

SPECIFICATIONS FOR COMPUTED RADIOGRAPHY (CR) SYSTEM

The CR system should comprise the following: -

- 1) Image recording system consisting of Imaging cassettes with flexible Imaging plates.
- 2) Single Cassette Image reader/ digitizer
- 3) CR Console/workstation.
- 4) Dry Laser Imager

1) IMAGE RECORDING SYSTEM CONSISTING OF IMAGING CASSETTES WITH IMAGING PLATES:

Following sizes of radiography cassettes along with flexible image plates should be supplied along with the unit:

- a) Standard resolution 14"x17" - 2 nos
- b) Standard resolution 10"x12"- 2nos.
- c) Standard resolution 8" x 10"- 2 Nos

2) IMAGE READER/ DIGITIZER:

- a) System should be compact in size with features of improved versatility and simplified functions for more practical and efficient operations.
- b) Processing capacity should be 60 IP/Hr at 5 pixels/mm of the 14x17 size cassettes.
- c) Cassettes should be without any external attachment
- d) The system should be a single-cassette reader with an automatic feed/load mechanism resulting in an efficient operation for a streamlined workflow.
- e) The Image plates should be flexible type.
- f) Image processing parameters are automatically selected through the anatomical region selection menu.
- g) System should be integrated with the console/workstation unit, making it possible to network with other devices.
- h) It should be able to process all standard size cassettes from 15 X 30 cm to 14x17 (35x43cm)

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- i) Image preview time should be less than 60 seconds for a cassette size 14"x17" (35x43cm)
- j) The system should have a standard spatial resolution of 10 pixels/mm for General Radiography.
- k) Depth acquisition resolution should be 12 bits or more.
- l) It should have various pre-set image processing protocols for respective regions of the body (Anatomical pre-set) with separate pre-sets for paediatric imaging and the possibility for user configurable anatomical pre-sets.

3) CR CONSOLE/WORKSTATION

System configuration requirements are:

- a) It should have a minimum 17" monochrome anti-glare, flicker-free TFT /LCD/LED monitor, keyboard and mouse.
- b) PC-based workstation for processing raw image data of the CR reader /Digitizer and patient identification.
 - Additional CR workstation needs to be supplied for post-processing related work.
- c) The CR reader /Digitizer must provide a display of acquired images with greater details of demographics, like a patient/study list for easy access.
- d) Work station software should be provided with Multimodality processing software capable of Multimodality connectivity and printing capability (especially DICOM protocols). and should be capable to connect USG, CT, MRI, etc., It should have a facility for multi-patient printing on a single film or multiple images of one patient in different formats on a single film.
- e) It should have various pre-set image processing protocols for respective regions of the body (Anatomical pre-set) with separate pre-sets for paediatric imaging and the possibility for user configurable anatomical pre-sets.
- f) Should have all radiology imaging standard software like full leg/full spine stitching, stationary grid pattern removal, tomography artefact subtraction and routine software for at least 250 anatomical solutions.
- g) It should have PACS connectivity for remote viewing and reporting.
- h) This workstation must provide a full amount of post-processing features like geometric corrections, window/level, algorithms, annotations such as markers, predefined text, drawing lines and geometric shapes, multi-scale image contrast amplification,

measuring distance and angles and determining leg length differences, shuttering, histograms, zoom, greyscale reversal, edge enhancement, noise reduction, indicate grey scale saturation level and latitude reduction, black border/black masking etc.

- i) This terminal must provide full-fledged DICOM printing, should be able to print multiple formats e.g., JPEG also, of a patient study and print true-size images.
- j) Should be equipped with a DICOM DVD/ CD writer for allowing examination of a patient to be written onto a DVD/CD in a DICOM and other formats.

4) DRY LASER IMAGER /PRINTER

- a) The system must be a dry laser imager without the need for any wet chemistry
 - b) The system must be DICOM 3.0 print service class provider
 - c) The system must have a spatial resolution of 500 PPI/DPI (minimum) or more for all sizes printed and a pixel size of 50 microns or less.
 - d) The system must have a contrast resolution of 14 bits/pixel or more.
 - e) The system must be 2 online film sizes and should be capable to print on any film size.
 - f) The system should have a throughput of 80 films or more per hour of 14 X 17 sizes of films.
- 5) Suitable online UPS for use with CR having backup power for at least 15 minutes.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine like AERB, e LORA etc.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service

Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.

17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.
20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

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