Technical Specification for 500mA X-Ray Machine with flat panel detector and printer

S.N.	Purchasers' Specification	Bidders offer
	500mA X-Ray Machine with Flat Panel Detector and Printer	
	Manufacturer	
	Brand	
	Type/Model	
	Country of Origin	
1	**Description of Function**	
1.1	A high frequency X-Ray Machine 500 mA & Flat Panel Detector System	
2	**System Configuration**	
2.1	High Frequency X-Ray Machine (500mA) & Flat Panel Detector System with standard accessories	
3	**Technical Specifications**	
A	**X-Ray Machine**	
	X-Ray Generator	
3.1	Microprocessor based, high frequency inverter generator, the generator shall have at least 40KW or more.	
3.2	Output Power 40 KW or more	
3.3	KV Range: 40 to 125 KVP	
3.4	mA: 500 mA	
3.5	mAs: 500 mAs	
3.6	Digital Display of KV, mA, mAs	
3.7	Overload Indication	
	X-Ray Tube:	
3.8	Rotating anode X-Ray Tube	
3.9	Dual Focal Spot: Small 1.0mm x 1.0mm, Large 2mm x 2mm or better	
3.10	Anode heat capacity shall be 140KHU or more	
	Radiography Table:	
3.11	Floating Table with 4-way movement of the table top i.e. along x-axis and y-axis is to be provided	
3.12	Shall have bucky system which can accommodate standard detector.	
	Tube Stand:	
3.13	Ceiling free stand with counter balanced tube head (Rotatable±180 Degree) mounted on floor rails for convenient movements should be provided.	
3.14	Vertical travel: 4ft - 6ft	
3.15	Movement of tube stand shall be arrested by electromagnetic brakes.	
	Control Panel:	
3.16	Shall have X-ray console to read various radiographic parameters and error codes.	
3.17	Shall have exposure indicator lamp outside x-ray room	
3.18	AEC Configuration with minimum one ionization chamber	
3.19	User configurable anatomical programs.	
3.20	Error indication in case of malfunction of X-Ray Equipment. The system should have detailed errors display capability.	
3.21	Display of KV, mA, mAs	
3.22	Density Control	
3.23	KVp increment & decrement in step of 1 KVp only	
B	**Flat Panel Detector System**	Manufacturer: …… Type/Model: ...…… Country of Origin: ……..
3.24	The detectors scintillator material shall be made up of Cesium Iodide or equivalent with appropriate technology.	
3.25	Cesium Iodide (CsI) Scintillator or equivalent	

3.26	Shall be Portable and 14x17 inches in size	
3.27	Detector shall have wired and wireless functionality	
3.28	Shall incorporate Latest Flat Panel technology for higher resolution and faster pixel response time.	
3.29	Shall have Lossless AED/AWC to increase dose efficiency and image quality by detecting X-ray start and finish with perfect precision	
3.30	Shall have spatial resolution of minimum 3 lines per millimeter	
3.31	The Pixel Matrix shall not be lesser than 2300 x 2800 pixels.	
3.32	The Pixel pitch shall have 150µ or lesser	
3.33	Shall have minimum image depth of 16 bit or more	
3.34	Detector shall have at least IP33 rating or more for ingress protection from dust & liquid.	
3.35	The system shall have feature to increase sharpness in the images that improves the possibility of detecting abnormalities.	
3.36	The detector shall have display to view the detector status.	
3.37	The detector shall be supplied with 2 Nos. Lithium Ion/Polymer Batteries	
3.38	Easy switch from sleep mode to acquisition mode for better battery performance.	
3.39	The detector shall also have direct charging facility (without removing batteries)	
3.40	Measurements, Annotations, ROI, Markers, Image Rotation etc.	
C	**Connectivity / Data Export:**	
3.41	The System shall have LAN Connectivity Port for transferring the DICOM Image to PACS / Imager with lifetime key	
3.42	Networking Compatibility: Local/MWL/Storage Server/MPPS/Printer	
D	**Image Acquisition PC**	
3.43	CPU – Intel i5, RAM – 16 GB, SSD – 1TB or higher	Manufacturer: …… Type/Model: ...…… Country of Origin: ……..
3.44	Display Monitor: 24” size or more; minimum 1920 x 1080 Pixels	Manufacturer: …… Type/Model: ...…… Country of Origin: ……..
E	**Laser/Thermal Printer:**	Manufacturer: …… Type/Model: ...…… Country of Origin: ……..
3.45	Printer shall have dry Laser image Technology or Thermal printer, compatible with DICOM.	
3.46	Printing capacity of about 50 sheets or more/ hour (14x17).	
3.47	Film Print Sizes: 14x17, 10x12, 8x10	
3.48	Double Online Tray	
3.49	Resolution: minimum 300 DPI	
3.50	Gray Scale Contrast Resolution: minimum 14 bits	
3.51	Shall have feature of daylight loading of film	
4	**Accessories, Spare Parts and Consumables**	
4.1	Lead Apron (0.25mm) - 1 Pcs	
4.2	Thyroid Shield (0.25mm) - 1 Pcs	
4.3	Abdomen Shield (0.25mm)– 1 Pcs	
4.4	Floor Mounted Vertical Bucky Chest Stand with grid, counter balanced weight with electromagnetic brake - 1 Set	
4.5	Online UPS of appropriate capacity with 30 min backup to run the computer and image printer	Manufacturer: …… Model: …… Country of Origin: ……..
4.6	Ultra slim LED View Box able to hold one 14x17 – 1 Pc	Manufacturer: …… Model: …… Country of Origin: ……..

4.7	Ultra slim LED View Box able to hold two 14x17 for reporting room – 1 Pc	Manufacturer: …… Model: …… Country of Origin: ……..
4.8	1.5 Ton air conditioner with inbuilt inverter for the X-Ray machine room – 1 Pc.	Manufacturer: …… Model: …… Country of Origin: ……..
4.9	1 Ton air conditioner with inbuilt inverter for the console/printer room – 1 Pc.	Manufacturer: …… Model: …… Country of Origin: ……..
4.10	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidder's must specify the quantity of every item included in their offer (including items not specified above)	
5	**Operating Environment**	
5.1	The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, humidity, etc	
6	**Standards & Safety Requirement**	
6.1	Submit products valid ISO 13485 for X-Ray, Flat Panel Detector System and Film Printer.	
6.2	Submit product's valid EU-CE (MDD Directive 93/42/EEC) certificate **or** official extension notice issued directly by the notified body, clearly listing the offered model **or** MDR (2017/745) for offered medical device; for X-Ray, Flat Panel Detector System and Film Printer.	
6.3	Submit USFDA (510K) approved product for X-Ray Machine	
7	**User Training**	
7.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment as well as routine checks and maintenance expected by users	
8	**Warranty**	
8.1	Comprehensive Warranty for 2 Years after acceptance.	
8.2	Submit commitment letter from the manufacturer for availability of spare parts for 5 years after completion of warranty period	
9	**Maintenance Service During Warranty Period**	
9.1	During warranty period supplier must ensure preventive maintenance & corrective/breakdown whenever required	
10	**Installation & Commissioning**	
10.1	The bidder must arrange for the equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchasers in advance in details	
11	**Documentation**	
11.1	User(Operating) manual in English	
11.2	Service(Technical/maintenance) Manual in English	