Amendment –II **Dated 05.09.2022**

Tender Ref : HSCC/PUR /Mauritius /New Cancer Hospital/2022/02 Dated : 12.07.2022

The reply of pre bid queries have been received details are as under.

The Bid sale, submission and opening date for the below mentioned items referred IFB may be extended for all items (Item No. 1) as per details given below:

Sl. No.	Description	Existing Schedule	Revised Schedule
i.	Dates of sale of tender enquiry documents	12.07.2022 to 12.09.2022 10.00 hrs to 1400 hrs IST	26.09.2022 up to 1400 hrs IST
ii.	Closing date & time for receipt of Tender	12.09.2022, 1430 hrs IST	26.09.2022, 1430 hrs IST
iii.	Time and date of opening of Techno – Commercial tenders	12.09.2022, 1500 hrs IST	26.09.2022, 1500 hrs IST

Amendments details are as under:-

Spec. Sr. No.	Technical Specification	Request for Changes	Decision of Technical Experts
1	**General Description:**		
d)	***General intent:*** This Specification describes the requirements for a complete nuclear medicine system principally composed of a dual-headSPECT/CT gammacamera and workstationsolution (hereinafterreferred to as the "System").	This Specification describes the requirements for a complete nuclear medicine system principally composed of a 12 digital, Cadmium Zinc Telluride (CZT) based detector system with direct photon conversion) and workstation solution (hereinafter referred to as the "System").	Must meet or exceed all requirement of specification in the specification
g)	***Alternatives*** The Contractor may propose alternatives that differ from this Specification, but are proven to produce the same or better results for this application. In such cases, the Contractor must clearly state the alternative, and provide sufficient technical information to assure compliance	The gantry with CZT solid state detectors disposed in 12 columns of detectors and gathered in modules of 16x16 pixels each. The Gantry should have 8 modules for each detector providing an optimal axial coverage of 32cm, resulting in a smaller number of bed positions (for greater coverage), faster acquisition and optimized scan length for long organs like lungs. Our CZT detectors have preset energy peaks for routine imaging isotopes and produce high image quality and accurate quantification. Body contour is in real-time and doesn't require any NM scout or pre-acquisition. It is also possible to perform dynamic acquisition for very important cardiac applications like absolute quantitation of myocardial blood flow. The system must have high volumetric sensitivity, high spatial resolution, high count-rate and high energy resolution. Because the digital detectors snugly surround the patient to sense maximum photons, the 3D image quality reveals more detail than planar, Anger-based images. The multipurpose SPECT/CT system scans	May quote as alternative please refer to section 1 .g Must meet or exceed all requirement of specification in the specification

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		from head to toes in NM/CT hybrid mode, maximizing routine clinical utilization and providing detailed information in a single 3D scan.	
	GENERAL REQUIREMENTS		
1.0	**Physical features** A dual detector variable angle gamma camera with integrated multi-slice CT scanner in one (1) gantry, one (1) patient bed, and one (1) integrated acquisition and processing workstation.	**Physical features** A multi detector 360-degree gantry design, gamma camera with integrated multi-slice CT scanner in one (1) gantry, one (1) patient bed, and one (1) integrated acquisition and processing workstation.	Must meet or exceed all requirement of specification in the specification
2.0	**Functional and Performance Requirements**		Must meet or exceed all requirement of specification in the specification
2.1	Hybrid SPECT/CT system combining a variable angle and variable geometry dual-head SPECT gamma camera with diagnostic CT scanner;	Hybrid SPECT/CT system combining a 360-degree gantry gamma camera geometry 12 detector SPECT gamma camera with diagnostic CT scanner;	Must meet or exceed all requirement of specification in the specification
3.1.1	Two (2) rectangular detectors with NaI (Tl) scintillation crystals;	12 digital CZT detectors arranged in 360-degree full gantry	Must meet or exceed all requirement of specification in the specification
3.1.2	Detector crystal thickness of 9.5 mm (3/8 inch);	Detector crystal thickness of 6 mm	Must meet or exceed all requirement of specification in the specification
3.1.3	Minimum UFOV (Useful Field of View) of (38 to 40) x (51 to 54) cm.	Field of View 39.5 mm x 315 mm. Camera axial FOV should be 310mm or longer to optimize single organ coverage	Must meet or exceed all requirement of specification in the specification
3.1.4	At least 55 PMT (Photo Multiplier Tube) per each head, characterized by energy resolution, magnetic shielding and long-term stability, with 1 ADC/PMT (Analogue to Digital Converter per PMT);	12 independent detector columns with 8 detector modules per column, providing a total of more than 2,000 detector pixels should be provided.	Must meet or exceed all requirement of specification in the specification
3.1.5	Image at energies between 40 – 580 keV, including the possibility to acquire the data in multiple energy windows, both centered on photo peak and offset.	SPECT CZT detectors must be suitable for the imaging with the following isotopes: Tc-99m, I-123, Lu-177, In111, Tl201, Ga67	Must meet or exceed all requirement of specification in the specification
3.1.7	At least one of the two detectors shall allow for caudal/cephalic tilt (optional).	Solid State Detector technology with pixelated crystals and swivel capability for ROI or VOI focused scan	Must meet or exceed all requirement of specification in the specification
3.2	***Collimators***		Must meet or exceed all requirement of specification in the specification
3.2.1	One (1) set of low energy (Tc-99m) high resolution collimators;	Collimator Type should be tungsten with 12 independent detectors	Must meet or exceed all requirement of specification in the specification
3.2.2	One set of Medium Energy (In-111, Ga-67, Lu-177) General Purpose collimators (Optional);	Collimator Type should be tungsten with 12 independent detectors	Must meet or exceed all requirement of specification in the specification
3.2.3	One (1) set of high energy (I-131) general purpose collimators;	Collimator Type should be tungsten with 12 independent detectors	Must meet or exceed all requirement of specification in the specification
3.2.4	One (1) set of HighEnergy High-Resolution collimators;	Collimator Type should be tungsten with 12 independent detectors	Must meet or exceed all requirement of specification in the specification

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3.2.5	Fully- or semi-automatic collimator exchange system;	System shall provide an Integrated Tungsten collimator without the need for collimator changes	Must meet or exceed all requirement of specification in the specification
3.2.6	Collimator cart(s)/tray(s) to store the collimators must be included.	System shall provide an Integrated Tungsten collimator without the need for collimator changes	Must meet or exceed all requirement of specification in the specification
3.3	***Gantry***		Must meet or exceed all requirement of specification in the specification
3.3.1	The gantry shall support variable angle configurations of the detectors including 90° and 180°;	The gantry design shall provide for close proximity during SPECT scan via a 360 CZT ring gantry	Must meet or exceed all requirement of specification in the specification
3.3.4	The System must incorporate the ability to acquire auto-contoured and uncontoured WB imaging, and circular and elliptical (contoured) SPECT acquisition;	The System must be equipped with real time body contouring with the capability to detect patient motion during bed positioning and with a technology which is not sensitive to hanging straps or clothes.	Must meet or exceed all requirement of specification in the specification
3.4	***Patient table***		Must meet or exceed all requirement of specification in the specification
3.4.5	Examination of seated and standing patients and patients on wheelchairs shall be allowed;	The patient examination bed can be adjusted up, down and in and out by electrical system and systematically adjusted in and out manually.	Must meet or exceed all requirement of specification in the specification
3.5	***Safety features***		Must meet or exceed all requirement of specification in the specification
3.5.2	Patient contact sensors (touch plates) mounted on each collimator;	Automatic Body Contouring can be performed during SPECT and Whole-Body SPECT imaging	Must meet or exceed all requirement of specification in the specification
3.6	***Acquisition workstation***		Must meet or exceed all requirement of specification in the specification
3.6.3.2	Planar dynamic	Dynamic 3D List mode acquisition protocols with multiple frame rates.	Must meet or exceed all requirement of specification in the specification
3.6.3.5	Dynamic SPECT	Dynamic 3D List mode acquisition protocols with multiple frame rates.	Must meet or exceed all requirement of specification in the specification
	CT scanner		Must meet or exceed all requirement of specification in the specification
3.7	**Functional and performance requirements and scanning parameters:**		Must meet or exceed all requirement of specification in the specification
3.7.1	The CT must be integrated, spiral, fully diagnostic, multi-slice, with sixty-four (64) slices (detector rows) or more.	The CT must be integrated, spiral, fully diagnostic, multi-slice, with sixty-four (64) slices (detector rows) or more.	Must meet or exceed all requirement of specification in the specification
3.12	***Software***		Must meet or exceed all requirement of specification in the specification
3.12.12.2	PMT tuning;	The SPECT system shall support absolute SUV measurement.	Must meet or exceed all requirement of specification in the specification
3.12.12.3	Uniformity;	Efficient quality control that does not require collimator removal, one acquisition for uniformity, COR calculation, energy resolution. ~5min acquisition scan using rod source, included with the system.	Must meet or exceed all requirement of specification in the specification

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3.12.12.4	COR;	Multiple Detectors Registration (COR)	Must meet or exceed all requirement of specification in the specification
3.13	***Ancillary Equipment***		Must meet or exceed all requirement of specification in the specification
3.13.7.2	PMT tuning;	The SPECT system shall support absolute SUV measurement.	Must meet or exceed all requirement of specification in the specification
3.13.7.3	Uniformity;	Efficient quality control that does not require collimator removal, one acquisition for uniformity, COR calculation, energy resolution. ~5min acquisition scan using rod source, included with the system.	Must meet or exceed all requirement of specification in the specification
3.13.7.4	COR;	Multiple Detectors Registration (COR)	Must meet or exceed all requirement of specification in the specification
4.0	NEMA performance parameters	NEMA NU1-2018 standards & performance specific to CZT based detector shall be provided.	Must meet or exceed all requirement of specification in the specification
4.1	**SPECT:**		Must meet or exceed all requirement of specification in the specification
4.1.1	Intrinsic flood field uniformity with 20% energy window and 20kcps for Tc-99m;	Intrinsic Spatial Resolution shall be 2.46mm	Must meet or exceed all requirement of specification in the specification
4.1.1.1	UFOV Integral ≤ 3.8%;	UFOV Integral < 4% or better	Must meet or exceed all requirement of specification in the specification
4.1.1.2	UFOV Differential ≤ 2.8%;	UFOV Differential < 3% or better	Must meet or exceed all requirement of specification in the specification
4.1.2	Intrinsic energy resolution (FWHM) at 140 keV:<10%;	Energy resolution FWHM at 140 keV: 7% or better	Must meet or exceed all requirement of specification in the specification
4.1.3	Intrinsic spatial resolution (FWHM) with 20% energy window and 20kcps for Tc-99m;	Volumetricsensitivity for Tc99m shall be at least 600k (SVS cps/MBq/cm3)	Must meet or exceed all requirement of specification in the specification
4.1.4	Count rate at 20% count loss: ≥ 300 kcps.	Maximum count rate with loss <5% - system: >2700cps	Must meet or exceed all requirement of specification in the specification
4.1.5		Detector planar sensitivity shall be 180cps/MBq or better	Must meet or exceed all requirement of specification in the specification
		We have reviewed the tender specifications and we firmly believe that the specifications canonly be met by one manufacturer, namely Siemens.	No Change , We maintain our specification document
		In view of the above, we would humbly request you to review the specifications to enablemore manufacturers to participate in the bidding exercise.	We maintain our specification document please refer section 1.g
Page 78 – SPECT/ CT Gamma	3.7.1 The CT must be integrated, spiral, fully diagnostic, multi-slice, with sixty-four (64) slices (detector rows) or more.	Please advise if an equipment with 32 detector rows producing 64 slices will be accepted.	Will be considered

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Camera			
Section VI	b) For Imported goods directly from foreign: 90 days from date of opening of L/C	We would request that delivery date is reviewed as below: Radiology Equipment – delivery is extended to 160 days. Same to be applicable to main equipment only.	Delivery & Installation –Within 48 Weeks
Section IX – Qualification Criteria	2. (a) The Manufacturer should have supplied and installed in last Five years from the date of Tender Opening, at least 33% of the quoted quantity of the similar equipment meeting major parameters of technical specification which is functioning satisfactorily.	We would suggest that the clause be reviewed to the tenderer/manufacturer should have supplied 33% of quoted quantity during the last five years.	The Manufacturer / bidder should have supplied and installed in last Five years from the date of Tender Opening, at least 33% of the quoted quantity of the similar equipment meeting major parameters of technical specification which is functioning satisfactorily. anywhere in the World of the same manufacturer.
	2 (b). The Tenderer quoting as authorized representative of the manufacturer meeting the above criteria 2 (a) should have executed at least one contract in the last five years from the date of tender opening of similar equipment meeting major parameters of Technical specification which is functioning satisfactorily, anywhere in the World of the same manufacturer.		
	(3.2.4): One set of High-Energy High-Resolution Collimators.	Propose: All !131 procedures are done using High-Energy General-Purpose Collimators (HEGP)	Will be considered
	(3.4.9): Touch screen flat panel monitor for patient positioning display and display of different acquisition parameters (time, count rate and infonnation about detector and patient table position	All needed information such as time, count rate, table and detector position, patient information and positioning,etc. are displayed on flat LED screen controlled by a remote unit (RCU). We don't use a touch screen for safety reasons to avoid any undeliberate action	Will be considered
	(3.7.1): The CT must be integrated, spiral, fully diagnostic, multi-slice with sixty-four (64) slices (detector rows) or more.	Propose: Our System is built on 24 physical row detector, 20 mm coverage allowing up to 32 slices, which is enough to cover all medicine nuclear and CT scan procures including Angio-scans and calcium scoring.	Will be considered
	3.9.3): Peak anode beat dissipation rate of least 1000 kHU/min or better	Propose: The Dissipation rate of our system is 840 kHU/min which is optimal as the anode is not stressed due to its short geometry and ASIR reconstructor allowing mA reduction without impacting the image quality.	Will be considered
	Anode heat storage capacity of not less than 7 MHU:	Propose: The Heat storage capacity of our system is 6.3MHU. as explained above in point (3.9.3), due to its physical short geometry, and the new ASIR reconstructor, the anode is much less stressed and consequently less heated.	Will be considered
	Delivery Time 90 days	It is impossible for any manufacturer to deliver this system in 90 days – 3 months. We request the delivery time be extended to 45-48 weeks	Delivery & Installation –Within 48 Weeks

All other terms and conditions of the tender enquiry documents including Amendments issued so far shall remain unchanged.

Prospective bidders are advised to regularly visit HSCC website/CPPP Website for the Corrigendum/amendments etc. if any, as these will be notified on these portals only. No separate advertisement will published in the newspaper in this regard.

Submitted for approval please

Executive Assistant Engineer

Manager (BME)

DGM(BME)

GM (Proc)

Senior Chief Executive,
Ministry of Health & Wellness,
Republic of Mauritius