user to use any of the above mentioned size. Should be supplied with 500 films of each size.

- 17.2. A colour laser printer for printing colour images and protocols on plane in 1200 dpi resolution and more than 200 ppm.
18. **Accessories**
- 18.1. Storage cabinet for all coils.
- 18.2. MRI Compatible Dual Syringe Pressure injector : Independent dual- Syringe Pressure injector with following Features; Non-ferrous, automatic syringe size detection, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery Must be compatible with 5, 7.5 &10ml pre-filled contrast syringes and 50 ml syringes for both saline & contrast (20 Nos of 50 ml Syringes with 100 nos. of tube connectors should be provided) Must be able to observe progress of injection and view injection result.
- 18.3. (Optional) - MRI Compatible Dual Syringeless Pressure injectors with pump hose : Independent Dual Syringeless Pressure injector with following Features; 5000 gauss Compliant, Non-ferrous, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery. Must be able to observe progress of injection and view injection result.
- 18.4. 100 nos. of tube connectors should be provided.
- 18.5. MRI Compatible ECG electrodes (100 nos Disposable Electrodes for MRI Image gating).
- 18.6. MRI Compatible Anaesthesia Machine with integrated Ventilator, 2 vaporiser, circle absorber and in built suction.
- Capable of ventilating adult, pediatric and neonates.
 - Soft ware for ventilation should support Volume control, Pressure control and Pressure support modes.
 - Should have oxygen, nitrous oxide and air flow meters.
 - Isoflurane and sevoflurane vaporizers.
 - All safety alarms.
 - All consumables required for Adult-10Set, Pediatrics-3Set, Neonates -02Set.
- 18.7. One MRI compatible Multiparameter Vital Signs Patient Monitor of 5000 Gauss Compliance / 1.5 meter from isocentre compliance in MRI Room and One Slave.
- 18.8. 5 Monitor in console room with following modules provision to monitor the following-
- Heart rate
 - Wireless ECG
 - NIBP – Size of Cuffs (adult & pediatric neonatal).
 - Respiration (Capnograph)
 - Oxygen Saturation- wireless Pulse oximeter with adult, pediatric probe, and neonatal probes - 2 sets (with the spare probes), Should have plethysmograph perfusion factor.
 - ETCO2 and ETAA (end tidal anesthetic agents)
 - Temperature (adult and pediatric).
 - All consumables required for Adult-10Set, Pediatrics-3Set, Neonates -02Set.
 - IBP module – 2 nos.
- 18.9. 3.0T MRI compatible syringe pump – 2 nos.
- 18.10. Arrangement of Gas lines in recovery room and magnet room – MRI compatible high pressure gas outlet for :
- Oxygen
 - Air
 - Nitrous Oxide with MRI compatible indexed system.
 - Vacuum suction
- 18.11. MRI Compatible 1 set of Laryngoscope :4 sizes blades- Neonatal, paediatrics, adult, extra.
- 18.12. MRI compatible Magill forceps : Adult & paediatric size- Two each.
- 18.13. Styilet for endotracheal tube : Ault, paediatric size- Three each.

- 18.14. MRI compatible Clamps 2 Nos : Either towel clip or artery forceps.
- 18.15. MRI Compatible two IV stands. (if not provided already).
- 18.16. Two non-magnetic height adjustable patient transfer trolleys should be provided.
- 18.17. Two Anesthesia bed/trolley for recovery room.
- 18.18. Metal detectors:
 - a) Hand held metal detector- 02 nos.
 - b) Walk through Metal detector – 01 no.
 - c) Walk through Metal detector with multiple sensor and multiple location LED (Zone IV type) - 01 no (to be installed at the entry door to the patient preparation area and must allow passage of patient trolley).
- 18.19. Phantoms to be provided for regular QA studies.
- 18.20. Complete manuals and other necessary documentation's should be provided.
- 18.21. MRI compatible Suction Apparatus - 2 nos.
- 18.22. MRI room Oxygen deficiency level monitor 1 no.
- 18.23. MRI compatible transport ventilator 1 no.
- 18.24. MRI compatible wheel chair 1 no.
- 19. Standard And Safety**
 - 19.1. Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model.
- 20. Training**
 - Onsite training for operation and day to day maintenance of the unit.
- 21. Bill of Quantities:**
 - 21.1. Whole body 3.0 Tesla Magnetic Resonance Imaging system - 32 channels RF system ; as specified.
 - 21.2. System Body Coil – Quadrature.
 - 21.3. 32 channels or more HEAD coil-capable of multi frequency MR spectroscopy (H1).
 - 21.4. Neurovascular coil - 16 channels or more.
 - 21.5. Spine: Phased array coil 32 channels or more.
 - 21.6. Body : Phased array coils 32 channels (single or in combination) or more
 - 21.7. Dedicated coil/coil combination for peripheral angiography of 32 or more channel with coverage of 80cm or more.
 - 21.8. Breast coil - 16 channel or more.
 - 21.9. Shoulder coil: Dedicated Shoulder coil – minimum 16 channel or more.
 - 21.10. Shoulder coil: Flex coils (Large)
 - 21.11. Shoulder coil: Flex coils (Small)
 - 21.12. High resolution foot/ ankle coil – minimum 16 channel or more.
 - 21.13. High resolution Tx & Rx KNEE coil- minimum 16 channel or more.
 - 21.14. Suitable Carotid coil.
 - 21.15. Endocavitary Coil.
 - 21.16. Server : Thin-client server as per specification.
 - 21.17. Concurrent licenses for Server.
 - 21.18. Node Hardware: CPU and Medical grade monitor.
 - 21.19. Antivirus software for Server / Node.
 - 21.20. Life Time Licenses for all Packages
 - 21.21. Accessories:
 - a) Storage box for all coils.-1
 - b) Dual Syringe Pressure injector.-1
 - c) Dual Syringe Pressure injector syringes.-20
 - d) Dual Syringe Pressure injector syringe connector.- 100
 - e) MRI Compatible ECG electrodes (disposable).- 100
 - f) MRI Compatible Anaesthesia Machine with integrated Ventilator, 2 vaporiser, circle absorber.- 1

- g) MRI Compatible Multiparameter Vital Signs Patient Monitor of 5000 Gauss Compliance / 1.5 meter from isocentre compliance & Slave monitor.-1
- h) 3.0T MRI compatible syringe pump.- 2
- i) MRI Compatible sets of Laryngoscope : 4 sizes blades- Neonatal, paediatrics, adult, extra large.-1
- j) MRI compatible Magill forceps : Adult size.- 2
- k) MRI compatible Magill forceps : Paediatric size.- 2
- l) Stylet for endotracheal tube : Adult size.- 3
- m) Stylet for endotracheal tube : Pediatric size.- 3
- n) MRI compatible Clamps : Either towel clip or artery forceps.- 2
- o) MRI Compatible IV stands.- 2
- p) MRI compatible suction apparatus.- 2
- q) Non-magnetic patient transfer trolleys with cushion and foam.- 2
- r) Metal detectors : Handheld.- 2
- s) Metal detector: Walk-through.- 1
- t) Walk through Metal detector with multiple sensor and multiple location LED (Zone IV type).- 1
- u) Phantoms to be provided for regular QA studies.- 1
- v) MRI Compatible Dual Syringe less Pressure injectors (Optional).- 1
- w) Tube connectors for Syringe less Pressure injector (Optional). 100
- x) Dry Chemistry laser camera as specified.- 1
- 21.22. MRI compatible Suction Apparatus - 2 nos.
- 21.23. MRI room Oxygen deficiency level monitor 1 no.
- 21.24. MRI compatible transport ventilator 1 no.
- 21.25. MRI compatible wheel chair 1 no.
- 21.26. LED X-ray film viewer with adjustable brightness capable of holding 3 films of 14" X 17" size.
- 21.27. Air conditioning, Dehumidifier (110 Litre) & chiller
- 21.28. Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.

22. Warranty

- 22.1. Adequate books and journals to be maintained within the warranty period.
- 22.2. Not less than 1 year.
- 22.3. The manufacturer has to provide consumables and CAMC for 5 years after the AMC period. Year wise cost of AMC should be specified.

XXXXXXXXXXXXXXXXXXXX

CT Scan Machine 128 slice with CT-Scan Machine Injector

Qty-01No.

Technical Specifications

1. Contrast enhanced Dual energy Technology 128 sub mm slice per rotation CT scanner

2. CT Procedures:

2.1. Contrast Media Tracking

2.2. CT Angiography, vascular plaque characterization

2.3. CT Pulmonary Angiography with Lung analysis (Iodine uptake quantification)

2.4. CTF fluoroscopy for Biopsy

2.5. Advances 3D analysis

2.6. Dynamic cerebral perfusion mapping

2.7. Head CT, Virtual NCCT

2.8. Thoracic CT

2.9. Abdominal CT

2.10. Pelvic CT

2.11. Skeletal CT, Material density data, Bone marrow imaging, Gout imaging, Mono energetic imaging with artifact elimination.

2.12. Interventional CT

2.13. Neuro CTA

2.14. Calculi Characterization

3. Detector:

3.1. The system should be latest generation multi-slice CT scanner capable of producing/generating 128 or more slices per 360 degree rotation for all type of scans and applications.

3.2. Submillimeterslicethicknessshouldbeavailableforaxialandhelicalmodes.

3.3. ThedetectorsshallbelargeareadetectorwithZaxiscoverageof38mmormore.

3.4. Thedetectorsshallhavemultiplerowswitheachrowhavingatleastover670elements.

3.5. The type of detector should be specified.

3.6. Detector system should not require frequent calibrations.

3.7. The number of rows and the total number of detector cells should be specified."

4. Gantry:

4.1. Aperture: 70cm or more

4.2. Scan field FOV: 50 cm or more

4.3. Control Panel: one either side.

4.4. Entire range of rotation times for full 360 degrees should be specified. Minimum rotation times should be 0.6 seconds or less for whole body application.

4.5. Should have positioning laser lights.

4.6. Tilt- Physical/Remote $\geq \pm 20^\circ$ on either side.

4.7. Should have CT fluoroscopy with separate monitor in the gantry room for CT guided biopsy.

4.8. Integrated Display panel

5. X - Ray Generator

5.1. Should be compact and in-built in the gantry.

5.2. High Frequency type.

5.3. Power output at least 70 kW or more to support continuous and sustained operation.

5.4. Output capacity: ≥ 100 kW or more.

5.5. MA range: 20 – 800 mA or more.

5.6.

6. X - Ray Tube:

- 6.1. Tubecurrent:30to600mAormore.
- 6.2. Real-Time mA modulation for dose regulation.
- 6.3. Tube Voltage: 80 to 140 KV.
- 6.4. Anode Heat Storage Capacity should be 7 MHU or more, or direct cooling technology.
- 6.5. Should have anode Temperature Monitoring System.
- 6.6. Heat Dissipation: ≥ 1 MHU per minute or more.
- 6.7. Focal Spot size and number according to IEC recommendation must be specified.
- 6.8. The tube should have dynamic focal spots.
- 6.9. The X-ray cooling unit should be in-built in the gantry.
- 6.10. Warranty of tube: Comprehensive warranty for all parts including X-ray tubes for 1 year irrespective of the number of scans

7. Patient Table:

- 7.1. Minimum Load capacity of at least 200 Kg \pm 10% with 1 mm positioning accuracy.
- 7.2. Scannable range: ≥ 2000 mm
- 7.3. Longitudinal Table speed: Horizontal up to 100 mm or more/sec.
- 7.4. Vertical Table travel: 50 mm/sec or more.
- 7.5. Minimum tabletop height should be 55 cm or less from the ground level for easy transportation of trauma patient.
- 7.6. Longitudinal Scan Range: at least 150 cm or more.
- 7.7. Manual movement of the table should be possible in case of power failure.
- 7.8. Reproducing positional accuracy should be mentioned.
- 7.9. Remote Up/ down and forward/backward should be standard.
- 7.10. Facility of positioning aid for horizontal isocentric positioning of the patient.
- 7.11. Should have Carbon Fiber Table Top

8. Scanning Modes

- 8.1. Spiral CT:
 - a) ScanTime: Minimum scantime0.4 secforfull360degrotation.
 - b) Minslicethicknessshouldbe0.625mmorless.
 - c) Maxslicethickness:10mm or more.
 - d) Slice increment.- Scan and selec table slice thickness must be specified.
 - e) PitchFactor(volumepitch):variablebetween0.5secto1.5secormoreandshouldbeuserselectable. All possible pitches elections must be specified.
 - f) Spiral length: 150 cm or more.
 - g) SingleContinuousscantimeshouldbeatleast100sec.
 - h) Should optimize radiation dose and resolution for each selection.
 - i) Bolus Triggered Spiral acquisition should be possible.
 - j) Facilityofmulti-spiral,bi-directionalspiralsandbacktobackspirals.
 - k) Facilityformonitorcontrastenhancementandautomaticallycommencedscanning.
- 8.2. Axial scanning
- 8.3. Dynamic Multiscan

9. Topogram:

- 9.1. Length and width: Range should be specified.
- 9.2. Scan Time: Range should be specified.
- 9.3. Views: Frontal & lateral views.
- 9.4. Should be able to interrupt acquisitions manually once the desired anatomy is obtained.

9. Data Acquisition System:

- 9.1. System should have minimum 64 rows of detector capable of generating 128 slices.
- 9.2. Inbuilt mechanism for adapting the tube current during each scan this should enable radiation dosage reduction where body part thickness is less.
- 9.3. Acquisition of cardiac images with ECG gating (prospective & retrospective) should be possible.
- 9.4. Step and shoot technique during cardiac scanning for dose reduction, or a similar alternative technology should be available.
- 9.5. Detector system should not require frequent calibration.
- 9.6. Should have inbuilt pediatric protocols based on patient weight.
- 9.7. Whole brain CT perfusion with coverage of not less than 8 cm.
- 9.8. CT-guided intervention 3D Fluoroscopy.
- 9.9. Dynamic CTA-Enabling 4D CT DSA, time resolved perfusion with a min. range of 31 cm.

10. Image Reconstruction:

- 10.1. Real-Time reconstruction speed: 20 images per sec or more at 1024x1024 matrices.
- 10.2. Display Matrix: 1024x1024 or more.
- 10.3. Reconstructed slice thickness: ≤1mm to 10mm.
- 10.4. Should have latest iterative reconstruction technique-ASIR-V/iDose4 Premium/SAIRE.
- 10.5. Should have selectable Scan Field and reconstructed field.

11. Operator Console:

- 11.1. Monitor Resolution: 1280x1240.
- 11.2. Pixel Size <0.3 mm.
- 11.3. Two number of Flat screen medical-grade LCD Type of at least 19" with fast image refresh rates should be fast and preferably instantaneous and flicker-free.
- 11.4. Should be non-interlaced and progressive display type & sturdy.
- 11.5. Should perform Registration, scheduling, protocol selection, volume rendering, Volume measurements, Multi-planer Reconstruction, and standard evaluation application and all available post-processing functions without the help of the satellite work station as well as film exposure.
- 11.6. Should have the latest processor with 8GB RAM.
- 11.7. Raw Data storage with at least 500GB Hard disc having a minimum of 150000 images storing capacity in 512x512 format.
- 11.8. Additional external hard disk of minimum 2TB should be provided.
- 11.9. System should be menu-driven operation.
- 11.10. Applications like image reconstruction, filming, curve MPR, CT Angiography; VRT, auto bone removal, CT brain perfusion, CT bronchoscopy, Bolus tracking should be available.
- 11.11. Lung nodule evaluation software to be provided in the workstation, not in operator console.
- 11.12. System should be offered with complete Cardiac Acquisition and post-processing packages.

12. Console Common Feature:

- 12.1. The workstation should be interconnected for two-way transfer of images and reports.
- 12.2. Spatial alignment and visualization of two different datasets of one patient generated on different modalities or with different acquisition time.
- 12.3. Cine display should be available, both interactive and automatic.
- 12.4. Window width and centre should be freely selectable.
- 12.5. Patient online Registration, pre-registration facility and transfer of information from HIS/RIS via DICOM should be possible.
- 12.6. Should have dedicated pediatric protocol for low-dose imaging.

12.7. Should be offered with complete cardiac acquisition and post-processing package.

13. Workstation: (At operator console room with two monitors - One at operator console room & one at Radiologist chamber)

13.1. Should have Flat screen medical grade LCD monitor of at least 19" with fast image refresh rate should be fast and preferably instantaneous and flicker free with Hard Disk of 500GB or more, capable of simultaneous viewing of all post-processing functions and filming independently without the help of main console. Data transfer between the operator console & the satellite workstation should be instantaneous.

13.2. Should have 2.6GHz or latest processor with 8GB RAM.

13.3. Should have lung nodule evaluation software as standard.

13.4. CT Angio – post-processing software should include VRT, MIP, 3D SSD, Image fusion.

13.5. The advance vessel analysis, auto bone removal, small volume quantification, CT Colonography with polyp measurement and auto registration of prone and supine views. CT reporting should be possible independently of workstation.

13.6. Digital Subtraction Angiography should be available for Neuro Angiography.

13.7. System should be offered with complete & latest Cardiac Post Processing packages on workstation.

13.8. Advanced Neuropackage to be offered.

a) Hemoperfusion CT: Evaluation of dynamic CT data of Brain. Different Diagnosis of Acute ischemic stroke. Assessment of dynamic cerebral perfusion, CBV, CBF, TTP and tissue at risk classification.

b) Tumour evaluation: Automated evaluation of Blood-Brain Barrier disruptions in Brain Tumour.

c) Neuroperfusion weighted map (NWM): Visualization of colour coded CTAsource images for 3D display of acute stroke.

d) NeuroDSACT should provide Visualization of intracranial vascular structures based on digital bone removal.

13.9. The system should be user-friendly with all functions menu-driven. It should be modern user interface and 50 DVD blank (medical grade) should be provided.

14. Image Evaluation Tools:

14.1. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.

14.2. Statistical Evaluation for area/volume, S.D, Mean/Max and Histograms.

14.3. Profile cuts: horizontal, vertical and oblique views.

14.4. Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.

14.5. Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density curves, peak enhancement images and time-to-peak images.

15. Image Quality Parameter:

15.1. It should be specified at the lowest scan time available at the system.

15.2. High Contrast Spatial Resolution should be 17 LP/cm or higher (Mention slice thickness, scan time phantom, mA, scan field, dose and MTF) up to 10% full FOV.

15.3. Low contrast detectability should be 5mm at difference using 20cm CATPHAN (please mention phantom, scan time, mA, filter for image reconstruction, scan field, dose, slice thickness).

15.4. High Contrast Resolution and Low Contrast Resolution for spiral must be same as that for axial.

16. Dose Reduction Technique:

16.1. Should be available.

16.2. Pre-patient collimation to reduce unnecessary dose to patient.

16.3. Specify the Dose reduction software.

17. Post Processing Tools:

Post Processing Tools:

17.1. 2-D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.

17.2. Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR.

17.3. Standard 3D applications: CT angiography, MIP, MinIP, SSD, VRT, and other advanced 3D applications and colour coding for different tissues.

17.4. Post Processing Software: Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, CT brain perfusion, CT bronchoscopy, Bolus tracking, Vessel segmentation, Virtual Endoscopy software to be provided on both the workstation.

17.5. 3D images for CT-guided biopsy, 3D virtual endoscopy, colonoscopy, bronchoscopy should be possible.

17.6. DSA and advanced neurological imaging packages should be provided.

17.7. Spatial alignment and visualization of two different datasets of one patient generated on different modalities or with different acquisition times.

17.8. Perfusion CT for the study of brain, liver, kidney, pancreas, etc.

17.9. Volume measurements.

17.10. Fusion of morphological data obtained on CT, MR, or DSA.

Patient Communication System: An integrated intercommand Automated Patient Instruction System (API) should be provided in English and the local language.

Image Documentation:

19.1. Dry View Imaging Camera with the following specifications:

a) Dry Laser Technology

b) Resolution: 16 bits/600 dpi.

c) Supports 5 Multiple Film Sizes: one of which must be 17"x14".

d) Must have 3 or more online film tray sizes.

e) DICOM Compatible Attach conformance statement.

19.2. State of the art Laser color printer:

a) Color Dry Printer for printing Film Quality Images on plain paper.

b) DICOM Compliant.

c) Laser/Thermal Dye Sublimation Technology for B/W or Color Printing.

d) Resolution-1200x1200 dpi.

e) More than 20 ppm.

Connectivity and Archival

20.1. DICOM connectivity should be optimized for networking with other imaging systems.

20.2. DICOM converters for linking the camera with other imaging systems of the department should be provided, if required separately.

20.3. It should have sufficient memory to store images from the CT as well as other systems connected to it.

20.4. Filming parallel to other activities including independent scanning, documentation and post-processing and configurable image text.

20.5. Archiving: DVD/CD writer should be provided for archival. Specify the minimum number of uncompressed and compressed images that it can store per disc.

20.6. Option of viewing these discs on any PC without DICOM viewers should be available.

Upgrade:

21.1. Software upgrades that enhance existing applications must be provided by the vendor indefinitely at no cost to the purchaser. These no charge upgrades shall include any circuit boards or parts if software is added to enhance existing capabilities.

21.2. The system should have the capability to be upgraded as new technology emerges for at least 7-10 years.

21.3. Additional or new software must have the capability of being downloaded by remote computer access. Software must include a free trial period before purchase.

Power Supply:

22.1. Power input to be 440V, 3 Phase/220-240VAC, 50Hz, as appropriate fitted with Indian plug for required items.

22.2. Suitable servo controller stabilizer provided with resettable overcurrent breakers shall be fitted for protection.

22.3. Online UPS of suitable rating of 60 minutes backup shall be supplied for the complete system including computer & dry laser imager system.

System configuration Accessories, spares, and consumables

23.1. Collapsible wheelchair with rubberized swivel wheels: 02

23.2. Standard Patient positioning acc and restraining devices: 02 sets

23.3. Good quality lightweight vinyl Lead Aprons of 0.5mm lead equivalent: 10 nos

23.4. Gonad and thyroid Shield - 10 Nos each

23.5. Lead Glass 150x100 cm x 2mm lead: 1 nos

23.6. Double row LED view boxes 4 in each row: 2 nos

23.7. Patient transport trolley: 2 nos

23.8. Instrument trolley: 2 nos.

Product Quality Standards:

24.1. Should be USFDA or CE (from notified body) approved model.

24.2. Electrical safety should conform to standards for electrical safety IEC-60601.

24.3. Lead Glass window of suitable thickness as per AERB guidelines as per room requirement.

24.4. Should furnish the clear model approval of the quoted model from AERB and also comply with AERB Guidelines for radiation leakage.

CT-Scan Machine Injector

25.1. Dual head Pressure Injector with the following:

a) Should be CE (Notified body) approved.

b) Flow rate - 0.1-10 ml/sec, Volume- 1 ml to syringe capacity, programmable pressure limit of 325 psi with 200 ml disposable sterile syringes. Syringe heater range 35 deg C +/- 5 deg C.

c) Should be provided with head mounting device and integral IV pole.

d) 100 no's syringes with tubing's to be provided with the machine.

e) Unit will be provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.

Other items to be supplied:

26.1. Resuscitation accessories including Silicone resuscitation bag, Intubation set with laryngoscope (Adult & Pediatric), Boyle's anesthesia machine (CE notified) should be supplied.

26.2. Carbon dioxide insufflation pump set for CT colonography with facility for delivery of heated CO2 gas and automatic regulation of flow rate and pressure with a high degree of precision. Accessories like tubing (10 nos.) & CO2 cylinders (5 nos.) to be provided.

26.3. Vacuum cleaner including all cleaning accessories & attachments for cleaning of dust should be supplied.

- 26.4. Public address system (3 branded sets) with hand-free speaker & loudspeaker.
- 26.5. One computer system, one laptop, one laser printer with scanning & copy facility should be provided with the latest specification for reporting & tele-radiology.
- 26.6. Cabling cost (per Running Meter including material cost) for console to independent workstation and from electrical point to the machine and other cabling (LAN etc): Cost for 50 Running meters is to be quoted for evaluation purpose.
- 26.7. Fire extinguisher, smoke detector with an alarm system to be provided (Suitable quantity for 500 Sq.ft area).
- 26.8. The supplier should perform anti-termite & anti-rodent measures during turnkey & installation process.
- 26.9. Postprocessing room chairs:
- 26.10. Doctor's Executive Chair: 2 nos
- 26.11. Table for reporting (wood): 2 nos
- 26.12. Patient waiting chair: 10 nos in 2 rows (5 Chairs in one row).
- 26.13. X Ray Film Viewer

27. Training & Documentation:

- 27.1. User Training for two radiologists, two technicians and two biomedical engineers.
- 27.2. Safety aspects of Radiation dosage leakage should be spelt out.
- 27.3. Radiologists to be trained for clinical whereas the technician and biomedical engineers to be trained for operation and day-to-day maintenance of the unit.
- 27.4. User manual in English incorporating the newer applications.
- 27.5. Service manual in English.
- 27.6. Logbook with instruction for daily, weekly, monthly and quarterly maintenance checklist.
- 27.7. The job description of the hospital technician and company service engineers should be clearly spelt out.
- 27.8. Adequate books and journals within the warranty period.

28. Warranty:

- 28.1. Not less than 1 year.
- 28.2. The manufacturer has to provide consumables and CAMC for 5 years after the AMC period. Yearly cost of AMC should be specified.

ANNEXURE-II

Ref.: HSCC/PUR/MEA-AFGHANISTAN/Med. Eqpt./2023/02 dated 17.08.2023

BUGETARY QUOTATION FORMAT

	Particulars	Remarks
1)	Sr. No. of Equipment:	
2)	Name of Item:	
3)	Model No.:	
4)	Name of manufacturer & Address:	
5)	Contact Details of the Firm submitting Budgetary Quotation:	
6)	Budgetary Cost of Equipment(Incl. GST):	

The Budgetary Cost of Equipment includes the following:

- 1) All Taxes & Duties and transportation up to IGI, Delhi Airport.
- 2) Insurance till Delhi Airport.
- 3) Inclusive of Warranty one year as per mentioned/as per available with equipment.
- 4) Delivery - within 30 days from the date of issue of Purchase Order
- 5) Installation within 30 days from the date of Delivery
- 6) Cost inclusive of 3rd Party Inspection by reputed Agencies i.e. SGS / Llyod / TUV etc.
- 7) Equipments to be installed by OEM/bidder in Afghanistan & conduct training to end user.

NOTE:

- 1. Please enclose a copy of Last Purchase Order for the same Model (preferably from a Govt. Institute).**
- 2. Copy of Catalogue / Brochure / Product Data Sheet etc to be submitted.**
- 3. Please provide separately, the cost of transportation of each Equipment (Incl. Marine /transit insurance) from Airport Delhi to Afganistan.**