Technical Specification of DR X-ray Machine 500 mA

महाशिला गाउँपालिका गाउँ कार्यपालिकाको कार्यालय, पर्वत वालाकोट, गण्डकी प्रदेश, नेपाल २०७२

S.N.	Purchaser's Specifications	Bidder's Offer		
	X-Ray Machine 500 mA	**Yes/No**	**Page no in Catalogue**	**Remarks**
	Manufacturer:			
	Brand:			
	Type/Model:			
	Country of Origin:			

Note to the Bidders:

1. **Bidders must completely fill the Technical Specification Form (TSF) in detail with corresponding page no. of catalogue/brochure/technical datasheet.**
2. **Only Yes/No/Comply should not be written.**
3. **Any deviation must be clearly mentioned.**
4. **Bidders must submit original catalogue/brochure/technical datasheet with the bid document.**

1	**Description of Function**			
1.1	X-ray unit is required to perform routine X-ray studies in the hospital.			
2	**Operational Requirements:**			
2.1	General purpose X-ray machine 500 mA.			
3	**System Configuration**			
3.1	X-ray machine 500 mA with complete accessories.			
4	**Technical Specifications**			
4.1	**X-ray Generator:** • Must be digital controlled line frequency generator, output 40 KW or above to give a constant output suitable for radiography. • Machine ON/OFF switch. • KV range: 40KV to 120KV at 50mA • mA range: 500 mA or more. • mAs range: 0.5 to 300mAs. • Control: Digital • Must Display mA, mAs & kVP • Simultaneous protection from excess selection of mA, mAs, kVP & Input Voltage must be provided for Electronic Overload. • A dual action hand switch with retractable cord must be provided for radiation protection of operator.			
4.2	**X-ray Tube:** • Rotating anode X-ray tube with dual focal spot (specify focal spot sizes, smaller focal spot size will be preferable). • HT Transformer with Full wave rectified Tube head • Collimator with auto/manual shut off facility must be provided.			
4.3	**Horizontal Bulky Table(HBT):** • Movable Floating table with motorized Bucky and Bucky grid must be provided. The Bucky tray must accept cassettes up to "14x17".			

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4.4	**Column Stand:** Tube stand from floor to ceiling must be provided.			
5	**Accessories, spares and consumables**			
5.1	**Accessories:** • Lead apron lightweight with 2mm thickness- 01no. • Wall mounted Chest Stand			
5.2	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. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	**Operating Environment**			
6.1	The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.			
6.2	Power supply: 220 or 440 VACS, 50Hz fitted with appropriate plug. The power cable must be at least 3 meter in length.			
7	**Standards and Safety Requirements**			
7.1	Must submit ISO13485 for Medical Devices			
7.2	CE, BIS/AERB or USFDA approved Certificate.			
8	**User Training**			
8.1	Must provide user training (including how to use and maintain the equipment).			
9	**Warranty**			
9.1	Comprehensive warranty for 2 years after acceptance.			
10	**Maintenance Service During Warranty Period**			
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.			
11	**Installation and Commissioning**			
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.			
12	**Documentation**			
12.1	User (Operating) manual in English.			
12.2	Service (Technical / Maintenance) manual in English.			
12.3	Must Submit Manufacture Authorization Letter to Bidder provided by Authorized Importer of Nepal, Manufacturer Authorization to Authorized Importer must be Included in this case.			

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गाउँ कार्यपालिकाको कार्यालय
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गण्डकी प्रदेश, नेपाल
२०७३

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Technical Specification of Digital Radiography (DR) System with Printer

S.N.	Purchaser's Specification	Bidder's Compliance Sheet		
	Digital Radiography (DR) System with Printer	**Yes/No**	**Page no in Catalogue**	**Remarks**
	Manufacturer:			
	Brand:			
	Model:			
	Country of Origin:			

Note to the Bidders:

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3. **Any deviation must be clearly mentioned.**
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1	**Digital Flat Panel Detector**			
1.1	Description of functions: The Flat Panel Detector directs digital radiography unit (portable type) for general purpose radiology examinations. It should be a retrofit solution and capable to work with any of the X-ray available in the hospital.			
1.2	Flat Panel Detector with workstation should be provided. It shall be suitable for adult and pediatric patients in general radiography examination.			
2	**System Configuration**			
	Detector:01			
	Imaging Workstation:01			
	Medical X-ray Film Printer: Double tray (film based):01			
3	**Technical Specification**			
	Flat Panel Detector System			
3.1	The Flat Panel should be a Retrofit Solution and capable to work with any of the X-Ray available in Department.			
3.2	Direct Deposit Cesium Iodide (CSI)/GOS scintillator.			
3.3	The most advanced CSI Direct-deposition technology ensures excellence of image quality at low X-ray dose and improves operation safety.			
3.4	Should incorporate Automatic Exposure Detection Technology.			
3.5	Portable approx. 14x17 inches size detector or more			
3.6	The detector should be light weight (less than 3.5 Kgs) including battery.			
3.7	The Pixel pitch should be equal to or less than 140 microns.			
3.8	Should have a spatial resolution: 3.4 LP/mm (lines per millimeter) or better.			
3.9	Image Matrix size: 3052 pixels x 2500 pixels or better.			
3.10	Image acquisition time should be less than 2.5 sec.			
3.11	Should have a minimum image depth of 16 bits or more.			
3.12	Data communication should be wireless and wired connection.			

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3.13	The Detector should have Detachable Li-ion Polymer Technology battery or Lithium Polymer battery and, should be provided with one extra battery of ≥4000mAh with battery backup of minimum 6 Hours or more along with battery charger having charging time not more than 2.5hrs.			
3.14	The Battery Charger should have facility to charge single / double battery at a time.			
3.15	The detector connectivity should be both wireless and wired.			
3.16	The Detector should be able to withstand surface load of at least 150kg or more.			
3.17	Software should have DICOM & PACS connectivity.			
3.18	Workstation: Should be supplied with the following configuration: • Branded CPU – Intel i5 or Latest model processor, • RAM – 8GB, SSD – 500GB, • OS Window 10, 64 bit or Latest • Display: At least 19" size Full HD LED Monitor			
3.19	Image Manipulation/Post processing Software: • Image post-processing, such as image transformation, including inversion, flip vertically/horizontally, rotation, etc. • Multi patient viewing and printing. • Image Magnification • Cropping and masking of images (standard software) • Distance measurement and Angle • Exporting images in JPEG and DICOM			
3.20	The offered model must be manufactured in the year 2025. Bidder must mention the year of manufacture.			
3.21	The system should be supplied with AI-based software for automated analysis of Chest X-ray images, fully integrated with the Digital Radiography system and workstation.			
3.22	The AI software shall support Chest X-ray interpretation for the following target abnormalities: Infectious Diseases: Tuberculosis detection with accuracy ≥90% Lung Abnormalities: Atelectasis, Lung opacity (Consolidation / Infiltration), Pleural effusion, Pulmonary nodule / mass, Pneumothorax with overall accuracy ≥90%) Cardiovascular Abnormalities: Cardiothoracic ratio calculation, Cardiomegaly detection with accuracy ≥90%) Or better.			
3.23	The bidder shall provide AI software name, version and perpetual license.			
3.24	The AI solution shall be CE approved/marked medical device software. Approval certificates should be submitted.			
	Medical X-ray Film Printer			
	Manufacturer:			
	Brand:			
	Model:			
	Country of Origin:			
3.25	Double Tray Medical Dry Film Printer should be provided.			
3.26	Printer should have dry thermal/Laser imager technology.			

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3.27	Throughput: 60 films or more			
3.28	Film Sizes:8x10,10x12,11x14,14x17.			
3.29	Resolution ≥300 DPI.			
3.30	Printer should be DICOM Compatible			
3.31	Contrast: 14-bit contrast resolution or more.			
3.32	X-Ray film must be insensitive to light and shall be used directly under daylight.			
3	**Accessories and spare parts and consumables**			
3.1	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. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
4	**Operating Environment:**			
4.1	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.			
4.2	Power supply: 220–240V AC, 50Hz fitted with appropriate plug type.			
5	**Standards and Safety Requirements:**			
5.1	Must submit ISO13485 for Medical Devices for Flat Panel Detector & printer.			
5.2	Must submit European CE from notified body for flat panel detector & printer.			
5.3	Must submit USFDA (510K) approved product certificate for flat panel detector.			
6	**User Training:**			
6.1	Must provide user training (including how to use and maintain the equipment).			
7	**Warranty:**			
7.1	Comprehensive warranty for 2 years after installation.			
8	**Maintenance Service During Warranty Period:**			
8.1	During the warranty period supplier must ensure preventive, and Corrective/breakdown maintenance whenever required.			
9	**Installation and Commissioning:**			
9.1	Supplier must accomplish proper installation and commissioning of the equipment on site.			
10	**Documentation:**			
10.1	User (Operating) manual in English.			
10.2	Service (Technical/ Maintenance) manual in English.			
10.3	Must Submit Manufacture Authorization Letter for DR system and DRY Laser Film Printer /Authorization letter to Bidder provided by Authorized Importer of Nepal, Manufacturer Authorization to Authorized Importer must be Included in this case.			

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