

## Schedule No. 04 - Digital Subtraction Angiography (Rfx no. 3000002192)

Sl. No	Tender Page & Para	TENDER SPECIFICATION	NAME OF THE FIRM	REPRESENTATION RECEIVED FROM THE FIRMS	COMMITTEE RECOMMENDATION
1	Page 74	State of art, latest model, USFDA approved, <b>AERB Approved</b> , and Ceiling suspended C-arm, Digital Subtraction Angiography (DSA) system with flat panel detector Technology, Rotational Angiography, 3D angiography and CT imaging suitable for vascular and non-vascular interventional procedures should be quoted.	Siemens Healthcare	Request you to amend as " State of art, latest model, USFDA approved, AERB Approved, and <b>Ceiling/Floor suspended C-arm</b> , Digital Subtraction Angiography (DSA) system with flat panel detector Technology, Rotational Angiography, 3D angiography and CT imaging suitable for vascular and non-vascular interventional procedures should be quoted." <b>Justification:</b> Ceiling/Floor both the system can have the same functionality in terms of CT Imaging, 3D Imaging, and Complete Body Coverage. Moreover Floor systems can be upgraded as Hybrid OR in future due to clear ceiling space, free from dust & rails.	State of art, latest model, USFDA approved, and Ceiling suspended C-arm, Digital Subtraction Angiography (DSA) system with flat panel detector Technology, Rotational Angiography, 3D angiography and CT imaging suitable for vascular and non-vascular interventional procedures should be quoted.
2	Page 74	Angiography (DSA) system with flat panel detector Technology, Rotational Angiography, 3D angiography and CT imaging suitable for vascular and non-vascular interventional procedures should be quoted.	WIPRO GE HEALTHCARE	Change as:- State of art, latest model, USFDA approved, AERB Approved, and <b>Ceiling/Floor mounted C-arm</b> <b>Justification:</b> - All type of interventional procedure can be performed on floor mounted system.	<b>Model which do not have AERB Approval shall be supplied with the undertaking that the supplier shall be responsible for obtaining the AERB Type approval of the system within reasonable time, at no cost nor liability to the institute.</b>
3			Philips India Ltd	State of art, latest model, USFDA approved, <b>AERB/NOC from AERB Approved</b> , and Ceiling suspended C-arm, Digital Subtraction Angiography (DSA) system with flat panel detector Technology, Rotational Angiography, 3D angiography and CT imaging suitable for vascular and non-vascular interventional procedures should be quoted.	
4	Page 74 Para 1.1	<b>1. C-Arm</b> <b>1.1</b> Ceiling suspended C-arm with motorized movements.	Siemens Healthcare	Request you to amend as " <b>Ceiling/Floor suspended</b> C-arm with motorized movements."	no change considered
5	Page 74 Para 1.3	<b>1. C-Arm</b> <b>1.3</b> C-arm RAO/LAO angulations of minimum 120 degree.	WIPRO GE HEALTHCARE	Change as:- C-arm RAO/LAO angulations of <b>minimum 107 degree</b> <b>Justification:</b> - Angulations upto 100 degree fulfill requirement of all the interventional procedure Request you to amend as " X-Ray tube should be dual focus with 0.3mm of smallest focal spot and should be capable of pulsed fluoroscopy with atleast 80KW or more tube power output." <b>Justification:</b> Minimum 80KW tube power is required for radiography to acquire max. Penetration in with higher spatial resolution. Allowing excellent imaging in high density organs & provides system stability for longer procedure. Smaller focal spot provides better spatial resolution with excellent soft tissue imaging.	no change considered
6	Page 74 Para 4.1	<b>4. X-Ray Tube</b> <b>4.1</b> X-Ray tube should be dual focus and capable of pulsed fluoroscopy.	Siemens Healthcare	<b>Justification:</b> Minimum 80KW tube power is required for radiography to acquire max. Penetration in with higher spatial resolution. Allowing excellent imaging in high density organs & provides system stability for longer procedure. Smaller focal spot provides better spatial resolution with excellent soft tissue imaging.	no change considered
7	Page 74 Para 4.2	<b>4. X-Ray Tube</b> <b>4.2</b> Anode heat storage capacity should be 5 MHU or above with latest cooling technology.	WIPRO GE HEALTHCARE	Change as:- Anode heat storage capacity should be <b>3.7 MHU or above</b> with latest cooling technology <b>Justification:</b> - we offered grid pulse tube with very heat dissipation capacity.	<b>4. X-Ray Tube</b>
8			ERBIS ENGINEERING CO. LTD	We request you to kindly amend the specs as "Anode heat storage capacity should be <b>3.0 MHU or above</b> with latest cooling technology."	<b>4.2</b> Anode heat storage capacity should be <b>2.4 MHU or above</b> with latest cooling technology.
9			Philips India Ltd	A flat panel detector of <b>40 x 30 cm or above</b> . Pixel size 160 micron or less.	



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9			Philips India Ltd	A flat panel detector of 40 x 30 cm or above. Pixel size 160 micron or less.	
10	Page 74 Para 5.1	5. Digital Imaging System 5.1 A flat panel detector of 43 x 43 cm or above. Pixel size 160 micron or less.	ERBIS ENGINEERING CO. LTD	We request you to kindly amend the specs as "A flat panel detector of 30 x 40 cm or above. Pixel size 200 micron or less."	5. Digital Imaging System 5.1 A flat panel detector of dimensions : 40 x 30 cm or larger. Pixel size 160 micron or less.
11			WIPRO GE HEALTHCARE	Change as: - A flat panel detector of 43 x 43 cm or above. Pixel size 200 micron or less Justification: - Image quality depends on high DQE value. Ge system offers 84% DQE, highest in the industry for high image quality.	
12			Siemens Healthcare	Request you to amend as "It should be capable of acquisition and processing in 1920x2048 matrix with at least 16 bit digitization and processing in 3D Imaging." Justification: In 3D Imaging, 16 bit digitization depth should be followed by 16 bit processing in order to attain same information with excellent clinical results. There should not be any loss of information while processing the rotational angio data.	
13	Page 74-75 Para 5.3	5. Digital Imaging System 5.3 It should be capable of acquisition and processing in 1920x2048 matrix with at least 16 bit digitization.	ERBIS ENGINEERING CO. LTD	We request you to kindly amend the specs as "It should be capable of acquisition and processing in 1536x2048 matrix with at least 16 bit digitization."	5. Digital Imaging System 5.3 It should be capable of acquisition and processing in 1500 x 2048 matrix with at least 16 bit digitization.
14			WIPRO GE HEALTHCARE	Change as: - It should be capable of acquisition and processing in 1024x1024 matrix with at least 14 bit digitization. Justification: - Image quality depends on high DQE value and dynamic range management technology. Ge system offers 84% DQE, highest in the industry for high image quality.	
15	Page 75 Para 5.6	5.6 Image storage capacity of at least 1,00,000 images in 1024x1024 matrix at 10/12 bits on the main system disk.	ERBIS ENGINEERING CO. LTD	We request you to kindly amend the specs as "Image storage capacity of at least 95,000 images in 1024x1024 matrix at 10/12 bits on the main system disk."	5.6 Image storage capacity of at least 90,000 Images in 1024x1024 matrix at 10/12 bits on the main system disk.
16	Page 75 Para 7.5	7. Control Console 7.5 System should have Latest radiation safety SW/HW package (care&clear/Allura clarity/or equivalent)	Philips India Ltd	System should have Latest radiation safety SW/HW package (care&clear/or equivalent)	no change considered
17	Page 76 Para 9.1	9. Installation 9.1 It should also include Lead lined door with lead glass peeping window, radiation warning indicators and signages, Aluminium false ceiling, GVT floor tiles and full height wall tiles. All turnkey work should comply with specified standards of the hospital.	Siemens Healthcare	Request you to amend as "It should also include Lead lined door with lead glass peeping window, radiation warning indicators and signages, Grid/Gypsum false ceiling, GVT floor tiles and full height wall tiles. All turnkey work should comply with specified standards of the hospital."	no change considered
18	Page 77 Para 12	Site Modification Works: a. Examination Room b. Console room c. DSA equipment / UPS room.	Siemens Healthcare	Request you to amend as " a. Examination room b. Console room c. Equipment room/UPS room d. Change room e. Scrub Area "	AMENDED PARA : SITE MODIFICATION - DSA UNIT attached.

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20	Page 78 Para 3	3 AIR CONDITIONING: Ductable Package air-conditioners may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface.	Siemens Healthcare	Request you to amend as "Total 13 TR (9 TR Working+4 TR Standby) Ductable Split Units/ Split Air-conditioning that is required for the DSA equipment, examination room, Patient prep and Console areas have to be installed by the vendor.. Humidity control should be effective to eliminate moisture condensation on equipment surface."	AMENDED PARA : SITE MODIFICATION - DSA UNIT attached.
21		Suggested by Bidder	Siemens Healthcare	Point to be added: 3. X-Ray Generator (Page No- 74) Tender Specification requested: The minimum continuous power should be 3000 W or more. Representation: To support longer procedures & uniformed IQ, It's imperative to have system supported with high rated x-ray generator	no change considered
	Page 77 Para 11	11. Instructions		11.1. There should be at least three installations of the quoted model in India. Satisfactory performance certificate by users on their letterhead must be attached.	11 Instructions 11.1 : There should be at least three installations of the quoted model globally. Satisfactory performance certificate by users on their letterhead must be attached.
22	Page 77 Para 11	11. Instructions		ADDED PARA	11.5 : Original Product Datasheet of main unit and all accessories, including third party items to be provided.
	Page 76 Para 8.	8. Essential Accessories		ADDED PARA	ADDED PARA 8. Essential Accessories 8.11 Crash cart - 1 no.

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### SITE MODIFICATION WORK-DSA UNIT

lights in each room shall be connected to the UPS to provide emergency lighting.



<b>2</b>	The electrical work shall include the following:	
a.	Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.	
b.	Switches light and power points should be of modular type and of standard make as listed below.	
c.	General lights –LED light fittings with minimum 500 Lux Illumination.	
<b>6</b>	<b>AIR CONDITIONING: minimum 14 TR ( 9 TR Working + 5 TR Standby)</b>	
a)	Duct-able Package air-conditioners may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface.	
b)	The outdoor units of AC should have grill coverings to prevent theft and damage.	
<b>2</b>	<b>Environment specifications:</b>	
a)	Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.	
b)	Temperature ranges: 22± 2° C in all areas except equipment room which shall be as per requirement of the equipment.	
c)	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.	
<b>7</b>	<b>Furniture:</b>	
a)	Revolving chairs height adjustable, medium-back with hand-rest – 4 NO.S	
c)	Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S	
d)	Drug trolleys - 1 NO.S	
e)	Patient trolley with rubber foam mattress - 1 NO.S	
f)	Name boards for all rooms	
g)	Tables for Workstation and Radiologist - 2 NO.S	
i)	Dustbins: 10 NO.S	
	All furniture items should be of standard make as mentioned in the table below.	
<b>8</b>	<b>Miscellaneous:</b>	
i.	LED X-ray Film viewer with adjustable brightness ; capable of holding 3 films of 14"x17" size. – <b>2 no.s</b>	
ii.	Cabling of Network (LAN) connectivity for camera system, console system, workstation, servers and computers etc.	
iii.	Cabling for Broadband connection: for REMOTE SERVICE of DSA system.	
<b>9</b>	<b>Fire alarm &amp; Detector:</b>	
i.	(i) Fire alarm (along with new/existing panel) should be provided in all rooms, wherever site modification is being carried out. Fire alarm shall comprise of fire panel, smoke / heat detectors. The vendor should discuss with the engineering section and the department before quoting for Site-Modification	
ii.	Fire extinguisher Dry CO2 type as required for the building safety. – One per room	
<b>10</b>	<b>LIST OF ITEMS AND SUGGESTED MANUFACTURERS.</b>	
	<b>ITEMS</b>	<b>PREFERRED MAKES</b>
A	FLOORING VITRIFIED TILES	-Somany, Kajaria , H&R Johnson, RAK india
B	PAINT	- Dulux, Asian Paints , Nerolac
C	PLUMBING	- Kohler, Jaguar , Grohe , Roca
D	SANITARY ITEMS	- CERA, Hindware, Parryware
E	ELECTRICAL	
1	CABLES	- Finolex, Havells ,V-Guard
2	SWITCHES	- Legrand, L&T, Crabtree , Roma
3	DISTRIBUTION BOX , MCB	- Legrand, L&T, Siemens, Havels
4	LIGHT FITTINGS	- Philips / Crompton / Wipro/syska
F	AIR CONDITIONING	- Daikin, Hitachi, Blue Star, Voltas,
G	FURNITURE	- Hermen Miller , Godrej , Featherlite, Geeken

*Dr. Sanjay Thakur*  
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