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1. Digital imaging scanner, computed radiography (CR Systems):

Features:

- **Configuration:**
 - Imaging plates (IP)
 - Image reader system
 - CR workstations
 - RIS interface
 - Remote ID and Preview stations
 - Accessories and consumables
 - Laser Imager
- **CR Compatible imaging plates size requirement:**
 - 35 cm x 43 cm - 3 Nos.
 - 35 cm x 35 cm - 3 Nos.
 - 24 cm x 30 cm - 2 Nos.
 - 18 cm x 24 cm - 2 Nos.
 - 15 cm x 30 cm - 2 Nos
- **Image reader:**
 - Various image-processing protocols for the respective regions of the body
 - IP processing rate
 - Mechanism for accepting exposed Imaging Plates without patient demographics, for Causality /Trauma workflow requirement
 - Mechanism for Re-routing the newly acquired Images to the preconfigured CR workstation
 - Capability of retrieving (Service Intervention) at least last 10 scanned images, as part of contingency plan.
 - Capability for quick check of the image and exam data of at least the last 4 Imaging Plates scanned at the x- ray room
 - Protocol for verifying the connectivity status of configured image destinations
 - Spatial resolution of the digital image for optimal resolution
- **Identification and Preview System Functional requirements:**
 - Capability of interfacing to
 - HL7
 - Non-HL7
 - Proprietary
 - DICOM Work list
 - User defined Windows/DOS /Linux based interface protocols to HIS/RIS.
 - Specify whether you have tested interfacing with HL7-DICOM Bridge.

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- Mechanism for retrieving Demographics of at least last 10 patients identified on a particular Identification Terminal.
- Customizable Graphic User Interface (GUI) in Identification station with facility of selecting DICOM print & Storage destination.
- Indication of Over Exposure on the preview module.
- Mechanism for User release from Preview terminal in case of Auto-routing Images to Pre-defined DICOM Destinations
- Customizable Graphic User Interface (GUI) for Preview terminal
- Solution for storing patient demographic data for multiple exams in RIS/non RIS environment
- Possibility to put a custom configurable data field in the demographic information of the patient linked with the image.
- **Software applications:**
 - Advanced Processing Software
 - Application Software
 - Connecting Software
 - Visual Output Software
 - Quality Monitoring Software
 - **Any other please specify**
- **SW applications as standard:**
 - Full Leg/Full spine image processing
 - Quality control software.
 - Software, which enables to see in the preview terminal the deviation from normal exposure and with the details of the deviation on the CR workstation
 - Software masking of the collimation areas. Special attention should be placed on pediatric applications
 - Software for storing images on any DICOM 3 (or newer versions) compliant stations
 - Software for printing on any DICOM printer.
- **CR Workstation:**
 - Accept images from CR Reader without any loss of data
 - Capable of Archiving & Printing selected image to a standard DICOM destination in DICOM 3.0 Format.
 - Storing images in the local disk for pre-defined period.
 - Mechanism for accepting New images when the local disk is full
 - Antiglare flicker free TFT/LCD color monitor
 - Monochrome antiglare flicker free Medical Grade TFT/LCD monitor
 - CD/DVD Burner
- **System Functional requirements:**
 - Support DICOM Work list or user defined Windows/Dos based interface to HIS/RIS
 - Mechanism for retrieving Demographics of at least last 10 patient identified on that Terminal.
 - Customizable Graphic User Interface with facility of selecting DICOM print & storage destination.
 - Indication of Over Exposure on the preview module

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- Mechanism for User release in case of Auto-routing Images to Pre-defined DICOM Destinations
- **Functional requirement for CR workstation:**
 - Built in routine for using predefined image processing parameters for image quality enhancement.
 - Mechanism for storing the Patient image based on
 - Name
 - Date
 - Exam, etc
 - Capability of storing user defined image processing parameters
 - Capability of overwriting predefined image parameter with user-defined parameters & storing these two images separately.
 - Correcting typographically in Patient Demographic module, in case the RIS connection was down and manually data entry was done.
 - Capability of changing
 - W/I
 - Flipping
 - Rotating
 - Zooming
 - Collimating Annotating incoming image
 - Auto-routing incoming image to predefined DICOM Store (SCP storage) or Print Destination (SCP Print Destination)
 - Mechanism for printing Multiple Images in one film, with the possibility of slide and True Size printing
- **Laser/thermal Imager System Configuration requirements:** Print Images from CR Workstation
 - Capable of Printing Images in DICOM 3.0 format
 - Mechanism to print images 14x 17,11X14, 8 x 10 film sizes simultaneously
 - Capable of handling mammography plates (FDA approval for same preferred)
- **Functional Requirement of Laser/Thermal Imager :**
 - Capable of Printing images in High quality
 - Mechanism for printing images in 14 x 17,11X14 and 8 x 10 film sizes simultaneously
 - Mechanism for Printing Multiple Images in one film, with the possibility of slide printing.
- **Documentation :**
 - User manual in English language
 - Service manual in English language
 - List of important spare parts and accessories with their part number and costing.
 - Calibration/ Inspection Certificate from factory
 - Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.
 - The job description of the hospital technician and company service engineer
 - List of equipments available with the supplier for carrying out preventive maintenance and calibrations as per service /technical manual.

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Specifications:

- **Image reader:**
 - IP processing rate: ≈90 plates/hour
 - Capability of Retrieving : last 10 scanned images
 - Capability for quick check of the image and exam data : Last 3-4 images
 - Spatial resolution of the digital image: 2000X2000X16 bits
- **CR Workstation:**
 - Antiglare flicker free TFT/LCD color monitor: 21"
 - Monochrome antiglare flicker free Medical Grade TFT/LCD monitor: 21" with at least 2k X 2k resolution.
 - Storage : >80GB
- **Laser/Thermal Imager System Configuration requirements:**
 - Print image sizes: 14"x 17", 11"x14", 8" x 10"
 - Resolution : >≈ 580 dpi preferred
- Power Supply : 240 Volts , 50 Hz, 1 Phase
- Standards: IEC - 601-2- 75.1