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Annexure - I

SPECIFICATIONS OF COMPUTERIZED RADIOGRAPHY (CR) SYSTEM FOR THE DEPARTMENT OF RADIODIAGNOSIS. 8/3/16

The Computerized Radiography (CR) System (Computer Radiography System) Should have the following essential components & features:

MAJOR PARAMETERS :-**1) Image Recording System (Cassettes & Image Plates) :****Cassettes**

- | | |
|----------------------------|----------|
| a) 14" x 17" | - 1 Nos. |
| b) 10" x 12" | - 2 Nos. |
| c) 8" x 10" | - 2 Nos. |
| d) 18" x 24" (mammography) | - 1 Nos. |

2) Image Reader (CR Reader) / Digitizer

Digitizer / Image Reader suitable for Government Hospitals which is capable to handle high workload is required, having the following features :

- Processing Capacity 80 Plates / hour or more for 14 x 14.
- It should have rigid plat scanning technology.
- Minimum image preview time should be less than 50-80 sec.
- Depth acquisition resolution should be of 10-14 bits.
- Unit offered should have atleast 2 types of Scanning Resolution & high resolution. It should have facility for reading mammography at 42-46 microns 22-24 pixel / mm) or less.
- It should have possibility for user configurable anatomical presents. Maximum presets preferred. It should have separate presets for pediatric patients.
- Stitching software should be available as standard.
- Should have provision for highest resolution scanning for any size.
- Should have various post-processing features like window level adjustment, Rotation, Zooming, Annotation, Noise reduction, cropping etc.
- It should be DICOM COMPATIBLE.
- It should have be able to process cassettes of size 8" x 10", 10" x 12", 14" x 17". 18" x 24" & 15" x 30".
- It should be able to pan & zoom the image directly when required, to check the quality of the image.

3) Cassette Identification

Through Bar code reader for Cassette

Annexure-I

4) Dedicated Advanced Work Station

The CR System should have workstation provided with 17" monitor with keyboard & mouse, with the following features.

- I. It should be capable of processing raw image data of the CR Reader / Digitizer
- II. It should have post processing facilities like window level adjustments, Image flipping & rotating, cropping, image zooming, edge enhancement, latitude reduction, image noise reduction, grey scale saturation feedback electronic shuttering etc. Edge enhancement, latitude reduction & noise reduction should be providing in console of workstation.
- III. It should have latest special image processing diagnostic software which has 4 levels of processing to obtain high quality image. Facility to process Soft tissues & bones separately should be available.
- IV. It should have separate presents for pediatric patients.
- V. It should have capability to use high resolution scanning for mammography of Latest version in console of in workstation. Mammography scanning software should be provided as standard.
- VI. Mammography software with license should be inbuilt in CR system

5) Second Advanced Processing work station.

It should have independent, full functionally Software with separate workstation PC with 17" LCD Display, with facility of CD writing of universally viewable CD's, for taking images on CD. The PC should have 1GB RAM, 320 GB or above Hard Disc. The second workstation software should be provided with Multimodality processing software capable for Multimodality Connectivity & printing capability and should be capable to connect USG, CT, MRI etc. It should also have Facility for Multipatient Printing on Single Film. The workstation should also have an option to connect to additional viewing workstation for doctors room.

6) Dry Laser Camera / Imager :

A dry laser printer of latest technology should be provided with the system, with the following features :

1. Print technology should be dry laser.
2. Printing resolution should be not less than 510-610 DPI for standard resolution printing, higher will be preferred.
3. Processing capacity : It should be able to print at least 100 sheets / hours of 14" x 17" size.
4. Pixels depth architecture / gray scale resolution should be 10 to 14 bits of more.
5. It should have compatibility of networking & connectivity – there should be provision of direct connectivity to any DICOM modality & on installation there should be available essential provision of connection to at least 5 DICOM modalities simultaneously, for high volume centralized US, CT, MRI, NM, CR & DR, C-ARM printing applications.

6. The systems should be capable to connect/link non- DICOM modalities also by connecting it to DICOM.
7. It should be able to support film sizes 14x17, 14x14, 11x14, 10x12 & 8x10
8. It should have at least 3 film sizes online.
9. It should be capable of printing in different layouts & multiple formats on a single film. Customized layouts & formats should be independent of film size. It should be capable of printing images of multiple patients & multiple images of single patient in single size
10. The system should be supplied with suitable UPS.

MINOR PARAMETERS BUT ESSENTIAL

1. The firm should provide CR films – Two pks. Of each size 8” x 10”, 10”x12”, 11”x14” (14”x17 – 1 Pkt).
2. The complete system should be CE/FDA approved.
3. The system should be offered with 2 years warranty including the IP plates.
4. The firm should give AMC/CMC rates for next five years after expiry of warranty period.
5. The firm should give name address of local service centre for prompt services.
6. The firm should provide name and address of institution where similar machine is supplied in last two years.

OPTIONAL – Nil

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Annexure-II

To be submitted by the firm along with offer-

Tender specification (As per Annexure-I)	Specification quoted by the firm	Deviation if any with clarification

Schedule-"B"

To be submitted by firm along with offer:-

Supplier Name:-	
Basic Rate(in Rs):-	
ED:-	
CST:-	
Freight:-	
Other charges:-	
All inclusive Rate of machine:-	
CMC's charges:- For 1 st Year after expiry of warranty. For 2 nd Years after expiry of warranty. For 3 rd Years after expiry of warranty. For 4 th Years after expiry of warranty. For 5 th Years after expiry of warranty.	
Total Cost (Inclusive of CMC charges):-	

Signature of the firm