

COMPANY	UFUK SEMARAK SDN BHD
PROJECT TITLE	HOSPITAL KEMAMAN (300 KATIL), TERENGGANU (REKA DAN BINA)

Contract No : JKR/IP/CKUB/133/2017
 Service Title : ELECTRICAL RELATED SERVICES
 Item Code : BXRY0069 Qty: 2
 Item Description : X-RAY GENERAL 80KW W MOTORISED TABLE, BUCKY STAND/CASSETTE HOLDER WHEELCHAIR COMPATIBLE

TECHNICAL SPECIFICATION ADHERENCE (TSA) FORM

Package Name	Diagnostic Imaging Equipment	Date	23/08/2021
Submission No	1		

SECTION A

[A1] BRAND AS PER CONTRACT

Brand 1 Brand: Siemens	Brand 2 Brand: Canon	Brand 3 Brand: Carestream
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[A2] PROPOSAL EQUIPMENT INFORMATION

Brand : Canon Manufacturer : Canon Medical Systems Corporation
 Model : MRAD-A80S Country of Origin : Japan
 Local Supplier : Canon Medical Systems Malaysia Sdn Bhd

[A3] EQUIPMENT FEATURES AND TECHNICAL DETAILS

i. Equipment Function:

These systems for general radiography procedure which designed for total cost saving, based on the small installation space, user-friendly, microprocessor-controlled operation, and easy maintenance.

ii. Design Features:

These systems are designed with the user's needs in mind and have excellent positioning characteristics. Furthermore, the generators are provided with microprocessor and memory functions. Various radiographic parameters can be registered and then retrieved with a one-touch operation. Simple and easy cassette (or FPD) loading. Just a touch is enough to operate the anatomical positioning functions.

iii. Technical Specification:

- a) X-Ray Generator (KXO-80SS)
 - Microprocessor based, multi-pulse, high frequency inverter generator.
 - 80kW at 100kVp

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- Radiographic kV : 40kV to 150 kV with KV accuracy +/- 5%
- Radiographic mA : 10mA to 1000mA
- Radiographic time range in ms - 1ms to 900ms
- Radiographic time range in sec - 1s to 9sec
- Come with anatomical Programmable Radiographic mode 672 programs
- Have Automatic Exposure Control (AEC)
- Have overload protection device
- Line frequency 50/60Hz

- b) X-Ray Tube (DRX-3723HD)
 - Maximum nominal voltage 150 KV
 - Rotating anode type, 1000 HU/s
 - Large focal spot size: 1.2 mm
 - Small focal spot size: 0.6 mm
 - Inherent filtration 1.1mm Al equivalent
 - Cooling method by natural or forced air
 - Anode heat capacity 300kHU
 - Housing heat capacity 1.5 MHU
 - 18 kHU/min for anode heat dissipation rate

- c) Motorized Bucky Stand (BS-02A)
 - Floor-wall mounted bucky stand
 - Height adjustable 67.6cm to 187.6 cm
 - Oscillating bucky with self-centered tray for holding the cassette sizes up to 35 x 43 cm
 - Come with removable anti scatter grid
 - Three AEC selection detector system provided

- d) Motorized Examination Table (EBT-100A)
 - Adjustable height between approximately 350 mm to 950 mm
 - Table top with length of 2300 mm and width of 820 mm
 - Flat tabletop with 4-way floating top
 - Lateral travel 240mm and longitudinal travel 1000mm
 - Table able to withstand a patient weight 227 kg
 - Electromagnetic brakes
 - Accommodates cassette sizes up to 35 cm x 43 cm.
 - Three AEC selection detector system provided

- e) Collimator (BLR-1000A)
 - Multi-leaf type with LIGHT ON indicator and built-in timer switch.
 - Halogen lamp type
 - Built-in light switch be provided
 - Light luminescence minimum 160 lux at 100 cm SID
 - Have 4-axis motorized control
 - Turning angle with lock +/- 90 degree.

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- f) Ceiling Suspended Column (DST-1000A)
- Ceiling suspended type with fully automated, motorized movement
 - Longitudinal travel range 4400 mm
 - Transverse travel range 2000 mm
 - Vertical travel range 1700 mm
 - X-ray tube rotation of vertical axis 180°; detents every 90°
 - X-ray tube rotation of horizontal axis +150° to -180°; detents every 15°
 - Electromagnetic brakes or motorized lock/unlock with push/ touch button controls
 - Bucky centering indicator provided.
 - Have digital angle indicator (LED) and SID display

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SECTION B

[B1] EQUIPMENT ACCESSORIES

The following accessories will be provided:-

No.	Accessory Description	Part No.	Qty
1.	Lateral cassette holder	CANON/LCH-FB10A/G1	1
2.	Cassette holder	CANON/CH-BS02A	1
3.	Ratchet compression band	CANON/CB-FB10B	1
4.	Signage Xray warning sign board "No Entry"	LOCAL	1/door
5.	Signage pregnant woman acknowledgement	LOCAL	1/door
6.	Xray warning light	LOCAL	1/door
7.	Rack lead glove and aprons	LKL/CXR0184-3	1
8.	Thyroid shield 0.5mm Pb	Kiran/Harmony	2
9.	Single sided light weight apron, front with 0.50mm Pb	Kiran/Coat Apron	3
10.	Vest and Skirt light weight apron, 0.50mm Pb	Kiran/Vest & Skirt	3
11.	X-ray protection eyewear Pb.Eqv: 0.75mm (+/-0.05)	Protech/Model 90	2
12.	Dehumidifier	Midea/MDF-20DG	1
13.	Voltage Stabilizer Systems 75kVa	QPS/VST75-4	1
14.			
15.			

[B2] EQUIPMENT CONSUMABLES

The following consumables will be provided as start-up and will NOT be used for T&C: -

No.	Consumable Description	Part No.	Expiry Date	Qty
1.				
2.				
3.				
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SECTION C

[C1] ATTACHMENT OF SUPPORTING DOCUMENTS

Please tick appropriate box

- | | | | | | |
|--|-------------------------------------|-------------------------|-------------------------------------|------------------------|-------------------------------------|
| 1. Product Catalogue | <input checked="" type="checkbox"/> | 2. Technical Data Sheet | <input checked="" type="checkbox"/> | 3. Eqpt. Location List | <input checked="" type="checkbox"/> |
| 4. Installation Reference | <input checked="" type="checkbox"/> | 5. M&E Pre-Installation | <input checked="" type="checkbox"/> | 6. Technical Drawing | <input checked="" type="checkbox"/> |
| 7. MDA Certificate | <input checked="" type="checkbox"/> | | | | |
| 8. Others, if any (please list): _____ | | | | | |

[C2] SERVICES REQUIRED

Please tick appropriate box

240V/50Hz	<input type="checkbox"/>	415V/50Hz	<input checked="" type="checkbox"/>	Cold Water	<input type="checkbox"/>	Hot Water	<input type="checkbox"/>
Exhaust	<input type="checkbox"/>	Drainage	<input type="checkbox"/>	Medical Gas	<input type="checkbox"/>	Data Point	<input type="checkbox"/>

Others (please list): _____

[C3] TRAINING PROGRAMME

YES	<input checked="" type="checkbox"/>	Local	<input checked="" type="checkbox"/>	User/Application Training	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>	Oversea	<input type="checkbox"/>	Technical Training	<input checked="" type="checkbox"/>

[C4] PLANNED PREVENTIVE MAINTENANCE (PPM)

YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	Frequency	<input type="text" value="2"/>	per year
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SECTION D

CONTRACTOR : UFUK SEMARAK SDN BHD

I hereby undertake to comply as set by the Consultant and procurement Team to ensure that the proposed equipment is in compliance with the required specification/ functionality as per contract requirements.

CONSULTANT : PERUNDING MEDICONSULT SB

I hereby verify that the proposed equipment is in compliance with the required specification/ functionality as per contract requirements.

Signature		Signature	
Name		Name	
Designation		Designation	
Date		Date	

JABATAN KERJA RAYA (JKR) HEAD OF DESIGN TEAM (HODT - ELEKTRIKAL/ MEKANIKAL)

Notwithstanding concurrence of the above equipment, it is the responsibility of the contractor to ensure that the equipment comply with the specification and functionally as in contract.

Accepted
 Accepted with condition
 Rejected. To re-submit
 Comments (if any):

JABATAN KERJA RAYA (JKR) WAKIL PENGARAH PROJEK (ELEKTRIKAL/ MEKANIKAL)

Notwithstanding concurrence of the above equipment, it is the responsibility of the contractor to ensure that the equipment comply with the specification and functionally as in contract.

Accepted
 Accepted with condition
 Rejected. To re-submit
 Comments (if any):

Signature	
Name	
Designation	
Date	

Signature	
Name	
Designation	
Date	

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CLIENT : KEMENTERIAN KESIHATAN MALAYSIA (KKM)

Accepted ☐
 Accepted with condition ☐
 Rejected. To re-submit ☐
 Comments (if any):

CLIENT : KEMENTERIAN KESIHATAN MALAYSIA (KKM)

Accepted ☐
 Accepted with condition ☐
 Rejected. To re-submit ☐
 Comments (if any):

Signature	
Name	
Designation	
Date	

Signature	
Name	
Designation	
Date	

JABATAN KERJA RAYA (JKR) WAKIL PENGARAH PROJEK UTAMA / SUPERINTENDENT OFFICER (SO)

Notwithstanding concurrence of the above equipment, it is the responsibility of the contractor to ensure that the equipment comply with the specification and functionally as in contract.

Concurred ☐
 Concurred with condition ☐
 Rejected. To re-submit ☐
 Comments (if any):

Signature	
Name	
Designation	
Date	

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INSTALLATION BASED

No.	HOSPITAL NAME	YEAR
1.	UNISZA	2021
2.	HOSPITAL DUNGUN	2021
3.	HOSPITAL PEKAN	2020
4.	HOSPITAL SRI MANJUNG	2020
5.	HOSPITAL SULTANAH BAHIAH	2020
6.	HOSPITAL LANGKAWI	2020
7.	HOSPITAL MELAKA	2020
8.	HOSPITAL SIMUNJAN	2020
9.	HOSPITAL PITAS	2020
10.	HOSPITAL RAJA PERMAISURI BAINUN	2019
11.	HOSPITAL KAPIT	2019
12.		
13.		
14.		
15.		
16.		

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EQUIPMENT LOCATION LISTING

DEPT	ROOM CODE	ROOM NAME	QTY
IMAGING DEPARTMENT	IMG206	General X-Ray Room 2 (CR/DR & 1 Intravenous Urography)	1
IMAGING DEPARTMENT	IMG202	General X-Ray Room 1 (CR/DR & OPG)	1
GRAND TOTAL			2