

**Amendment-II**

Ref.: Tender No. HSCC/SJH/Med.Eqpt./2016/22 dt. 10.10.2016.

Sub.: Procurement of Medical Equipment for New Emergency Block & Super-Specialty Block at Safderjung Hospital, New Delhi.

**Item No. 1 : 3 Tesla MRI Unit**

**Existing As (Heading) :** Whole Body 3.0 Tesla Magnetic Resonance Imaging System optimized for all body applications, such as musculoskeletal, vascular, pediatric, hepatobiliary, abdominal, cardiac and neurological applications with super conducting magnet, high performance gradients and digital Radio Frequency System. The manufacturer/ bidder must quote the latest 'state of the art' 3 Tesla MR system as per the specifications below or better.

**Amended as:** 'State of the art' Whole Body 3.0 Tesla Magnetic Resonance Imaging System optimized for all body applications, including musculoskeletal, vascular, pediatric, hepatobiliary, abdominal, cardiac and neurological applications with super conducting magnet, high performance gradients and digital Radio Frequency System. The manufacturer/ bidder must quote the latest 'state of the art' 3 Tesla MR system as per the specifications below or better. Latest model to be quoted; If any new model in the same series with better specifications is launched in RSNA 2016, then the same should be quoted/supplied. Model should be US-FDA approved.

**Point 3 Gradient System Sub Point (B) Existing As:** The gradient should be actively shielded with each axis having independently a slew rate of at least 200 T/m/s and peak amplitude of 40mT/m.

**Amended as:** The gradient should be actively shielded with each axis having simultaneously a slew rate of at least 200 T/m/s and a peak amplitude of 36mT/m or more.

**Point 4 RF System Sub Point (a) Existing As:** A fully digital RF system capable of Multi Transmission with 2 amplifiers of at least 15kW each or one amplifier of 30 kW, to reduce magnetic susceptibility affects.

**Amended as: (1)** A fully digital RF system capable of Multi Transmission with 2 amplifiers of at least 15kW each or one amplifier of 30 kW, to reduce magnetic susceptibility artifacts. B1 inhomogeneity correction should be possible. Vendor has to elaborate on technology used to improve organ specific the B1 homogeneity.

2. If the vendor has any additionally technology like Zoom it/FOCUS or equivalent for selective excitation within a user specified FoV, the same should be quoted. True shape and true form or equivalent technology to be quoted.

**Point 5 Patient Table (a) Existing As:** Patient table should be fully motorized and dockable with computer controlled table movements in vertical and horizontal directions. (Specify the patient load capacity).

**Amended as:** Patient table should be fully motorized with computer controlled table movements in vertical and horizontal directions. (Specify the patient load capacity).

**Point 5 Patient Table, Sub Point (d) Existing As:** Table technology - Bolus chasing with automatic/ continuous moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 sec for CE-MRA. Latest table technology available with the vendor (globally) should be offered (eg. TIM-CT, etc.)

**Amended as :** (1) Bolus chasing with automatic/ continuous moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 second for CE-MRA.

(2) Latest table technology available with the vendor (globally) should be quoted (eg. TIM-CT, etc.) as optional. (Price for point 2 will not be considered for calculation of L1)

**Point 7 Measurement systems, Sub Point (a) Existing As:** Largest Field of View should be at least 48 cm in all three axis. Specify the highest FOV and minimum FOV.

**Amended as:** Largest Field of View should be at least 45 cm in all three axis. Specify the maximum and minimum FOV.

**Point 8 Coil System, Main Heading Existing As:** The main body coil integrated to the magnet must be Quadrature/CP of the latest technology. In addition to the inbuilt body coil, following coils should be quoted for which the number of channels and number of elements for each coil should be maximum that the vendor has in their product list. All coils (other than coils for exclusive spectroscopy, like surface coils) should be compatible for parallel acquisitions.

**Amended as:** The main body coil integrated to the magnet must be Quadrature/CP of the latest technology. In addition to the in-built body coil, following coils should be quoted. All coils (other than coils for exclusive spectroscopy, like surface coils) should be compatible for parallel acquisitions. The vendor should supply latest coil (with maximum channels and elements) with the best technology available with them at the time of tender submission.

**Point 8 Coil System, Sub Point (i) Existing As** Multichannel Head coil with at least 16 channels for routine brain imaging.

**Amended as :** Point Deleted.

**Point 8 Coil System Sub Point ii :** Multichannel Head Coil with 32 channels or more for EPI/DTI applications.

Amended as : Above point Retained.

**Point 8 Coil System Sub Point iii :** Neuro Vascular Coil with 20 or more channels or Head/Neck Coil combined , capable of high resolution neruo – vascular imaging or combinations of head & neck coil for similar coverage.(The head coil quoted for neurovascular work shall be separate from the head coil in point 8 coil system sub point ii)

Amended as: Above point Retained.

**Point 8 Coil System Sub Point iv :** Spine array /matrix coil for thoracic and lumbar spine imaging with at least 32 Channels acquisition per exam.

Amended as: Above point Retained.

**Point 8 Coil System Sub Point v :** Body Array /Matrix coil with at least 40 cm z axix coverage for imaging of abdomen with at least 32 channels acquisition for body part angiograms and heart in case one coil cannot provide this coverage then multiple coils should be offered. (the best available body coil with the vendor must be supplied)

**Amended as:** Above point Retained.

**Point 8 Coil System, Sub Point (vi) Existing As** Suitable surface coil for peripheral angiography application of at least 32 channels.

**Amended as :** (Above Point Retained) Suitable surface / phased array coil for peripheral angiography application of at least 32 channels with coverage of minimum 80 cm with single or combination of coils. For Angio application if the coils offered are in combination it will be counted as 1 coil for the purpose of peripheral angiography.

**Point 8 Coil System, Sub Point (vi) Existing As** Bilateral breast coil with at least 16 channel with fully functional spectroscopy.

**Amended as:** Above point Retained.

**Point 8 Coil System, Sub Point (viii) Existing As :** Dedicated Shoulder Coil- at least 8 channels.

**Amended as :** Dedicated Shoulder Coil- at least 16 Channel or more.

**Point 8 Coil System, Sub Point (ix) Existing As :** Dedicated Knee Coil - at least 8 channels.

**Amended as :** Dedicated Knee Coil - at least 15 channels or more. If transmit receive coil is available the same should be quoted.

**Point 8 Coil System, Sub Point (x) Existing As** Dedicated wrist coil -8 channel

Amended as : Above Point Retained

**Point 8 Coil System, Sub Point (xi) Existing As** Loop Flex Coil - large & small (at least 2 to be provided).

**Amended as :** Flex Coil

a) Large (2 quantity) - 4 channel

b) Small (2 quantity)- 4 channel

**Point 8 Coil System, Sub Point (xii) Existing As** Small flex coil for pediatric and neonatal head and neck applications -8 channel or more

Amended as : Above point Retained

**Point 8 Coil System, Sub Point (xiii) Existing As:** " Dedicated Ankle Coil with 8 channels or more".

**Amended as :** "Dedicated Ankle Coil with 16 channels or more".

**Point 8 Coil System, Sub Point (xiv) Existing As:** Body Array matrix coil/phased array coil-20 channels or more.

**Amended as:** Point Deleted.

**Point 8 Coil System, Sub Point (xiv) Existing As:** Ear /Eye , TMJ Coil

Amended as : Point Deleted

**TOTAL COILS- 15 Nos**

**Existing as: Special application package:** The vendor must provide their specialized and optimized imaging sequences with post processing packages for (i) neuro, (ii) body, (iii) oncology, (iv) cardiac, (v) angio, (vi) ortho, (vii) pediatric and other applications. For example, this includes packages like optional/ premium/ advanced/ application suite/ etc.

**Amended as : Point Deleted**

**Neuro application, Sub Point (ii) Existing As:** Complete MRI solution including audio-visual projection (3D capable) system.

**Amended as :** Complete MRI solution including audio-visual projection system.

**Neuro application, Sub Point (iii) Existing As:** The audio-video projection system should have the capability to project 3D images/movies to the subject, and should be compatible with the 32 channel head coil, and should include all attachments that may be required for complete integration.

**Amended as:** The audio-video projection system should have the capability to project movies to the subject, and should be compatible with the 32 channel head coil, and should include all attachments that may be required for complete integration.

**Neuro application, Sub Point (ix) Existing As:** The system should have the option of integrating binocular eye-tracker, and should give good quality MR compatible eye-trackers (binocular), along with eye-tracking software at the console (on a separate PC/laptop).

**Amended as : Point Deleted**

**Neuro application, Sub Point (j) Existing As: Productivity improvement Techniques,** with availability of "Previous Scans" such as Smart Exam/ Auto Align /Ready for Brain, breast, joints including shoulder, hip, knee etc. to be provided. Integrated exam planning should be possible. All filming, viewing and export options should be possible.

**Amended as:** (1) Workflow improvement Techniques with availability of "Previous Scans" such as Smart Exam/ Auto Align /Ready for Brain applications to be provided.

(2) Integrated exam planning should be possible. All filming, viewing and export options should be possible. Optional price for breast, joints including shoulder, hip, knee and for other applications to be provided.

(Price for point (2) will not be considered for L1 calculation).

**Neuro application, Sub Point a (4) Existing As:** Susceptibility weighted imaging I SWANI  
Venous BOLD.

**Amended as:** Susceptibility weighted imaging with phase information (i.e.  
SW1/SWIp/eSWAN 2.0)/Venous BOLD Imaging.

**Point E Vascular Imaging Sub Point e.** Time resolved angiography with contrast kinetics like 4D TRACKS/ 4D BLISS/ KTblast or equivalent:

**Amended as :** Time resolved angiography with contrast kinetics like 4D TRACKS/ 4D BLISS/KTblast / TRICKS /TWIST or equivalent.

**Point i. Prostrate Imaging Existing As:** Prostrate Imaging with Parametric cards (Ktrans, Kep, Ve, Vp).

**Amended as :** i) Prostrate Imaging with Parametric cards (Ktrans, Kep, Ve, Vp)- quote this as optional and price will not be included in calculation for L1.

**Point 10 .Additional software and hardware & Accessories Sub Point Existing as (i):** Multi Nuclear Spectroscopy: Facility of P31 Imaging & Spectroscopy. Double tuned surface coil for P31 and H1 Imaging and spectroscopy for liver, calf muscle, heart, etc.

**Amended as:** Multi Nuclear Spectroscopy: Facility of P31 Imaging & Spectroscopy. Double tuned surface coil for P31 Imaging and spectroscopy for brain & breast.

**Point 10 .Additional software and hardware & Accessories Sub Point Existing as (v)"Silent MRI" sequence package.**

**Amended as :** "Silent MRI" sequence package. Please specify the decibel levels for silent MRI and list all the sequences with their acquisition time where silent MRI is not available.

**Point 11. Additional Workstation Sub Point Existing as (b):** Each Client to have at least 19 inch LCD TFT 2MB pixel color monitor, with hard disk of at least 120 GB for at least 100,000 image storage in 256 matrix, and 4 GB RAM capacity- Total five Clients Each of the client should enable printing in laser film camera and color printers. Total 5 client hardware and software to be provided.

**Amended as :** desktops with i7 , 6<sup>th</sup> generation , Intel Processor , 8 GB DDR3 RAM, 500 GB SSD (Solid state Drives) 1 TB HDD 24" LED Medical Grade Monitor - Total five Clients Each of the client should enable printing in laser film camera and color printers. Total 5 client hardware and software to be provided.

**Point 11. Additional Workstation Sub Point Existing as (c):** The offered System is to be networked with the existing "Department Network" including PACS and appropriate anti-virus protection to be provided by the Vendor. The vendor should provide picture storage and archival system, to store and retrieve MR images.

**Amended as :** The offered System is to be networked with the then existing "Department Network" including PACS. Appropriate anti-virus protection to be provided by the Vendor. The vendor should provide picture storage and archival system, to store and retrieve MR images.

**Point 11. Additional Workstation Sub Point Existing as (e):** To be quoted optionally, facility to view images/reports on mobile services (through throughVPN) and web clients. 2D/3D image viewing with basic image manipulation tools to be quoted. The package should permit 5 concurrent users to view images. One broadband connection with Static IP(2MBPS) and one server to be provided forVPN. The monthly recurring expense for broadband / VPN to be provided by Vendor. The hardware for 5 clients to be provided. Price to be quoted separately.

**Amended as :** Point Deleted

**Point 11. Additional Workstation Sub Point Existing as (f):** To be quoted separately, three RIS software / licences for registration, DICOM worklist, integrated with offered PACS, with registration, sticker printing, schedule integrated appointment modules, and corresponding hardware for RIS also should be included .Module for scheduling and imaging Modality, exam date and time will be fixed during scheduling of the exam Appointment letter with patient instructions will be printed from RIS and given to patient for OPD patients, ward patients, critical patients and VVIPs/DWL licences to plan, perform and document examinations Statistics of exams, etc.

**Amended as : Point Deleted .**

**Point 11. Additional Workstation Sub Point existing as (g):** Comprehensive Radiology reporting software having normal reports of MRI and CT of various body parts.

i It should be possible to edit the reports and generate customized reporting formats

ii It should be able to assign a unique ID for each report

iii. It should be possible to search for the reports upto at least one year by entering patient details/ date of examination, etc.

iv. It should be possible to sort out the reports on daywise basis for purpose of archiving them on CD/DVD

**Amended as : Point Deleted**

**Point 13. Accessories (a)** Existing as : DICOM compatible Dry Chemistry laser camera with integrated processor for filming from main console & workstation. The camera should be capable of printing on films of 14" x 17", 11" x 14" and 10" x 8" sizes in a resolution of 500 or more dpi. It should be possible to connect other imaging modalities to the printer. 1000 compatible films to be provided.

**Amended as:** DICOM compatible Dry Chemistry laser camera (2 No.s) with integrated processor for filming from main console & workstation. The camera should be capable of printing on films of 14" x 17", 11" x 14" and 10" x 8" sizes in a resolution of 600 or more dpi. It should be possible to connect other imaging modalities to the printer. 2000 compatible films to be provided. Films to be provided after installation as and when required by the user. Main equipment (MRI) in the emergency block to be networked with cameras of CT and DRF camera in the emergency block.

**Point 13. Accessories (e)** Existing as : Dual/triple Head MRI-Compatible Pressure Injector (minimum 2000 cost line) with 500 sets of syringes (Two syringes & connecting tubing per set). It should be compatible with 10, 15, 20 & 30 ml pre-filled contrast syringes and 50 ml syringes for both saline and contrast.

**Amended as :** Dual Head MRI-Compatible Pressure Injector ( minimum 2000 Gauss line) with 1000 sets of syringes (Two syringes & connecting tubing per set). It should be compatible with 50 ml syringes for both saline and contrast.

**Point 13. Accessories (H) Existing as :** Two Non-ferromagnetic MR compatible patient transfer trollies of international make should be provided. (in case of dockable table, one extra trolley to be supplied).

**Amended as :** Two Non-ferromagnetic MR compatible patient transfer trolleys should be globally repudiated make.

**Point 13. Accessories (g) Existing as :** Two laptops with 512GB storage, 2 GB RAM & Windows 8 operating system (of reputed make) with laser Printer, UPS & dictaphone.

**Amended as :** Three desktops with i7 , 6<sup>th</sup> generation , Intel Processor , 8 GB DDR3 RAM, 500 GB SSD (Solid state Drives) 1 TB HDD 24” LED Medical Grade Monitor with three laser Printers of 600 dpi, UPS & dictaphone.

**Point 13. Accessories (r) Existing as :** SPECIFICATION FOR MRI COMPATIBLE ANAESTHESIA MACHINE (1000 Gauss Line) & MRI COMPATIBLE MONITOR (2000 Gauss Line)

**Amended as :** SPECIFICATION FOR MRI COMPATIBLE ANAESTHESIA MACHINE (1000 Gauss Line) & MRI COMPATIBLE MONITOR or (1000 Gauss Line)

**Point 13. Accessories Point B MRI Compatible Monitor Sub Point ii Existing as :** Should be MRI safe at 2,000 Gauss , 3.0 Tesla and 4W/Kg SAR

**Amended as :** Should be MRI compatible (Safe will not be acceptable) at 1000 Gauss, 3.0 Tesla and 4W/Kg SAR.

**Point 14. Guarantee Sub Point ii: Existing as :** Software upgrades (where hardware upgrades are not required )like new pulse sequence, new application package etc. should be provided within one month after release worldwide (any country,viz. north America/ Europe/Germany etc).In case, the same is not provided in time, the parent company should undertake the responsibility to implement the same. This is to make sure that the machine stays updated with similar products for atleast 5years.

**Amended as :** Software updates (where hardware upgrades are not required )like new pulse sequence, new application package etc. should be provided within one month after release worldwide (any country,viz. north America/ Europe/Germany etc).In case, the same is not provided in time, the parent company should undertake the responsibility to implement the same. This is to make sure that the machine stays updated with similar products for at least 5years.



**Point 14. Warranty Period Sub Point i: Existing as:** The equipment should have 60months warranty from the date of handing over the fully functional unit of all coils and the accessories supplied(such as UPS,AC,Generator, etc) to the hospital against manufacturing defects of material and workmanship. The Helium Supply and cold head repairs (including replacement. If needed) should be included in the warranty period. The vendor should take care of the day-to-day running of the UPS, AC generator, etc. on 24 hr basis with manpower. The vendor should provide the cost of manpower separately for the 5+5 year period.

**Amended as :** The equipment should have 60months warranty from the date of handing over the fully functional unit of all coils and the accessories supplied(such as UPS,AC,Generator, etc)\ to the hospital against manufacturing defects of material and workmanship. The Helium Supply and cold head repairs (including replacement. If needed) should be included in the warranty period.

**Point 14. Warranty Period Sub Point iv: Existing as:** If a particular coil is not working for more than 3 days and due to which patient work suffers, the firm will, be asked to pay penalty of half-a- day beyond 3 days for each day that it is not working.

**Amended as :** If any particular coil is not working resulting in non functioning of a particular clinical application for more than 3 days it will be considered as downtime .

**Point 14 Post Guarantee Annual Comprehensive Maintenance Contract (CMC) (i) Existing as :** The post –warranty (after 5 years) CMC should be comprehensive and should include helium and cold head (repair and/ or replacement) + labour + spares for the complete system which includes all the accessories supplied such as UPS, Generator, AC, etc. with 24 hrs. manpower for operation (including all consumables like batteries for UPS, diesel for Generator, etc.) and maintenance for another 5 years. The vendor should provide the cost of manpower separately. This CMC should be quoted in Indian Rupees.

**Amended as :** The post –warranty (after 5 years) CMC should be comprehensive and should include helium and cold head (repair and/ or replacement) + labour + spares for the complete system which includes all the accessories supplied such as UPS, Generator, AC, etc. (including batteries for UPS) and maintenance for another 5 years. The vendor should provide the cost of manpower separately. This CMC should be quoted in Indian Rupees.

**Point 14 Guarantee(The price of post warranty 5 years CMC Shall be taken for price comparison ) Sub point (iii) Existing as :**The insurance should be done by the bidder to cover the losses, if any, due to force major conditions. The rate of post-warranty comprehensive CMC should be offered for at least five years by the bidder and be offered in Indian Rupees only.

**Amended as :** The rate of post-warranty comprehensive CMC should be offered for at least five years by the bidder and be offered in Indian Rupees only.

**Point 14 Guarantee (The price of post warranty 5 years CMC Shall be taken for price comparison ) Sub point (iv) Exist as :** If a particular coil is not working for more than 3 days and due to which patient work suffers, the firm will be asked to pay the penalty of half-a-day beyond 3 days for each day that it is not working.

**Amended as :** If a particular coil is not working resulting in non working of a particular clinical application for more than 3 days will be considered as downtime.

**15. Training Existing as :** One on-site engineer and application specialist to be available for a period of six months.

**Amended as :** One on site service engineer and one on site application specialist to be available for a uninterrupted continuously break period of two months with the team of both engineers will maintain log book of training provided to technical staff & doctors.

**Amendment regarding the Turnkey Works:**

**Details of Various Makes for Executing Turnkey Activities for Installation, Testing & Commissioning Medical Equipment viz. CT Scan, MRI, DSA, Digital Radiography, Digital Radiofluoroscopy, Cath Lab., PET/CT, Gamma Knife, Gamma Camera, Heamodialysis Machines, RO Plant, any Lab. Equipment or any other Medical Equipment requiring such activities at Safderjung Hospital Project.**

**LIST OF APPROVED MAKES : CIVIL WORKS**

S.No	Material	MANUFACTURERS
1	Doors & Windows fixtures/ Fittings	<i>Dorma, Godrej, Ozone, Austavision</i>
2	Door Closer / Floor spring	<i>Ozone, hettich, Dorma, Godrej,</i>
3	Aluminium Sections.	Hindalco, Jindal, <i>BALCO, Alom</i>
4	Clear Glass/ Clear Float Glass/ Toughened Glass	Saint Gobain(SG), Modi, <i>Asahi, Glaverbel</i>
5	Laminates	Formica, Decolam, Century, Marino, <i>Greenlam</i>
6	Synthetic Enamel Paints	Berger, Asian, ICI , Nerolac, Shalimar
7	Oil Bound Distemper	Berger, Asian, <i>ICI</i> , Nerolac, Shalimar
8	Cement Paint	Snowcem plus, Berger, Nerolac, <i>Asian, ICI</i>
9	Plastic Emulsion Paint	<i>Berger</i> , Asian, ICI , Nerolac, Shalimar
10	Other Paints/Primers	Berger, Asian, ICI , Nerolac, Shalimar
11	MS Pipe/ Sections	Jindal Hisar, Prakash-Surya, BST, Kalinga, Tata
12	Polycarbonate Sheets	GE, <i>Macrolux, Plastic, Vergola, Skyarch, Polytechno</i>
14	Wooden Fire Check Doors	Navair, Pacific Fire Control, Kutty Promat, Sukri

15	Metal Fire Check Doors	Navair, Shakti- Met, Godrej, Sukri, Pacific Fire Control
16	Ceramic Tiles	Johnson, Somany, Kajaria, Nitco, <i>Bell, Hindustan,</i>
17	Pre-Laminated Particle Board	Novopan, Greenlam, Kitlam, Marino, <i>Century, Archid ply</i>
18	Flush Door Shutters	Century, Kitply, Green Ply, <i>Duro</i>
19	Glazed Tiles	Bell, Somany, Johnson, Kajaria, <i>Nitco</i>
20	PVC Water Stops	<i>Prince/Supreme/Finolex/BASF</i>
21	White Cement	Birla White, J.K., <i>Grasim</i>
22	Dash Fasteners./Anchor bolts	Hilti, Fischer, Bosch,
23	Stainless Steel Bolts, Washers and nuts	Kundan , Puja , Atul
24	6mm thick Reflective Glass	Glaverbel, Glavermas, Saint Gobain, <i>Asahi</i>
25	Door Locks	ACME, Godrej, <i>Dorma</i>
26	Door Seal – Woolpile Weather Strip/ <i>Acoustic seal</i>	Anand -Reddiplex, <i>Enviroseal, Viper</i>
27	Aluminium Grill	Hindalco, Jindal
28	Vitrified Tiles	Naveen, Bell, Kajaria, Somani, <i>Nitco, Johnson, Euro</i>
29	Aluminium Cladding sheets	Alstrong , Alpolic, Alucobond, Alstone International, Aludecor Lamination
30	Stainless steel D-handles	D-line, Giesse, Dorma, Dorset, ozone
31	Stainless Steel Pipes/Flats	304 Grade (as approved by Engineer)
32	Structural Steel	TATA, SAIL, RINL, JINDAL
33	Epoxy Flooring/ wall coating	Fosrock, Beck, Famaflor, <i>Araldite, STP, Sika, BASF</i>
34	Ply board	Greenply, Kitply, Century, Archid, Marino, <i>Duro</i>
35	PVC Flooring	LG, Tarkett, Responsive , <i>Armstrong, Gerflor</i>
36	SS Railing	<i>Ozone, D-Line, Jindal,</i>
37	Fire rated door closer/Mortice Lock/ Door Co-ordinator	Dorma, Becker F.S. Australian or approved equivalent
38	Gypsum Board System	Gyproc (Saint Gobain), Lafarge, Boral, <i>Hilux, Aerolite</i>
39	Adhesive for Door Work	<i>Fevicol/ Vamicol/ Dunlop/ Piditite/ Sika/ Thermoshield</i>
40	Epoxy Paint	<i>Nerolac/ Shalimar/ cico/ Fairmate/ sika/ BASF/ Berger/ Asian/ Pidilite</i>
41	Polysulphide sealant	Pidilite/ Fosroc/ Choksey/chematal rai/ cico/ sika, MC Bouchemie, BASF, STP
42	Glass Doors (Motorised)	<i>DORMA/ Hafle/ Ozone</i>

43	Calcium silicate boards	<i>Hilux/ Aerolite, Armstrong</i>
44	Calcium Silicate Tiles	<i>Hilux/ Aerolite, Armstrong</i>
45	Texture Paints	<i>Spectrum/Heritages/ICI Dulux/Asian</i>
46	Wall care putti	<i>J.K. White/Birla/Gyproc wall putty</i>
47	Frameless glass partition fixtures	<i>Dorma/Hafle/Ozone</i>
48	U-PVC Windows	<i>Fenesta, Window Magic, Aluplast</i>
49	Toilet Cubicles	<i>Greenlam, Marino or approved equivalent</i>
Note:	<p>If the makes given in the list are not available, other equivalent makes can be considered subject to approval by the Purchaser/HSCC based on credentials of the company and test certificates of the product, subject to price adjustment.</p> <p>Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.</p>	

#### LIST OF APPROVED MAKES: PLUMBING WORKS

Sl.No	Material	Relevant IS Code	MANUFACTURERS
1	Vitreous China Sanitary ware	2556	Kohler, Roca, American Standard, Toto
2	White Glazed Fire Clay Sink	771	Sanfire, Cera, Neycer, Hindware.
3	Stainless Steel Sink		Jayna, <i>Neelkanth</i> , Commander, Nirali
4	Plastic seat cover of W.C	2548	Kohler, Roca, American Standard, Toto
5	Geyser		Racold, Venus, Voltas, Usha Lexus, Jaguar, Havells
6	C.P. Fittings Mixer/Pillar taps Washers, C.P. brass accessories ,CP Angle Valve,Bibcocks,CP waste	1795/4291/4827	Kohler, Roca, American Standard, Toto
7	Centrifugally /Sand cast iron pipes & fittings	3989/1729	Neco, Hepco, <i>SKF</i>
8	G.I. Pipes	1239 Part I	Jindal-Hissar, Tata, Prakash-Surya
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto, R
10	Stoneware pipes & Gully Traps	651	IS Marked pipes
11	Mirror		Atul, Modi guard, <i>Asahi</i> , <i>Saint Gobain</i>
12	Hand drier		Kopal, Automat, Euronics, <i>Utech</i>

14	Insulation of Hot water pipes		Vidoflex insulation, Superlon, <i>Thermaflex, Kaiflexkaimenn</i>
15	D.I pipes		Jindal, Tata, Electrosteel., <i>Kesoram</i>
16	PVC/UPVC pipes & fittings		Finolex , Prince,
17	Infrared Sensor operated Faucets/Urinals		Kohler, Roca, American Standard, Toto
18	Gratings, Strainers, Cleanouts etc		Neer Brand (Sage Metals), <i>ACO</i>
19	Decorative bath room fittings		Jaquar (Florentine range), Aquabaths, Kohler
20	HDPE pipes and fittings		Oriplast, So-Soon, Finolex, Gebreti, Nosil,
21	CPVC pipe, fittings and Solvent		Flowguard, Astral, Prince,
22	Copper Pipe		Raj Co., Maxflow, <i>Mehta Tubes</i>
23	Copper Fittings		Viega, IBP, <i>Yorkshire, Mehta Tubes,</i> <i>Rajco</i>
24	Lab drainage		Viega, Duraline, Rex
25	Lab Fittings		Vijay, Viega
26	SS pipe(EN-10312) & press type fitting		Viega, Jindal
27	Oxilyte (Mixed oxident)		Oxybee Solutions, I2M Technologies, Faith Innovations

Note: Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

#### LIST OF APPROVED MAKES : FIRE FIGHTING WORKS

Sl.No	Material	Relevant ISI Code	MANUFACTURERS
1	G.I./M.S. Heavy class pipe	1239/3589	Jindal-Hissar, Tata, Prakash -Surya,
2	Portable Fire Extinguisher	2171	Minimax, <i>Safex</i> , Ceasefire, Newage,
3	Sprinkler Heads		
4	Pendent type		<i>Tyco, Viking, HD, Grinnel</i>
5	Side wall type		<i>Tyco, Viking, HD, Grinnel</i>
6	Sprinkler Side wall extended through		<i>Tyco, Viking, HD, Grinnel</i>
7	Standby battery lead acid		Exide, Standard, Amco
8	Cables		As per Electrical Works
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto, <i>R</i>
10	DI pipes		Jindal, TATA, Electrosteel, Kesoram
11	Pipe coat material (Pipe protection)		<i>Pypkote Integrated water proofing co. Madras/ coaltek Rustech products (P) Ltd. Syndcate Enclave, Dabri/Makphall</i>
12	Fire Man's Axe		<i>Safeguard/safex/Newage/Gunnebo</i>

Note: Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

#### LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM

Contractor shall use the materials of approved make as indicated below unless specified in BOQ or as approved by the HSCC electrical incharge. The contractor shall ensure the correct selection of the approved make meeting the specifications and application duties. Before placing order for procurement, the sample of approved make shall be got verified for its suitability to the specification and application duty. However, HSCC electrical engineer (approving authority) reserves the right to opt for the best preferred listed make. The contractor shall quote the rate for the material and equipment as per the list of approved makes and equipment as per the list of approved makes. In the event of the contractor wants to use alternate makes other than those stipulated for any reason , the contractor can send a proposal after ensuring that what he proposes at the least meets both the quality and safety standard of the stipulated makes, and the financial benefit that will accrue to the client. He shall also stand full guarantee to his alternate proposal. The alternate makes can be used only after an approval accorded by the client/HSCC., whose decision will be final in this matter. Any financial implication incurred related with inspection will be borne by contractor.

S.No.	Item Description	Make list
1	Timers in Distribution board	Legrand/ Hager/ Siemens/ ABB/ GE
2	MCB distribution Boards	L &T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
3	MCB	L &T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
4	Rewirable porcelain wire	CPL, KEW
5	Data and Voice wire	Finolex, Delton, Skyton, Anchor, L&T, AT&T, Avaya
6	RCCB	L & T Hager/ Legrand/ Siemens , GE/Schenider (Merlin –Gerin)
7	ELCB/ELMCB	Merlin Gerin-multi 9, Legrand, Hager, Siemens
8	11 KV LT XLPE cables	RPG/ Polycab/ NICCO/ UNIVERSAL/Rallison/KEI/Skytone/ Havells
9	Copper Control cable	Finolex/ Polycab/ NICCO/ Universal/ National/ Rallison/RR Cable
10	Cable Joints (Heat Shrinkable)	Raychem/3M/Cabseal
11	Cable Trays	Steelways/ Bharti/ Unitech /Maheshwari/or approved by HSCC
12	Galvanized/PVC Raceways and raceways accessories	Steelways/ Bharti/ Schneider(MG)/Legrand

13	Light fitting	Philips/ GE/ Crompton Greaves
14	fancy LIGHT FITTING	Anchor(Panasonic )/ Twinkle/Decon/Ankur
15	Lamps	Philips/ Osram/ GE/Anchor (Panasonic)/Perlite
16	GI / MS conduit ISI marked	BEC/ AKG/ Steel Kraft
17	PVC conduit	BEC/ AKG
18	Steel conduit accessories (ISI as approved sample)	Sharma sales corporation, super sales corporation or equivalent.
19	Modular Metal box for switch /socket	Havells/ MK/MDS/Anchor Roma/Northwest
20	Copper conductor FRLS PVC insulated wires ISI marked	National/ Finolex / R R cable/Rallison/Skytone/lap/Bonton
21	Modular Switches & sockets Outlets	Havell's ( Crabtree)/ MK- Wraparound/Hagger/Wipro Legrand (Myrius/ Anchor-Roma(Tersa, woods, viola)/ Northwest
22	Metal clad Socket outlets With boxes	L & T Hager/ Siemens/ Merlin Gerin/ ABB MDS / BCH /Havells
23	UPS system	PCI LTD/ Siemens/ Etone powerware/Emerson/APC (Schneider)
24	Electronic Ballast	Philips/ Wipro/Osram / Bajaj
25	Ceiling fans	Crompton Greaves/ Bajaj/ Orient/ Alastom/ Usha
26	Main PC with CPU monitor	HP/ Compaq/Del
27	PVC Tape	Steel Grip
28	Batton Holder,Angle holder, Ceiling Rose	Anchor

29	Exhaust Fan with Gravity Louvers	Usha Lexus/Orient/ Crompton/Industrial-Almonard/ GEC
30	TV Cable- Co axial	Finolex, airtech, bhansali
31	Chemical Earthing	Ashlok, Erico, Pioneer, Nimbus,JK Earthing
32	LCD/LED Monitor	Sony, Panasonic, Samsung

LIST OF APPROVED MAKES AND MANUFACTURERS

The subcontractors/makes/brands of equipment listed below are approved for installation.

All items to be used in the works samples, catalogues and specifications are to be submitted by the contractor for approval of the Purchaser/HSCC. Only approved makes shall be used in the works. The approved samples shall be kept in the custody of the Purchaser/HSCC for comparison.

S.No	Material/Item	Approved Makes
1	Precision AC units	Emerson/Blue box/Stulz/Hiross
2	Window/split AC	Carrier /Hitachi/Voltas/Bluestar/Daikin/Ogeneral
3	VRV/VRF	Carrier /Hitachi/Daikin/Ogeneral
	Ducting & Grilles	
4	Factory fabricated duct	Zeco/ Ductofab/Rolastar/Technofab
5	G.I. Sheet Metal Duct	Jindal /National/ Tata/Sail
6	Spiral duct	Atco/Seven Star
7	Grilles/Diffusers/Volume Controller	Ravistar/Caryaire/ Mapro/Dynacraft/Airmaster
8	Fire Dampers UL listed	Caryaire/Dynacraft / Ravistar/Ruskin
9	Sound Attenuator	Caryaire/Dynacraft/Ravistar/Trox
10	G.I. Sheets	TATA/SAIL/Jindal/Bhushan Steel
11	Aluminium Sheets	Balco/Nalco/Hindalco
12	Stick Pins	Prima Seal/Air flow
	Pipes	
13	G.I.	ITC/ Jindal Hissar/Tata/SAIL/HSL
14	M.S. upto 150 mm	ITC/ Jindal Hissar/Tata/SAIL/HSL
15	M.S. 200 mm and above dia factory rolled	ITC/ Jindal Hissar/Tata/SAIL/HSL
	Valves	
16	Butterfly Valves	Advance/Audco
17	Motorised butterfly valve(actuator)	Belimo/Honeywell/Invensys/siemens



18	Non Return Valve	Advance/Kirloskar/Audco
19	Balancing Valves	Advance/Audco/Danfoss/Honeywell
20	Gate/Globe Valves	Leader/Divine/Sant/Bankim Sarkar /Zoloto
21	GM valve upto 40mm	Leader/Divine/Sant/Bankim Sarkar /Zoloto
22	Ball Valve with Y strainer	Rapid Control/Sant/Leader/Zoloto
23	Pressure independent Balancing valve	Danfoss/Flowcon/TA
	Accessories	
24	Y-strainer	Emerald/Sant/Rapid cool
25	Pressure Gauge	Fiebig/Emerald/H Guru/Japsin
26	Thermometer	Fiebig/Emerald/H Guru/Japsin
27	Flow Switch	Rapid Control/Anergy
28	Automatic Air Vent	Rapid Control/Anergy
29	Suction Guide	Anergy/ Rapid Control/Flowcon
30	Filters(pre,fine Hepa)	Thermadyne/Spectrum/Kirloskar /Anfilco/Johnflower/Dynafilter
	Insulation	
31	Expanded Polystyrene	Beardsell Ltd./ BASF/Styrene Packing/ Indian Packaging Industries/ Lloyd
32	Glass Wool	FGP Ltd./UP Twiga/Kimmco / Owens Corning
33	Polyurethane Foam	Malanpur /Superurethane
34	Crossed linked Polyethylene Foam	Trocellene / Aeroflex/Armacell/
35	Closed Cell Elastomeric Insulation	K-flex /Vedoflex/Armacell
36	Non woven fibre material	Mikron/ Du pont
37	Mineral wool	Rockwool India Pvt Ltd,
38	Pre-moulded PUF section for pipe & pipe supports	Malanpur/ Lloyd
39	Fibreglass rigid Board/Pipe section	FGP Ltd./UP Twiga/Kimmco / Owens Corning
40	Aluminium Tape	Johnson/Birla 3M/Garware
41	Thermostats	Honeywell/Johnson controls/Belimo/Danfoss/Siemens/Oventrop
42	Humidistat	Honeywell/Johnson control/ Belimo/Danfoss
	Miscellaneous	
43	V Belt	Dunlop/Fenner
44	Anchor fastners	Fischer/Hilti
45	Dash fastner	Fischer/Hilti
46	Welding rods	Advani/L&T
47	Wire Rope duct supporting arrangement	Gripple
48	Flexible pipe connection	Dunlop/Kanwal/resistoflex

49	Hessian Cloth (fire rated)	Navair/Pyrogaurd
50	Vibration isolator	Resistoflex, Dunlup, Kanwal
51	Copper Refrigerant Piping	Diamond/Star/Rajco

### **Turnkey Works For 3 Tesla MRI Unit**

The layout plans (with dimensions) allocated uploaded. Air-conditioning of appropriate strength/capacity (tonnage) in the area as required shall be done. Additional standby split air conditioner(s) of appropriate strength/capacity (tonnage) to be fixed in the main equipment rooms.

**Civil work:** In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor as shown in the layout plan after approval by Purchaser/HSCC shall be executed as per approved makes specified.

The walls of MRI Complex should be finished acrylic/plastic emulsion (approved makes) and should be finished with vitrified tiles (approved makes) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.

The flooring in the MRI complex should be as per regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (approved makes). Colour as approved by Purchaser/HSCC shall be provided.

Whole area of MRI Complex as in the layout plan shall be finished with fire resistant false ceiling material (approved makes). MRI Room PVC roll flooring with mineral fiber panel false ceiling and Aluminium suspension.

All the doors should be provided with necessary fittings with hydraulic type door closures (approved makes) and with Mortised locks (approved makes).

**Electrical work:** The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes mentioned. The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.

A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided & fixed by the hospital. Vendor shall do cabling from distribution panel up to the equipment. The switch gears (MCBs / ACBs/ MCCBs), L.T. distribution board for MCBs etc. (approved makes). Electrical wires should be of copper of different capacity as per the load (approved makes).

For Telephone wiring cables (approved makes). Telephones to be provided in all rooms with EPABX system having control in office.

Modular range Switches / Sockets of approved makes should be provided and fixed as per requirement. LED lights of suitable illumination should be provided of Phillips/GE/ Crompton/Syska make.

Light dimmers (down lighters) should also be fixed in the equipment room.

**Air conditioning:**

Split Air conditioners of reputed make (approved makes) to be provided by the vendor in whole complex as per requirements (to maintain appropriate temperature in the main equipment room & other rooms) and as per regulations of AERB.

Standby additional split air conditioners of appropriate strength/capacity (tonnage) to be fixed in the main equipment room

Hygrometer Nos.1 to be provided.

In-built or External De Humidifier in Equipment, Console and Examination rooms to be provided as per room layout.

**Fire Protection**

Non water based fire protection is to be integrated as per requirement. Fire extinguishers of appropriate types (approved makes) should be fixed in different rooms as per requirement. Heat detectors/hooters/photoelectric/smoke detectors (approved makes) shall be provided in all the rooms and corridors as per requirements. In case the expiry date of fire extinguishers is before the completion of 5 years comprehensive warranty period, extra set(s) of fire extinguishers will be supplied by the vendor till the completion of the 5 years comprehensive warranty period. Besides, any works required as per statutory/Delhi Fire Services norms shall be executed by the vendor.

The vendor to also install the following:

Audio visual Music systems for patient waiting areas.

Adequate Pest, insect and rodent control system to be provided and installed to ensure that area remains insect, pest and rodent free.

Music and Public Address system for calling/ informing the patients in the waiting areas.

**Furniture:-**

Following furniture (Godrej/Debono/Delite) will be provided:

Chairs with castors and armrests	2 nos.
Coil Rack for MRI	1 No.
Medicine Trolley	1 No.
Ultrasonic pest repellent equipment	1 no.
Insect killer equipment	1no.
Steel Storage Almirah	2 nos.
Overhead Storage(1.2x0.4x.6m) for CD storage	1 no.

In case any item missed out inadvertently, vendor shall provide the same. The price quoted by the bidders shall include all costs required for supply, installation, testing and commissioning of the equipment on turnkey basis and as per bid document.

**Item No. 2 : Digital Radiofluoroscopy****1. Existing Specification**

It should be FDA approved

**Amended**:- It should be US FDA approved

## 2. Essential Accessories

Existing Specification:- Dual head pressure injector with 2000 syringes

**Amended**:- Dual head pressure injector US FDA approved with 2000 syringes

## 3. Additional point need to Add

Existing Specification: At least of the three major components i.e. x-ray tube, x-ray generator and detector, at least two should be from the same manufacturer.

**Amended**:- Among three major components tube/generator /detector at least two component must be manufactured by quoting vendor themselves.

## **Turnkey Works For Digital Radio-Fluoroscopy System**

The layout plans (with dimensions) allocated has already been uploaded earlier. Air-conditioning of appropriate strength/capacity (tonnage) in the area as required shall be done. Additional standby split air conditioner(s) of appropriate strength/capacity (tonnage) to be fixed in the main equipment rooms.

**Civil work:** In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor as shown in the layout plan after approval by the Atomic Energy Regulatory Board (AERB) shall be executed as per approved makes specified.

The walls of whole Complex should be finished acrylic/plastic emulsion (approved makes) and should be finished with vitrified tiles (approved makes) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.

The flooring in the Fluoroscopy/DR complex should be as per AERB regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (approved makes). Colour as approved by Purchaser/HSCC shall be provided.

Whole area of Complex as in the layout plan approved by the AERB shall be finished with fire resistant false ceiling material (approved makes).

All the doors should be provided with necessary fittings with hydraulic type door closures (approved makes) and with Mortised locks (approved makes).

Main door of the complex in the corridor shall be in glazed aluminum powder coated with adequate thickness of glass with etching work wherever required. Colour of aluminium powder coating shall be got approved from Purchaser/HSCC before execution of works.

Lead Glass window of adequate size will be fixed as per AERB guidelines in the console room. Proper signage both external and internal to be done.

**Electrical work:** The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes

mentioned. The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.

A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided & fixed by the hospital. Vendor shall do cabling from distribution panel up to the equipment. The switch gears (MCBs / ACBs/ MCCBs), L.T. distribution board for MCBs etc. (for approved makes refer Amendment no. XX dated 04.2.2016). Electrical wires should be of copper of different capacity as per the load (approved makes).

For Telephone wiring cables (approved makes). Telephones to be provided in all rooms with EPABX system having control in office.

Modular range Switches / Sockets of approved makes should be provided and fixed as per requirement. LED lights of suitable illumination should be provided of Phillips/GE/ Crompton/Syska make.

**Air conditioning:**

Split Air conditioners of reputed make (approved makes) to be provided by the vendor in whole complex as per requirements (to maintain appropriate temperature in the main equipment room & other rooms) and as per regulations of AERB.

Standby additional split air conditioners of appropriate strength/capacity (tonnage) to be fixed in the main equipment room.

Hygrometer Nos.1 to be provided.

In-built or External De Humidifier in Equipment, Console and Examination rooms to be provided as per room layout.

**Fire Protection**

Non water based fire protection is to be integrated as per requirement. Fire extinguishers of appropriate types (approved makes) should be fixed in different rooms as per requirement. Heat detectors/hooters/photoelectric/smoke detectors (approved makes) shall be provided in all the rooms and corridors as per requirements. In case the expiry date of fire extinguishers is before the completion of 5 years comprehensive warranty period, extra set(s) of fire extinguishers will be supplied by the vendor till the completion of the 5 years comprehensive warranty period. Besides, any works required as per statutory/Delhi Fire Services norms shall be executed by the vendor.

The vendor to also install the following:

Audio visual Music systems for patient waiting areas.

Adequate Pest, insect and rodent control system to be provided and installed to ensure that area remains insect, pest and rodent free.

Music and Public Address system for calling/ informing the patients in the waiting areas.

**Furniture:-**

Following furniture (Godrej/Debono/Delite) will be provided:

Chairs with castors and armrests

2 nos.

Overhead Storage(1.2x0.4x.6m) for CD storage  
Medicine Trolley

1 no.  
1 No.

### **Item No. 3 : Mobile Digital Radiography**

1. **Existing point** The unit should be compact easily transportable digital mobile radiographic unit with articulated or telescopic arm.

Amendment-The unit should be compact easily transportable digital mobile radiographic unit with articulated or telescopic arm and built in monitors.

### **Site Layout Plan**

The site layout plan of Radiology Deptt. of the New Emergency Block is enclosed.

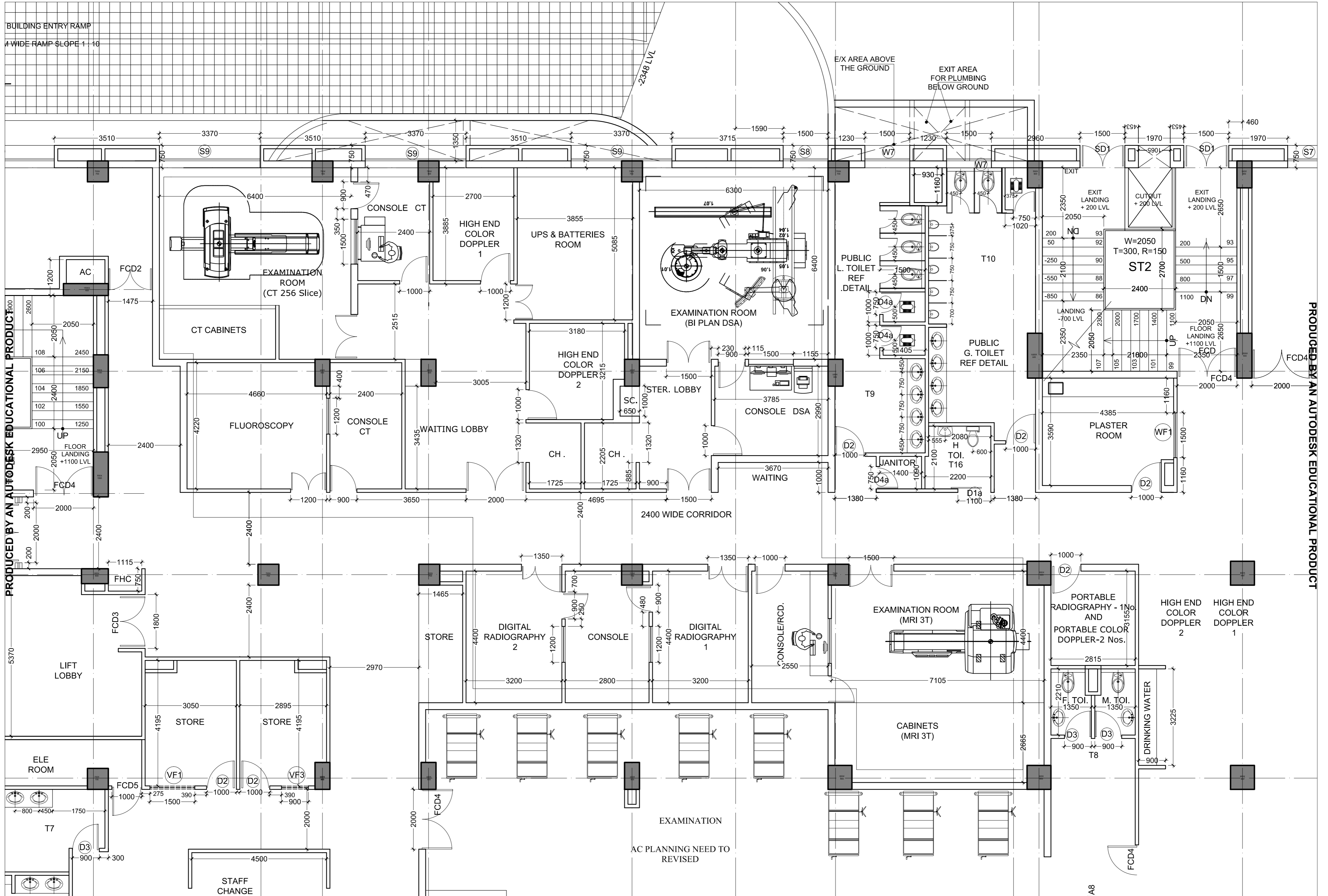
**It is the vendors/suppliers responsibility to do the needful for installation, testing and commissioning of Medical Equipment as per terms and conditions of the Bid Document including Turnkey Works mentioned in Section-VII of the Bid Document.**

**Bid submission date is changed from 07.11.2016 to 15.11.2016.**

All other tender terms and conditions remain unchanged.

Amendment to be issued will be uploaded on websites [www.tenderwizard.com/HSCC](http://www.tenderwizard.com/HSCC) & [www.hsccltd.com](http://www.hsccltd.com).

**Medical Superintendent  
Safderjung Hospital & VMMC,  
New Delhi.**



BUILDING ENTRY RAMP  
A WIDE RAMP SLOPE 1 : 10

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EXAMINATION  
AC PLANNING NEED TO REVISED