DIGITAL RADIOGRAPHY
TECHNICAL SPECIFICATIONS

Should be a Digital Radiography system with single flat panel detector, capable to take digital images in horizontal, vertical and oblique positions of all skeletal body including spine and chest. The detector should be fixed type and move between horizontal and vertical positions.

GENERATOR
1. Generator should be of latest high frequency inverter technology for constant output and lowest radiation doses.
2. Should have at least 80 KW power.
3. The range should be from 40 to 150 KV.
4. Should have 800mA or more at 100KV.
5. Should have automatic exposure control device.
6. Should have anatomical programming radiography.
7. Should have over loading protection feature.
8. Should have a digital display for KV and mAs.

X-RAY TUBE AND COLLIMATOR
1. Should be a high speed rotating anode dual focus tube compatible with the generator.
2. Should have focal spot sizes of 0.6mm and 1.2mm or less.
3. Should have an anode heat capacity of 300KHU or more.
4. Should have a multi leaf collimator having halogen/bright light source with auto shut provision for the light.
5. Should have over load protection.

CEILING SUSPENDED TUBE
1. Should be ceiling suspended type.
2. It should have movements in all directions i.e. 3D transverse 140 cm or more, longitudinal 290 cm or more and vertical 125 cm or more.
3. All movements should have electromagnetic brakes with fully counter balanced mechanism.
4. It should have facility to display FFD/SID.
5. It should have provision of auto centering with the detector.
6. Tube rotation at vertical axis and horizontal axis +/- 180 degree.

X-RAY TABLE
1. Should be a horizontal table with carbon fiber table top of minimum 2000mmx720mm.
2. It should have a weight bearing capacity of 200kg or more.
3. The table should be mounted on high quality fiber wheels with brakes.

VERTICAL DETECTOR STAND
1. Should have an in-built detector capable to take digital images in horizontal, vertical and oblique positions with suitable movements for all skeletal body including spine and chest.
2. It should have provision to do chest radiography without grid.
3. It should have automatic exposure control with at least 3 fields.
4. Should be supplied with grids suitable for horizontal and vertical imaging.
5. The detector should be capable of rotating on its axis across +90 to -15 degrees.

DIGITAL DETECTOR
1. The detector should be a flat panel detector of latest technology with Cesium Iodide scintillator.
2. The size of the detector should be 35 cm x 41 cm or more.
3. Should have a minimum spatial resolution of 2.5 lines pair/millimeter.
4. Detector Quantum Efficiency (D.Q.E) should be more 55% @ Zero Line Pairs.
5. The active matrix size should be 2 k x 2k or more.
6. Should have a minimum image depth of 14 bit.

IMAGE ACQUISITION, IMAGE PROCESSING
1. The digital workstation should be based on the latest high speed processors of at least 32 bit.
2. It should have the possibility of acquiring the image from the detector system. Should have preview time 5 seconds or better.
3. It should have image storage disk of 70 Gigabyte or more.
4. The system should have ready DICOM interface and networking capability with RIS/HIS/PACS.
5. Post processing function must be available.
6. (1+4) Workstation one state of the art latest Pentium system minimum 2 GB RAM, minimum 1 TeraByte Hard disk, Medical grade monitor supported by all necessary software for all the various DR functions and four additional fully networked workstation with high resolution monitors. DICOM images should be viewed on all the four additional workstations. The configuration of the main and additional work stations should be specified in the bid and should be supplied with suitable table and UPS.
7. Dry Laser camera with at least 3 online film tray, 500 dpi or more for printing the digital images should be supplied.
8. A CD, DVD – R/W drive should be supplied.

ACCESSORIES
1. On line UPS with 30 minutes back up for work station and laser camera.
2. Lead Glass of size 80cms x 120cms.
3. Lead apron
4. Four 3 ton split AC for X-ray and work station room.

SCOPE FOR TURNKEY WORK IN MCH THIRUVANANTHAPURAM
1. Approximate area of work station room and X-ray room is 30 sqm.
2. Brick work to cover gaps on the existing room.
3. Remodeling the existing dark room to main work station room.
4. Fixing of the lead glass in the wall.
5. Flooring on the X-ray and work station room.
6. Interior finishing works with fall ceiling.
7. Installation of the AC units on the X-ray and work station room.
8. Cabling work for the four additional work stations in the causality (Ortho, Surgery, Medicine MO rooms) and one in the radio-diagnosis HOD room.