TECHNICAL SPECIFICATIONS OF MEDCIAL DEVICES FOR RADIO IMAGING DEPARTMENT

Ministry of Health and Family Welfare
Government of India

INDEX

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INTRODUCTION

Medical devices are a very important part of health care and their use is increasing by the day. Technical specifications play an important role in identification, selection and procurement of appropriate and cost effective medical devices. Consistency and standardization in technical specifications promotes positive competition and reduces effective costs. It also promotes uniformity in user training and smooth maintenance of equipment. In order to address the variation in technologies many of which could be add-ons, separate exercises were undertaken for specific categories of medical devices procured under National Health Mission. The experts consulted for specifications formulation exercises included clinicians, medical technologists, maintenance experts and also representatives from manufactures' industry associations/government organizations.

National Health Systems Resource Centre which is also a WHO collaborating centre for priority medical devices & health technology policy; in consultation with experts has formulated technical specifications for commonly used medical devices. Specifications are suggestive in nature and any specific requirement needs to be incorporated at the time of procurement. While effort has been made to make the specifications as generic as possible and consensus and technical appropriateness has been the corner stone of this technical exercise.

In the consultative meeting experts has mentioned the following activities needs to be considered wisely while procuring medical devices.

(1) The public health facility that intend to house medical devices (especially electrical/electronic based) must ensure before installation ,
(a) Proper grounding at electrical sockets,
(b) Wherever generator or UPS or solar power is used as back up energy source, should ensure the stabilizer/surge protector to prevent malfunction of medical devices. The same may be undertaken at facilities having voltage/energy fluctuations.
(2) Procurer may form rate contract on reagents/consumables anticipating yearly demand, on Medical devices which require periodic supply of reagents/consumables for its day to day operation.
(3) Appropriate filtering mechanism to be housed at public facility to ensure maximum longevity on Medical devices which operates efficiently depending on quality of pneumatics/water supply source.
(4) Ensure compliance for Medical devices which are regulated under various laws/regulatory body like CDSCO, AERB, Pollution control Board, PC PNDT, PESO etc.
(5) Procurer/public health facility must ensure scheduling calibration and preventive maintenance (incl. replacement of parts that are expected to be worn out after certain operation) as recommended in Medical device manufactures operational/service manual.
(6) Wherever necessary warning/safety information required, has to be placed at public health facilities.
(7) User/ In-house service training to be procured along with Medical devices for effective utilization.
(8) Public health facility may actively engage with MoHFW initiative, Post market surveillance /Materiovigilance program of India.
(9) Public health facility have to rely on manpower availability or utilization or IPD/OPD load factor to decide on quantity of medical devices to be procured and not just on number of bed at each level.

60 mA X-Ray

Version no. :		Ver_3
Date:		1/29/2019
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		13267
UMDNS code(s)		Radiographic Units
GENERAL		
1. USE		
1.1	Clinical purpose	Units that include an x-ray source to irradiate the portion of the patient to be examined, and an image receptor that converts in some form of latent image the array of x-rays that were differentially attenuated within the patient. This latent image is converted, usually in another device (e.g., a film image processor), into a visible image (i.e., a radiograph) reflecting the internal structure of the irradiated patient region. The interpretation of these images by a physician contributes to a clinically useful diagnosis.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	X-ray Generator: High frequency X-Ray generator having frequency of 20 KHz or more suitable for radiography should be provided. Power rating, 3 kW @ 100 kVp Maximum output, 100 kVp mAs 1-50 range mA range (rad.) : 20 mA to 60 mA. Control: A very compact, Soft touch Control panel having following functions & indications should be provided. The panel can be supplied in floor or wall mount with spill proof design following features should be on the control panel. Machine ON/OFF switch, Digital display of KV & mAs, KV&mAs increase and decrease switches. Tube focal spot selection switch, Ready and x-ray on switch ith indicators. Bucky selection switch. Self diagnostic programme with indicators for earth fault error, KV error, filament error & Tube's thermal overload. X-Ray Tube: Tube should be one number Dual focus stationary anode, BEL/Toshiba/Imported X-ray tube and thermally protected, having focal spot 1.4 mm or less. Anode heat storage capacity of tube should be more than 140 KHU. One number manual collimator with aluminium filter & for adjustment of exposure area. Coloumn Stand: It should have floor to ceiling stand with vertical counter balanced travel.

		It should have 360 deg. rotation. It should be provided one vertcal bucky stand with machine. Five position tilt table having bucky grid ration of 8:1 with 85 lines per inches should be provided. The bucky tray should accept cassette of 8"x10",10"x12" and 14"x17" size.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	In built
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	Power Supply: 230V, AC, 50 Hz, 15 Amps, three phase, Line resistance < 0.4 ohms.
4.2	Battery operated	NO
4.3	Protection	NA
4.4	Power consumption	????????
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Machine should be provided with following accessories: 1) Two numbers of BARC approved whole body lead aprons with all attachments. 2) One pair of 8 meter HV Cable
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment: IEC 60601-1-2 Certified to be complaint with IEC 60601-1-3, IEC 60601-2-54 AERB type approved.

7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

100 mA X-Ray

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		13267
UMDNS code(s)		Radiographic Units
GENERAL		
1. USE		
1.1	Clinical purpose	Units that include an x-ray source to irradiate the portion of the patient to be examined, and an image receptor that converts in some form of latent image the array of x-rays that were differentially attenuated within the patient. This latent image is converted, usually in another device (e.g., a film image processor), into a visible image (i.e., a radiograph) reflecting the internal structure of the irradiated patient region. The interpretation of these images by a physician contributes to a clinically useful diagnosis.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	X-ray Generator: High frequency X-Ray generator having frequency of 20 KHz or more suitable for radiography should be provided. Power output of generator should be 20 KW Radiography KV range should be 40-120 KV or more. mA range (rad.) : 100 mA or more. Control: A very compact, Soft touch Control panel having following functions & indications should be provided. The panel can be supplied in floor or wall mount with spill proof design following features should be on the control panel. Machine ON/OFF switch, Digital display of KV & mAs, KV&mAs increase and decrease switches. Tube focal spot selection switch, Ready and x-ray on switch ith indicators. Bucky selection switch. Self diagnostic programme with indicators for earth fault error, KV error, filament error & Tube's thermal overload. X-Ray Tube: Tube should be one number Dual focus rotating anode, BEL/Toshiba/Imported X-ray tube and thermally protected, having focal spot 2.8 mm or les. Anode heat storage capacity of tube should be more than 140 KHU. One number manual collimator with aluminium filter & for adjustment of exposure area. Coloumn Stand: It should have floor to ceiling stand with vertical counter balanced travel. It should have 360 deg. rotation. It should be provided one vertcal bucky

		stand with machine. Five position tilt table having bucky grid ration of 8:1 with 85 lines per inches should be provided. The bucky tray should accept cassette of 8"x10",10"x12" and 14"x17" size.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	In built
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	Power Supply: 230V, AC, 50 Hz, 15 Amps, three phase, Line resistance < 0.4 ohms.
4.2	Battery operated	NO
4.3	Protection	NA
4.4	Power consumption	????????
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Machine should be provided with following accessories: 1) Two numbers of BARC approved whole body lead aprons with all attachments. 2) One pair of 8 meter HV Cable
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:60601-1-2. Certified to be complaint with IEC 60601-1-3, IEC 60601-2-54 AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

100 mA X-Ray - Mobile

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		13272
UMDNS code(s)		Radiographic Units, Mobile
GENERAL		
1. USE		
1.1	Clinical purpose	Radiographic units consisting of a manually driven or motor-driven wheeled cart that transports an x- ray generator, an x-ray tube and tube stand, collimators, and a film cassette or flat-panel detector storage drawer (for film and digital units respectively). There are three different types of mobile radiographic units, which are categorized according to the generator: line-powered transformers, capacitor-discharge generators, and battery-powered transformers. Most mobile radiographic units utilize one of several types of digital imaging; advantages of digital imaging over film include greater dynamic range, reduced patient radiation exposure, and the ability to integrate with digital picture archiving and communication systems (PACS). Mobile radiographic units are used for imaging patients who cannot be moved to the radiology department or when patient transport is contraindicated, such as for patients in intensive care and critical care units or operating and emergency rooms.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	X-ray Generator: High frequency X-Ray generator having frequency of 20 KHz or more suitable for radiography should be provided. Power output of generator should be 20 KW Radiography KV range should be 40-120 KV or more. mA range (rad.) : 100 mA or more. Control: A very compact, Soft touch Control panel having following functions & indications should be provided. The panel can be supplied in floor or wall mount with spill proof design following features should be on the control panel. Machine ON/OFF switch, Digital display of KV & mAs, KV&mAs increase and decrease switches. Tube focal spot selection switch, Ready and x-ray on switch ith indicators. Bucky selection switch. Self diagnostic programme with indicators for earth fault error, KV error, filament error & Tube's thermal overload. X-Ray Tube: Tube should be one number Dual focus rotating anode, BEL/Toshiba/Imported X-ray tube and thermally protected, having focal spot 2.8 mm or les. Anode heat storage capacity of tube should be more than 140 KHU. One number manual collimator with aluminium filter & for adjustment of exposure area.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	In built
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Mobile
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	Power Supply: 230V, AC, 50 Hz, 15 Amps, three phase, Line resistance < 0.4 ohms.
4.2	Battery operated	NO
4.3	Protection	NA
4.4	Power consumption	????????
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Machine should be provided with following accessories: 1) Two numbers of BARC approved whole body lead aprons with all attachments. 2) One pair of 8 meter HV Cable

BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:60601-1-2 Certified to be complaint with IEC 60601-1-3, IEC 60601-2-54
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

CT Scan - 64 Slice

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		13267
UMDNS code(s)		Radiographic Units
GENERAL		
1. USE		
1.1	Clinical purpose	Computed Tomography scanners are used for a wide variety of diagnostic procedures, including spine and head injuries, lesions, and abdominal and pelvic malignancies; to examine the cerebral ventricles, the chest wall, and the large blood vessels; and to assess musculoskeletal degeneration.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	1. Gantry Should incorporate low Voltage Slip Rings b) Minimum scan time for a 360º rotation should be less than or equal to 0.35 sec. (350 mili sec.) c) Should have minimum tilt of 30 degrees on either side and remote tilt should be available as standard Gantry should be provided with remote/user control panels on either side for positioning of the patient The sub millimeter slice @0.63 mm or less in 64 row 64 slice acquisition acquisitions should be available. The system should be in position to perform 64 slices / rotation for general, cardiac and vascular applications f) Should have 3D positioning laser lights The scan FOV in acquisition mode be at least 50 cm with intermediate steps for scanning different anatomies h) Gantry aperture should be at least 70 cm. in diameter Integrated Display Panel - Gantry front showing current scan parameters such as kV, mA, ECG trace etc. for easy set up for ECG gated studies. 2. X-Ray Generator Should be compact and in-built in the gantry b) Should be high frequency having at least 70 kW output or more The mA range available should be between 20 to 600 or more, with increment steps of not more than 10 mA. d) Tube Voltage: 80-140 kV 3. X-Ray Tube The X-ray tube should be dual focus with heat storage capacity of 6 MHU or more, with effective storage of at least 15 MHU. b) Peak heat dissipation rate of anode should be at least 750 KHU/min c) X-ray tube cooler unit should be inside the gantry d) Focal spots, and type of X-ray tube should be specified as per IEC Recommendations. e) Filter and beam limiting devices should be quoted as standard. 4. Detectors a) These should be of solid state type
2.2	User's interface	Patient Communication System: An integrated intercom and automated patient instruction system (API) should be provided.

2.3	Software and/ or standard of communication(where ever required	Workstations: A client server architecture based solution (Intellispace Portal 6/ Dexus-AW server 2/ Syngo Via 30A or equivalent.) with minimum concurrent 24,000 slices rendering capacity, with storage of minimum 1TB having following client hardware specifications-Workstation: Z820 or equivalent CPU, dual quad core processor, 16 GB RAM, 1TB hard drive, DVD Writing with clinical grade monitor of minimum 2 MP.A reputed Anti-Virus Solution for Server should be in place. The Server should be with minimum three user (Three Hardware's) facility Fully DICOM 3.0 Compliant and PACS Interface ready. The workstation should have following processing tools/software's Available as standard: Multi planar reconstruction(MPR) , Minimum and Maximum intensity projection 3D Volume rendering , • 3D SSD (Shaded Surface Display). Advance Vessel Analysis with plaque visualization,• Auto Bone Removal. Volume measurement, • Lung Nodule analysis. Liver lesion analysis. Colonography. Perfusion CT. Image Fusion of CT, MR & PET Data Neuro DSA. Coronary tree analysis: automated 3D processing of coronary arteries, calcium scoring, stent analysis, LV analysis Multi-modality automatic tumour tracking & Automatic measurements in RECIST, WHO, Volume & Choi criteria calculation.
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	3 phase power supply
4.2	Battery operated	NO
4.3	Protection	-
4.4	Power consumption	-
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Dry Chemistry Laser Imager (dpi 500 or more) of a reputed make : Integrated with main console and workstation b) Color Laser Printer (High Resolution) for color coaded images C) UPS with half hour 'back-up' to run entire CT system, Workstations and Laser Imager d) Dual – Head Pressure injector of reputed make (100 syringes) e) 160 KVA Silent DG Set with AMF panel f) Two LED based view boxes with adjustable illumination to view 3 films of 14" x 17" in each view box. g) Thyroid Collars -2 No. h) Gonadal Shields- 2 each for male and female(Total 4) i) Lead Apron Hanger with 2 light weight Lead Aprons j) Lead glass
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 18 to 30 deg C and relative humidity of 20 to 75% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 18 to 30 deg C and relative humidity of 20 to 75%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		

7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:IEC 60601-1-2 Certified to be complaint with IEC 60601-1-3, IEC 61010-2-44 or equivalent BIS AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	lead glass, door shields
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	5 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

CT Scan - 128 Slice

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		13267
UMDNS code(s)		Radiographic Units
GENERAL		
1. USE		
1.1	Clinical purpose	Computed Tomography scanners are used for a wide variety of diagnostic procedures, including spine and head injuries, lesions, and abdominal and pelvic malignancies; to examine the cerebral ventricles, the chest wall, and the large blood vessels; and to assess musculoskeletal degeneration.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	1. Gantry Should incorporate low Voltage Slip Rings b) Minimum scan time for a 360º rotation should be less than or equal to 0.35 sec. (350 mili sec.) c) Should have minimum tilt of 30 degrees on either side and remote tilt should be available as standard Gantry should be provided with remote control/user control panels on either side for positioning of the patient The sub millimeter slice @0.63 mm or less in 64 row 128 slice acquisitions should be available. The system should be in position to perform 256 slices / rotation for general, cardiac and vascular applications f) Should have 3D positioning laser lights The scan FOV in acquisition mode be at least 200 mm to 500 mm with intermediate steps for scanning different anatomies h) Gantry aperture should be at least 70 cm. in diameter Integrated Display Panel - Gantry front showing current scan parameters such as kV, mA, ECG trace etc. for easy set up for ECG gated studies. 2. X-Ray Generator Should be compact and in-built in the gantry b) Should be high frequency having at least 100 kW output or more The mA range available should be between 20 to 800 or more, with increment steps of not more than 10 mA. d) Tube Voltage: 80-140 kV 3. X-Ray Tube The X-ray tube should be dual focus with heat storage capacity of 8 MHU or more, with effective storage of at least 25 MHU. b) Peak heat dissipation rate of anode should be at least 1600 KHU/min c) X-ray tube cooler unit should be inside the gantry d) Focal spots, and type of X-ray tube should be specified as per IEC Recommendations. e) Filter and beam limiting devices should be quoted as standard. 4. Detectors a) These should be of solid state type
2.2	User's interface	Patient Communication System: An integrated intercom and automated patient instruction system (API) should be provided.

2.3	Software and/ or standard of communication(where ever required	Workstations: A client server architecture based solution (Intellispace Portal 6/ Dexus-AW server 2/ Syngo Via 30A or equivalent.) with minimum concurrent 24,000 slices rendering capacity, with storage of minimum 1TB having following client hardware specifications-Workstation: Z820 or equivalent CPU, dual quad core processor, 16 GB RAM, 1TB hard drive, DVD Writing with clinical grade monitor of minimum 2 MP.A reputed Anti-Virus Solution for Server should be in place. The Server should be with minimum three user (Three Hardware's) facility Fully DICOM 3.0 Compliant and PACS Interface ready. The workstation should have following processing tools/software's Available as standard: Multi planar reconstruction(MPR) , Minimum and Maximum intensity projection 3D Volume rendering , • 3D SSD (Shaded Surface Display). Advance Vessel Analysis with plaque visualization,• Auto Bone Removal. Volume measurement, • Lung Nodule analysis. Liver lesion analysis. Colonography. Perfusion CT. Image Fusion of CT, MR & PET Data Neuro DSA. Coronary tree analysis: automated 3D processing of coronary arteries, calcium scoring, stent analysis, LV analysis Multi-modality automatic tumour tracking & Automatic measurements in RECIST, WHO, Volume & Choi criteria calculation.
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	Three phase stable power supply
4.2	Battery operated	NO
4.3	Protection	-
4.4	Power consumption	-
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Dry Chemistry Laser Imager (dpi 500 or more) of a reputed make : Integrated with main console and workstation b) Color Laser Printer (High Resolution) for color coaded images C) UPS with half hour 'back-up' to run entire CT system, Workstations and Laser Imager d) Dual – Head Pressure injector of reputed make (100 syringes) e) 160 KVA Silent DG Set with AMF panel f) Two LED based view boxes with adjustable illumination to view 3 films of 14" x 17" in each view box. g) Thyroid Collars -2 No. h) Gonadal Shields- 2 each for male and female(Total 4) i) Lead Apron Hanger with 2 light weight Lead Aprons j) Lead glass
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 18 to 30 deg C and relative humidity of 20 to 75% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 18 to 30 deg C and relative humidity of 20 to 75%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.

7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:IEC 60601-1-2 Certified to be complaint with IEC 60601-1-3, IEC 61010-2-44 or equivalent BIS standard AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Lead Glass, Door Sheild
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

Full Body MRI System - 1.5tesla

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		16260
UMDNS code(s)		Magnetic Resonance Imaging (MRI) Units
GENERAL		
1. USE		
1.1	Clinical purpose	MRI is primarily used to identify diseases of the central nervous system, brain, and spine and to detect musculoskeletal disorders.It is also used to view cartilage, tendons, and ligaments. MRI can also be used to image the eyes and the sinuses. MRI can be used to help diagnose infectious diseases; to detect metastatic liver disease; to display heart-wall structure; to stage prostate,bladder, and uterine cancer.MRI can also be used as a functional imaging tool.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	1. MAGNET Whole Body 1.5Tesla Magnetic Resonance Imaging System optimized for higher performance in Whole Body and Vascular examinations with superconducting magnet, high performance gradients and digital Radio Frequency System. b. 1.5T active shielded super conductive magnet should be short and non-claustrophobic. c. It should have at least 70 cm patient bore with flared opening. d. Magnet length should be less than 200cm. e. Homogeneity of magnet should be less than 3.5 ppm over 45cm DSV The magnet should be well ventilated and illuminated with built in 2 way intercom for communication with patient. g. It should have a built in cryo-cooler such that helium consumption does not exceed 0.01 lit/ hour. h. Emergency Rundown Control at both operator console room and Gantary Room is a must. i. Fringe Field 0.5 Gauss line radius is essential. j. Front Panel of gantry should display table and patient position. 2. SHIM SYSTEM High performance, highly stable shim system with global and localized automated shimming for high homogeneity magnetic field for imaging and spectroscopy. b. Auto shim should be available to shim the magnet with patient in position. 3. GRADIENT SYSTEM Actively shielded Gradient system The gradient should be actively shielded with each axis having independently a slew rate of at least 200 T/m/s and a peak amplitude of 33mT/m. c. The system should have efficient and adequate Eddy current compensation d. Effective cooling system for gradient coil and power supply e. Duty Cycle- 100% the gradient power amplifier. f. Usable over 45 cm of FOV in all directions. 4. RF SYSTEM A fully digital RF system capable of transmitting power of at least 15kw. It should also have at least 32 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array/Matrix coils. c. It should

2.2	User's interface	The main Host computer should have a 19 inches or more high resolution LCD TFT color monitor with 1024 x 1024 matrix display The system should have image storage capacity of 100 GB for at least 2,00,000 images in 256x256 matrix. c. The reconstruction speed should be at least 1300 or more for full FOV 256 matrix. The main console should have facility for music system for patient in the magnet room. The system should have DVD / CD / flash drive archiving facility. The system should be provided with auto DVD writer. e. Two way intercom system for patient communication. MRI System should be DICOM ready in all parameters with no additional requirement of licence for connectivity to any PACS/HIS and Radiotherapy treatment planning system.
2.3	Software and/ or standard of communication(where ever required	a. A workstation with same user interface as of main console is required with the availability of all necessary software including: Basic post-processing software including MIP, MPR, surface reconstruction and volume rendering technique. Advanced post-processing offered applications perfusion quantification, advanced diffusion and DTI, processing of 2D/3D CSI data, with color metabolite mapping, quantification of CSF flow data, vascular analysis package. It should have at least 19 inch color monitor, with hard disk of at least 120 GB for at least 250,000 image storage in 256 matrix, and 4 GB RAM capacity or more, with self playing DVD/CD archiving facility. c. Seperate viewing station should be provided.
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Maximum 120 dBA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanismwith less than 1˚ c change during scan
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	3 phase power supply
4.2	Battery operated	-
4.3	Protection	-
4.4	Power consumption	-
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Dual Head MRI Compatible Pressure Injector with 100 sets of syringes. b. Water Chiller for Cold Head I Gradients.. c. 2 Non-ferromagnetic patient transfer trolley should be provided. d. Fire Fighting System, Detectors and 6 Fire Extinguishers - MR compatible/ MR safe Hand held metal detectors and two mental detector doors to be installed at the entrance point as will be intimated. f. Closed circuit CCD camera g. Phantoms for image quality audits. MRI compatible Anaesthesia machine (for paediatric and adult use) with dual vaporisers i.Suction and O2 pipeline and manifold to be provided inside the RF enclosure. j. Suitable RF Enclosure k. UPS for entire system for backup of 30 minutes. l. DG set
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 18 to 30 deg C and relative humidity of 20 to 75% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 18 to 30 deg C and relative humidity of 20 to 75%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.

7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:IEC 60601-1-2 Certified to be complaint with IEC 61010-2-33 AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Turnkey Project only space to be provided.?????
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	5 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

Full Body MRI System - 3tesla

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		16260
UMDNS code(s)		Magnetic Resonance Imaging (MRI) Units
GENERAL		
1. USE		
1.1	Clinical purpose	MRI is primarily used to identify diseases of the central nervous system, brain, and spine and to detect musculoskeletal disorders.It is also used to view cartilage, tendons, and ligaments. MRI can also be used to image the eyes and the sinuses. MRI can be used to help diagnose infectious diseases; to detect metastatic liver disease; to display heart-wall structure; to stage prostate,bladder, and uterine cancer.MRI can also be used as a functional imaging tool.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	1. MAGNET Whole Body 3 Tesla Magnetic Resonance Imaging System optimized for higher performance in Whole Body and Vascular examinations with superconducting magnet, high performance gradients and digital Radio Frequency System. b. 3T active shielded super conductive magnet should be short and non-claustrophobic. c. It should have at least 70 cm patient bore with flared opening. d. Magnet length should be less than 200cm. e. Homogeneity of magnet should be better than 1.5 ppm over 40 cm DSV The magnet should be well ventilated and illuminated with built in 2 way intercom for communication with patient. g. It should have a built in cryo-cooler such that helium consumption does not exceed 0.01 lit/ hour. h. Emergency Rundown Control at both operator console room and Gantary Room is a must. i. Fringe Field 0.5 Gauss line radius is essential. j. Front Panel of gantry should display table and patient position. 2. SHIM SYSTEM High performance, highly stable shim system with global and localized automated shimming for high homogeneity magnetic field for imaging and spectroscopy. b. Auto shim should be available to shim the magnet with patient in position. 3. GRADIENT SYSTEM Actively shielded Gradient system The gradient should be actively shielded with each axis having independently a slew rate of at least 200 T/m/s and a peak amplitude of 40 mT/m. c. The system should have efficient and adequate Eddy current compensation d. Effective cooling system for gradient coil and power supply e. Duty Cycle- 100% the gradient power amplifier. f. Usable over 45 cm of FOV in all directions. 4. RF SYSTEM A fully digital RF system capable of transmitting power of at least 15kw. It should also have at least 32 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array/Matrix coils. The highest

2.2	User's interface	The main Host computer should have a 19 inches or more high resolution LCD TFT color monitor with 1024 x 1024 matrix display The system should have image storage capacity of 100 GB for at least 2,00,000 images in 256x256 matrix. c. The reconstruction speed should be at least 1300 or more for full FOV 256 matrix. The main console should have facility for music system for patient in the magnet room. The system should have DVD / CD / flash drive archiving facility. The system should be provided with auto DVD writer. e. Two way intercom system for patient communication. MRI System should be DICOM ready in all parameters with no additional requirement of licence for connectivity to any PACS/HIS and Radiotherapy treatment planning system.
2.3	Software and/ or standard of communication(where ever required	a. A workstation with same user interface as of main console is required with the availability of all necessary software including: Basic post-processing software including MIP, MPR, surface reconstruction and volume rendering technique. Advanced post-processing offered applications perfusion quantification, advanced diffusion and DTI, processing of 20/30 CSI data, with color metabolite mapping, quantification of CSF flow data, vascular analysis package. It should have at least 19 inch LCD TFT color monitor, with hard disk of at least 120 GB for at least 250,000 image storage in 256 matrix, and 4 GB RAM capacity or more, with self playing DVD/CD archiving facility. c. Seperate viewing station should be provided.
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Maximum 120 dBA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanismwith less than 1˚ c change during scan
3.5	Mobility, portability	Stationary installation
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	
4.2	Battery operated	NO
4.3	Protection	
4.4	Power consumption	
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Dual Head MRI Compatible Pressure Injector with 100 sets of syringes. b. Water Chiller for Cold Head I Gradients.. c. 2 Non-ferromagnetic patient transfer trolley of international make should be provided. d. Fire Fighting System, Detectors and 6 Fire Extinguishers. Hand held metal detectors and two mental detector doors to be installed at the entrance point as will be intimated. f. Closed circuit CCD camera g. Phantoms for image quality audits. MRI compatible Anaesthesia machine for paediatric and adult use) with dual vaporisers i.Suction and O2 pipeline and manifold to be provided inside the RF enclosure. j. Suitable RF Enclosure k. UPS for entire system for backup of 30 minutes. l. DG set
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 18 to 30 deg C and relative humidity of 20 to 75% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 18 to 30 deg C and relative humidity of 20 to 75%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.

7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:IEC 60601-1-2. Certified to be complaint with IEC 61010-2-33 AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection, Satisfactory certificate for any existing installation from government hospial.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

PORTABLE ULTRASOUND

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		17422
UMDNS code(s)		Scanning Systems, Ultrasonic, Cardiac, gynaological, General, Anaesthesia, vascular
GENERAL		
1. USE		
1.1	Clinical purpose	An assembly of devices designed for extracorporeal and/or intracorporeal (endosonography or endoscopic) imaging procedures involving the heart and blood vessels. Included are software packages that support a variety of static or real-time cardiac specific imaging applications used to diagnose anatomical defects of the heart, determine blood flow characteristics and functional/anatomical problems associated with myocardial infarction. It is used to generate ultrasound pulses, direct them to a target area, detect the echoes, and process the resulting information to produce and display static or dynamic two or three-dimensional (3-D) images.
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	A typical configuration for a cardiac ultrasound system consists of a scanner and software, several single- or multifrequency transducers, a TEE probe, color Doppler, M-mode, CFM, cardiac analysis software. Phased array transducers required 3.Following transducers are to be supplied: . A-2.0-5.0 MHz Multi frequency Convex Transducer-One. . B-5.0-12.0 MHz Multi frequency Linear transducer-One. . C-5.0-8.0 MHz or more Endo Cavitory probe-One. Transesophageal Echocardiogram - TEE scanning capability Penetration depth of at least 30 cm Digital and caliper measurement functions required for both distance and area Alphanumeric annotation to be possible Measurement accuracy to be better than 2% over 10cm distance Doppler display to indicate blood flow both numerically and in colour.). System that is DICOM compatible for communication efficiency. 3D or 2D image for cardiac studies in adults, children and infants 11. ZOOM in real time at least 4X and ZOOM for frozen image at least 20X. 12. Equipment dynamic range, at least, 180 dB.
2.2	User's interface	Patient Communication System: An integrated intercom and automated patient instruction system (API) should be provided.
2.3	Software and/ or standard of communication(where ever required	The hardware and software included will allow the following application: Cardiac and stress echo; tissue differentiation to clearly show the walls of the left ventricle and egional wall motion abnormalities. Left ventricle wall abnormalities software; abdominal; obstetrical and gynecological; peripheral and deep vascular;
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	Noise-free system
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	Trolley is mobile
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	3 hours
4.3	Protection	Voltage corrector / stabilizer / UPS to allow operation at ± 30% of local rated voltage and one hour operation in the event of mains power failure.
4.4	Power consumption	????????
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	All probes required for frequency range stated. It is recommended include the type of transducers and the minimum of transducers with harmonics.

BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment: IEC 60601-1-2. Certified to be complaint with IEC 61010-2-33
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Single phase stable power supply; PCPNDT Act clearance
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

X-Ray Developing Tank

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	Manual film processing unit- with the tanks with lid shall be of capacities 13.5 liters for fixing and developing tanks, 22.5 liter for washing tank along with hangers. Casing shall be of robust anti-corrosive material of stainless steel 316 grade. Tanks to be made out of 23 SWG, 304 grade mirror finish, quality stainless steel sheet for developer, wash chemicals. Single welding joint in the body height of tank and polished to avoid corrosion. All welding joints are fold pressed welded to avoid leakage.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	Power Supply: 230V, AC, 50 Hz, 15 Amps, three phase, Line resistance < 0.4 ohms.
4.2	Battery operated	NO
4.3	Protection	NA
4.4	Power consumption	????????
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	Machine should be provided with following accessories: 1) Two numbers of BARC approved whole body lead aprons with all attachments. 2) One pair of 8 meter HV Cable 3) 3 numbers of non corrosive tanks for solution 4) hanger of 10 clips and loose clips.
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:61326-1. Certified to be complaint with IEC 61010-1-3, IEC 61010-1-2, IEC 61010-2-54, IEC 61010-1-6 and IEC 62304.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		

8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

CHEST STAND: Floor Model

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
2.1	Technical characteristics (specific to this type of device)	Floor model vertical stand with rigid L channel structure on a stable platform for standing patients. L channel to be made of 4 mm thick 50 mm sq. angle and approximately 180 cm height and fitted on patient platform. Cassette holder to take cassettes up to 14 x 17" to move vertically up and down on two SS guide rods with facility to lock cassette holder in any desired position for takingradiographs.. Cassette holder up and down movement to be approximately 60 cm.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:61326-1. Certified to be complaint with IEC 61010-1-3, IEC 61010-1-2, IEC 61010-2-54, IEC 61010-1-6 and IEC 62304.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer

8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

LEAD SCREEN BARRIER

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	1. Triple fold type- Lead Screen movable on a sturdy, rust proof wheels with 1.5 mm lead sheet sandwiched between phenol bonded laminated sheet with teak wood finishing. Lead glass window (1.0 mm lead or equivalent) of minimum size 7" x 7" at a convenient height to be provided. Angle iron frame work for durability of screen to be provided. Size of the screen: Central part 6 feet height x 2 feet width. Item to conform to IS 7620 or equivalent.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	
4.2	Battery operated	NO
4.3	Protection	NA
4.4	Power consumption	
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements(or equivalent BIS Standard). Shall meet internationally recognised standard for Electromagnetic Compatability(EMI/EMC). for electromedical equipment:61326-1. Certified to be complaint with IEC 61010-1-3, IEC 61010-1-2, IEC 61010-2-54, IEC 61010-1-6 and IEC 62304.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer

8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

FILM HANGER

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	Stainless steel film hanger clip type or channel type to hang wet films. Sizes should be 8 "x 10", 10"x 12", 12"x 15" and 14"x 14", 14"x 17"(dimensions in inches) The equipment should be suitable for operation in temperatures from 10° C to 45° C with a relative humidity of 100 % Labels and markings should be clear and visible. Equipment should be simple to use, operate and maintain. It should be designed for easy access to serviceable parts.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/Europen CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.

10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

X-RAY LOBBY- SINGLE FILM

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	1. For viewing single X-ray film having dimensions of 15"x 5"x 25"(L x D x H) with 2 nos. of 20W fluorescent tubes of 2 feet length each with necessary fittings in MS housing of 20 SWG and is duly powder coated. View box to be fitted with white acrylic sheet to reduce glare and provide uniform illumination. Grip clips/ grip rollers are to be provided to hold the film. Ventilation for cooling. Drip tray for wet films
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/Europen CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

DARK ROOM SAFETY LIGHT

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	Body to be made out of MS sheet with outside black coating and unbreakable red plastic filter for satisfactory results Lamp holder to be included Size approximately 25 x 20 x 15 cm made of MS housing of 20 SWG epoxy powder coated Necessary electrical fittings are provided I the housing to fit a red colored 25W bulb along with mains cable and 3 pin plug with provision for switching ON/ OFF
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/Europen CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

DARK ROOM TIMER

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	DARK ROOM TIMER 1. Electronic type in the range from 0.1 seconds 2. Accuracy: ± .01% 3. Digital display with audio signal. 4. Auto reset option. 5. Power supply: 220-240 V AC, 50 Hz, Single phase. 6. Easy to use in darkroom.
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/Europen CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

X-RAY CASSETTE

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	A set of cassettes having system for indicating whether or not it is loaded and a slot for patient identity card. Cassettes to be compatible with the radiology equipment 3. Should include 14"x 17", 15"x 12", 12"x 10", 10"x 8" Cassettes to be made of Aluminium for light weight. 4 corners to be connected with non-metallic construction to give protection covers. Soft push button locking arrangement with stainless springs Suitable lead protection spray to be given on the inside rear flap of the cassette to eliminate fog effect on X-ray film 7. High grade foam material to be pasted inside to give the film a uniform contact with intensifying screens
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/Europen CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. AERB type approved.
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;

9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

Intensifying Screens

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	High speed in class 100 to 160 in various sizes Calcium tungstate emulsion layer on polyester base Compatible with all X- ray films available 4. Sizes of screens: 14"x 17", 15"x 12", 12"10", 10"x8" (5 nos. each)
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	Should be FDA/Europen CE/BIS approved product. Manufacturer and Supplier should have ISO 13485/ISO 9001 certification for quality standards. Shall complaints to IEC 61262-7 : Medical electrical equipment - Characteristics of electro-optical X- ray image intensifiers - Part 7: Determination of the modulation transfer function
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.

LEAD APRON

Version no. :		Ver_1
Date:		15/02/2018
Done by : (name.institution)		HCT/NHSRC
NAME, CATEGORY AND CODING		
UMDNS name		
UMDNS code(s)		
GENERAL		
1. USE		
1.1	Clinical purpose	
1.2	Used by clinical department/ward	Radiology Department
TECHNICAL		
2. TECHNICAL CHARACTERISTICS		
	Technical characteristics (specific to this type of device)	Coat type aprons fabricated from multiple leaded vinyl fabric having minimum 0.5 mm lead equivalent for protection from scattered radiation Apron to cover over shoulders through upto knees Item should be light in weight and durable Necessary water proof cloth lining to be stitched on vinyl fabric. Apron should have approval certificate of AERB Suitable wooden hanger to be provided for hanging apron to avoid damage
2.2	User's interface	Manual
2.3	Software and/ or standard of communication(where ever required	NA
3. PHYSICAL CHARACTERISTICS		
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Noise (in dBA)	NA
3.4	Heat dissipation	Should maintain nominal temp and the heat should be disbursed throgh a cooling mechanism
3.5	Mobility, portability	
4. ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)		
4.1	Power requirements	NA
4.2	Battery operated	NA
4.3	Protection	NA
4.4	Power consumption	NA
5. ACCESSORIES, SPARE PARTS, CONSUMABLES		
5.1	Accessories, (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	
BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS		
6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS		
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1 .Operating Condition: Capable of operating continuously in ambient temperture of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. 2. Storage condition: Capable of being stored continuosly in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7. STANDARDS AND SAFETY		
7.1	Certificates (pre-market, sanitary,..); Performance and safety standards (specific to the device type); Local and/or international	1. Manufacturer and Supplier should have ISO 13485/ISO 9001 certification for quality standards 2. Shall be complaint to IEC61331-1
7.2	Local and/or international	Manufacturer/Supplier should have ISO 13485 certificate for quality standard.
8. TRAINING AND INSTALLATION		
8.1	Pre- installation requirements: nature, values, quality, tolerance	Three phase stable power supply
8.2	Requirements for sign-off	Certificate of calibration and inspection of parts from the manufacturer
8.3	Training of staff (medical, paramedical, technicians)	1. Training of users on operation and basic maintenance; 2. Advanced maintenance tasks required shall be documented;
9. WARRANTY AND MAINTENANCE		
9.1	Warranty	3 years, including all spares and caliberation.
10. DOCUMENTATION		

10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: User, technical and maintenance manuals should be supplied in english/Hindi language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals(original and Copy) to be provided; Advanced maintenance tasks documntation; Certificate of calibration and inspection,
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;
11. Notes		
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract(AMC/CMC/add-hoc) to be declared by the manufacturer.
11.2	Recommendations or warnings	Any warning sign would be adequaetly displayed.