TENDER AGREEMENT FORSUPPLYING, INSTALLATION, TESTING, COMMISSIONING, TRAINING AND MAINTAINANCE OF

LOT 1: FOUR (4) 64 SLICE CT SCANNER

LOT2: ONE (1) 128 SLICE CT SCANNER

TENFER NUMBER: PA/161/HQ/G/2021-2022/95

BETWEEN

BUGANDO MEDICAL CENTRE (BMC)

AND

M/S PACIFIC DIAGNOSTICS LIMITED

DRAWN BY:

BUGANDO MEDICAL CENTRE (BMC)

P. O. BOX 1370

MWANZA

FEBRUARY, 2022

PURCHASE AGREEMENT

PURCHASE AGREEMENT

THIS PURCHASE AGREEMENT is made the 28 day of **February**, 2022

BETWEEN

BUGANDO MEDICAL CENTRE (BMC), P.O BOX 1370, MWANZA, and a public private institution operating under thepartnership of the government of the United Republic of Tanzania and the Tanzania Episcopal Conference (TEC) (hereinafter referred to as **Employer /the Buyer'')** which expression shall, where the context so admits, include assigns and successors in title of the one part;

AND

M/SPACIFIC DIAGNOSTICS LIMITED, P.O.BOX 34056, DAR ES SALAAM (Here in after referred to as "**The Supplier/Tenderer**") which expression shall, where the context so admits, include assigns and successors in title of the other part.

NOW, THEREFORE, THE PARTIES here to agree and declare as follows:

Article 1. Contract Documents

1.1 Contract Documents (Reference GCC Clause 2)
The following documents shall constitute the Contract between the Employer and the Supplier, and each shall be read and construed as an integral part of the Contract:

This contract shall be valid for the period of five (5) years from the date of …….. of ……. 2022 to the date of …….. of ….. 2027.

(a) This Contract Agreement and the Appendixes hereto
(b) Tender and Price Schedules submitted by the Supplier
(c) Special Conditions of Contract
(d) General Conditions of Contract
(e) Technical Specifications and Drawings
(f) Procedures (as listed)
(g) Negotiation report
(h) Acceptance letter

1.2 Order of Precedence (Reference GCC Clause 2)
In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause 1)
Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract.

Article 2. Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause 11)
The Employer hereby agrees to pay to the Supplier the Contract Price in consideration of the performance by the supplier of its obligations hereunder. The Contract Price shall be **9,500,000,000/= (nine billion five hundred million) Tanzanian Shillings** as the aggregate of **7,400,000,000/= (Seven Billions, four hundred million Tanzanian shillings for four (4) 64 slice CT Scan** machine and **2,100,000,000/= (two billion one hundred million Tanzanian shillings only) (1), 128 slice** such other sums as may be determined in accordance with the terms and conditions of the Contract.

2.2 Terms of Payment (Reference GCC Clause 12)
The terms and procedures of payment according to which the Employer will reimburse the Supplier are given in the corresponding Appendix (Terms and Procedures of Payment) hereto.

The Employer shall pay the supplier an advance payment of 50% of the contract sum within 14 days after signing the contract and after receipt of 50% advance payment guarantee, then 50% of the contract sum within 14 days after supplying, installation, commissioning, training and testing of the machine.
For the whole period of warrant and maintenance the supplier shall receive no payment.

Article 3. Effective Date for Determining Time for Completion

3.1 Effective Date (Reference GCC Clause 1)
The Time of Completion of the Facilities shall be determined from the date when all of the following conditions have been fulfilled:

(a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Supplier;

(b) The Supplier has submitted to the Employer the performance security and the advance payment guarantee;

(c) The Employer has paid the Supplier the advance payment.

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

3.2 If the conditions listed under 3.1 are not fulfilled within two (2) months from the date of this Contract notification because of reasons not attributable to the Supplier, the parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Completion and/or other relevant conditions of the Contract.

Article 4. Appendixes

4.1 The Appendixes listed in the attached List of Appendixes shall be deemed to form an integral part of this Contract Agreement.

4.2 Reference in the Contract to any Appendix shall mean the Appendixes attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Employer and the Supplier have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by, for and on behalf of the Employer

_____

[Signature]

DIRECTOR GENERAL

_____

[Title]

In the presence of Cornelius H. NTUNGWELI

LEGAL OFFICER/ADVOCATE

CORNELIUS H. NTUNGWELI
ADVOCATE
NOTARY PUBLIC
&
COMMISSIONER
FOR OATHS
P. O. Box 135, NGARA

Signed by, for and on behalf of the Supplier

_____

[Signature]

CHIEF OPERATIONS OFFICER

_____

[Title]

In the presence of _____

NOTIFICATION LETTER

BUGANDO MEDICAL CENTRE
Consultant and Teaching Hospital

P.O. Box 1370
Mwanza, Tanzania
Telephones 2540610/5
2500513
Fax: 255 – 028 - 2500799
Hospbugando@gmail.com

*Department of : **ADMINISTRATION***

OurRef:AB.321/386/01/PART"A"/365

Date: 28/02/2022

MANAGING DIRECTOR,
M/S PACIFIC DIAGNOSTICS,
P.O BOX 34056,
DAR ES SALAAM.

Dear Sir/Madam,

RE: PUBLIC PROCURMENT ACT NO. 70F 2011 SECTION 60-(5) AND REGULATION 231-(6) OF THE RULES 2013.

RE: AWARD OF TENDER NO. PA/161/HQ/G/2021-2022/95 FOR SUPPLY INSTALLATION, TESTING, TRAINING AND MAINTENANCE OF FOUR (4) 64 SLICE CT-SCAN MACHINE FOR MUSOMA RRH, GEITA RRH, SHINYANGA RRH AND SIMIYU RRH AND ONE (1) 128 SLICES CT SCAN MACHINE FOR CHATO ZRH.

Reference is made to the heading above.

The Director General of Bugando Medical Centre, award tender no. PA/161/HQ/G/2020-2021/95 for SUPPLY, ISTALLATION,TESTING,TRAINING AND MAINTENANCE OF four (4) 64 SLICES CT SCAN MACHINE for MUSOMA RRH, GEITA RRH, SHINYANGA RRH AND SIMIYU RRH at cost price of **Tsh 7,400,000,000/=** and one (1) 128 SLICES CT-SCAN MACHINE for CHATO ZRH at cost price of **Tsh 2,100,000,000/=** to your company M/S pacific diagnostics of P.O.BOX 340556, Dar es salaam as you met the requirement as per your tender application.

You are requested to contact our company for contract signing.

Sincerely yours,

Dr. Fabian A. Massaga
Director General

ACCEPTANCE LETTER

Pacific Diagnostics
medical imaging solutions

28th February 2022

PDL/BMC/ACCEPT/034/2022

EXECUTIVE DIRECTOR
BUGANDO MEDICAL CENTRE
P.O.BOX 1370
MWANZA, TANZANIA

Dear Sir/ Madam,

RE: ACCEPTANCE OF THE AWARD UNDER TENDER NO; PA/161/HQ/2021-2022/G/95 FOR THE SUPPLY, INSTALLATION, TESTING, TRAINING, AND MAINTENANCE OF FOUR (4) 64 SLICE CT SCAN MACHINES FOR MUSOMA RRH, GEITA RRH, SHINYANGA RRH, AND SIMIYU RRH AND ONE (1) 128 SLICE CT SCAN MACHINE FOR CHATO ZRH

We hereby acknowledge with pleasure the receipt of your letter with Ref No. 320/386/01/PART "A"/365 dated 28th February 2022.

With this letter, we confirm our acceptance of the offer accordingly and we pledge to deliver the best in the course of execution.

We are looking forward to working with you on the next step for the signing of the contract.

Yours faithfully,

For PACIFIC DIAGNOSTICS LTD

Naftal Phillip
Chief Operating Officer

PACIFIC DIAGNOSTICS LIMITED
DAR-ES-SALAAM

P.O. Box 34056, Plot 46-48, Mikocheni Industrial Area, Opposite Coca-cola Kwanza Factory, Coca-cola Road.
Dar es Salaam, Tanzania
Email: info@pacificafrica.co.tz, Tel: +255 22 2701032, Fax: +255 22 2773440

TENDER AND PRICE SCHEDULES SUBMITTED BY THE SUPPLIER.

Pacific Diagnostics
medical imaging solutions

Plot 46- 48, Mikocheni Industrial Area, Opposite Coca-cola Kwanza Factory
Dar es Salaam, Tanzania.
Email: info@pacificafrica.com,
Tel: +255 22 2701032 Fax: +255 22 2773440

Bugando Medical Center
Schedules of Rates and Prices

QUOTE FOR 128 SLICE CT SCANNER MACHINE

TENDER No. PA/161/HQ/G/2021-2022/95 LOT 2

S/N	Item Description	Model	Qty	Unit price TZS, DDP	Total Price
1	CT Scan 128 slices	SIEMENS Somatom X.Cite CT scanner	1	2,314,000,000	2,314,000,000
	128 Slice CT Scan machine as specified in your requirements Somatom slice CT system with 2 years warranty and 3 years comprehensive maintenance included	INCLUDED			
	Total Price for supply of 128 Slice CT scanner machine				**2,314,000,000.00**

Name NAFTAL PHILLIP in the capacity of CHIEF OPERATING OFFICER

Signature of Tenderer: _____

Duly authorized to sign the Tender for and on behalf of PACIFIC DIAGNOSTICS LIMITED.

Dated on 11th day of February 2022

Item No.	Description of Goods		Qty.	Unit Price US DOLLARS	Total Price US DOLLARS
	CMC VALUES AFTER 5 years warranty for 64 Slice CT Scan machine. Price indicated is per machine				-
	6th year			121,000.00	-
	7th year			127,050.00	-
	8th year			127,050.00	-
	9th year			133,402.50	-
	10th year			133,402.50	-
	The above prices are on the assumption that there shall be no changes in Import Duty OR VAT on the cost of spare parts, or any addition to the current taxes and their levels as of Feb 2022.				
	The CMC Prices are subject to VAT. The same is to be added as per Government rate				-
	The payment may be made in equivalent TZS at the beginning of each year.				-
					-

Name of Tenderer: Pacific Diagnostics Ltd

Signature of Tenderer:

PACIFIC DIAGNOSTICS LIMITED
DAR-ES-SALAAM

POWER OF ATTORNEY

STANDARD POWER OF ATTORNEY

TO ALL IT MAY CONCERN

THAT BY THIS POWER OF ATTORNEY given on the 9th February 2022,
WE the undersigned PACIFIC DIAGNOSTICS LIMITED of Plot 46-48, Mikocheni Industrial Area, Coca-Cola road, P.O. Box 34056, Dar es Salaam, Tanzania , by virtue of authority conferred to us by the Board Resolution No of 2019, do hereby ordain nominate and appoint NAFTAL PHILLIP of P.O. Box 34056, Dar es Salaam, Tanzania to be our true lawful Attorney and Agent, with full power and authority, for us and in our names, and for our accounts and benefits, to do any, or all of the following acts, in the execution of tender No. PA/161/HQ/G/2021-2022/95 that is to say;

To act for the company and do any other thing or things incidental for PA/161/HQ/G/2021-2022/95 of THE SUPPLY, INSTALLATIONS, TESTING, COMMISSIONING, TRAINING AND MAINTENANCE OF LOT 2: 128 SLICES CT SCANNER FOR CHATO ZONAL REFERRAL HOSPITAL for the BUGANDO MEDICAL CENTRE;

AND provided always that this Power of Attorney shall not revoke or in any manner affect any future power of attorney given to any other person or persons for such other power or powers shall remain and be of the same force and affect as if this deed has not been executed.

AND we hereby undertake to ratify everything, which our Attorney or any substitute or substitutes or agent or agents appointed by him under this power on his behalf herein before contained shall do or purport to do in virtue of this Power of Attorney.

SEALED with the common seal of the said PACIFIC DIAGNOSTICS LIMITED and delivered in the presence of us this 9th February 2022

IN WITNESS whereof we have signed this deed on this 9th of February 2022 at Dar es Salaam for and on behalf of PACIFIC DIAGNOSTICS LIMITED

SEALED and **DELIVERED** by the
Common Seal of PACIFIC DIAGNOSTICS LIMITED
This 9th February 2022

.....
DONOR

BEFORE ME:

.....
COMMISSIONER FOR OATHS

HELLEN A. MREMA
ADVOCATE
P. O. Box 7318
DAR-ES-SALAAM

ACKNOWLEDGEMENT

I NAFTAL PHILLIP doth hereby acknowledge and accept to be Attorney of the said PACIFIC DIAGNOSTICS LIMITED under the terms and conditions contained in this POWER OF ATTORNEY and I promise to perform and discharge my duties as the lawfully appointed Attorney faithfully and honestly.

SIGNED AND DELIVERED by the said
NAFTAL PHILLIP, Who is known to me personally
This 9th February 2022

.....
DONEE

BEFORE ME

.....
COMMISSIONER FOR OATHS

HELLEN A. MREMA
ADVOCATE
P. O. Box 7318
DAR-ES-SALAAM

MANUFACTUERER AUTHORIZATION

Siemens Healthcare GmbH, SHS EMEA DES BS, Karlheinz-Kaske-Str. 5,
91052 Erlangen

THE SECRETARY OF TENDER BOARD
BUGANDO MEDICAL CENTRE
P.O. BOX 1370
MWANZA
TANZANIA

Name Dr. Michael Klug
Department SHS EMEA DES BS

Telephone +49 (172) 6347870
E-mail emea_des_bs.team@siemens-healthineers.com
Our reference TZ2204
Date February 10, 2022

Reference IFT No. PA/161/HQ/G/2021-2022/95 LOT 1

MANUFACTURER'S AUTHORIZATION FORM

We, Siemens Healthcare GmbH ("Siemens Healthineers"), who are official manufacturer and manufacturer through affiliates of

- SOMATOM go.Top, SOMATOM go.All
- MAGNETOM Altea, MAGNETOM Sempra, MAGNETOM Free.Max
- Multix Impact, Multix Impact C
- ACUSON NX3, ACUSON NX3 Elite, ACUSON Juniper, ACUSON Redwood
- Artis zee
- Teamplay
- Syngo Virtual Cockpit

and manufacturer through contracted factory of

- Mobilett Elara Max

having its principal place of business at Henkestraße 127, 91052 Erlangen, Germany and having factories in Germany, China, Spain, Republic of Korea and USA, do hereby authorize:

PACIFIC DIAGNOSTICS LTD.
Plot 46-48, Mikocheni Light Industrial Area
Coca Cola Road
DAR ES SALAAM
PO BOX: 34056
UNITED REPUBLIC OF TANZANIA

to submit a bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the above Goods, manufactured by us, and to subsequently negotiate and sign the Contract, in its own name and on its own account.

Letter of February 10, 2022
to TANZANIA

SIEMENS Healthineers

We hereby extend our standard warranty with respect to the goods manufactured by us offered for supply by the above firm against this Invitation for Tenders.

Sincerely yours,

Siemens Healthcare GmbH

Electronically signed by: Carole Millet-Perry
Reason: Document Execution
Date: Nov 15, 2021 12:42 GMT+1

carole.millet-perry@siemens-healthineers.com

Carole Millet-Perry
Controlling Manager Direct Export Sales

i.V. M. Klug

Electronically signed by: Michael Klug
Date: Nov 15, 2021 12:38 GMT+1

michael.klug@siemens-healthineers.com

Dr. Michael Klug
Head of Business Services Direct Export Sales

Siemens
Henkestr. 127
Postfach 3260
91056 Erlangen
+49 (91 31) 84-0
Healthcare GmbH

BUSINESS CERTIFICATION

C.1

TANZANIA

Certificate of Incorporation

Section 15

No **57899**

I HEREBY CERTIFY THAT

PACIFIC DIAGNOTICS LIMITED =======

is this day incorporated under the Companies Act, 2002 and that the Company is Limited.

Given under my hand at Dar es salaam this **9TH** day of **OCTOBER** **TWO THOUSAND AND SIX**

Assistant Registrar of Companies

BUSSINESS LICENSE

MCH 124/56

TFN. 226
(Rev. 2/96)

ID: 22530

JAMHURI YA MUUNGANO WA TANZANIA

KINONDONI MUNICIPAL COUNCIL

LESENI YA BIASHARA

B 3850856

(Imetolewa chini ya Sheria ya Leseni za Biashara Na. 25 ya Mwaka 1972 marekebisho ya mwaka 1980 na masharti yaliyo nyuma)

*Futa isiyotakiwa.

1. Ofisi iliyotolewa MANISPAA YA KINONDONI
2. Nambari ya Ushuru wa mapato 109 - 983 - 373
3. Leseni imetolewa kwa PACIFIC DIAGNOSTICS LIMITED
   kuendesha biashara ya MAINJANANCE & INSTALLATION OF MEDICAL EQUIPMENT
   katika Wilaya/Kanda* ya KINONDONI Mtaa MIROCHENI A
4. Ni ya Shina/Tawi*
   Ada Sh. 80,000/= Nambari ya Stakabadhi 3734190
   ya tarehe 30/7/2021
5. Mpya inaendeleza* muda wa Leseni Na 3488753
   ya tarehe 31/8/2020

(ii) Muda wa leseni hii utaishia 30 Juni 20 9/7/2022

Tarehe 5/8/2021

Box DSM

Sahihi na Muhuri wa Mtoaji Leseni

SHIVANA K.

GP-Dsm

MCH/24/03

D: 22533

TFN. 226
(Rev. 2/96)

JAMHURI YA MUUNGANO WA TANZANIA

KINONDONI MUNICIPAL COUNCIL

LESENI YA BIASHARA

B 3850803

(Imetolewa chini ya Sheria ya Leseni za Biashara Na. 25 ya Mwaka 1972 marekebisho ya mwaka 1980 na masharti yaliyo nyuma)

*Futa isiyotakiwa.

1. Ofisi iliyotolewa MANISPAA YA KINONDONI
2. Nambari ya Ushuru wa mapato 109 - 983 - 373
3. Leseni imetolewa kwa PACIFIC DIAGNOSTICS LTD
   kuendesha biashara ya MEDICAL EQUIPMENTS
   katika Wilaya/Kanda* ya KINONDONI Mtaa MIKOCHENI B
4. Ni ya Shina/Tawi* 120,000/=
   Ada Sh. [illegible] Nambari ya Stakabadhi 3734191
   ya tarehe 30/7/2021 3735558
5. Mpya inuendeleo muda wa Leseni Na. 3544232
   ya tarehe 1/8/2021

(ii) Muda wa leseni hii utaishia 30 Juni 20 16/8/2022

Tarehe 2/8/2021
Box DSM

Sahihi na Muhuri wa Mtoaji Leseni
SILVANA K.

GP-Dsm

BRELLA

TANZANIA

BRELA
BUSINESS REGISTRATIONS AND LICENSING AGENCY

Register of Companies
Detailed information

Information date and time: 07/06/2019 12:25:02
Registration date and time: 09/10/2006 00:00:00

1.	**Status:**	Registered
2.	**Incorporation number:**	**57899**
3.	**Company:**	**PACIFIC DIAGNOTICS LIMITED**
4.	**Company type:**	Private company Limited by shares
5.	**Registered office:**	Region Dar Es Salaam, District Kinondoni, Ward Mikocheni, Postal code 14112, Street COCACOLA, Road COCACOLA, Plot number 46, 47 & 4, Block number -, House number -
6.	**Contacts:**	Email: anthony.gshuma@gmail.com, Mob no/Tel no: 255755804380, P.O.Box 31119
7.	**Business activity:**	4659 - Wholesale of other machinery and equipment 4649 - Wholesale of other household goods
8.	**Directors / Directors in the country of origin:**	PRASHANT KRISHNARAO GOKARN, Indian ABRAHAM AGWAMBO OKORE, Tanzania
9.	**Company secretary / Company secretary in the country of origin:**	ANTHONY GOODLUCK SHUMA, Tanzania
10.	**Authorised share capital:**	5000000000 TZS
11.	**Class of shares:**	Class Ordinary: 1000000 shares, 5000 TZS/share, 5000000000 TZS
12.	**Shareholders:**	PYRAMID PHARMA LIMITED Class Ordinary 2500 shares taken PRASHANT KRISHNARAO GOKARN Class Ordinary 2500 shares taken PACIFIC DIAGNOSTICS LIMITED Class Ordinary 995000 shares taken

Information ordered by: ANTHONY SHUMA
NOTE. Information printed from the Register of Company is true and complete as per extract generation date and time. Please be advised to refer to the Online Registration System at BRELA (ors.brela.go.tz) for an up-to-date information regarding given Company.

REGISTRAR OF COMPANIES
TANZANIA

Registrar of Companies

CERTIFICATE OF MEDICAL DEVICES REGISTRATION

TMDA/DMC/MDC/CF/001

TANZANIA MEDICINES AND MEDICAL DEVICES AUTHORITY

TMDA
Tanzania Medicines & Medical Devices Authority

CERTIFICATE OF MEDICAL DEVICE REGISTRATION

(Made under Section 53(4) (iii) of Tanzania Food, Drugs and Cosmetics Act, Cap 219)

Registration number:	**TAN 19 MDR 0557**

This is to certify that the Medical Device described below has been registered in Tanzania subject to conditions indicated:.

Trade name of the device:	**SOMATOM GO. TOP**
Common Name:	**CT SCAN MACHINE**
Class of the device:	**CLASS C**
GMDN Code and Term:	**37618 & FULL-BODY CT SYSTEM**
Commercial Presentation:	**1 UNIT**
Name of Marketing Authorization Holder:	**SIEMENS HEALTHCARE GMBH, ADVANCE THERAPIES, SIEMENSSTR**
Name and address of the Manufacturer:	**SIEMENS HEALTHCARE GMBH** **HENKESTR. 127, 91052 ERLANGEN** **ERLANGEN GERMANY**
Local Responsible Person:	**PACIFIC DIAGNOSTICS LTD**
Issued on:	**November 11, 2019**
Expires on:	**November 10, 2024**

.....

A. M. FIMBO

ACTING DIRECTOR GENERAL

- The certificate must be returned to the Authority if canceled, invalidated or if registration of the medical device is withdrawn or when requested to do so by the Director General.
- The conditions for registration are outlined overleaf:

COMPLIANCE SHEET

CT 64 SLICES TECHNICAL SPECIFICATIONS

Level of use: Regional Referral Hosptital and above

CT 64 Slices: 2 Years warranty, 5 Years Comprehensive Maintenance and spare parts inclusive

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
1	**CT EXAMINATIONS:**		The Following CT Examinations can be performed
	1. CT Angiography	YES	CT Angiography
	2. Head and Neck CT	YES	Head and Neck CT
	3. Cardiothoracic CT	YES	Cardiothoracic CT
	4. Abdominal CT	YES	Abdominal CT
	5. Pelvic CT	YES	Pelvic CT
	6. Musculoskeletal CT	YES	Musculoskelatal CT
	7. Spine CT	YES	Spine CT
2	**DETECTOR:**		
	1. Should be 64 detectors array system	YES	64 Row Array Detector System
	2. The detectors shall be large area detector with Z axis coverage of 38mm and/or above.	YES, Meets Specifications	Z Axis Coverage: 38.4 mm
	3. Detector system should not require frequent calibrations (at least once a month).	YES, Meets Specifications	The Detector system does not need frequent calibrations
	4. Specify the number of rows and the total number of detector cells (670 elements or more).	YES, Better than requested Specifications	Number of rows: 64 Number of detector cells per row: 840 Total Number of detector elements: 53,760
	GANTRY:		
	1. Aperture: 70 cm or more	YES, Meets Specifications	Gantry Aperture 70 cm

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
3	2. Control Panel: on either side	Yes, Meets Specifications	Mobile Workflow with 12" Tablet Operation: operator can stay mobile and prepare the entire protocol next to the patient.
	3. Entire range of rotation times for full 360 degree should be specified. Minimum rotation time should be 0.4 seconds or less for whole body application.	YES, Better than requested Specifications	Time for Full 360 degree rotation: 0.33 sec (Option is included)
	4. Should have positioning laser lights.	YES, Meets Specifications	3D Laser Positioning Lights in Axial, Coronal and Sagittal directions. In addition, Isocenter laser is also included.
	5. Maximum scan FOV should be at least 50 cm.	YES, Meets Specifications	Maximum scan FOV is 50cm.
	6. Tilt-Remote >= +/- 30 deg.	YES, Meets Specifications	Physical Tilt: +/- 30 degree.
4	**X-RAY GENERATOR:**		
	1. High Frequency type	YES, Meets Specifications	Microprocessor Controlled High Frequency Generator.
	2. Power output 75KW or more to support continuous and sustained operation	YES, Meets Specifications	Actual Power Output 75kW; equivalent to 187 kW with SAFIRE
	X-RAY TUBE:		
	1. Tube current : 30 to 600mA or more	Yes, Exceeds Specifications	13 - 625 mA; max. tube current equivalent to 1560 mA utilizing SAFIRE
	2. Real Time mA modulation for dose regulation.	YES, Meets Specifications	CARE Dose4D: Fully automated dose modulation solution. The algorithm automatically modulates tube current for optimum image quality.

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
5	3. Tube Voltage: 80 to140 KV	Yes, Exceeds Specifications	70 to 140 kV
	4. Anode Heat Storage Capacity should be 6 MHU or more	Yes, Exceeds Specifications	7.0 MHU; equivalent to 17.5 MHU with SAFIRE
	5. Should have anode Temp Monitoring System.	YES, Meets Specifications	Inbuilt Anode and Tube temperature Monitoring System.
	6. Heat Dissipation: 1000 KHU or more	Yes, Exceeds Specifications	1700 kHU
	7. Specify Focal Spot size and number according to IEC recommendation.	Yes	Focal spot size according to IEC 60336 • 0.8 x 0.8 / 7° • 1.0 x 1.2 / 7°
	8. The tube should have dynamic focal spots.	YES, Meets Specifications	Flying Focal Spots
	9. The X-ray cooling unit should be inbuilt in the gantry.	YES, Meets Specifications	The X-ray Tube Cooling System is inbuilt in the Gantry.
	10.Warranty of tube: Comprehensive warranty for all parts including x- ray tubes for at least 2 years irrespective of number of scans.	YES, Meets Specifications	We have included a Comprehensive Tube and Spares warranty for 5 years, irrespective of the number of scans
	PATIENT TABLE:		
	1. Minimum Load capacity of at least 200Kg ±10% with 1 mm positioning accuracy.	Yes, Exceeds Specifications	227 kg with positioning accuracy of 1mm
	2. Table speed: Horizontal up to 100mm or more/sec.	Yes, Exceeds Specifications	200mm/sec
	3. Vertical Table travel: 50mm/sec or more	YES, Meets Clinical Requirements	28.3 mm/sec
	4. Minimum table top height should be 55cm or less from the ground level for easy transportation of trauma patient.	Yes, Exceeds Specifications	46cm for easy transportation of Patient.

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
6	5. Longitudinal Scan Range: at least 150cm or more	Yes, Exceeds Specifications	160 cm
	6. Manual movement of the table should be possible in case of power failure.	YES, Meets Specifications	Mechanical Lock can be released and Manual movement of table is possible for fast retrieval of patient in case of emergency or Power Failure.
	7. Reproducing positional accuracy should be mentioned.	YES	0.25mm reproducing positional accuracy
	8. Remote Up/down and forward /backward should be standard.	YES, Meets Specifications	Standard. From Console or from Tablet.
	9. Facility of positioning aid for horizontal isocentric positioning of the patient.	YES, Meets Specifications	Isocenter Horizontal Laser is available for accurate positioning of the Patient in the Isocenter.
	Should have Carbon Fibre Table Top.	YES, Meets Specifications	Carbon Fiber Table top is standard.
	SPIRAL CT:		
	1. Scan Time: Minimum scan time 0.4 sec or less for full 360 deg rotation.	Yes, Exceeds Specifications	0.33 sec.
	2. Min slice thickness should be 0.625 mm or less	Yes, Exceeds Specifications	0.6mm
	3. Max slice thickness: 10 mm or more	YES, Meets Specifications	10 mm
	4. Slice increment.-specify scan and selectable slice thickness	YES, Meets Specifications	Sequence Acquisition Reconstructed slice widths 0.8, 1.0, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm Multislice Spiral Acquisition Reconstructed slice widths 0.6, 0.8, 1, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
7	5. Pitch Factor (volume pitch): variable between 0.5 sec to 1.5 sec or more and should be user selectable. Specify all possible pitch selections.	YES, Meets Specifications	Pitch factor • 0.15 – 1.5 • Down to 0.03. User Selectable. Pitch selection as per scan protocol. Exam Designer Easy and intuitive way to change and manage scan protocols
	6. Single Continuous scan time should be at least 120 sec.	Yes, Exceeds Specifications	300 seconds
	7. Should optimize radiation dose and resolution for each selection.	Yes, Exceeds Specifications	• X-CARE Provides organ dose reduction for radiation-sensitive peripheral organs e.g. eye lenses, while maintaining image quality. • Flex Dose Profile • CARE kV • 10 kV Steps • CARE Child • CARE Filter
	8. Bolus Triggered Spiral acquisition should be possible.	YES, Meets Specifications	CARE Bolus is included as standard
	9. Facility of multi-spiral, bi-directional spirals and back to back spirals.	YES, Meets Specifications	Multi-Spirals can be planned on the Topogram. Prospective or Retrospective (bi-directional) spirals and Back to back Spirals are possible.
	10. Facility for monitor contrast enhancement and automatically commenced scanning.	YES, Meets Specifications	Window Width and Center is possible for Monitor Contrast enhancement. Automatic commencement of scanning is possible.

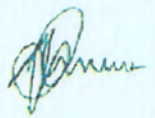
S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
9	**TOPOGRAM:** 1. Length and width: Specify range 2. Scan Time: Specify range per examination/procedure 3. Views: Frontal & lateral views. 4. Should be able to interrupt acquisitions manually once the desired anatomy is obtained	Yes Yes YES, Meets Specifications YES, Meets Specifications	Topogram Length • 128–1,680 mm Width: 70cm Scan times • 1.36–8.76 s Suitable for all Exams and procedures Views a.p., p.a., lateral CARE Topo Manual interruption possible once desired anatomy has been imaged
10	**DATA ACQUISITION SYSTEM:** 1. Detector should capable of acquiring 64 slices per 360 degree of rotation. 2. Number of rows with their thickness, number of element in each rows 3. Inbuilt mechanism for adapting the tube current during each scan this should enable radiation dosage reduction where body part thickness is less. 4. Detector system should not require frequent calibration.	YES, Meets Specifications YES Yes, Exceeds Specifications YES, Meets Specifications	Acquiring 64 slices per 360 degree of rotation 64 rows 840 elements per row 38.4mm total detector thickness Total Elements 53,760. CARE Dose4D & Flex Dose Profile: Fully automated dose modulation solution. The algorithm automatically modulates tube current for optimum image quality and and accurate dose handling. The UFC Detector does not need frequent calibration.

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
	5. Should have inbuilt paediatric protocols based on patient weight.	YES, Meets Specifications	CARE Child protocol for Pediatric scans based on Patient weight. Dedicated pediatric protocols automatically set a low tube voltage – in most cases 70 kV – while CARE Dose4D optimizes dose distribution and offers special modulation curves.
11	**IMAGE RECONSTRUCTION:** 1. Real Time reconstruction speed: 15 images per sec or more at 512x512 matrix.	Yes, Exceeds Specifications	23 images/sec at 512 matrix
	2. Display Matrix: 1024x1024 or more	YES, Meets Specifications	Display Matrix 1024 x 1024
	3. Reconstructed slice thickness: ≤1mm to 10mm.	Yes, Exceeds Specifications	0.6mm to 10mm
	4. Should have selectable Scan Field and reconstructed field	YES, Meets Specifications	Scan Field is selectable from Topogram. Reconstructed Field is also selectable from Topogram. It is also possible to carry out reconstruction from Raw data to user selectable Reconstruction Field width
	OPERATOR CONSOLE: 1. Radiology Monitor Resolution: 1280x1240	YES, Meets Specifications	2560 x 1440 resolution.
	2. Pixel Size < 0.3 mm.	YES, Exceeds Specifications	0.2331 mm
	3. Two Flat screens radiology grade LCD Type of at least 24″ with fast image refresh rate should be fast and preferably instantaneous and flicker free.	YES, Meets Specifications	Two Flat ScreenMedical Grade 4MP LCD monitors, High Resolution of 27" each, Flickerfree, 100 Hz monitors

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
12	4. Should be non-interlaced and progressive display type & sturdy.	YES, Meets Specifications	Non-interlaced and Progressive Display. Sturdy design and robust construction, long life
	5. Should perform Registration, scheduling, protocol selection , volume rendering, Volume measurements, Multiplan Reconstruction, and standard evaluation application and all available post processing functions without the help of the satellite workstation as well as film exposure.	YES, Meets Specifications	Performs all the actions as described. No need of a Satellite Workstation. All Standard Evaluation and post-processing functions as well as Filming are available
	6. Should have 3GHz or latest processor with at least 16GB RAM.	Yes, Exceeds Specifications	High performance computer CPU Intel Xeon 3.5–4.0 GHz with Turbo Boost Technology 96 GB RAM
	7. Raw Data storage with at least 1TB Hard disc having a minimum of 1,500,000 images storing capacity in 512x512 format.	Yes, Meets Specifications	1.2TB with Image Storage of 1,500,000 images in 512 matrix
	8. Additional external hard disk of minimum 2TB should be provided.	YES, Meets Specifications	External Hard Disk of 2 TB will be supplied
	9. System should be menu driven operation. Applications like image reconstruction, filming, curve MPR, CT Angiography; VRT, auto bone removal.	YES, Meets Specifications	Menu Driven Applications for Image Reconstruction, MPR, CT Angio, VRT, Auto Bone removal, Filming and many more.
	10. Lung nodule evaluation software to be provided in workstation, and not in operator console.	YES, Meets Specifications	Lung Nodule Evaluation will be provided on the Workstation.
	CONSOLE COMMON FEATURE:		
	1. The workstation should be interconnected for two-way transfer of images and reports.	YES, Meets Specifications	The Workstations are connected to the Main console for two way transfer of Images and Reports.

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	2. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition time.	YES, Meets Specifications	Comparison of two datasets is possible, taken on different modalities or with different acquisition times
13	3. Cine display should be available, both interactive and automatic.	YES, Meets Specifications	CINE Display Display of image sequences Automatic or interactive with mouse control Max. image rate: 30 frames/s
	4. Window width and Centre should be freely selectable.	YES, Meets Specifications	Window Width and Center are freeley Selectable
	5. Patient online Registration, pre-registration facility and transfer of information from HIS/RIS via DICOM should be possible.	YES, Meets Specifications	These are Standard Features
	6. Should have dedicated pediatric protocol for low dose imaging.	YES, Meets Specifications	CARE Child, 70 kV for Pediatric and low dose imaging is available.
	WORKSTATIONS: Total two (1 at operator console room & 1 at Radiologist room)	YES, Meets Specifications	Two Workstations, 1 at Operator Console and 1 at Radiologist room are included in Scope of Supply.
	1. Should have Flat screen Medical Diagnostic monitor (minimum 1Mega pixels coloured) of **at least 24"** with fast image refresh rate should be fast and preferably instantaneous and flicker free with Hard Disk of 1TB or more, capable of simultaneous viewing of all post processing functions and filming independently without the help of main console. Data transfer between the operator console & the satellite workstation should be instantaneous.	Yes, Exceeds Specifications	Workstation will have a 30" monitor 6MP, fast image refresh, Flickerfree color monitor with Hard drive of 1TB, capable of all post-processing and filming independent of Main console. Data Transfer between Operator console and workstation is instantaneous.

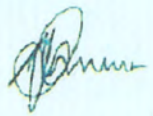
S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
14	**K. Processor / Chipset CPU:** Intel Xeon E5-1650V2 / 3.5 GHz, Max Turbo Speed. 3.9 GHz, Number of Cores. 6-core, Chipset Type. Intel C602, Processor Main Features. Hyper-Threading Technology, Intel Turbo Boost Technology 2, Processor Socket. LGA2011 Socket,	YES, Exceeds Specifications	On checking the requested specification is not available any more, Hence we propose the below better specifications. HP Z2 G5-Tower Workstation 1 x Intel Core i5 10600K 6 Cores 32 GB RAM Up to 4.8 GHz with Intel Turbo Boost Technology (4.1 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate Licenced Windows 10 Professional, 64 bit.
	1. **Operating System:** Licensed Windows 10 Professional	YES, Meets Specifications	Kindly note that the System has to be connected to Internet for automatic updates by Microsoft.
	2. **Microsoft Office:** Microsoft Office 2019 Professional	YES, Meets Specifications	Licenced Microsoft Office 2019 or later if available
	3. **Antivirus:** Include antivirus software	YES, Meets Specifications	Anti-Virus Software will be installed. The Workstation has to be connected to Internet for automatic update of the Virus Databases for continued protection.
	4. **Radiology Monitor**		
	5. **Size:** 24 inch	YES, Meets Specifications	30 inch
	6. **Backlight:** LED	YES, Meets Specifications	Backlight LED
	7. **Native Resolution:** 1536 x 2048 (3:4 aspect ratio)	YES, Meets Specifications	30" Monitor with 3280 x 2048 resolotion 6MP will be supplied.



S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
	8. **Display Colors:** 10-bit (DisplayPort): 1.07 billion from a palette of 543 billion (13-bit) colors	YES, Meets Specifications	10-bit (DisplayPort): 1.07 billion from a palette of 543 billion (13-bit) colors.
	8-bit: 16.77 million from a palette of 543 billion (13-bit) colors	YES, Meets Specifications	8-bit: 16.77 million from a palette of 543 billion (13-bit) colors
	9. **Video Signals:** DisplayPort x 3, HDMI, DVI-D (dual link)	YES, Meets Specifications	Video Signals: DisplayPort x 3, HDMI, DVI-D (dual link)
	10. **USB:** 3 Ports of USB 3.0	YES, Meets Specifications	The Workstation CPU will have 2 USB 3.2 Gen 2 Type-A ports 2 USB 3.2 Gen 1 Type-A ports
	Certifications & Standards: CE (Medical Device), EN60601-1, ANSI/AAMI ES60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, CAN ICES-3 (B), RCM, RoHS, China RoHS, WEEE, CCC, EAC	YES, Meets Specifications	CE (Medical Device), EN60601-1, ANSI/AAMI ES60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, CAN ICES-3 (B), RCM, RoHS, China RoHS, WEEE, CCC, EAC
	IMAGE EVALUATION TOOLS:		
	1. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.	YES, Meets Specifications	Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.
	2. Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.	YES, Meets Specifications	Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms
	3. Profile cuts: horizontal, vertical and oblique views.	YES, Meets Specifications	Profile cuts: horizontal, vertical and oblique views.



S/ No.	Technical specification	Comply YES/NO	Specify/Detail
15	4. Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.	YES, Meets Specifications	Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation
	5. Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.	YES, Meets Specifications	Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.
16	**IMAGE QUALITY PARAMETER:** 1. It should be specified at the lowest scan time available at the system.	YES, Meets Specifications	Specified at 0.33 sec.
	2. High Contrast Spatial Resolution should be 17 LP/cm or higher (Mention slice thickness, scan time phantom, mA, scan field, dose and MTF) up to 10% full FOV.	YES, Meets Specifications	High-contrast Resolution • 0% MTF 17 LP/cm (± 10%) • 2% MTF 15.1 lp/cm (± 10%) • 10% MTF 14.6 lp/cm (± 10%) • 50% MTF 12.0 lp/cm (± 10%) Technique • Tungsten wire in air • 160 mA, 120 kV, 1 s, 5 mm
	3. Low contrast detect ability should be 5mm at difference using 20cm CATPHAN (please mention phantom, scan time, mA, filter for image reconstruction, scan field, dose, slice thickness).	YES, Meets Specifications	**Phantom CATPHAN (20 cm)** Object size: 5 mm Contrast difference: 3 HU CTDIvol (32 cm) 10.75 mGy Technique 1.0 s, 10 mm, 120 kV



S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
	4. High Contrast Resolution and Low Contrast Resolution for spiral must be same as that for axial.	YES, Meets Specifications	High Contrast Resolution and Low Contrast Resolution for spiral is same as that for axial.
17	**DOSE REDUCTION TECHNIQUE:** 1. Should be available. 2. Pre-patient collimation to reduce unnecessary dose to patient. 3. Specify the Dose reduction software.	Yes YES, Meets Specifications YES, Meets Specifications	Combined Applications to Reduce Exposure (CARE protocols) Yes, based on CT application selected. Standard CARE technologies • CARE kV • 10 kV Steps • CARE Child • CARE Dose4D • CARE Topo • CARE Profile • CARE Filter • Flex Dose Profile • CARE Bolus CT • CARE Test Bolus • X-CARE • SAFIRE® (Sinogram Affirmed Iterative Reconstruction)
	POST PROCESSING TOOLS: 1. 2-D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.	YES, Meets Specifications	2-D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
18	2. Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR. 3. **Standard 3D applications:** CT angiography, MIP, MinIP, SSD, VRT, and other advanced **3D applications** and colour coding for different tissues. 4. Post Processing Software: Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, Vessel segmentation, Virtual Endoscopy software to be provided in all workstations. 5. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition times. 6. Volume measurements	YES, Meets Specifications YES, Meets Specifications YES, Meets Specifications YES, Meets Specifications YES, Meets Specifications	Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR is available on the system CT angiography, MIP, MinIP, SSD, VRT, and other advanced 3D applications and colour coding for different tissues is available on the system. Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, Vessel segmentation, Virtual Endoscopy software is provided in both workstations. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition times is available. Volume Measurements is available as a standard feature.
19	**PATIENT COMMUNICATION SYSTEM:** An integrated intercom and Automated Patient Instruction System (API) should be provided	Yes, Meets Specifications	Automatic Patient Instruction (API) • Freely recordable • 7 API text pairs for respective languages available • Presets in 40 languages available
	T. CONNECTIVITY AND ARCHIVAL		

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	1. DICOM Connectivity (Specify Version) should be compatible and optimised for networking with other imaging systems.	YES, Meets Specifications	DICOM 3.0 connectivity for DICOM Send, Store, Query/Retrieve, MPPS, Print etc is in built and standard for networking with other imaging systems
	2. DICOM converters for linking the camera with other imaging systems of the department should be provided, if required separately.	YES, Meets Specifications	All modern systems are DICOM compatible. So such converters are not needed.
	3. It should have sufficient memory to store images from the CT as well as other systems connected to it.	YES, Meets Specifications	It has sufficient memory to store images from the CT, and can also retrieve images from other modalities.
	4. Filming parallel to other activities, including independent scanning, documentation and post-processing and configurable image text.	YES, Meets Specifications	While scanning is in process, user can post-process other patient images, carry out filming, etc as required
	5. Archiving: Multi - burner DVD/CD writer should be provided for archival. Specify minimum number of uncompressed and compressed images that it can store per disc.	YES, Meets Specifications	CD/DVD write is provided for image archival. About 4,000 images compressed per disk about 1,500 uncompressed images per disk.
	6. Option of viewing these discs on any PC without DICOM viewer should be available.	YES, Meets Specifications	Yes, These images can be burnt on jpeg format and viewed on any PC without a DICOM Viewer.
20	7. Should be capable of IT system integration with PACS storage capacity of at least 30T	YES, Meets Specifications	The CT System is capable of integration with any PACS system as far as they follow a DICOM image transfer protocol.
	U. UPGRADABILITY:		

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	4. Software updates that enhance existing applications must be provided by the vendor indefinitely at **no cost to the purchaser**. These no charge updates shall include any circuit boards or parts if software is added to enhance existing capabilities.	YES, Meets Specifications	Manufacturer releases mandatory updates from time to time. These updates are automatically performed if the system is connected to the Internet via SRS (Smart Remote Services). If the updates involve change in Hardware, these will also be performed.
	5. System should have capability to being upgraded as new technology emerges for at least 10 years	YES, Meets Specifications	The Somatom GO Platform is a very new CT platform developed by Siemens. The system will have the capability of being upgraded as new technology emerges for 10 years or more.
	Additional or new software must have the capability of being downloaded by remote computer access. Software must include a free trial period before purchase.	YES, Meets Specifications	If the System is connected to the Internet, additional or New Software can be downloaded. If not, Pacific can enable the installation of such new Software. Trial licences are available for trying out the software for a period of 3 months, before purchase.
	POWER SUPPLY: 1. Power input to be 3 Phase, 380-480VAC, 50/60Hz, as appropriate fitted with for required items.	YES, Meets Specifications	400V, 3 Phase, 50HZ

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
21	2. Suitable servo controller stabilizer provided with resettable over current breaker shall be fitted for protection.	YES, as per Clarification reply received.	We shall supply a Servo Stabiliser. However in our opinion, a Servic Stabiliser is too slow to respond to the high load demand of the CT scanner and will force the load to shift to the UPS, thereby rendering the Stabiliser ineffetive. The supplied UPS is able to carry out load supply stabilisation due to the Online design. Please confirm if you insist that the same be supplied.
	3. Online UPS of suitable rating for 30 minutes or more backup shall be supplied for the complete system including computers.	YES, Meets Specifications	120kVA or larger will be supplied with 30 min backup and will cover the whole CT System including the CT Computers.
	ACCESSORIES, SPARES AND CONSUMABLES:		
	1. Standard Patient positioning accessories and restraining devices : 2 sets	YES, Meets Specifications	2 sets of Patient positioning accessories and restraining devices will be supplied.
	2. Good quality light weight vinyl Lead Eye Goggles, Thyroid Shields, Aprons and of .5mm lead equivalent : 3 units each	YES, Meets Specifications	Led Glass Goggles, Thyroid Shields, Lead Aprons all of 0.5mm Pb, 3 nos each will be supplied. Manufacturer Radi Teknoloji A.S., Turkey. www.radixray.com
	3. Lead Glass 150x100cmx 2mm lead : 1 unit	YES, Meets Specifications	Lead Glass 150 x 100 x 2.2mm Pb, with frame will be supplied
	4. Patient transport trolley : 2 units	YES, Meets Specifications	2 units Patient transport trolleys shall be supplied. Manufactured by Jaffery Ind Saini Limited, Dar es Salaam

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	5. Instrument trolley: 2 units	YES, Meets Specifications	2 units Instrument trolleys shall be supplied. Manufactured by Jaffery Ind Saini Limited, Dar es Salaam
	6. Non Invasive Monitor of 12" screen with TFT colour display with the following accessories:	YES, Meets Specifications	**BPL Medical India**, Non-Invasive monitor 12" Screen with accessories as stated below.
	• Should be USFDA & CE (Notified body)	YES, Meets Specifications	CE Certified System. As well as USFDA.
	• ECG /Resp: 5 lead ECG cable with clip – 2 sets per monitor and 10 lead ECG cable with clip 1 set per monitor.	YES, Meets Specifications	ECG /Resp: 5 lead ECG cable with clip – 2 sets per monitor and 10 lead ECG cable with clip 1 set per monitor.
	• NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs –one per monitor. (Complete sets)	YES, Meets Specifications	NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs –one per monitor. (Complete sets) will be supplied.
	• SpO2: Adult SpO2 sensor with cable – two units per monitor and Pediatric SpO2 Sensors – one unit per monitor.	YES, Meets Specifications	SpO2: Adult SpO2 sensor with cable – two units per monitor and Pediatric SpO2 Sensors – one unit per monitor. Will be supplied
	• Temperature: Central temperature Probe – two per monitor and Skin temperature probe – one unit per monitor	YES, Meets Specifications	Temperature: Central temperature Probe – two per monitor and Skin temperature probe – one unit per monitor will be supplied
	7. Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to 360 Joule :	YES, Meets Specifications	**BPL Medical India** Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to 360 Joule
	• Should be USFDA & CE (Notified body). It should be mains and battery operated.	YES, Meets Specifications	USFDA & CE certified. It is mains and battery operated.

S/ No.	Technical specification	Comply **YES/NO**	Specify/Detail
22	• Should deliver at least 25 shocks with fully charged battery with the following accessories:	YES, Meets Specifications	Delivers at least 25 shocks with fully charged battery with the following accessories
	• Adult and paediatric paddle : 1 each	YES, Meets Specifications	Adult and paediatric paddle : 1 each
	• Disposable pads: 10 units.	YES, Meets Specifications	Disposable pads: 10 units.
	8. Dual head Pressure Injector with the following:	YES	**Medtron** CT-D, Dual Head CT Injector
	• Should be CE (Notified body) approved.	YES, Meets Specifications	CE Certified System. As well as USFDA.
	• Flow rate 0.1-10 ml/sec, Volume - 1 ml to syringe capacity, programmable pressure limit of 325 psi with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.	YES, Meets Specifications	Flow rate 0.1-10 ml/sec Volume - 1 ml to 200ml, programmable pressure limit of 21 bar with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.
	• Should be provided with head mounting device and integral IV pole.	YES, Meets Specifications	Provided with Syringe Head Mounting Device. This is a CT Injector with dual syringes, so no separate IV pole on the Injector is required.
	• 1000 unit's syringes with tubing's to be provide with the machine.	YES, Meets Specifications	1000 syringes with tubings shall be supplied
	• Unit will be provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.	YES, Meets Specifications	Unit is provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.
	9. Other items to be supplied:		

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	• Post processing room chairs : 5 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
	• Executive Chairs for reporting: 2 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
	• Executive Tables for reporting : 2 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
	• Patient waiting chairs : 8 units in 2 rows (4 Chairs in one row)	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
	• One laptop and one laser printer with scanning & copy facility should be provided with latest specification for reporting & tele-radiology.	YES	HP Laptop and HP Laser printer with Scanning and Copy facility with latest specification will be supplied. Tele-radiology software is not included.
	NB. The make & model of all the additional equipment should be specified in the compliance statement for the technical evaluation, assessment & record.		
23	**SITE:** 1. A complete site preparation plan will be required to be submitted along with its financial components in separate cover. The vendor will be eligible to inspect the proposed site after obtaining permission. Care must be taken to address placement of the equipment, sitting, viewing and reporting area, patient preparation space, storage area etc.	Yes	Details are provided.
	2. Requirements of power and air conditioning must be clearly specified in a separate section of the offer. The temperature of the gantry room to be maintained at 20oC.	YES	YES, Provided in Planning guide.

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
	WARRANTY & CMC:		
	Should have 2years warranty, and three years comprehensive and collective maintenance inclusive spare parts for entire CT system (X-ray TUBE and all accessories) including all turn key items (Patient Monitor, Defibrillator, Laser Imaging Camera, Digital film printer, Pressure Injector, UPS, Air Conditioner).	YES	Included.
	Cost of CMC (Comprehensive Maintenance Contract) must be quoted in the price bid for the next 5 years after the expiration of the warranty period (i.e.: 6th, 7th, 8th, 9th, 10th).	YES	Provided in Price BID. Not added to tender price.
24	Lifetime support; spare parts, consumables should be available throughout the lifetime period of the machine.	YES, Meets Specifications	Spares and Services are available throughout the lifetime of the machine.
	Uptake time should be a minimum of 90%.	Yes	We shall provide an Uptime of 90% or higher.
	Proof of locally available technical support personnel, including CVs and work permit for foreign personnel.	YES	All our engineers are Tanzanian citizens. No work permits are needed. We have submitted their Training Certificates.
	Availability of technical personnel within the country should be stated; this should include CVs, work permits for foreign personnel.	YES,	We have Technical personnel within the country
	Software should be flexible and provide the room for upgrade to add new parameters to be measured by the Machine and report format	YES, Meets Specifications	Software is flexible and provides the room for upgrade to add new parameters to be measured by the Machine and report format

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
25	**MANDATORY REQUIREMENTS:** **Vendor shall have to process the documents and get all the necessary clearances of the unit from all regulatory authorities such as TAEC, TMDA and TBS.**	YES	We will process all the documents as requested, TMDA, TBS (as necessary) and TAEC.
	TRAINING & DOCUMENTATION:		
	At least 2 weeks on site training by application specialist for two radiologists, two radiographers.	YES	Will be provided.
	□ At least 6 weeks certified Comprehensive service training for Biomedical Engineer	YES	3 weeks at manufacturer site and 3 weeks onsite will be provided.
	□ Safety aspects of Radiation dosage leakage should be spelt out.	YES	Application Trainer will spell the Safety aspects of Radiation dose leakage.
	□ User manual in English incorporating the newer applications.	YES	English Language manuals are suplied

S/ No.	Technical specification	Comply YES/NO	Specify/Detail
26	☐ Service manual in English	YES	Installation and basic service manual in English are supplied.
	☐ Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.	YES	A LOG Book shall be provided for the Users to log in daily, weekly, monthly and quarterly maintenance as required.
	☐ The job description of the hospital technician and company service engineer should be clearly spelt out.	YES	The Hospital Biomedical technician is responsible to attend to first line of maintenance of the Scanner and its components and inform the Company/Supplier with Information of the fault, maintenance, Error Logs and also schedule the Corrective and Preventive Maintenance of the scanner with the Company/Supplier. The Company service engineer will carry out all Corrective and Preventive maintenance with the hospital Biomed, order spares as necessary, and maintain the requested uptime of 90%. The Company will also provide service reports for service and spares tracking.
	☐ Adequate books and journals within the warranty period	YES	Company will help to connect Users to the Siemens CT Users group where online Documents and journals published by Siemens are available.

PACIFIC DIAGNOSTICS LIMITED
DAR-ES-SALAAM

CT 128 SLICES TECHNICAL SPECIFICATIONS

Level of use: Zonal Hospitals and above

Bugando Medical Center. For Chato Zonal Hospital

2 years warranty, three years comprehensive Maintenance and spare parts

Technical specification	Comply YES/NO	Specify/Detail
The system shall be of latest technology allowing full and continuous rotation, multi-slice scanning (128 slices acquisition per rotation) with true isotropic volume acquisition and sub-millimetre resolution of at least 0.4mm for body, cardiac and vascular application. Pitch to be specified used for each application to achieve the resolution. True future upgradability to higher slices per rotation and future applications should be possible. The speed should be adequate to all body, neurological and cardiovascular examinations.	**YES**	Siemens X.cite, 128 slice CT scanner, which is the Latest technology CT Scanner with 128 slice Acquisition per rotation and with true isotropic volume acquisition and sub-millimeter resolution of at least 0.4mm for body, cardiac and vascular application. The platform is an upgradeable to platform for oth, hardware and software. The speed is unprecedented and is easily used for Whole Body Applications without compromise.
CT EXAMINATIONS:		The Following CT Examinations can be performed
1. Head and Neck CT	YES	Head and Neck CT
2. Cardiothoracic CT	YES	Cardiothoracic CT
3. Abdominal CT	YES	Abdominal CT
4. Pelvic CT	YES	Pelvic CT
5. Spine CT	YES	Spine CT
6. Musculoskeletal CT	YES	Musculoskelatal CT

	Technical specification	Comply YES/NO	Specify/Detail
	7. CT Angiography	Yes	CT Angiography
	8. Specialised CT examinations such as Cardiac CT, coronary CT and Interventional procedures.	YES	Specialised CT examinations such as Cardiac CT, coronary CT and Interventional procedures (Interventional procedures need monitor
	DETECTOR:		
2	1. Should be 1 2 8 detectors a r r a y system (h a r d w a r e)	YES	The X.Cite System incorporates the Stellar detector array system and is a true 128 acquired Slice system with modern hardware and software, with an X-ray Tube of unprecedented Heat Storage capacity. Details are provided below in other specifications.
	2. The detectors shall be large area detector with Z axis coverage of 38mm and/or above.	YES, Meets Specifications	Z Axis Coverage: 38.4 mm
	3. Detector system should not require frequent calibrations (at least once a month).	YES, Meets Specifications	The Detector system does not need frequent calibrations
	4. Specify the number of rows and the total number of detector cells (670 elements or more).	YES, Better than requested Specifications	Number of rows: 64 Number of detector cells per row: 840 Total Number of detector elements: 53,760
	GANTRY:		
	1. Aperture: 70 cm or more	YES, Meets Specifications	Gantry Aperture 70 cm
	2. Control Panel: on either side	Yes, Meets Specifications	Control Panel on both sides
	3. Entire range of rotation times for full 360 degree should be specified. Minimum rotation time should be 0.4 seconds or less for whole body application.	YES, Better than requested Specifications	Time for Full 360 degree rotation: 0.3 sec

	Technical specification	Comply YES/NO	Specify/Detail
3	4. Should have positioning laser lights.	YES, Meets Specifications	3D Laser Positioning Lights in Axial, Coronal and Sagittal directions. In addition, Isocenter laser is also included.
	5. Maximum scan FOV should be at least 50 cm.	YES, Meets Specifications	Maximum scan FOV is 50cm.
	6. Tilt-Remote >= +/- 30 deg.	YES, Meets Specifications	Physical Tilt: +/- 30 degree.
	7. Should have CT fluoroscopy with separate monitor in the gantry room for CT guided biopsy.	YES, Meets Specifications	Interventional CT hardware, wit separate monitor in Gantry room, with CT Guided biopsy software is included.
	X-RAY GENERATOR:		
4	1. High Frequency type	YES, Meets Specifications	Microprocessor Controlled High Frequency Generator.
	2. Power output 75KW or more to support continuous and sustained operation	YES, Meets Specifications	Actual Power Output 105kW.
	X-RAY TUBE:		
	1. Tube current : 30 to 800mA or more	Yes, Exceeds Specifications	10 - 1200 mA
	2. Real Time mA modulation for dose regulation.	YES, Meets Specifications	CARE Dose4D: Fully automated dose modulation solution. The algorithm automatically modulates tube current for optimum image quality.
	3. Tube Voltage: 80 to140 KV	Yes, Exceeds Specifications	70 to 150 kV
	4. Anode Heat Storage Capacity should be 6 MHU or more	Yes, Exceeds Specifications	Direct Anode Cooling - 30 MHU
5	5. Should have anode Temp Monitoring System.	YES, Meets Specifications	Inbuilt Anode and Tube temperature Monitoring System.

Technical specification	Comply YES/NO	Specify/Detail
6. Heat Dissipation: 1600 KHU or more	Yes, Exceeds Specifications	2,700 kHU/min
7. Specify Focal Spot size and number according to IEC recommendation.	Yes	Focal spot size according to IEC 60336 • 0.6 x 0.7 / 8° • 0.8 x 1.1 / 8°
8. The tube should have dynamic focal spots.	YES, Meets Specifications	Flying Focal Spots
9. The X-ray cooling unit should be inbuilt in the gantry.	YES, Meets Specifications	The X-ray Tube Cooling System is inbuilt in the Gantry.
10.Warranty of tube: Comprehensive warranty for all parts including x- ray tubes for at least 2 years irrespective of number of scans.	YES, Meets Specifications	We have included a Comprehensive Tube and Spares warranty for 5 years, irrespective of the number of scans
PATIENT TABLE:		
1. Minimum Load capacity of at least 200Kg ±10% with 1 mm positioning accuracy.	Yes, Exceeds Specifications	227 kg with positioning accuracy of 1mm
2. Table speed: Horizontal up to 100mm or more/sec.	Yes, Exceeds Specifications	200mm/sec
3. Vertical Table travel: 50mm/sec or more	YES, Meets Clinical Requirements	35 mm/sec
4. Minimum table top height should be 55cm or less from the ground level for easy transportation of trauma patient.	Yes, Exceeds Specifications	43cm for easy transportation of Patient.
5. Longitudinal Scan Range: at least 150cm or more	Yes, Exceeds Specifications	200 cm
6. Manual movement of the table should be possible in case of power failure.	YES, Meets Specifications	Mechanical Lock can be released and Manual movement of table is possible for fast retrieval of patient in case of emergency or Power Failure.

Technical specification	Comply YES/NO	Specify/Detail
7. Reproducing positional accuracy should be mentioned.	YES	0.25mm reproducing positional accuracy
8. Remote Up/down and forward /backward should be standard.	YES, Meets Specifications	Standard. From Console or from Tablet.
9. Facility of positioning aid for horizontal isocentric positioning of the patient.	YES, Meets Specifications	Isocenter Horizontal Laser is available for accurate positioning of the Patient in the Isocenter.
Should have Carbon Fibre Table Top.	YES, Meets Specifications	Carbon Fiber Table top is standard.
SPIRAL CT:		
1. Scan Time: Minimum scan time 0.4 sec or less for full 360 deg rotation.	Yes, Exceeds Specifications	0.3 sec.
2. Min slice thickness should be 0.625 mm or less	Yes, Exceeds Specifications	0.6mm
3. Max slice thickness: 10 mm or more	YES, Meets Specifications	10 mm
4. Slice increment.-specify scan and selectable slice thickness	YES, Meets Specifications	Sequence Acquisition Reconstructed slice widths 0.6, 0.6, 0.8, 1.0, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm Multislice Spiral Acquisition Reconstructed slice widths 0.5, 0.6, 0.8, 1, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm

	Technical specification	Comply **YES/NO**	Specify/Detail
7	5. Pitch Factor (volume pitch): variable between 0.5 sec to 1.5 sec or more and should be user selectable. Specify all possible pitch selections.	YES, Meets Specifications	Pitch factor • 0.15 – 1.7 • Down to 0.03. User Selectable. Pitch selection as per scan protocol. Exam Designer Easy and intuitive way to change and manage scan protocols
	6. Single Continuous scan time should be at least 120 sec.	Yes, Exceeds Specifications	200 seconds
	7. Should optimize radiation dose and resolution for each selection.	Yes, Exceeds Specifications	• X-CARE Provides organ dose reduction for radiation-sensitive peripheral organs e.g. eye lenses, while maintaining image quality. • Flex Dose Profile • CARE kV • 10 kV Steps • CARE Child • CARE Filter

	Technical specification	Comply YES/NO	Specify/Detail
	8. Bolus Triggered Spiral acquisition should be possible.	YES, Meets Specifications	CARE Bolus is included as standard
	9. Facility of multi-spiral, bi-directional spirals and back to back spirals.	YES, Meets Specifications	Multi-Spirals can be planned on the Topogram. Prospective or Retrospective (bi-directional) spirals and Back to back Spirals are possible.
	10. Facility for monitor contrast enhancement and automatically commenced scanning.	YES, Meets Specifications	Window Width and Center is possible for Monitor Contrast enhancement. Automatic commencement of scanning is possible.
	TOPOGRAM:		
	1. Length and width: Specify range	Yes	Topogram Length • 128–1,680 mm Width: 70cm
9	2. Scan Time: Specify range per examination/procedure	Yes	Scan times • 1.36–8.76 s Suitable for all Exams and procedures
	3. Views: Frontal & lateral views.	YES, Meets Specifications	Views a.p., p.a., lateral
	4. Should be able to interrupt acquisitions manually once the desired anatomy is obtained	YES, Meets Specifications	CARE Topo Manual interruption possible once desired anatomy has been imaged
	DATA ACQUISITION SYSTEM:		
	1. Detector should capable of acquiring 64 slices per 360 degree of rotation.	YES, Meets Specifications	Acquiring 128 slices per 360 degree of rotation
	2. Number of rows with their thickness, number of element in each rows	YES	64 rows 840 elements per row 38.4mm total detector thickness Total Elements 53,760.

	Technical specification	Comply YES/NO	Specify/Detail
0	3. Inbuilt mechanism for adapting the tube current during each scan this should enable radiation dosage reduction where body part thickness is less.	Yes, Exceeds Specifications	CARE Dose4D & Flex Dose Profile: Fully automated dose modulation solution. The algorithm automatically modulates tube current for optimum image quality and and accurate dose handling.
	4. Detector system should not require frequent calibration.	YES, Meets Specifications	The UFC Detector does not need frequent calibration.
	5. Should have inbuilt paediatric protocols based on patient weight.	YES, Meets Specifications	CARE Child protocol for Pediatric scans based on Patient weight. Dedicated pediatric protocols automatically set a low tube voltage – in most cases 70 kV – while CARE Dose4D optimizes dose distribution and offers special modulation curves.

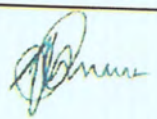
Technical specification	Comply YES/NO	Specify/Detail
IMAGE RECONSTRUCTION:		
1. Real Time reconstruction speed: 15 images per sec or more at 512x512 matrix.	Yes, Exceeds Specifications	23 images/sec at 512 matrix
2. Display Matrix: 1024x1024 or more	YES, Meets Specifications	Display Matrix 2560 x 1440
3. Reconstructed slice thickness: ≤1mm to 10mm.	Yes, Exceeds Specifications	0.6mm to 10mm
4. Should have selectable Scan Field and reconstructed field	YES, Meets Specifications	Scan Field is selectable from Topogram. Reconstructed Field is also selectable from Topogram. It is also possible to carry out reconstruction from Raw data to user selectable Reconstruction Field width
OPERATOR CONSOLE:		
1. Radiology Monitor Resolution: 1280x1240	YES, Meets Specifications	2560 x 1440 resolution.
2. Pixel Size < 0.3 mm.	YES, Exceeds Specifications	0.2331 mm
3. Two Flat screens radiology grade LCD Type of at least 24" with fast image refresh rate should be fast and preferably instantaneous and flicker free.	YES, Meets Specifications	Two Flat ScreenMedical Grade 4MP LCD monitors, High Resolution of 27" each, Flickerfree, 100 Hz monitors
4. Should be non-interlaced and progressive display type & sturdy.	YES, Meets Specifications	Non-interlaced and Progressive Display. Sturdy design and robust construction, long life

Technical specification	Comply **YES/NO**	Specify/Detail
5. Should perform Registration, scheduling, protocol selection , volume rendering, Volume measurements, Multiplan Reconstruction, and standard evaluation application and all available post processing functions without the help of the satellite workstation as well as film exposure.	YES, Meets Specifications	Performs all the actions as described. No need of a Satellite Workstation. All Standard Evaluation and post-processing functions as well as Filming are available
6. Should have 3GHz or latest processor with at least 16GB RAM.	Yes, Exceeds Specifications	High performance computer CPU Intel Xeon 3.5–4.0 GHz with Turbo Boost Technology 96 GB RAM
7. Raw Data storage with at least 1TB Hard disc having a minimum of 1,500,000 images storing capacity in 512x512 format.	Yes, Meets Specifications	1.2TB with Image Storage of 1,500,000 images in 512 matrix
8. Additional external hard disk of minimum 2TB should be provided.	YES, Meets Specifications	External Hard Disk of 2 TB will be supplied
9. System should be menu driven operation. Applications like image reconstruction, filming, curve MPR, CT Angiography; VRT, auto bone removal.	YES, Meets Specifications	Menu Driven Applications for Image Reconstruction, MPR, CT Angio, VRT, Auto Bone removal, Filming and many more.
10. Lung nodule evaluation software to be provided in workstation, and not in operator console.	YES, Meets Specifications	Lung Nodule Evaluation will be provided on the Workstation.
11. System should be offered with complete Cardiac Acquisition and post processing packages.	YES, Meets Specifications	Full Cardiac Acquisition and post-processing packages are included.

	Technical specification	Comply YES/NO	Specify/Detail
	CONSOLE COMMON FEATURE:		
	1. The workstation should be interconnected for two-way transfer of images and reports.	YES, Meets Specifications	The Workstations are connected to the Main console for two way transfer of Images and Reports.
	2. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition time.	YES, Meets Specifications	Comparison of two datasets is possible, taken on different modalities or with different acquisition times
3	3. Cine display should be available, both interactive and automatic.	YES, Meets Specifications	CINE Display Display of image sequences Automatic or interactive with mouse control Max. image rate: 30 frames/s
	4. Window width and Centre should be freely selectable.	YES, Meets Specifications	Window Width and Center are freeley Selectable
	5. Patient online Registration, pre-registration facility and transfer of information from HIS/RIS via DICOM should be possible.	YES, Meets Specifications	These are Standard Features
	6. Should have dedicated pediatric protocol for low dose imaging.	YES, Meets Specifications	CARE Child, 70 kV for Pediatric and low dose imaging is available.

Technical specification	Comply YES/NO	Specify/Detail
WORKSTATIONS: Total two (1 at operator console room & 1 at Radiologist room)	YES, Meets Specifications	Two Workstations, 1 at Operator Console and 1 at Radiologist room are included in Scope of Supply.
1. Should have Flat screen Medical Diagnostic monitor (minimum 1Mega pixels coloured) of **at least 24"** with fast image refresh rate should be fast and preferably instantaneous and flicker free with Hard Disk of 1TB or more, capable of simultaneous viewing of all post processing functions and filming independently without the help of main console. Data transfer between the operator console & the satellite workstation should be instantaneous.	Yes, Exceeds Specifications	Workstation will have a 30" monitor 6MP, fast image refresh, Flickerfree color monitor with Hard drive of 1TB, capable of all post-processing and filming independent of Main console. Data Transfer between Operator console and workstation is instantaneous.
K. Processor / Chipset CPU: Intel Xeon E5-1650V2 / 3.5 GHz, Max Turbo Speed. 3.9 GHz, Number of Cores. 6-core, Chipset Type. Intel C602, Processor Main Features. Hyper-Threading Technology, Intel Turbo Boost Technology 2, Processor Socket. LGA2011 Socket,	YES, Exceeds Specifications	On checking the requested specification is not available any more, Hence we propose the below better specifications. HP Z2 G5-Tower Workstation 1 x Intel Core i5 10600K 6 Cores 32 GB RAM Up to 4.8 GHz with Intel Turbo Boost Technology (4.1 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate
1. Operating System: Licensed Windows 10 Professional	YES, Meets Specifications	Licenced Windows 10 Professional, 64 bit. Kindly note that the System has to be connected to Internet for automatic updates by Microsoft.

Technical specification	Comply YES/NO	Specify/Detail
2. **Microsoft Office:** Microsoft Office 2019 Professional	YES, Meets Specifications	Licenced Microsoft Office 2019 or later if available
3. **Antivirus:** Include antivirus software	YES, Meets Specifications	Anti-Virus Software will be installed. The Workstation has to be connected to Internet for automatic update of the Virus Databases for continued protection.
4. **Radiology Monitor**		
5. **Size:** 24 inch	YES, Meets Specifications	30 inch
6. **Backlight:** LED	YES, Meets Specifications	Backlight LED
7. **Native Resolution:** 1536 x 2048 (3:4 aspect ratio)	YES, Meets Specifications	30" Monitor with 3280 x 2048 resolotion 6MP will be supplied.
8. **Display Colors:** 10-bit (DisplayPort): 1.07 billion from a palette of 543 billion (13-bit) colors	YES, Meets Specifications	10-bit (DisplayPort): 1.07 billion from a palette of 543 billion (13-bit) colors.
8-bit: 16.77 million from a palette of 543 billion (13-bit) colors	YES, Meets Specifications	8-bit: 16.77 million from a palette of 543 billion (13-bit) colors
9. **Video Signals:** DisplayPort x 3, HDMI, DVI-D (dual link)	YES, Meets Specifications	Video Signals: DisplayPort x 3, HDMI, DVI-D (dual link)
10. **USB:** 3 Ports of USB 3.0	YES, Meets Specifications	The Workstation CPU will have 2 USB 3.2 Gen 2 Type-A ports 2 USB-3.2 Gen 1 Type-A ports
Certifications & Standards: CE (Medical Device), EN60601-1, ANSI/AAMI ES60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, CAN ICES-3 (B), RCM, RoHS, China RoHS, WEEE, CCC, EAC	YES, Meets Specifications	CE (Medical Device), EN60601-1, ANSI/AAMI ES60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, CAN ICES-3 (B), RCM, RoHS, China RoHS, WEEE, CCC, EAC



Technical specification	Comply YES/NO	Specify/Detail
2. Should have 3GHz or latest processor with 16GB RAM.	YES, Meets Specifications	we propose the below better specifications. HP Z2 G5-Tower Workstation 1 x Intel Core i5 10600K 6 Cores 32 GB RAM Up to 4.8 GHz with Intel Turbo Boost Technology (4.1 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate
3. Should have lung nodule evaluation software as standard.	YES, Meets Specifications	Yes, Lung Evaluation Software is standard supply.
4. CT Angio – post processing software should include VRT, MIP, 3D SSD, Image fusion.	YES, Meets Specifications	Yes, CT Angio – post processing software should include VRT, MIP, 3D SSD, Image fusion.
5. The advance vessel analysis, auto bone removal, small volume quantification, CT Colonography with polyp measurement and auto registration of prone and supine views. CT reporting should be possible independently of workstation.	YES, Meets Specifications	The advance vessel analysis, auto bone removal, small volume quantification, CT Colonography with polyp measurement and auto registration of prone and supine views is possible on workstation. (Should this specification be part of main console)
6. Digital Subtraction Angiography should be available for Neuro Angiography	YES, Meets Specifications	Digital Subtraction Angiography should be available for Neuro Angiography
7. System should be offered with complete & latest Cardiac Post Processing packages on workstation.	YES, Meets Specifications	Complete & latest Cardiac Post Processing packages on workstation is offered.
8. Advanced Neuro package to be offered.	YES, Meets Specifications	Advanced Neuro package to be offered.

Technical specification	Comply YES/NO	Specify/Detail
a. Hemoperfusion CT: Evaluation of dynamic CT data of Brain. Different Diagnosis of Acute ischemic stroke. Assessment of dynamic cerebral perfusion, CBV, CBF, TTP and tissue at risk classification. b. Tumour evaluation: Automated evaluation of Blood Brain Barrier disruptions in Brain Tumour. c. Neuro perfusion weighted map (NWM): Visualization of colour coded CTA source images for 3D display of acute stroke. d. Neuro DSA CT should provide Visualization of intracranial vascular structures based on digital bone removal.	YES, Meets Specifications	a. Hemoperfusion CT: Evaluation of dynamic CT data of Brain. Different Diagnosis of Acute ischemic stroke. Assessment of dynamic cerebral perfusion, CBV, CBF, TTP and tissue at risk classification. b. Tumour evaluation: Automated evaluation of Blood Brain Barrier disruptions in Brain Tumour. c. Neuro perfusion weighted map (NWM): Visualization of colour coded CTA source images for 3D display of acute stroke. d. Neuro DSA CT should provide Visualization of intracranial vascular structures based on digital bone removal.
9. The system should be user friendly with all functions menu driven. It should be modern user interface and 50 DVD blank (medical grade) should be provided.	YES, Meets Specifications	User Friendly and menu driven functions. We shall provide 50 blank DVD medical grade
10. All workstations should be full loaded with licensed post processing software capability.	YES, Meets Specifications	All workstations will be having licenced post-processing capability.
IMAGE EVALUATION TOOLS:		
1. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.	YES, Meets Specifications	Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.

).	Technical specification	Comply YES/NO	Specify/Detail
	2. Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR.	YES, Meets Specifications	Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR is available on the system
	3. **Standard 3D applications:** CT angiography, MIP, MinIP, SSD, VRT, and other advanced **3D applications** and colour coding for different tissues.	YES, Meets Specifications	CT angiography, MIP, MinIP, SSD, VRT, and other advanced 3D applications and colour coding for different tissues is available on the system.
18	4. Post Processing Software: Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, Vessel segmentation, Virtual Endoscopy software to be provided in all workstations.	YES, Meets Specifications	Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, Vessel segmentation, Virtual Endoscopy software is provided in both workstations.
	5. 3D images for CT guided biopsy, 3D virtual endoscopy, colonoscopy, bronchoscopy should be possible.	YES, Meets Specifications	3D images for CT guided biopsy, 3D virtual endoscopy, colonoscopy, bronchoscopy is possible.
	6. DSA and advanced neurological imaging packages should be provided.	YES, Meets Specifications	DSA and advanced neurological imaging packages is provided.
	7. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition times.	YES, Meets Specifications	Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition times is available.
	8. Perfusion CT for study of brain. Liver, kidney, pancreas etc.	YES, Meets Specifications	Body Perfucaion is included.
	9. Volume measurements	YES, Meets Specifications	Volume Measurements is available as a standard feature.

	Technical specification	Comply YES/NO	Specify/Detail
	2. Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.	YES, Meets Specifications	Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms
	3. Profile cuts: horizontal, vertical and oblique views.	YES, Meets Specifications	Profile cuts: horizontal, vertical and oblique views.
15	4. Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.	YES, Meets Specifications	Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation
	5. Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.	YES, Meets Specifications	Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.
	IMAGE QUALITY PARAMETER:		
	1. It should be specified at the lowest scan time available at the system.	YES, Meets Specifications	Specified at 0.33 sec.
6	2. High Contrast Spatial Resolution should be 17 LP/cm or higher (Mention slice thickness, scan time phantom, mA, scan field, dose and MTF) up to 10% full FOV.	YES, Meets Specifications	High-contrast Resolution • 0% MTF 17 LP/cm (± 10%) • 2% MTF 15.1 lp/cm (± 10%) • 10% MTF 14.6 lp/cm (± 10%) • 50% MTF 12.0 lp/cm (± 10%) Technique • Tungsten wire in air • 160 mA, 120 kV, 1 s, 5 mm
	3. Low contrast detect ability should be 5mm at difference using 20cm CATPHAN (please mention phantom, scan time, mA, filter for image reconstruction, scan field, dose, slice thickness).	YES, Meets Specifications	**Phantom CATPHAN (20 cm)** Object size: 5 mm Contrast difference: 3 HU CTDIvol (32 cm) 10.75 mGy Technique 1.0 s, 10 mm, 120 kV

	Technical specification	Comply **YES/NO**	Specify/Detail
	10. Fusion of morphological data obtained on CT, MR or DSA.	YES, Meets Specifications	Image Fusion form CT, MR or DSA is possible.

	Technical specification	Comply YES/NO	Specify/Detail
	PATIENT COMMUNICATION SYSTEM:		
9	An integrated intercom and Automated Patient Instruction System (API) should be provided	Yes, Meets Specifications	Automatic Patient Instruction (API) • Freely recordable • 7 API text pairs for respective languages available • Presets in 40 languages available
	T. CONNECTIVITY AND ARCHIVAL		
	1. DICOM Connectivity (Specify Version) should be compatible and optimised for networking with other imaging systems.	YES, Meets Specifications	DICOM 3.0 connectivity for DICOM Send, Store, Query/Retrieve, MPPS, Print etc is in built and standard for networking with other imaging systems
	2. DICOM converters for linking the camera with other imaging systems of the department should be provided, if required separately.	YES, Meets Specifications	All modern systems are DICOM compatible. So such converters are not needed.
	3. It should have sufficient memory to store images from the CT as well as other systems connected to it.	YES, Meets Specifications	It has sufficient memory to store images from the CT, and can also retrieve images from other modalities.
	4. Filming parallel to other activities, including independent scanning, documentation and post-processing and configurable image text.	YES, Meets Specifications	While scanning is in process, user can post-process other patient images, carry out filming, etc as required
	5. Archiving: Multi - burner DVD/CD writer should be provided for archival. Specify minimum number of uncompressed and compressed images that it can store per disc.	YES, Meets Specifications	CD/DVD write is provided for image archival. About 4,000 images compressed per disk about 1,500 uncompressed images per disk.
	6. Option of viewing these discs on any PC without DICOM viewer should be available.	YES, Meets Specifications	Yes, These images can be burnt on jpeg format and viewed on any PC without a DICOM Viewer.

	Technical specification	Comply YES/NO	Specify/Detail
0	7. Should be capable of IT system integration with PACS storage capacity of at least 30T	YES, Meets Specifications	The CT System is capable of integration with any PACS system as far as they follow a DICOM image transfer protocol.
	U. UPGRADABILITY:		
	4. Software updates that enhance existing applications must be provided by the vendor indefinitely at **no cost to the purchaser**. These no charge updates shall include any circuit boards or parts if software is added to enhance existing capabilities.	YES, Meets Specifications	Manufacturer releases mandatory updates from time to time. These updates are automatically performed if the system is connected to the Internet via SRS (Smart Remote Services). If the updates involve change in Hardware, these will also be performed.
	5. System should have capability to being upgraded as new technology emerges for at least 10 years	YES, Meets Specifications	The Somatom GO Platform is a very new CT platform developed by Siemens. The system will have the capability of being upgraded as new technology emerges for 10 years or more.
	Additional or new software must have the capability of being downloaded by remote computer access. Software must include a free trial period before purchase.	YES, Meets Specifications	If the System is connected to the Internet, additional or New Software can be downloaded. If not, Pacific can enable the installation of such new Software. Trial licences are available for trying out the software for a period of 3 months, before purchase.

	Technical specification	Comply YES/NO	Specify/Detail
	POWER SUPPLY:		
	1. Power input to be 3 Phase, 380-480VAC, 50/60Hz, as appropriate fitted with for required items.	YES, Meets Specifications	400V, 3 Phase, 50HZ
1	2. Suitable servo controller stabilizer provided with resettable over current breaker shall be fitted for protection.	YES, as per Clarification reply received.	We shall supply a Servo Stabiliser. However in our opinion, a Servic Stabiliser is too slow to respond to the high load demand of the CT scanner and will force the load to shift to the UPS, thereby rendering the Stabiliser ineffetive. The supplied UPS is able to carry out load supply stabilisation due to the Online design. Please confirm if you insist that the same be supplied.
	3. Online UPS of suitable rating for 30 minutes or more backup shall be supplied for the complete system including computers.	YES, Meets Specifications	UPS for suitable kVA will be supplied with 30 min backup and will cover the whole CT System including the CT Computers for 60 min.
	ACCESSORIES, SPARES AND CONSUMABLES:		
	1. Standard Patient positioning accessories and restraining devices : 2 sets	YES, Meets Specifications	2 sets of Patient positioning accessories and restraining devices will be supplied.
	2. Good quality light weight vinyl Lead Eye Goggles, Thyroid Shields, Aprons and of .5mm lead equivalent : 3 units each	YES, Meets Specifications	Led Glass Goggles, Thyroid Shields, Lead Aprons all of 0.5mm Pb, 3 nos each will be supplied. Manufacturer Radi Teknoloji A.S., Turkey. www.radixray.com
	3. Lead Glass 150x100cmx 2mm lead : 1 unit	YES, Meets Specifications	Lead Glass 150 x 100 x 2.2mm Pb, with frame will be supplied

	Technical specification	Comply YES/NO	Specify/Detail
4.	Patient transport trolley : 2 units	YES, Meets Specifications	2 units Patient transport trolleys shall be supplied. Manufactured by Jaffery Ind Saini Limited, Dar es Salaam
5.	Instrument trolley: 2 units	YES, Meets Specifications	2 units Instrument trolleys shall be supplied. Manufactured by Jaffery Ind Saini Limited, Dar es Salaam

).	Technical specification	Comply YES/NO	Specify/Detail
	6. Non Invasive Monitor of 12" screen with TFT colour display with the following accessories:	YES, Meets Specifications	**BPL Medical India**, Non-Invasive monitor 12" Screen with accessories as stated below.
	• Should be USFDA & CE (Notified body)	YES, Meets Specifications	CE Certified System. As well as USFDA.
	• ECG /Resp: 5 lead ECG cable with clip – 2 sets per monitor and 10 lead ECG cable with clip 1 set per monitor.	YES, Meets Specifications	ECG /Resp: 5 lead ECG cable with clip – 2 sets per monitor and 10 lead ECG cable with clip 1 set per monitor.
	• NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs –one per monitor. (Complete sets)	YES, Meets Specifications	NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs –one per monitor. (Complete sets) will be supplied.
	• SpO2: Adult SpO2 sensor with cable – two units per monitor and Pediatric SpO2 Sensors – one unit per monitor.	YES, Meets Specifications	SpO2: Adult SpO2 sensor with cable – two units per monitor and Pediatric SpO2 Sensors – one unit per monitor. Will be supplied
	• Temperature: Central temperature Probe – two per monitor and Skin temperature probe – one unit per monitor	YES, Meets Specifications	Temperature: Central temperature Probe – two per monitor and Skin temperature probe – one unit per monitor will be supplied
	7. Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to 360 Joule :	YES, Meets Specifications	**BPL Medical India** Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to 360 Joule
	• Should be USFDA & CE (Notified body). It should be mains and battery operated.	YES, Meets Specifications	USFDA & CE certified. It is mains and battery operated.
	• Should deliver at least 25 shocks with fully charged battery with the following accessories:	YES, Meets Specifications	Delivers at least 25 shocks with fully charged battery with the following accessories
	• Adult and paediatric paddle : 1 each	YES, Meets Specifications	Adult and paediatric paddle : 1 each

).	Technical specification	Comply **YES/NO**	Specify/Detail
))	• Disposable pads: 10 units.	YES, Meets Specifications	Disposable pads: 10 units.

Technical specification	Comply YES/NO	Specify/Detail
8. Dual head Pressure Injector with the following:	YES	**Medtron** CT-D, Dual Head CT Injector
• Should be CE (Notified body) approved.	YES, Meets Specifications	CE Certified System. As well as USFDA.
• Flow rate 0.1-10 ml/sec, Volume - 1 ml to syringe capacity, programmable pressure limit of 325 psi with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.	YES, Meets Specifications	Flow rate 0.1-10 ml/sec Volume - 1 ml to 200ml, programmable pressure limit of 21 bar with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.
• Should be provided with head mounting device and integral IV pole.	YES, Meets Specifications	Provided with Syringe Head Mounting Device. This is a CT Injector with dual syringes, so no separate IV pole on the Injector is required.
• 1000 unit's syringes with tubing's to be provide with the machine.	YES, Meets Specifications	1000 syringes with tubings shall be supplied
• Unit will be provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.	YES, Meets Specifications	Unit is provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.
9. Other items to be supplied:		
• Resuscitation accessories including Silicone resuscitation bag, Intubation set with laryngoscope (Adult & Pediatric) should be supplied.	YES, Meets Specifications	Yes, Will be supplied as needed.

Technical specification	Comply YES/NO	Specify/Detail
• Insufflation pump sets for CT colonography with facility for delivery of heated CO2 gas and automatic regulation of flow rate and pressure with high degree of precision. Accessories like tubing (10 units) & CO2 cylinders (5 units) to be provided.	YES, Meets Specifications	Insufflation pump sets for CT colonography with facility for delivery of heated CO2 gas and automatic regulation of flow rate and pressure with high degree of precision will be provided. Accessories - tubing (10 units) & CO2 cylinders (5 units) provided
• Post processing room chairs : 5 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
• Executive Chairs for reporting: 2 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
• Executive Tables for reporting : 2 units	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
• Patient waiting chairs : 8 units in 2 rows (4 Chairs in one row)	Yes	Manufactured by Jaffery Ind. Saini Limited, Dar es Salaam
• One laptop and one laser printer with scanning & copy facility should be provided with latest specification for reporting & tele-radiology.	YES	HP Laptop and HP Laser printer with Scanning and Copy facility with latest specification will be supplied. Tele-radiology software is not included.
NB. The make & model of all the additional equipment should be specified in the compliance statement for the technical evaluation, assessment & record.		
SITE:		

	Technical specification	Comply YES/NO	Specify/Detail
3	1. A complete site preparation plan will be required to be submitted along with its financial components in separate cover. The vendor will be eligible to inspect the proposed site after obtaining permission. Care must be taken to address placement of the equipment, sitting, viewing and reporting area, patient preparation space, storage area etc.	Yes	Details are provided.
	2. Requirements of power and air conditioning must be clearly specified in a separate section of the offer. The temperature of the gantry room to be maintained at 20oC.	YES	YES, Provided in Planning guide.
	WARRANTY & CMC:		
	Should have 2years warranty, and three years comprehensive and collective maintenance inclusive spare parts for entire CT system (X-ray TUBE and all accessories) including all turn key items (Patient Monitor, Defibrillator, Laser Imaging Camera, Digital film printer, Pressure Injector, UPS, Air Conditioner).	YES	Included for all items suplied
	Cost of CMC (Comprehensive Maintenance Contract) must be quoted in the price bid for the next 5 years after the expiration of the warranty period (i.e.: 6th, 7th, 8th, 9th, 10th).	YES	Provided in Price BID. Not added to tender price.
24	Lifetime support; spare parts, consumables should be available throughout the lifetime period of the machine.	YES, Meets Specifications	Spares and Services are available throughout the lifetime of the machine.

	Technical specification	Comply YES/NO	Specify/Detail
	Uptake time should be a minimum of 90%.	Yes	We shall provide an Uptime of 90% or higher.
	Proof of locally available technical support personnel, including CVs and work permit for foreign personnel.	YES	All our engineers are Tanzanian citizens. No work permits are needed. We have submitted their Training Certificates.
	Availability of technical personnel within the country should be stated; this should include CVs, work permits for foreign personnel.	YES,	We have Technical personnel within the country
	Software should be flexible and provide the room for upgrade to add new parameters to be measured by the Machine and report format	YES, Meets Specifications	Software is flexible and provides the room for upgrade to add new parameters to be measured by the Machine and report format
	MANDATORY REQUIREMENTS:		
25	**Vendor shall have to process the documents and get all the necessary clearances of the unit from all regulatory authorities such as TAEC, TMDA and TBS.**	YES	We will process all the documents as requested, TMDA, TBS (as necessary) and TAEC.

	Technical specification	Comply YES/NO	Specify/Detail
	TRAINING & DOCUMENTATION:		
	At least 2 weeks on site training by application specialist for two radiologists, two radiographers.	YES	Will be provided.
	☐ At least 6 weeks certified Comprehensive service training for Biomedical Engineer	YES	3 weeks at manufacturer site and 3 weeks onsite will be provided.
	☐ Safety aspects of Radiation dosage leakage should be spelt out.	YES	Application Trainer will spell the Safety aspects of Radiation dose leakage.
	☐ User manual in English incorporating the newer applications.	YES	English Language manuals are suplied
	☐ Service manual in English	YES	Installation and basic service manual in English are supplied.
	☐ Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.	YES	A LOG Book shall be provided for the Users to log in daily, weekly, monthly and quarterly maintenance as required.

).	Technical specification	Comply YES/NO	Specify/Detail
26	□ The job description of the hospital technician and company service engineer should be clearly spelt out.	YES	The Hospital Biomedical technician is responsible to attend to first line of maintenance of the Scanner and its components and inform the Company/Supplier with Information of the fault, maintenance, Error Logs and also schedule the Corrective and Preventive Maintenance of the scanner with the Company/Supplier. The Company service engineer will carry out all Corrective and Preventive maintenance with the hospital Biomed, order spares as necessary, and maintain the requested uptime of 90%. The Company will also provide service reports for service and spares tracking.
	□ Adequate books and journals within the warranty period	YES	Company will help to connect Users to the Siemens CT Users group where online Documents and journals published by Siemens are available.

PACIFIC DIAGNOSTICS LIMITED
DAR-ES-SALAAM

SPECIAL CONDITIONS OF CONTRACT.

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC. The corresponding clause number of the GCC is indicated in parentheses.

SCC Clause Number	GCC Clause Number	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
		Definitions (GCC Clause 1)
1.	1.1	The Employer is: **DIRECTOR GENERAL,** **BUGANDO MEDICAL CENTRE,** **P.O. Box 1370.** **Mwanza.** The Project Manager is: **Dr. FABIAN A. MASSAGA (DIRECTOR GENERAL)** The Supplier is: **M/SPACIFIC DIAGNOSTICS LIMITED** The Supplier Representative is: NAFTAL PHILLIP The Adjudicator is: **Tanzania Institute of Arbitrators (TIArb)** Country of Origin: all countries and territories as indicated in the section of the Tendering Documents, Eligibility for the Provision of Goods, Works and Services. Time for Completion: **90 days.** Time for Completion for all Facilities: ***90 days,*** and the supplier shall provide Procurement Schedules of all Medical Equipment's delivery.
		Notices (GCC Clause 4)
2.	4.1	Employer's address for notice purposes: **DIRECTOR GENERAL,** **BUGANDO MEDICAL CENTRE,** **P.O. BOX 1370,** **MWANZA.**

		Supplier address for notice purposes: **M/S PACIFIC DIAGNOSTIS LIMITED, P.O.BOX 34056 , DAR ES SALAAM**
Governing Law (GCC Clause 5)		
3.	5.1	GCC 5.1 – The Contract shall be interpreted in accordance with the laws of the **United Republic of Tanzania.**
Settlement of Disputes (GCC Clause 6)		
4.	6.1.3	Adjudicator's hourly fee as per rules of Tanzania Institute of Arbitration.
5	6.1.4	Appointing Authority for Adjudicator: **Tanzania Institute of Arbitrators (TIArb)**
6	6.2.3	Rules of procedure for arbitration proceedings: Place of arbitration: MWANZA (a) Contracts with nationals of the United Republic of Tanzania: *For contracts entered into with a national of the United Republic of Tanzania, the Contract may provide for adjudication/arbitration in accordance with the law of the United Republic of Tanzania.* GCC 6.2.3 (b)--Any dispute between the Employer and a Supplier who is a national of the United Republic of Tanzania arising in connection with the present Contract shall be referred to adjudication or arbitration in accordance with the laws of the United Republic of Tanzania.
Scope of Facilities *[Spare Parts]* (GCC Clause 7)		
7.	7.3	The Supplier agrees to supply spare parts for a period of years: **Five (5) years mandatory**
8.	7.4	The Supplier shall carry sufficient inventories to ensure an ex-stock supply of consumable spares for the goods. Other spare parts and components shall be supplied as promptly as possible. In addition, in the event of termination of the production of spare parts, advance notification will be made to the Employer of the pending termination, with sufficient time to permit the Employer to procure the needed requirement. Following such termination, the Supplier will furnish to the extent possible and at no cost to the Employer the blueprints, drawings and specifications of the spare parts, if requested.

Time for Commencement and Completion (GCC Clause 8)		
9.	8.1	The Supplier shall commence work on the Facilities from the Effective Date for determining Time for Completion as specified in the Contract Agreement.
10.	8.2	The Completion of the Facilities shall be attained within 90 days
Contract Price (GCC Clause 11)		
11.	11.2	The Contract Price not be subjected to any adjustments shall be adjusted in accordance with the provisions of the corresponding Appendix (Price Adjustment) to the Contract Agreement **Not subject to adjustment.**
Securities (GCC Clause 13)		
12.	13.3.1	The amount of performance security, as a percentage of the Contract Price for the Facility or for the part of the Facility for which a separate time for Completion is provided, shall be: **Fifteen percent (15%).**
13.	13.3.2	The performance security shall be in the form of the **PREMIUM INSURANCE BOND**attached hereto in the section on Sample Forms and Procedures.
14.	13.3.3	The performance security shall be reduced to ten percent (10%) of the value of the component covered by the extended warranty to cover the Supplier extended warranty in accordance with the provision in the SCC, pursuant to GCC sub-Clause 27.10.
Work Programme (GCC Clause 18)		
15.	18.2	The form of the programme of performance of the Contract shall be: **form of the critical path method (CPM)**
Commissioning and Operational Acceptance (GCC Clause 25)		
16.	25.2.2	The Guarantee Test of the Facilities shall be successfully completed within **45 days***from* the date of Completion.

Completion Time Guarantee (GCC Clause 26)		
17.	26.2	Applicable rate for liquidated damages: **0.15 percent per day.** Maximum deduction for liquidated damages: is equal to the Performance Security quoted.
18.	26.3	Not Applicable for the bonus for early Completion: Maximum bonus: No bonus will be given for earlier Completion of the Facilities or part thereof.
Defect Liability (GCC Clause 27)		
19.	27.10	The critical components covered under the extended warranty are all critical parts as per technical specification attached herewith and the period shall be within 5 years after extension.
Completion – Guarantee Test – Acceptance (GCC Clauses 24.3 and 25.2)		
20.	24.3 and 25.2	20.1 In the event that the Supplier is unable to proceed with the Pre-commissioning of the Facilities pursuant to sub-Clause 24.3, or with the Guarantee Test pursuant to sub-Clause 25.2, for reasons attributable to the Employer either on account of non-availability of other facilities under the responsibilities of other supplier(s), or for reasons beyond the Employer's control, the provisions leading to "deemed" completion of activities such as Completion, pursuant to GCC sub-Clause 24.6, and Operational Acceptance, pursuant to GCC sub-Clause 25.3.4, and Supplier's obligations regarding Defect Liability Period, pursuant to GCC sub-Clause 27.2, Functional Guarantee, pursuant to GCC Clause 28, and Care of Facilities, pursuant to GCC Clause 32, and GCC Clause 41.1, Suspension, shall not apply. In this case, the following provisions shall apply. 20.2 When the Supplier is notified by the Project Manager that he will be unable to proceed with the activities and obligations pursuant to above sub-Clause 13.1, the Supplier shall be entitled to the following: (a) the Time of Completion shall be extended for the period of suspension without imposition of liquidated damages pursuant to GCC sub-Clause 26.2;

		(b) payments due to the Supplier in accordance with the provision specified in the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement, which would not have been payable in normal circumstances due to non-completion of the subject activities, shall be released to the Supplier against submission of a security in the form of a bank guarantee of equivalent amount acceptable to the Employer, and which shall become null and void when the Supplier will have complied with its obligations regarding those payments, subject to the provision of sub-Clause 13.3 below; (c) the expenses towards the above security and extension of other securities under the contract, of which validity needs to be extended, shall be reimbursed to the Supplier by the Employer; (d) The additional charges towards the care of the Facilities pursuant to GCC sub-Clause 32.1 shall be reimbursed to the Supplier by the Employer for the period between the notification mentioned above and the notification mentioned in sub-Clause 13.4 below. The provision of GCC sub-Clause 33.2 shall apply to the Facilities during the same period. 20.3 In the event that the period of suspension under above sub-Clause 13.1 actually exceeds one hundred eighty (180) days, the Employer and Supplier shall mutually agree to any additional compensation payable to the Supplier. 20.4 When the Supplier is notified by the Project Manager that the plant is ready for Pre-commissioning, the Supplier shall proceed without delay in performing all the specified activities and obligations under the contract.

GENERAL CONDITION.

GENERAL CONDITION

A. Contract and Interpretation

1.	Definitions	1.1	The following words and expressions shall have the meanings hereby assigned to them: "Contract" means the Contract Agreement entered into between the Employer and the Supplier, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term "the Contract" shall in all such documents be construed accordingly. "Contract Documents" means the documents listed in Article 1.1 (Contract Documents) of the Form of Contract Agreement (including any amendments thereto). "GCC" means the General Conditions of Contract hereof. "SCC" means the Special Conditions of Contract. "Day" means calendar day.. "Month" means calendar month.. "Employer" means the person named as such in the SCC and includes the legal successors or permitted assigns of the Employer. "Project Manager" means the person appointed by the Employer in the manner provided in GCC sub-Clause 17.1 (Project Manager) hereof and named as such in the SCC to perform the duties delegated by the Employer. "Supplier" means the person(s) whose tender to perform the Contract has been accepted by the Employer and is named as such in the Contract Agreement, and includes the legal successors or permitted assigns of the Supplier. "Supplier's Representative" means any person nominated by the Supplier and named as such in the SCC and approved by the Employer in the manner provided in GCC sub-Clause 17.2 (Supplier's Representative and Construction Manager) hereof to perform the duties delegated by the Supplier. "Subsupplier," including vendors, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Goods, is sub-contracted directly or indirectly by the Supplier, and includes its legal successors or permitted assigns. "Adjudicator" means the person or persons named as such in the SCC appointed by agreement between the Employer and the

			Supplier to make a decision on or to settle any dispute or difference between the Employer and the Supplier referred to him or her by the parties pursuant to GCC sub-Clause 6.1 (Adjudicator) hereof. "Contract Price" means the sum specified in Article 2.1 (Contract Price) of the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract. "Facilities" means the Goods to be supplied and installed, as well as all the Installation Services to be carried out by the Supplier under the Contract. "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Supplier, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected. "Goods" means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided and incorporated in the Facilities by the Supplier under the Contract (including the spare parts to be supplied by the Supplier under GCC sub-Clause 7.3 hereof), but does not include Supplier's Equipment. "Installation Services" means all those services ancillary to the supply of the Goods for the Facilities, to be provided by the Supplier under the Contract; e.g., transportation and provision of marine or other similar insurance, inspection, expediting, site preparation works (including the provision and use of Supplier's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training, etc. "Supplier's Equipment" means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Supplier, but does not include Goods, or other things intended to form or forming part of the Facilities. "Country of Origin" means the countries and territories eligible under the PPA 2004 and its corresponding Regulations as further elaborated in the SCC. "Site" means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site. "Effective Date" means the date of fulfillment of all conditions stated in Article 3 (Effective Date for Determining Time for Completion) of the Form of Contract Agreement, for the purpose of determining the Time for Completion.

			"Time for Completion" means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained in accordance with the specifications in the SCC and the relevant provisions of the Contract. "Completion" means that the Facilities (or a specific part thereof where specific parts are specified in the SCC) have been completed operationally and structurally and put in a tight and clean condition, and that all work in respect of Pre-commissioning of the Facilities or such specific part thereof has been completed; in other words, that the Facilities or specific part thereof are ready for Commissioning as provided in GCC Clause 24 (Completion) hereof. "Pre-commissioning" means the testing, checking and other requirements specified in the Technical Specifications that are to be carried out by the Supplier in preparation for Commissioning as provided in GCC Clause 24 (Completion) hereof. "Commissioning" means operation of the Facilities or any part thereof by the Supplier following Completion, which operation is to be carried out by the Supplier as provided in GCC sub-Clause 25.1 (Commissioning) hereof, for the purpose of carrying out Guarantee Test(s). "Guarantee Test(s)" means the test(s) specified in the Technical Specifications to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees specified in the Technical Specifications in accordance with the provisions of GCC sub-Clause 25.2 (Guarantee Test) hereof. "Operational Acceptance" means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which certifies the Supplier's fulfillment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of GCC Clause 28 (Functional Guarantees) hereof and shall include deemed acceptance in accordance with GCC Clause 25 (Commissioning and Operational Acceptance) hereof. "Defect Liability Period" means the period of validity of the warranties given by the Supplier commencing at Completion of the Facilities or a part thereof, during which the Supplier is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GCC Clause 27 (Defect Liability) hereof.
2.	**Contract Documents**	2.1	Subject to Article 1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are

			intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.
3.	**Interpretation**	3.1	Language 3.1.1 Unless the Supplier is a national of the United Republic of Tanzania and the Employer and the Supplier agree to use the national language, all Contract Documents, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be written in English, and the Contract shall be construed and interpreted in accordance with that language. 3.1.2 If any of the Contract Documents, correspondence or communications are prepared in any language other than the governing language under GCC sub-Clause 3.1.1 above, the English translation of such documents, correspondence or communications shall prevail in matters of interpretation.
		3.2	Singular and Plural The singular shall include the plural and the plural the singular, except where the context otherwise requires.
		3.3	Headings The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.
		3.4	Persons Words importing persons or parties shall include firms, corporations and government entities.
		3.5	Incoterms Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties there under shall be as prescribed by *Incoterms*. *Incoterms* means international rules for interpreting trade terms published by the International Chamber of Commerce (latest edition), 38 Cours Albert 1er, 75008 Paris, France.
		3.6	Entire Agreement Subject to GCC sub-Clause 16.4 hereof, the Contract constitutes the entire agreement between the Employer and Supplier with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.
		3.7	Amendment

			No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party hereto.
		3.8	Independent Supplier The Supplier shall be an independent supplier performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the parties hereto. Subject to the provisions of the Contract, the Supplier shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Subsuppliers engaged by the Supplier in connection with the performance of the Contract shall be under the complete control of the Supplier and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Supplier shall be construed to create any contractual relationship between any such employees, representatives or Subsuppliers and the Employer.
		3.9	Joint Venture or Consortium If the Supplier is a joint venture or consortium of two or more persons, all such firms shall be jointly and severally bound to the Employer for the fulfillment of the provisions of the Contract and shall designate one of such persons to act as a leader with authority to bind the joint venture or consortium. The composition or the constitution of the joint venture or consortium shall not be altered without the prior consent of the Employer.
		3.10	Non-Waiver 3.10.1 Subject to GCC sub-Clause 3.10.2 below, no relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract. 3.10.2 Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.
		3.11	Severability If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.
		3.12	Country of Origin

			"Origin" means the place where the materials, equipment and other supplies for the Facilities are mined, grown, produced or manufactured, and from which the services are provided.
4.	**Notices**	4.1	Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, airmail post, special courier, cable, telegraph, telex, facsimile or Electronic Data Interchange (EDI) to the address of the relevant party set out in the SCC, with the following provisions: 4.1.1 Any notice sent by cable, telegraph, telex, facsimile or EDI shall be confirmed within two (2) days after dispatch by notice sent by airmail post or special courier, except as otherwise specified in the Contract. 4.1.2 Any notice sent by airmail post or special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after dispatch. In proving the fact of dispatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by airmail or special courier. 4.1.3 Any notice delivered personally or sent by cable, telegraph, telex, facsimile or EDI shall be deemed to have been delivered on date of its dispatch. 4.1.4 Either party may change its postal, cable, telex, facsimile or EDI address or addressee for receipt of such notices by ten (10) days' notice to the other party in writing.
		4.2	Notices shall be deemed to include any approvals, consents, instructions, orders and certificates to be given under the Contract.
5.	**Governing Law**	5.1	The Contract shall be governed by and interpreted in accordance with laws of the United Republic of Tanzania.
6.	**Settlement of Disputes**	6.1	<u>Adjudicator</u> 6.1.1 If any dispute of any kind whatsoever shall arise between the Employer and the Supplier in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Facilities – whether during the progress of the Facilities or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference by mutual consultation, then the dispute shall be referred in writing by either party to the Adjudicator, with a copy to the other party.

			6.1.2 The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it. If the Adjudicator has done so, and no notice of intention to commence arbitration has been given by either the Employer or the Supplier within fifty-six (56) days of such reference, the decision shall become final and binding upon the Employer and the Supplier. Any decision that has become final and binding shall be implemented by the parties forthwith. 6.1.3 The Adjudicator shall be paid an hourly fee at the rate specified in the SCC plus reasonable expenditures incurred in the execution of its duties as Adjudicator, and these costs shall be divided equally between the Employer and the Supplier. 6.1.4 Should the Adjudicator resign or die, or should the Employer and the Supplier agree that the Adjudicator is not fulfilling its functions in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Supplier. Failing agreement between the two within twenty-eight (28) days, the new Adjudicator shall be appointed at the request of either party by the Appointing Authority specified in the SCC.
		6.2	Arbitration 6.2.1 If either the Employer or the Supplier is dissatisfied with the Adjudicator's decision, or if the Adjudicator fails to give a decision within twenty-eight (28) days of a dispute being referred to it, then either the Employer or the Supplier may, within fifty-six (56) days of such reference, give notice to the other party, with a copy for information to the Adjudicator, of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. 6.2.2 Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with GCC sub-Clause 6.2.1, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Facilities. 6.2.3 Arbitration proceedings shall be conducted in accordance with the rules of procedure designated in the SCC.
		6.3	Notwithstanding any reference to the Adjudicator or arbitration herein, (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree (b) The Employer shall pay the Supplier any monies due the Supplier.

B. Subject Matter of Contract

7.	**Scope of Facilities**	7.1	Unless otherwise expressly limited in the Technical Specifications, the Supplier's obligations cover the provision of all Goods and the performance of all Installation Services required for the design, the manufacture (including

			procurement, quality assurance, construction, installation, associated civil works, Pre-commissioning and delivery) of the Goods and the installation, completion and commissioning of the Facilities in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in the Technical Specifications. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment, spare parts (as specified in GCC sub-Clause 7.3 below) and accessories; Supplier's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, as set forth in the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement.
		7.2	The Supplier shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.
		7.3	In addition to the supply of Mandatory Spare Parts included in the Contract, the Supplier agrees to supply spare parts required for the operation and maintenance of the Facilities for the period specified in the Special Conditions of Contract. However, the identity, specifications and quantities of such spare parts and the terms and conditions relating to the supply thereof are to be agreed between the Employer and the Supplier, and the price of such spare parts shall be that given in Price Schedule No. 6, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price therefore and other costs and expenses (including the Supplier's fees) relating to the supply of spare parts.
8.	**Time for Commencement and Completion**	8.1	The Supplier shall commence work on the Facilities within the period specified in the SCC and without prejudice to GCC sub-Clause 26.2 hereof, the Supplier shall thereafter proceed with the Facilities in accordance with the time schedule specified in the corresponding Appendix (Time Schedule) to the Contract Agreement.
		8.2	The Supplier shall attain Completion of the Facilities (or of a part where a separate time for Completion of such part is specified in the Contract) within the time stated in the SCC or within such extended time to which the Supplier shall be entitled under GCC Clause 40 hereof.
9.	**Supplier's Responsibilities**	9.1	The Supplier shall design, manufacture (including associated purchases and/or subcontracting), install and complete the Facilities with due care and diligence in accordance with the Contract.
		9.2	The Supplier confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Facilities (including any data

			as to boring tests) provided by the Employer, and on the basis of information that the Supplier could have obtained from a visual inspection of the Site (if access thereto was available) and of other data readily available to it relating to the Facilities as of the date twenty-eight (28) days prior to tender submission. The Supplier acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.
		9.3	The Supplier shall acquire in its name all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the United Republic of Tanzania where the Site is located that are necessary for the performance of the Contract, including, without limitation, visas for the Supplier's and Sub supplier's personnel and entry permits for all imported Supplier's Equipment. The Supplier shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GCC sub-Clause 10.3 hereof and that are necessary for the performance of the Contract.
		9.4	The Supplier shall comply with all laws in force in the United Republic of Tanzania and local bylaws where the Facilities are installed and where the Installation Services are carried out. The laws will include all local, state, national or other laws that affect the performance of the Contract and bind upon the Supplier. The Supplier shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Supplier or its personnel, including the Sub suppliers and their personnel, but without prejudice to GCC sub-Clause 10.1 hereof.
		9.5	Any Plant, Material and Services that will be incorporated in or be required for the Facilities and other supplies shall have their origin as specified under GCC Clause 1 (Country of Origin).
		9.6	The Supplier shall permit the PE to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the PE, if so required by the PE
10.	**Employer's Responsibilities**	10.1	The Employer shall ensure the accuracy of all information and/or data to be supplied by the Employer as described in the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract, except when otherwise expressly stated in the Contract.
		10.2	The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement. The Employer shall give full possession of an accord all rights of access thereto on or before the date(s) specified in that Appendix.

		10.3	The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the United Republic of Tanzania. Such authorities or undertakings require the Employer to obtain them in the Employer's name, are necessary for the execution of the Contract (they include those required for the performance by both the Supplier and the Employer of their respective obligations under the Contract), and are specified in the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement.
		10.4	If requested by the Supplier, the Employer shall use its best endeavors to assist the Supplier in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the Supplier or Subsuppliers or the personnel of the Supplier or Subsuppliers, as the case may be, to obtain.
		10.5	Unless otherwise specified in the Contract or agreed upon by the Employer and the Supplier, the Employer shall provide sufficient, properly qualified operating and maintenance personnel; shall supply and make available all raw materials, utilities, lubricants, chemicals, catalysts, other materials and facilities; and shall perform all work and services of whatsoever nature, including those required by the Supplier to properly carry out Pre-commissioning, Commissioning and Guarantee Tests, all in accordance with the provisions of the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement at or before the time specified in the programme furnished by the Supplier under GCC sub-Clause 18.2 hereof and in the manner thereupon specified or as otherwise agreed upon by the Employer and the Supplier.
		10.6	The Employer shall be responsible for the continued operation of the Facilities after Completion, in accordance with GCC sub-Clause 24.8, and shall be responsible for facilitating the Guarantee Test(s) for the Facilities, in accordance with GCC sub-Clause 25.2.
		10.7	All costs and expenses involved in the performance of the obligations under this GCC Clause 10 shall be the responsibility of the Employer, save those to be incurred by the Supplier with respect to the performance of Guarantee Tests, in accordance with GCC sub-Clause 25.2.

C. Payment

11.	**Contract Price**	11.1	The Contract Price shall be as specified in Article 2 (Contract Price and Terms of Payment) of the Form of Contract Agreement.

		11.2	Unless indicated otherwise in the SCC, the Contract Price shall be a firm lump sum not subject to any alteration, except in the event of a Change in the Facilities or as otherwise provided in the Contract.
		11.3	Subject to GCC sub-Clauses 9.2, 10.1 and 35 hereof, the Supplier shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.
12.	**Terms of Payment**	12.1	The Contract Price shall be paid as specified in the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement. The procedures to be followed in making application for and processing payments shall be those outlined in the same Appendix.
		12.2	No payment made by the Employer herein shall be deemed to constitute acceptance by the Employer of the Facilities or any part(s) thereof.
		12.3	The employer shall ensure that no delay in payment of the respective due during the implementation of this contract. Any delay should be immediately notified to the tenderer for rectification of the order.
		12.4	The currency or currencies in which payments are made to the Supplier under this Contract shall be specified in the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement, subject to the general principle that payments will be made in the currency or currencies in which the Contract Price has been stated in the Supplier's Tendering.
		12.5	All payments shall be made in the currency or currencies specified in the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement, pursuant to GCC 12.4.
13.	**Securities**	13.1	<u>Issuance of Securities</u> The Supplier shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified below.
		13.2	<u>Advance Payment Security</u> 13.2.1 The Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement, and in the same currency or currencies. 13.2.2 The security shall be in the form provided in the tendering documents or in another form acceptable to the Employer. The amount of the security shall be reduced in proportion to the value of the Facilities executed by and paid to the Supplier from time to time, and shall automatically become null and void when the full amount of the

			advance payment has been recovered by the Employer. The security shall be returned to the Supplier immediately after its expiration.
		13.3	Performance Security 13.3.1 The Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a security for the due performance of the Contract in the amount specified in the SCC. 13.3.2 The security shall be denominated in the currency or currencies of the Contract, or in a freely convertible currency acceptable to the Employer, and shall be in one of the forms of bank guarantees provided in the tendering documents, as stipulated by the Employer in the SCC, or in another form acceptable to the Employer. 13.3.3 The security shall automatically be reduced by half on the date of the Operational Acceptance and shall become null and void, eighteen (18) months after Completion of the Facilities or twelve (12) months after Operational Acceptance of the Facilities, whichever occurs first; provided, however, that if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC sub-Clause 27.8 hereof, the Supplier shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Supplier immediately after its expiration, provided, however, that if the Supplier, pursuant to GCC sub-Clause 27.10, is liable for an extended warranty obligation, the performance security shall be extended for the period and up to the amount specified in the SCC.
			13.3.4 Where circumstances necessitate the amendment of the contract after signature, and such amendment is effected, the Employer shall require the Supplier to provide additional Performance Security to cover any cumulative increase of more than ten percent of the Initial Contract Price.
14.	**Taxes and Duties**	14.1	Except as otherwise specifically provided in the Contract, the Supplier shall bear and pay all taxes, duties, levies and charges assessed on the Supplier, its Sub suppliers or their employees by all municipal, state or national government authorities in connection with the Facilities in and outside of the United Republic of Tanzania where the Site is located.
		14.2	Notwithstanding GCC sub-Clause 14.1 above, the Employer shall bear and promptly pay all customs and import duties as well as other local taxes like, e.g., a value added tax (VAT), imposed by the law of the United Republic of Tanzania on the Goods specified in Price Schedule No. 1 and that are to be incorporated into the Facilities.
		14.3	If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the United Republic of Tanzania, the Employer shall use its best endeavors to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
		14.4	For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2 (Contract Price and Terms of Payment) of the Form of Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of tender submission in the

			United Republic of Tanzania (hereinafter called "Tax" in this GCC sub-Clause 14.4). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Supplier, Subsuppliers or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be, in accordance with GCC Clause 36 hereof.

D. Intellectual Property

15.	**Copyright**	15.1	The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Supplier herein shall remain vested in the Supplier or, if they are furnished to the Employer directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.
16.	**Confidential Information**	16.1	The Employer and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subsupplier(s) such documents, data and other information it receives from the Employer to the extent required for the Subsupplier(s) to perform its work under the Contract, in which event the Supplier shall obtain from such Subsupplier(s) an undertaking of confidentiality similar to that imposed on the Supplier under this GCC Clause 16.
		16.2	The Employer shall not use such documents, data and other information received from the Supplier for any purpose other than the operation and maintenance of the Facilities. Similarly, the Supplier shall not use such documents, data and other information received from the Employer for any purpose other than the design, procurement of Goods, construction or such other work and services as are required for the performance of the Contract.
		16.3	The obligation of a party under GCC sub-Clauses 16.1 and 16.2 above, however, shall not apply to that information which (a) now or hereafter enters the public domain through no fault of that party (b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto (c) Otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
		16.4	The above provisions of this GCC Clause 16 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto

			prior to the date of the Contract in respect of the Facilities or any part thereof.
		16.5	The provisions of this GCC Clause 16 shall survive termination, for whatever reason, of the Contract.

E. Execution of the Facilities

17.	**Representatives**	17.1	Project Manager If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall appoint and notify the Supplier in writing of the name of the Project Manager. The Employer may from time to time appoint some other person as the Project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Supplier without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of work on the Facilities. Such appointment shall only take effect upon receipt of such notice by the Supplier. The Project Manager shall represent and act for the Employer at all times during the currency of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as herein otherwise provided. All notices, instructions, information and other communications given by the Supplier to the Employer under the Contract shall be given to the Project Manager, except as herein otherwise provided.
		17.2	Supplier's Representative & Construction Manager 17.2.1 If the Supplier's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Supplier shall appoint the Supplier's Representative and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Supplier's Representative shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefor, then the Supplier shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC sub-Clause 17.2.1 shall apply thereto. 17.2.2 The Supplier's Representative shall represent and act for the Supplier at all times during the currency of the Contract and shall give to the Project Manager all the Supplier's notices, instructions, information and all other communications under the Contract. All notices, instructions, information and all other communications given by the Employer or the Project Manager to the Supplier under the Contract shall be given to the Supplier's Representative or, in its absence, its deputy, except as herein otherwise provided. The Supplier shall not revoke the appointment of the Supplier's Representative without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer

			consents thereto, the Supplier shall appoint some other person as the Supplier's Representative, pursuant to the procedure set out in GCC sub-Clause 17.2.1. 17.2.3 The Supplier's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Supplier's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Project Manager. Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC sub-Clause 17.2.3 shall be deemed to be an act or exercise by the Supplier's Representative. 17.2.4 From the commencement of installation of the Facilities at the Site until Completion, the Supplier's Representative shall appoint a suitable person as the construction manager (hereinafter referred to as "the Construction Manager"). The Construction Manager shall supervise all work done at the Site by the Supplier and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Construction Manager is absent from the Site, a suitable person shall be appointed to act as his or her deputy. 17.2.5 The Employer may by notice to the Supplier object to any representative or person employed by the Supplier in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC sub-Clause 22.3. The Employer shall provide evidence of the same, whereupon the Supplier shall remove such person from the Facilities. 17.2.6 If any representative or person employed by the Supplier is removed in accordance with GCC sub-Clause 17.2.5, the Supplier shall, where required, promptly appoint a replacement.
18.	**Work Programme**	18.1	<u>Supplier's Organization</u> The Supplier shall supply to the Employer and the Project Manager a chart showing the proposed organization to be established by the Supplier for carrying out work on the Facilities. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be employed within twenty-one (21) days of the Effective Date. The Supplier shall promptly inform the Employer and the Project Manager in writing of any revision or alteration of such an organization chart.

		18.2	Programme of Performance Within twenty-eight (28) days after the date of signing the Contract Agreement, the Supplier shall prepare and submit to the Project Manager a detailed programme of performance of the Contract, made in the form specified in the SCC and showing the sequence in which it proposes to design, manufacture, transport, assemble, install and pre-commission the Facilities, as well as the date by which the Supplier reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Supplier to execute the Contract in accordance with the programme and to achieve Completion, Commissioning and Acceptance of the Facilities in accordance with the Contract. The programme so submitted by the Supplier shall accord with the Time Schedule included in the corresponding Appendix (Time Schedule) to the Contract Agreement and any other dates and periods specified in the Contract. The Supplier shall update and revise the programme as and when appropriate or when required by the Project Manager, but without modification in the Times for Completion given in the SCC and any extension granted in accordance with GCC Clause 40, and shall submit all such revisions to the Project Manager.
		18.3	Progress Report The Supplier shall monitor progress of all the activities specified in the programme referred to in GCC sub-Clause 18.2 above, and supply a progress report to the Project Manager every month. The progress report shall be in a form acceptable to the Project Manager and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the programme, giving comments and likely consequences and stating the corrective action being taken.
		18.4	Progress of Performance If at any time the Supplier's actual progress falls behind the programme referred to in GCC sub-Clause 18.2, or it becomes apparent that it will so fall behind, the Supplier shall, at the request of the Employer or the Project Manager, prepare and submit to the Project Manager a revised programme, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion under GCC sub-Clause 8.2, any extension thereof entitled under GCC sub-Clause 40.1, or any extended period as may otherwise be agreed upon between the Employer and the Supplier.
		18.5	Work Procedures The Contract shall be executed in accordance with the Contract Documents and the procedures given in the section on Sample Forms and Procedures of the Contract Documents. The Supplier may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in the Contract.

19.	**Subcontracting**	19.1	The corresponding Appendix (List of Approved Subsuppliers) to the Contract Agreement specifies major items of supply or services and a list of approved Subsuppliers against each item, including vendors. Insofar as no Subsuppliers are listed against any such item, the Supplier shall prepare a list of Subsuppliers for such item for inclusion in such list. The Supplier may from time to time propose any addition to or deletion from any such list. The Supplier shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Employer for any of the Subsuppliers shall not relieve the Supplier from any of its obligations, duties or responsibilities under the Contract.
		19.2	The Supplier shall select and employ its Subsuppliers for such major items from those listed in the lists referred to in GCC sub-Clause 19.1.
		19.3	For items or parts of the Facilities not specified in the corresponding Appendix (List of Approved Subsuppliers) to the Contract Agreement, the Supplier may employ such Subsuppliers as it may select, at its discretion.
20.	**Design and Engineering**	20.1	<u>Specifications and Drawings</u> 20.1.1 The Supplier shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract, or where not so specified, in accordance with good engineering practice. The Supplier shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Project Manager or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Supplier by or on behalf of the Employer. 20.1.2 The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Project Manager.
		20.2	<u>Codes and Standards</u> Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of tender submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GCC Clause 39.
		20.3	<u>Approval/Review of Technical Documents by Project Manager</u> 20.3.1 The Supplier shall prepare (or cause its Subsuppliers to prepare) and furnish to the Project Manager the documents listed in the corresponding Appendix (List of Documents for Approval or

			Review) to the Contract Agreement for its approval or review as specified and in accordance with the requirements of GCC sub-Clause 18.2 (Programme of Performance). Any part of the Facilities covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof. GCC sub-Clauses 20.3.2 through 20.3.7 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only. 20.3.2 Within fourteen (14) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC sub-Clause 20.3.1, the Project Manager shall either return one copy thereof to the Supplier with its approval endorsed thereon or shall notify the Supplier in writing of its disapproval thereof and the reasons therefore and the modifications that the Project Manager proposes. If the Project Manager fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Project Manager. 20.3.3 The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with some specified provision of the Contract or that it is contrary to good engineering practice. 20.3.4 If the Project Manager disapproves the document, the Supplier shall modify the document and resubmit it for the Project Manager's approval in accordance with GCC Sub-Clause 20.3.2. If the Project Manager approves the document subject to modification(s), the Supplier shall make the required modification(s), whereupon the document shall be deemed to have been approved. 20.3.5 If any dispute or difference occurs between the Employer and the Supplier in connection with or arising out of the disapproval by the Project Manager of any document and/or any modification(s) thereto that cannot be settled between the parties within a reasonable period, then such dispute or difference may be referred to an Adjudicator for determination in accordance with GCC sub-Clause 6.1 hereof. If such dispute or difference is referred to an Adjudicator, the Project Manager shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Supplier shall proceed with the Contract in accordance with the Project Manager's instructions, provided that if the Adjudicator upholds the Supplier's view on the dispute and if the Employer has not given notice under GCC sub-Clause 6.1.2 hereof, then the Supplier shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the Adjudicator

			shall decide, and the Time for Completion shall be extended accordingly. 20.3.6 The Project Manager's approval, with or without modification of the document furnished by the Supplier, shall not relieve the Supplier of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager. 20.3.7 The Supplier shall not depart from any approved document unless the Supplier has first submitted to the Project Manageran amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC sub-Clause 20.3. If the Project Manager requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 39 shall apply to such request.
21.	**Procurement**	21.1	Goods Subject to GCC sub-Clause 14.2, the Supplier shall manufacture or procure and transport all the Goods in an expeditious and orderly manner to the Site.
		21.2	Employer-Supplied Plant, Equipment, and Materials If the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement provides that the Employer shall furnish any specific items of machinery, equipment or materials to the Supplier, the following provisions shall apply: 21.2.1 The Employer shall, at its own risk and expense, transport each item to the place on or near the Site as agreed upon by the parties and make such item available to the Supplier at the time specified in the programme furnished by the Supplier, pursuant to GCC sub-Clause 18.2, unless otherwise mutually agreed. 21.2.2 Upon receipt of such item, the Supplier shall inspect the same visually and notify the Project Manager of any detected shortage, defect or default. The Employer shall immediately remedy any shortage, defect or default, or the Supplier shall, if practicable and possible, at the request of the Employer, remedy such shortage, defect or default at the Employer's cost and expense. After inspection, such item shall fall under the care, custody and control of the Supplier. The provision of this GCC sub-Clause 21.2.2 shall apply to any item supplied to remedy any such shortage or default or to substitute for any defective item, or shall apply to defective items that have been repaired. 21.2.3 The foregoing responsibilities of the Supplier and its obligations of care, custody and control shall not relieve the Employer of liability for any undetected shortage, defect or default, nor place the Supplier under any liability for any such shortage, defect or default whether under GCC Clause 27 or under any other provision of Contract.
		21.3	Transportation

			21.3.1 The Supplier shall at its own risk and expense transport all the Goods and the Supplier's Equipment to the Site by the mode of transport that the Supplier judges most suitable under all the circumstances. 21.3.2 Unless otherwise provided in the Contract, the Supplier shall be entitled to select any safe mode of transport operated by any person to carry the Goods and the Supplier's Equipment. 21.3.3 Upon dispatch of each shipment of the Goods and the Supplier's Equipment, the Supplier shall notify the Employer by telex, cable, facsimile or Electronic Data Interchange (EDI) of the description of the Goods and of the Supplier's Equipment, the point and means of dispatch, and the estimated time and point of arrival in the United Republic of Tanzania, if applicable, and at the Site. The Supplier shall furnish the Employer with relevant shipping documents to be agreed upon between the parties. 21.3.4 The Supplier shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the Goods and the Supplier's Equipment to the Site. The Employer shall use its best endeavors in a timely and expeditious manner to assist the Supplier in obtaining such approvals, if requested by the Supplier. The Supplier shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the Goods and the Supplier's Equipment to the Site.
		21.4	<u>Customs Clearance</u> The Supplier shall, at its own expense, handle all imported Goods and Supplier's Equipment at the point(s) of import and shall handle any formalities for customs clearance, subject to the Employer's obligations under GCC sub-Clause 14.2, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Employer, the Employer shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance that are not the fault of the Supplier, the Supplier shall be entitled to an extension in the Time for Completion, pursuant to GCC Clause 40.
22.	**Installation**	22.1	<u>Setting Out/Supervision/Labour</u> 22.1.1 *Bench Mark*: The Supplier shall be responsible for the true and proper setting-out of the Facilities in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Employer. If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Supplier shall forthwith notify the Project Manager of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Project Manager. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer.

			22.1.2 *Supplier's Supervision*: The Supplier shall give or provide all necessary superintendence during the installation of the Facilities, and the Construction Manager or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Supplier shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand. 22.1.3 *Labour*: (a) The Supplier shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the Contract. The Supplier is encouraged to use local labour that has the necessary skills. (b) Unless otherwise provided in the Contract, the Supplier shall be responsible for the recruitment, transportation, accommodation and catering of all labour, local or expatriate, required for the execution of the Contract and for all payments in connection therewith. (c) The Supplier shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labour and personnel to be employed on the Site into the United Republic of Tanzania and in the exact region where the Site is located. (d) The Supplier shall at its own expense provide the means of repatriation to all of its and its Subsupplier's personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Supplier defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Supplier. (e) The Supplier shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labour of its Subsuppliers. (f) The Supplier shall, in all dealings with its labour and the labour of its Subsuppliers currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labour.
		22.2	<u>Supplier's Equipment</u>

			22.2.1 All Supplier's Equipment brought by the Supplier onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Supplier shall not remove the same from the Site without the Project Manager's consent that such Supplier's Equipment is no longer required for the execution of the Contract. 22.2.2 Unless otherwise specified in the Contract, upon completion of the Facilities, the Supplier shall remove from the Site all Equipment brought by the Supplier onto the Site and any surplus materials remaining thereon. 22.2.3 The Employer will, if requested, use its best endeavors to assist the Supplier in obtaining any local, state or national government permission required by the Supplier for the export of the Supplier's Equipment imported by the Supplier for use in the execution of the Contract that is no longer required for the execution of the Contract.
		22.3	<u>Site Regulations and Safety</u> The Employer and the Supplier shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Supplier shall prepare and submit to the Employer, with a copy to the Project Manager, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld. Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention.
		22.4	<u>Opportunities for Other Suppliers</u> 22.4.1 The Supplier shall, upon written request from the Employer or the Project Manager, give all reasonable opportunities for carrying out the work to any other suppliers employed by the Employer on or near the Site. 22.4.2 If the Supplier, upon written request from the Employer or the Project Manager, makes available to other suppliers any roads or ways the maintenance for which the Supplier is responsible, permits the use by such other suppliers of the Supplier's Equipment, or provides any other service of whatsoever nature for such other suppliers, the Employer shall fully compensate the Supplier for any loss or damage caused or occasioned by such other suppliers in respect of any such use or service, and shall pay to the Supplier reasonable remuneration for the use of such equipment or the provision of such services. 22.4.3 The Supplier shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other suppliers. The Project Manager shall determine the resolution of any difference or conflict that may arise between the

			Supplier and other suppliers and the workers of the Employer in regard to their work. 22.4.4 The Supplier shall notify the Project Manager promptly of any defects in the other suppliers' work that come to its notice, and that could affect the Supplier's work. The Project Manager shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Project Manager shall be binding on the Supplier.
		22.5	Emergency Work If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Supplier shall immediately carry out such work. If the Supplier is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine is necessary in order to prevent damage to the Facilities. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Supplier in writing of such emergency, the work done and the reasons therefore. If the work done or caused to be done by the Employer is work that the Supplier was liable to do at its own expense under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Supplier to the Employer. Otherwise, the cost of such remedial work shall be borne by the Employer.
		22.6	Site Clearance 22.6.1 *Site Clearance in Course of Performance*: In the course of carrying out the Contract, the Supplier shallkeep theSite reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Supplier's Equipment no longer required for execution of the Contract. 22.6.2 *Clearance of Site after Completion*: After Completion of all parts of the Facilities, the Supplier shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and Facilities clean and safe.
		22.7	Watching and Lighting The Supplier shall provide and maintain at its own expense alllighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.
		22.8	Work at Night and on Holidays 22.8.1 Unless otherwise provided in the Contract, no work shall be carried out during the night and on public holidays of the United Republic of Tanzania without prior written consent of the Employer, except where work is necessary or required to ensure safety of the Facilities or for the protection of life, or to prevent loss

			or damage to property, when the Supplier shall immediately advise the Project Manager, provided that provisions of this GCC sub-Clause 22.8.1 shall not apply to any work which is customarily carried out by rotary or double-shifts. 22.8.2 Notwithstanding GCC sub-Clauses 22.8.1 or 22.1.3, if and when the Supplier considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the Employer's consent thereto, the Employer shall not unreasonably withhold such consent.
23.	**Test and Inspection**	23.1	The Supplier shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/or inspections of the Goods and any part of the Facilities as are specified in the Contract.
		23.2	The Employer and the Project Manager or their designated representatives shall be entitled to attend the aforesaid test and/or inspection, provided that the Employer shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
		23.3	Whenever the Supplier is ready to carry out any such test and/or inspection, the Supplier shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Employer and the Project Manager (or their designated representatives) to attend the test and/or inspection.
		23.4	The Supplier shall provide the Project Manager with a certified report of the results of any such test and/or inspection. If the Employer or Project Manager (or their designated representatives) fails to attend the test and/or inspection, or if it is agreed between the parties that such persons shall not do so, then the Supplier may proceed with the test and/or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.
		23.5	The Project Manager may require the Supplier to carry out any test and/or inspection not required by the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of work on the Facilities and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected
		23.6	If any Goods or any part of the Facilities fails to pass any test and/or inspection, the Supplier shall either rectify or replace such Goods or part

			of the Facilities and shall repeat the test and/or inspection upon giving a notice under GCC sub-Clause 23.3.
		23.7	If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Goods or part of the Facilities that cannot be settled between the parties within a reasonable period of time, it may be referred to an Adjudicator for determination in accordance with GCC sub-Clause 6.1.
		23.8	The Supplier shall afford the Employer and the Project Manager, at the Employer's expense, access at any reasonable time to any place where the Goods are being manufactured or the Facilities are being installed, in order to inspect the progress and the manner of manufacture or installation, provided that the Project Manager shall give the Supplier a reasonable prior notice.
		23.9	The Supplier agrees that neither the execution of a test and/or inspection of Goods or any part of the Facilities, nor the attendance by the Employer or the Project Manager, nor the issue of any test certificate pursuant to GCC sub-Clause 23.4, shall release the Supplier from any other responsibilities under the Contract.
		23.10	No part of the Facilities or foundations shall be covered up on the Site without the Supplier carrying out any test and/or inspection required under the Contract. The Supplier shall give a reasonable notice to the Project Manager whenever any such ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.
		23.11	The Supplier shall uncover any part of the Facilities or foundations, or shall make openings in or through the same as the Project Manager may from time to time require at the Site, and shall reinstate and make good such part or parts. If any parts of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC sub-Clause 23.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Supplier has thereby been delayed or impeded in the performance of any of its obligations under the Contract
24.	**Completion of the Facilities**	24.1	As soon as the Facilities or any part thereof has, in the opinion of the Supplier, been completed operationally and structurally and put in a tight and clean condition as specified in the Technical Specifications, excluding minor items not materially affecting the operation or safety of the Facilities, the Supplier shall so notify the Employer in writing.

		24.2	Within seven (7) days after receipt of the notice from the Supplier under GCC sub-Clause 24.1, the Employer shall supply the operating and maintenance personnel specified in the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement for Pre-commissioning of the Facilities or any part thereof. Pursuant to the corresponding Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement, the Employer shall also provide, within the said seven (7) day period, the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Pre-commissioning of the Facilities or any part thereof.
		24.3	As soon as reasonably practicable after the operating and maintenance personnel have been supplied by the Employer and the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters have been provided by the Employer in accordance with GCC sub-Clause 24.2, the Supplier shall commence Pre-commissioning of the Facilities or the relevant part thereof in preparation for Commissioning.
		24.4	As soon as all works in respect of Pre-commissioning are completed and, in the opinion of the Supplier, the Facilities or any part thereof is ready for Commissioning, the Supplier shall so notify the Project Manager in writing.
		24.5	The Project Manager shall, within fourteen (14) days after receipt of the Supplier's notice under GCC sub-Clause 24.4, either issue a Completion Certificate in the form specified in the Sample Forms and Procedures section in the tendering documents, stating that the Facilities or that part thereof have reached Completion as of the date of the Supplier's notice under GCC sub-Clause 24.4, or notify the Supplier in writing of any defects and/or deficiencies. If the Project Manager notifies the Supplier of any defects and/or deficiencies, the Supplier shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GCC sub-Clause 24.4. If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within seven (7) days after receipt of the Supplier's repeated notice, issue a Completion Certificate stating that the Facilities or that part thereof have reached Completion as of the date of the Supplier's repeated notice. If the Project Manager is not so satisfied, then it shall notify the Supplier in writing of any defects and/or deficiencies within seven (7) days after receipt of the Supplier's repeated notice, and the above procedure shall be repeated.
		24.6	If the Project Manager fails to issue the Completion Certificate and fails to inform the Supplier of any defects and/or deficiencies within fourteen (14) days after receipt of the Supplier's notice under GCC sub-Clause 24.4 or within seven (7) days after receipt of the Supplier's repeated notice

			under GCC sub-Clause 24.5, or if the Employer makes use of the Facilities or part thereof, then the Facilities or that part thereof shall be deemed to have reached Completion as of the date of the Supplier's notice or repeated notice, or as of the Employer's use of the Facilities, as the case may be.
		24.7	As soon as possible after Completion, the Supplier shall complete all outstanding minor items so that the Facilities are fully in accordance with the requirements of the Contract, failing which the Employer will undertake such completion and deduct the costs thereof from any monies owing to the Supplier.
		24.8	Upon Completion, the Employer shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.
25.	**Commissioning and Operational Acceptance**	25.1	<u>Commissioning</u> 25.1.1 Commissioning of the Facilities or any part thereof shall be commenced by the Supplier immediately after issue of the Completion Certificate by the Project Manager, pursuant to GCC sub-Clause 24.5, or immediately after issue of the deemed Completion, under GCC sub-Clause 24.6. 25.1.2 The Employer shall supply the operating and maintenance personnel and all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Commissioning.
		25.2	<u>Guarantee Test</u> 25.2.1 The Guarantee Test (and repeats thereof) shall be conducted by the Supplier during Commissioning of the Facilities or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Technical Specifications. The Supplier's and Project Manager's advisory personnel shall attend the Guarantee Test, and shall advise and assist the Employer. The Employer shall promptly provide the Supplier with such information as the Supplier may reasonably require in relation to the conduct and results of the Guarantee Test (and any repeats thereof). 25.2.2 If for reasons not attributable to the Supplier, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the period from the date of Completion specified in the SCC or any other period agreed upon by the Employer and the Supplier, the Supplier shall be deemed to have fulfilled its obligations with respect to the Functional Guarantees, and GCC sub-Clauses 28.2 and 28.3 shall not apply.
		25.3	<u>Operational Acceptance</u> 25.3.1 Subject to GCC sub-Clause 25.4 below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when

			(a) the Guarantee Test has been successfully completed and the Functional Guarantees are met; or (b) the Guarantee Test has not been successfully completed or has not been carried out for reasons not attributable to the Supplier within the period from the date of Completion specified in the SCC or any other agreed upon period as specified in GCC sub-Clause 25.2.2 above; or (c) the Supplier has paid the liquidated damages specified in GCC sub-Clause 28.3 hereof; and (d) any minor items mentioned in GCC sub-Clause 24.7 hereof relevant to the Facilities or that part thereof have been completed. 25.3.2 At any time after any of the events set out in GCC sub-Clause 25.3.1 have occurred, the Supplier may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate in the form provided in the Tendering Documents or in another form acceptable to the Employer in respect of the Facilities or the part thereof specified in such notice as of the date of such notice. 25.3.3 The Project Manager shall, after consultation with the Employer, and within seven (7) days after receipt of the Supplier's notice, issue an Operational Acceptance Certificate. If within seven (7) days after receipt of the Supplier's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Supplier in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the Facilities or the relevant part thereof shall be deemed to have been accepted as of the date of the Supplier's said notice.
		25.4	Partial Acceptance 25.4.1 If the Contract specifies that Completion and Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Completion and Commissioning including the Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities. 25.4.2 If a part of the Facilities comprises facilities such as buildings, for which no Commissioning or Guarantee Test is required, then the Project Manager shall issue the Operational Acceptance Certificate for such facility when it attains Completion, provided that the Supplier shall thereafter complete any outstanding minor items that are listed in the Operational Acceptance Certificate.

F. Guarantees and Liabilities

26	**Completion Time Guarantee**	26.1	The Supplier guarantees that it shall attain Completion of the Facilities (or a part for which a separate time for completion is specified in the SCC) within the Time for Completion specified in the SCC pursuant to GCC sub-Clause 8.2, or within such extended time to which the Supplier shall be entitled under GCC Clause 40 hereof.
		26.2	If the Supplier fails to attain Completion of the Facilities or any part thereof within the Time for Completion or any extension thereof under GCC Clause 40, the Supplier shall pay to the Employer liquidated damages in the amount specified in the SCC as a percentage rate of the Contract Price, or the relevant part thereof. The aggregate amount of such liquidated damages shall in no event exceed the amount specified as "Maximum" in the SCC. Once the "Maximum" is reached, the Employer may consider termination of the Contract, pursuant to GCC sub-Clause 42.2.2. Such payment shall completely satisfy the Supplier's obligation to attain Completion of the Facilities or the relevant part thereof within the Time for Completion or any extension thereof under GCC Clause 40. The Supplier shall have no further liability whatsoever to the Employer in respect thereof. However, the payment of liquidated damages shall not in any way relieve the Supplier from any of its obligations to complete the Facilities or from any other obligations and liabilities of the Supplier under the Contract. Save for liquidated damages payable under this GCC sub-Clause 26.2, the failure by the Supplier to attain any milestone or other act, matter or thing by any date specified in the corresponding Appendix (Time Schedule) to the Contract Agreement and/or other programme of work prepared pursuant to GCC sub-Clause 18.2 shall not render the Supplier liable for any loss or damage thereby suffered by the Employer.
		26.3	If the Supplier attains Completion of the Facilities or any part thereof before the Time for Completion or any extension thereof under GCC Clause 40, the Employer shall pay to the Supplier a bonus in the amount specified in the SCC. The aggregate amount of such bonus shall in no event exceed the amount specified as "Maximum" in the SCC.
27.	**Defect Liability**	27.1	The Supplier warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Goods supplied and of the work executed.
		27.2	The Defect Liability Period shall be eighteen (18) months from the date of Completion of the Facilities (or any part thereof) or twelve (12) months from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC. If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Goods supplied or of the work executed by the Supplier, the Supplier shall promptly, in

			consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Supplier shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect. The Supplier shall not be responsible for the repair, replacement or making good of any defect of any damage to the Facilities arising out of or resulting from any of the following causes: (a) improper operation or maintenance of the Facilities by the Employer (b) operation of the Facilities outside specifications provided in the Contract (c) normal wear and tear.
		27.3	The Supplier's obligations under this GCC Clause 27 shall not apply to (a) any materials that are supplied by the Employer under GCC sub-Clause 21.2, are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein (b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Supplier has disclaimed responsibility herein (c) any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GCC sub-Clause 27.7.
		27.4	The Employer shall give the Supplier a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Supplier to inspect any such defect.
		27.5	The Employer shall afford the Supplier all necessary access to the Facilities and the Site to enable the Supplier to perform its obligations under this GCC Clause 27. The Supplier may, with the consent of the Employer, remove from the Site any Goods or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.
		27.6	If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Employer may give to the Supplier a notice requiring that tests of the defective part of the Facilities shall be made by the Supplier immediately upon completion of such remedial work, whereupon the Supplier shall carry out such tests. If such part fails the tests, the Supplier shall carry out further repair, replacement or making good (as the case may be) until that part of the Facilities passes such tests. The tests shall be agreed upon by the Employer and the Supplier.

		27.7	If the Supplier fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Supplier, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Supplier or may be deducted by the Employer from any monies due the Supplier or claimed under the Performance Security.
		27.8	If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons.
		27.9	Except as provided in GCC Clauses 27 and 33, the Supplier shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Goods, design or engineering or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, criminal or willful action of the Supplier.
		27.10	In addition, the Supplier shall also provide an extended warranty for any such component of the Facilities and during the period of time as may be specified in the SCC. Such obligation shall be in addition to the defect liability specified under GCC sub-Clause 27.2.
28.	**Functional Guarantees**	28.1	The Supplier guarantees that during the Guarantee Test, the Facilities and all parts thereof shall attain the Functional Guarantees specified in the corresponding Appendix (Functional Guarantees) to the Contract Agreement, subject to and upon the conditions therein specified.
		28.2	If, for reasons attributable to the Supplier, the minimum level of the Functional Guarantees specified in the corresponding Appendix (Functional Guarantees) to the Contract Agreement are not met either in whole or in part, the Supplier shall at its cost and expense make such changes, modifications and/or additions to the Plant or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Supplier shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Guarantee Test until the minimum level of the Guarantees has been met. If the Supplier eventually fails to meet the minimum level of

			Functional Guarantees, the Employer may consider termination of the Contract, pursuant to GCC sub-Clause 42.2.2.
		28.3	If, for reasons attributable to the Supplier, the Functional Guarantees specified in the corresponding Appendix (Functional Guarantees) to the Contract Agreement are not attained either in whole or in part, but the minimum level of the Functional Guarantees specified in the said Appendix to the Contract Agreement is met, the Supplier shall, at the Supplier's option, either (a) make such changes, modifications and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense, and shall request the Employer to repeat the Guarantee Test or (b) pay liquidated damages to the Employer in respect of the failure to meet the Functional Guarantees in accordance with the provisions in the corresponding Appendix (Functional Guarantees) to the Contract Agreement.
		28.4	The payment of liquidated damages under GCC sub-Clause 28.3, up to the limitation of liability specified in the SCC, shall completely satisfy the Supplier's guarantees under GCC sub-Clause 28.3, and the Supplier shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Supplier, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.
29.	**Patent Indemnity**	29.1	The Supplier shall, subject to the Employer's compliance with GCC sub-Clause 29.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Employer may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Facilities by the Supplier or the use of the Facilities in the United Republic of Tanzania; and (b) the sale of the products produced by the Facilities in United Republic of Tanzania. Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Supplier, pursuant to the Contract Agreement.
		29.2	If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC sub-Clause 29.1, the Employer shall promptly give the Supplier a notice thereof, and the Supplier may at

			its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Supplier fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Supplier has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim. The Employer shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.
		29.3	The Employer shall indemnify and hold harmless the Supplier and its employees, officers and Subsuppliers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Employer.
30.	**Limitation of Liability**	30.1	Except in cases of criminal negligence or willful misconduct, (a) the Supplier shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Employer and (b) the aggregate liability of the Supplier to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Employer with respect to patent infringement.

G. Risk Distribution

31.	**Transfer of Ownership**	31.1	Ownership of the Goods (including spare parts) to be imported into the United Republic of Tanzania shall be transferred to the Employer upon loading on to the mode of transport to be used to convey the Goods from the country of origin.

		31.2	Ownership of the Goods (including spare parts) procured in the United Republic of Tanzania where the Site is located shall be transferred to the Employer when the Goods are brought on to the Site.
		31.3	Ownership of the Supplier's Equipment used by the Supplier and its Subsuppliers in connection with the Contract shall remain with the Supplier or its Subsuppliers.
		31.4	Ownership of any Goods in excess of the requirements for the Facilities shall revert to the Supplier upon Completion of the Facilities or at such earlier time when the Employer and the Supplier agree that the Goods in question are no longer required for the Facilities.
		31.5	Notwithstanding the transfer of ownership of the Goods, the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Supplier pursuant to GCC Clause 32 (Care of Facilities) hereof until Completion of the Facilities or the part thereof in which such Goods are incorporated.
32.	**Care of Facilities**	32.1	The Supplier shall be responsible for the care and custody of the Facilities or any part thereof until the date of Completion of the Facilities pursuant to GCC Clause 24 or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Facilities or the relevant part thereof from any cause whatsoever during such period. The Supplier shall also be responsible for any loss or damage to the Facilities caused by the Supplier or its Sub suppliers in the course of any work carried out, pursuant to GCC Clause 27. Notwithstanding the foregoing, the Supplier shall not be liable for any loss or damage to the Facilities or that part thereof caused by reason of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC sub-Clauses 32.2 and 38.1.
		32.2	If any loss or damage occurs to the Facilities or any part thereof or to the Supplier's temporary facilities by reason of (a) (insofar as they relate to the United Republic of Tanzania, where the Site is located) nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced supplier could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, insofar as such risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks and Political Risks, taken out under GCC Clause 34 hereof (b) any use or occupation by the Employer or any third party (other than a Subsupplier) authorized by the Employer of any part of the Facilities (c) any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Employer, or any such matter for which the Supplier has disclaimed responsibility herein,

			the Employer shall pay to the Supplier all sums payable in respect of the Facilities executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Supplier the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Employer requests the Supplier in writing to make good any loss or damage to the Facilities thereby occasioned, the Supplier shall make good the same at the cost of the Employer in accordance with GCC Clause 39. If the Employer does not request the Supplier in writing to make good any loss or damage to the Facilities thereby occasioned, the Employer shall either request a change in accordance with GCC Clause 39, excluding the performance of that part of the Facilities thereby lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the Facilities, the Employer shall terminate the Contract pursuant to GCC sub-Clause 42.1 hereof.
		32.3	The Supplier shall be liable for any loss of or damage to any Supplier's Equipment, or any other property of the Supplier used or intended to be used for purposes of the Facilities, except (i) as mentioned in GCC sub-Clause 32.2 (with respect to the Supplier's temporary facilities), and (ii) where such loss or damage arises by reason of any of the matters specified in GCC sub-Clauses 32.2 (b) and (c) and 38.1.
		32.4	With respect to any loss or damage caused to the Facilities or any part thereof or to the Supplier's Equipment by reason of any of the matters specified in GCC sub-Clause 38.1, the provisions of GCC sub-Clause 38.3 shall apply.
33.	**Loss of or Damage to Property; Accident or Injury to Workers; Indemnification**	33.1	Subject to GCC sub-Clause 33.3, the Supplier shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property (other than the Facilities whether accepted or not), arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Supplier or its Subsuppliers, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its suppliers, employees, officers or agents.
		33.2	If any proceedings are brought or any claim is made against the Employer that might subject the Supplier to liability under GCC sub-Clause 33.1, the Employer shall promptly give the Supplier a notice thereof and the Supplier may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Supplier fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Supplier has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim. The Employer shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and

			shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.
		33.3	The Employer shall indemnify and hold harmless the Supplier and its employees, officers and Subsuppliers from any liability for loss of or damage to property of the Employer, other than the Facilities not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GCC Clause 34, provided that such fire, explosion or other perils were not caused by any act or failure of the Supplier.
		33.4	The party entitled to the benefit of an indemnity under this GCC Clause 33 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the party fails to take such measures, the other party's liabilities shall be correspondingly reduced.
34.	**Insurance**	34.1	To the extent specified in the corresponding Appendix (Insurance Requirements) to the Contract Agreement, the Supplier shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval. (a) <u>Cargo Insurance During Transport</u> Covering loss or damage occurring while in transit from the Supplier's or Subsupplier's works or stores until arrival at the Site, to the Goods (including spare parts therefore) and to the Supplier's Equipment. (b) <u>Installation All Risks Insurance</u> Covering physical loss or damage to the Facilities at the Site, occurring prior to Completion of the Facilities, with an extended maintenance coverage for the Supplier's liability in respect of any loss or damage occurring during the Defect Liability Period while the Supplier is on the Site for the purpose of performing its obligations during the Defect Liability Period. (c) <u>Third Party Liability Insurance</u> Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property occurring in connection with the supply and installation of the Facilities. (d) <u>Automobile Liability Insurance</u> Covering use of all vehicles used by the Supplier or its Subsuppliers (whether or not owned by them) in connection with the execution of the Contract. (e) <u>Workers' Compensation</u>

			In accordance with the statutory requirements applicable in United Republic of Tanzania. (f) Employer's Liability In accordance with the statutory requirements applicable in United Republic of Tanzania. (g) Other Insurances Such other insurances as may be specifically agreed upon by the parties hereto as listed in the said the corresponding Appendix.
		34.2	The Employer shall be named as co-insured under all insurance policies taken out by the Supplier pursuant to GCC sub-Clause 34.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Supplier's Subsuppliers shall be named as co-insured's under all insurance policies taken out by the Supplier pursuant to GCC sub-Clause 34.1 except for the Cargo Insurance During Transport, Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insured's for losses or claims arising out of the performance of the Contract shall be waived under such policies.
		34.3	The Supplier shall, in accordance with the provisions of the corresponding Appendix (Insurance Requirements) to the Contract Agreement, deliver to the Employer certificates of insurance (or copies of the insurance policies) as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notices shall be given to the Employer by insurers prior to cancellation or material modification of a policy.
		34.4	The Supplier shall ensure that, where applicable, its Subsupplier(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subsuppliers are covered by the policies taken out by the Supplier.

		34.5	The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the corresponding Appendix (Insurance Requirements) to the Contract Agreement, in the sums and with the deductibles and other conditions specified in the said Appendix. The Supplier and the Supplier's Subsuppliers shall be named as co-insured's under all such policies. All insurers' rights of subrogation against such co-insured's for losses or claims arising out of the performance of the Contract shall be waived under such policies. The Employer shall deliver to the Supplier satisfactory evidence that the required insurances are in full force and effect. The policies shall provide that not less than twenty-one (21) days' notices shall be given to the Supplier by all insurers prior to any cancellation or material modification of the policies. If so, requested by the Supplier, the Employer shall provide copies of the policies taken out by the Employer under this GCC sub-Clause 34.5.
		34.6	If the Supplier fails to take out and/or maintain in effect the insurances referred to in GCC sub-Clause 34.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Supplier under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Supplier. If the Employer fails to take out and/or maintain in effect the insurances referred to in GCC 34.5, the Supplier may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Employer under the Contract any premium that the Supplier shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Employer. If the Supplier fails to or is unable to take out and maintain in effect any such insurances, the Supplier shall nevertheless have no liability or responsibility towards the Employer, and the Supplier shall have full recourse against the Employer for any and all liabilities of the Employer herein.
		34.7	Unless otherwise provided in the Contract, the Supplier shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 34, and all monies payable by any insurers shall be paid to the Supplier. The Employer shall give to the Supplier all such reasonable assistance as may be required by the Supplier. With respect to insurance claims in which the Employer's interest is involved, the Supplier shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Supplier's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Supplier.
35.	**Unforeseen Conditions**	35.1	If, during the execution of the Contract, the Supplier shall encounter on the Site any physical conditions (other than climatic conditions) or artificial obstructions that could not have been reasonably foreseen prior

			to the date of the Contract Agreement by an experienced supplier on the basis of reasonable examination of the data relating to the Facilities (including any data as to boring tests) provided by the Employer, and on the basis of information that it could have obtained from a visual inspection of the Site (if access thereto was available) or other data readily available to it relating to the Facilities, and if the Supplier determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Supplier shall promptly, and before performing additional work or using additional Goods or Supplier's Equipment, notify the Project Manager in writing of (a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen (b) the additional work and/or Goods and/or Supplier's Equipment required, including the steps which the Supplier will or proposes to take to overcome such conditions or obstructions (c) the extent of the anticipated delay (d) the additional cost and expense that the Supplier is likely to incur. On receiving any notice from the Supplier under this GCC sub-Clause 35.1, the Project Manager shall promptly consult with the Employer and Supplier and decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Project Manager shall instruct the Supplier, with a copy to the Employer, of the actions to be taken.
		35.2	Any reasonable additional cost and expense incurred by the Supplier in following the instructions from the Project Manager to overcome such physical conditions or artificial obstructions referred to in GCC sub-Clause 35.1 shall be paid by the Employer to the Supplier as an addition to the Contract Price.
		35.3	If the Supplier is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GCC sub-Clause 35.1, the Time for Completion shall be extended in accordance with GCC Clause 40.
36.	**Change in Laws and Regulations**	36.1	If, after the date twenty-eight (28) days prior to the date of Tender submission, in the United Republic of Tanzania, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Supplier and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for

			in the price adjustment provisions where applicable, in accordance with the SCC.
37.	**Force Majeure**	37.1	Force majeure shall include, without limitation, the following: (a) war, hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts (c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster (f) shortage of labour, materials or utilities where caused by circumstances that are themselves Force Majeure.
		37.2	If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.
		37.3	The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause 40.
		37.4	The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract under GCC sub-Clauses 37.6 and 38.5.

		37.5	No delay or nonperformance by either party hereto caused by the occurrence of any event of Force Majeure shall (a) constitute a default or breach of the Contract (b) (subject to GCC sub-Clauses 32.2, 38.3 and 38.4) give rise to any claim for damages or additional cost or expense occasioned thereby if and to the extent that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.
		37.6	If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party's right to terminate the Contract under GCC sub-Clause 38.5.
		37.7	In the event of termination pursuant to GCC sub-Clause 37.6, the rights and obligations of the Employer and the Supplier shall be as specified in GCC sub-Clauses 42.1.2 and 42.1.3.
		37.8	Notwithstanding GCC sub-Clause 37.5, Force Majeure shall not apply to any obligation of the Employer to make payments to the Supplier herein.
38.	**War Risks**	38.1	"War Risks" shall mean any event specified in paragraphs (a) and (b) of GCC sub-Clause 37.1 and any explosion or impact of any mine, bomb, shell, grenade or other projectile, missile, munitions or explosive of war, occurring or existing in or near the United Republic of Tanzania where the Site is located.
		38.2	Notwithstanding anything contained in the Contract, the Supplier shall have no liability whatsoever for or with respect to (a) destruction of or damage to Facilities, Goods, or any part thereof (b) destruction of or damage to property of the Employer or any third party (c) injury or loss of life if such destruction, damage, injury or loss of life is caused by any War Risks, and the Employer shall indemnify and hold the Supplier harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges or expenses arising in consequence of or in connection with the same.
		38.3	If the Facilities or any Goods or Supplier's Equipment or any other property of the Supplier used or intended to be used for the purposes of the Facilities shall sustain destruction or damage by reason of any War Risks, the Employer shall pay the Supplier for

			(a) any part of the Facilities or the Goods so destroyed or damaged (to the extent not already paid for by the Employer) (b) replacing or making good any Supplier's Equipment or other property of the Supplier so destroyed or damaged (c) replacing or making good any such destruction or damage to the Facilities or the Goods or any part thereof so far as may be required by the Employer, and as may be necessary for completion of the Facilities. If the Employer does not require the Supplier to replace or make good any such destruction or damage to the Facilities, the Employer shall either request a change in accordance with GCC Clause 39, excluding the performance of that part of the Facilities thereby destroyed or damaged or, where the loss, destruction or damage affects a substantial part of the Facilities, shall terminate the Contract, pursuant to GCC sub-Clause 42.1.
		38.4	Notwithstanding anything contained in the Contract, the Employer shall pay the Supplier for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any War Risks, provided that the Supplier shall as soon as practicable notify the Employer in writing of any such increased cost.
		38.5	If during the performance of the Contract any War Risks shall occur that financially or otherwise materially affect the execution of the Contract by the Supplier, the Supplier shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Subsuppliers' personnel engaged in the work on the Facilities, provided, however, that if the execution of the work on the Facilities becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any War Risks, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other.
		38.6	In the event of termination pursuant to GCC sub-Clauses 38.3 or 38.5, the rights and obligations of the Employer and the Supplier shall be specified in GCC sub-Clauses 42.1.2 and 42.1.3.

H. Change in Contract Elements

39.	**Change in the Facilities**	39.1	<u>Introducing a Change</u> 39.1.1 Subject to GCC sub-Clauses 39.2.5 and 39.2.7, the Employer shall have the right to propose, and subsequently require, that the Project Manager order the Supplier from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Facilities (hereinafter called "Change"), provided that such Change falls within the general scope of the Facilities and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of the Change envisaged with the nature of the Facilities as specified in the Contract. 39.1.2 The Supplier may from time to time during its performance of the Contract propose to the Employer (with a copy to the Project Manager) any Change that the Supplier considers necessary or desirable to improve the quality, efficiency or safety of the Facilities. The Employer may at its discretion approve or reject any Change proposed by the Supplier, provided that the Employer shall approve any Change proposed by the Supplier to ensure the safety of the Facilities. 39.1.3 Notwithstanding GCC sub-Clauses 39.1.1 and 39.1.2, no change made necessary because of any default of the Supplier in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion. 39.1.4 The procedure on how to proceed with and execute Changes is specified in GCC sub-Clauses 39.2 and 39.3, and further details and sample forms are provided in the Sample Forms and Procedures section in the Tendering Documents.
		39.2	<u>Changes Originating from Employer</u> 39.2.1 If the Employer proposes a Change pursuant to GCC sub-Clause 39.1.1, it shall send to the Supplier a "Request for Change Proposal," requiring the Supplier to prepare and furnish to the Project Manager as soon as reasonably practicable a "Change Proposal," which shall include the following: (a) brief description of the Change (b) effect on the Time for Completion (c) estimated cost of the Change (d) effect on Functional Guarantees (if any) (e) effect on any other provisions of the Contract. 39.2.2 Prior to preparing and submitting the "Change Proposal," the Supplier shall submit to the Project Manager an "Estimate for

Change Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Supplier's Estimate for Change Proposal, the Employer shall do one of the following:

(a) accept the Supplier's estimate with instructions to the Supplier to proceed with the preparation of the Change Proposal

(b) advise the Supplier of any part of its Estimate for Change Proposal that is unacceptable and request the Supplier to review its estimate

(c) advise the Supplier that the Employer does not intend to proceed with the Change.

39.2.3 Upon receipt of the Employer's instruction to proceed under GCC sub-Clause 39.2.2 (a), the Supplier shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GCC sub-Clause 39.2.1.

39.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates for the valuation of the Change.

39.2.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith and with all other Change Orders that have already become binding upon the Supplier under this GCC Clause 39 would be to increase or decrease the Contract Price as originally set forth in Article 2 (Contract Price) of the Contract Agreement by more than fifteen percent (15%), the Supplier may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Supplier's objection, the Employer shall withdraw the proposed Change and shall notify the Supplier in writing thereof.

The Supplier's failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Supplier represents.

39.2.6 Upon receipt of the Change Proposal, the Employer and the Supplier shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Supplier with a Change Order.

If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Supplier with details of when the Supplier can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the

			Supplier accordingly. Under such circumstances, the Supplier shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Supplier in its Estimate for Change Proposal submitted in accordance with GCC sub-Clause 39.2.2. 39.2.7 If the Employer and the Supplier cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Supplier to proceed with the Change by issue of a "Pending Agreement Change Order." Upon receipt of a Pending Agreement Change Order, the Supplier shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal. If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the Adjudicator in accordance with the provisions of GCC sub-Clause 6.1.
		39.3	<u>Changes Originating from Supplier</u> 39.3.1 If the Supplier proposes a Change pursuant to GCC sub-Clause 39.1.2, the Supplier shall submit to the Project Manager a written "Application for Change Proposal," giving reasons for the proposed Change and including the information specified in GCC sub-Clause 39.2.1. Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GCC sub-Clauses 39.2.6 and 39.2.7. However, should the Employer choose not to proceed, the Supplier shall not be entitled to recover the costs of preparing the Application for Change Proposal.
40.	**Extension of Time for Completion**	40.1	The Time(s) for Completion specified in the SCC shall be extended if the Supplier is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following: (a) any Change in the Facilities as provided in GCC Clause 39 (b) any occurrence of Force Majeure as provided in GCC Clause 37, unforeseen conditions as provided in GCC Clause 35, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC sub-Clause 32.2 (c) any suspension order given by the Employer under GCC Clause 41 hereof or reduction in the rate of progress pursuant to GCC sub-Clause 41.2 or (d) any changes in laws and regulations as provided in GCC Clause 36 or (e) any default or breach of the Contract by the Employer, specifically including failure to supply the items listed in the corresponding Appendix (Scope of Works and Supply by the Employer) to the

			Contract Agreement, or any activity, act or omission of any other suppliers employed by the Employer or (f) any other matter specifically mentioned in the Contract by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Supplier.
		40.2	Except where otherwise specifically provided in the Contract, the Supplier shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Supplier shall agree upon the period of such extension. In the event that the Supplier does not accept the Employer's estimate of a fair and reasonable time extension, the Supplier shall be entitled to refer the matter to an Adjudicator, pursuant to GCC sub-Clause 6.1.
		40.3	The Supplier shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.
41.	**Suspension**	41.1	The Employer may request the Project Manager, by notice to the Supplier, to order the Supplier to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefor. The Supplier shall thereupon suspend performance of such obligation (except those obligations necessary for the care or preservation of the Facilities) until ordered in writing to resume such performance by the Project Manager. If, by virtue of a suspension order given by the Project Manager, other than by reason of the Supplier's default or breach of the Contract, the Supplier's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Supplier may give a notice to the Project Manager requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 39, excluding the performance of the suspended obligations from the Contract. If the Employer fails to do so within such period, the Supplier may, by a further notice to the Project Manager, elect to treat the suspension, where it affects a part only of the Facilities, as a deletion of such part in accordance with GCC Clause 39 or, where it affects the whole of the Facilities, as termination of the Contract under GCC sub-Clause 42.1.
		41.2	If: (a) the Employer has failed to pay the Supplier any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the corresponding Appendix (Terms and Procedures of Payment)

			to the Contract Agreement, or commits a substantial breach of the Contract, the Supplier may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GCC sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Supplier's notice or (b) the Supplier is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas in accordance with GCC sub-Clause 10.2, or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities, then the Supplier may by fourteen (14) days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.
		41.3	If the Supplier's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 41, then the Time for Completion shall be extended in accordance with GCC sub-Clause 40.1, and any and all additional costs or expenses incurred by the Supplier as a result of such suspension or reduction shall be paid by the Employer to the Supplier in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Supplier's default or breach of the Contract.
		41.4	During the period of suspension, the Supplier shall not remove from the Site any Goods, any part of the Facilities or any Supplier's Equipment, without the prior written consent of the Employer.
42.	**Termination**	42.1	<u>Termination for Employer's Convenience</u> 42.1.1 The Employer may at any time terminate the Contract for any reason by giving the Supplier a notice of termination that refers to this GCC sub-Clause 42.1. 42.1.2 Upon receipt of the notice of termination under GCC sub-Clause 42.1.1, the Supplier shall either immediately or upon the date specified in the notice of termination (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below (c) remove all Supplier's Equipment from the Site, repatriate the Supplier's and its Subsuppliers' personnel from the Site,

			remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition (d) In addition, the Supplier, subject to the payment specified in GCC sub-Clause 42.1.3, shall (i) deliver to the Employer the parts of the Facilities executed by the Supplier up to the date of termination (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Supplier to the Facilities and to the Goods as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Supplier and its Subsuppliers (iii) Deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Supplier or its Subsuppliers as at the date of termination in connection with the Facilities. 42.1.3 In the event of termination of the Contract under GCC sub-Clause 42.1.1, the Employer shall pay to the Supplier the following amounts: (a) the Contract Price, properly attributable to the parts of the Facilities executed by the Supplier as of the date of termination (b) the costs reasonably incurred by the Supplier in the removal of the Supplier's Equipment from the Site and in the repatriation of the Supplier's and its Sub suppliers' personnel (c) any amounts to be paid by the Supplier to its Sub suppliersin connection with the termination of any subcontracts, including any cancellation charges (d) costs incurred by the Supplier in protecting the Facilities and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC sub-Clause 42.1.2 (e) The cost of satisfying all other obligations, commitments and claims that the Supplier may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.
		42.2	<u>Termination for Supplier's Default</u> 42.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefor to the Supplier, referring to this GCC sub-Clause 42.2: (a) if the Supplier becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its

creditors, or, if the Supplier is a corporation, a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Supplier takes or suffers any other analogous action in consequence of debt

(b) if the Supplier assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 43.

(c) if the Supplier, in the judgment of the Employer has engaged in corrupt, coercive, collusive, obstructive or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph:

i. "corrupt practice means the offering, giving receiving or soliciting of anything of value to influence the action of a public officer in the procurement process or contract execution;
ii. "coercive practice" means impairing or harming, or threatening to impair or harm directly or indirectly, any party or the property of the party for the purpose of influencing improperly the action or that party in connection with public procurement or in furtherance of corrupt practice or fraudulent practice;
iii. collusive practices" means impairing or harming, or threatening to impair or harm directly or indirectly, any part or the property of the Party for the purpose of influencing improperly the action or a part or in connection with public procurement or government contracting or in furtherance of a corrupt practice or a Fraudulent Practice
iv. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Government or a public body and includes collusive practices among tenderers, prior to or after submission designed to establish tender prices at artificial non-competitive levels and to deprive the Government of the benefits of free and open competition;
v. "obstructive practice" means acts intended to materially impede access to required information in exercising a duty under this Act;

42.2.2 If the Supplier

(a) has abandoned or repudiated the Contract

(b) has without valid reason failed to commence work on the Facilities promptly or has suspended (other than pursuant to GCC sub-Clause 41.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed

(c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause

(d) refuses or is unable to provide sufficient materials, services or labor to execute and complete the Facilities in the manner specified in the programme furnished under GCC sub-Clause 18.2 at rates of progress that give reasonable assurance to the Employer that the Supplier can attain Completion of the Facilities by the Time for Completion as extended, then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Supplier stating the nature of the default and requiring the Supplier to remedy the same. If the Supplier fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Supplier that refers to this GCC sub-Clause 42.2.

42.2.3 Upon receipt of the notice of termination under GCC sub-Clauses 42.2.1 or 42.2.2, the Supplier shall, either immediately or upon such date as is specified in the notice of termination,

(a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition

(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) below

(c) deliver to the Employer the parts of the Facilities executed by the Supplier up to the date of termination

(d) to the extent legally possible, assign to the Employer all right, title and benefit of the Supplier to the Facilities and to the Goods as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Supplier and its Sub suppliers

(e) Deliver to the Employer all drawings, specifications and other documents prepared by the Supplier or its Sub suppliers as of the date of termination in connection with the Facilities.

42.2.4 The Employer may enter upon the Site, expel the Supplier, and complete the Facilities itself or by employing any third party. The Employer may, to the exclusion of any right of the Supplier over the same, take over and use with the payment of a fair rental rate to the Supplier, with all the maintenance costs to the account of the Employer and with an indemnification by the Employer for all liability including damage or injury to persons arising out of the Employer's use of such equipment, any Supplier's Equipment owned by the Supplier and on the Site in connection with the Facilities for such reasonable period as the Employer

			considers expedient for the supply and installation of the Facilities. Upon completion of the Facilities or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Supplier that such Supplier's Equipment will be returned to the Supplier at or near the Site and shall return such Supplier's Equipment to the Supplier in accordance with such notice. The Supplier shall thereafter without delay and at its cost remove or arrange removal of the same from the Site. 42.2.5 Subject to GCC sub-Clause 42.2.6, the Supplier shall be entitled to be paid the Contract Price attributable to the Facilities executed as of the date of termination, the value of any unused or partially used Goods on the Site, and the costs, if any, incurred in protecting the Facilities and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC sub-Clause 42.2.3. Any sums due the Employer from the Supplier accruing prior to the date of termination shall be deducted from the amount to be paid to the Supplier under this Contract. 42.2.6 If the Employer completes the Facilities, the cost of completing the Facilities by the Employer shall be determined. If the sum that the Supplier is entitled to be paid, pursuant to GCC sub-Clause 42.2.5, plus the reasonable costs incurred by the Employer in completing the Facilities, exceeds the Contract Price, the Supplier shall be liable for such excess. If such excess is greater than the sums due the Supplier under GCC sub-Clause 42.2.5, the Supplier shall pay the balance to the Employer, and if such excess is less than the sums due the Supplier under GCC sub-Clause 42.2.5, the Employer shall pay the balance to the Supplier. The Employer and the Supplier shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.
		42.3	<u>Termination by Supplier</u> 42.3.1 If (a) the Employer has failed to pay the Supplier any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the corresponding Appendix (Terms and Procedures of Payment) of the Contract Agreement, or commits a substantial breach of the Contract, the Supplier may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GCC sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or

give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Supplier's notice, or

(b) the Supplier is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities,

then the Supplier may give a notice to the Employer thereof, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within twenty-eight (28) days of such notice, or if the Supplier is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within twenty-eight (28) days of the said notice, the Supplier may by a further notice to the Employer referring to this GCC sub-Clause 42.3.1, forthwith terminate the Contract.

42.3.2 The Supplier may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GCC sub-Clause 42.3.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt.

42.3.3 If the Contract is terminated under GCC sub-Clauses 42.3.1 or 42.3.2, then the Supplier shall immediately

(a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition

(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii)

(c) Remove all Supplier's Equipment from the Site and repatriate the Supplier's and its Sub suppliers' personnel from the Site.

(d) In addition, the Supplier, subject to the payment specified in GCC sub-Clause 42.3.4, shall

(i) deliver to the Employer the parts of the Facilities executed by the Supplier up to the date of termination

(ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Supplier to the Facilities and to the Goods as of the date of termination, and, as may be required by the Employer,

			in any subcontracts concluded between the Supplier and its Sub suppliers (iii) Deliver to the Employer all drawings, specifications and other documents prepared by the Supplier or its Sub suppliers as of the date of termination in connection with the Facilities. 42.3.4 If the Contract is terminated under GCC sub-Clauses 42.3.1 or 42.3.2, the Employer shall pay to the Supplier all payments specified in GCC sub-Clause 42.1.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Supplier arising out of, in connection with or in consequence of such termination. 42.3.5 Termination by the Supplier pursuant to this GCC sub-Clause 42.3 is without prejudice to any other rights or remedies of the Supplier that may be exercised in lieu of or in addition to rights conferred by GCC sub-Clause 42.3.
		42.4	In this GCC Clause 42, the expression "Facilities executed" shall include all work executed, Installation Services provided, and all Goods acquired (or subject to a legally binding obligation to purchase) by the Supplier and used or intended to be used for the purpose of the Facilities, up to and including the date of termination.
		42.5	In this GCC Clause 42, in calculating any monies due from the Employer to the Supplier, account shall be taken of any sum previously paid by the Employer to the Supplier under the Contract, including any advance payment paid pursuant to the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement.
43.	**Assignment**	43.1	Neither the Employer nor the Supplier shall, without the express prior written consent of the other party (which consent shall not be unreasonably withheld), assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Supplier shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

SCHEDULE OF REQUIREMENT

SCHEDULE OF REQUIREMENT

LOT	EQUIPMENT	CHATO	SIMIYU	SHINYANGA	MUSOMA	GEITA	TOTAL	UNIT PRICE	TOTAL PRICE
LOT 1	64 SLICE CT SCAN MACHINE	0	1	1	1	1	4	1,850,000,000	7,400,000,000
LOT 2	128 SLICE CT SCAN MACHINE	1	0	0	0	0	1	2,100,000,000	2,100,000,000

TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATIONS

LOT 1: CT SCANNER 64 SLICES

Level of use: Regional Referral Hospital and above

64 Slice CT-Scan. 2 years warranty, three years comprehensive Maintenance and spare parts inclusive.

The system shall be of latest technology allowing full and continuous rotation, multi-slice scanning (**64 slice acquisitions per rotation**) with true isotropic volume acquisition and best resolution of at least **0.4mm** for body, cardiac and vascular application. Pitch to be specified used for each application to achieve the resolution. True future upgradability to higher slices per rotation and future applications should be possible. The speed should be adequate to **all body, neurological and cardiovascular examinations.**

Technical Specifications or Requirements:

A. CT EXAMINATIONS:

1. CT Angiography
2. Head and Neck CT
3. Cardiothoracic CT
4. Abdominal CT
5. Pelvic CT
6. Musculo-Skeletal CT
7. Spine CT

B. DETECTOR:

1. Should be 64 detectors array system
2. The detectors shall be large area detector with Z axis coverage of 38mm and/or above.
3. Detector system should not require frequent calibrations(atleast once a month)
4. Specify the number of rows and the total number of detector cells.(670 elements or more)

C. GANTRY:

1. Aperture : 70 cm or more
2. Control Panel: on either side
3. Entire range of rotation times for full 360 degree should be specified. Minimumrotation time should be 0.4 seconds or less for whole body application.
4. Should have positioning laser lights.

5. Maximum scan FOV should be at least 50 cm.
6. Tilt-Remote >= +/- 30 deg.

D. X-RAY GENERATOR:

1. High Frequency type
2. Power output 75KW or more to support continuous and sustained operation.

E. X-RAY TUBE:

1. Tube current : 30 to 600mA or more
2. Real Time mA modulation for dose regulation.
3. Tube Voltage: 80 to140 KV
4. Anode Heat Storage Capacity should be 6 MHU or more
5. Should have anode Temp Monitoring System.
6. Heat Dissipation: >= 1000 KHU or more
7. Specify Focal Spot size and number according to IEC recommendation.
8. The tube should have dynamic focal spots.
9. The X-ray cooling unit should be inbuilt in the gantry.
10. **Warranty of tube: Comprehensive warranty for all parts including x-ray tubes for at least 2 years irrespective of number of scans.**

F. PATIENT TABLE:

1. **Minimum Load capacity of at least 200Kg ±10% with 1 mm positioningaccuracy.**
2. Table speed: Horizontal up to 100mm or more/sec.
3. Vertical Table travel: 50mm/sec or more
4. Minimum table top height should be 55cm or less from the ground level for easy transportation of trauma patient.
5. Longitudinal Scan Range: at least 150cm or more
6. Manual movement of the table should be possible in case of power failure.
7. Reproducing positional accuracy should be mentioned.
8. Remote Up/down and forward /backward should be standard.
9. Facility of positioning aid for horizontal isocentric positioning of the patient.
10. Should have Carbon Fibre Table Top.

G. SPIRAL CT:

1. Scan Time: Minimum scan time 0.4 sec or less for full 360 deg rotation.
2. Min slice thickness should be 0.625 mm or less
3. Max slice thickness: 10 mm or more
4. Slice increment.-specify scan and selectable slice thickness
5. Pitch Factor (volume pitch): variable between 0.5 sec to 1.5 sec or more andshould be user selectable. Specify all possible pitch selections.

6. Single Continuous scan time should be at least 120 sec.
7. Should optimize radiation dose and resolution for each selection.
8. Bolus Triggered Spiral acquisition should be possible.
9. Facility of multi-spiral, bi-directional spirals and back to back spirals.
10. Facility for monitor contrast enhancement and automatically commencedscanning.

H. TOPOGRAM:

1. Length and width: Specify range
2. Scan Time: Specify range
3. Views: Frontal & lateral views.
4. Should be able to interrupt acquisitions manually once the desired anatomy isobtained.

I. DATA ACQUISITION SYSTEM:

1. Detector should be capable of acquiring 64 slices per 360 degree of rotation.
2. Number of rows with their thickness, number of element in each rows
3. Inbuilt mechanism for adapting the tube current during each scan this shouldenable radiation dosage reduction where body part thickness is less.
4. Detector system should not require frequent calibration.
5. Should have inbuilt paediatric protocols based on patient weight.

J. IMAGE RECONSTRUCTION:

1. Real Time reconstruction speed: 15 images per sec or more at 512x512 matrix.
2. Display Matrix: 1024x1024 or more
3. Reconstructed slice thickness: ≤1mm to 10mm.
4. Should have selectable Scan Field and reconstructed field.

K. OPERATOR CONSOLE:

1. Radiology Monitor Resolution: 1280x1240
2. Pixel Size < 0.3 mm.
3. Two Flat screens medical grade LCD Type of at least 24" with fast image refreshrate should be fast and preferably instantaneous and flicker free.
4. Should be non-interlaced and progressive display type & sturdy.
5. Should perform Registration, scheduling, protocol selection , volume rendering,Volume measurements, Multiplan Reconstruction, and standard evaluation application and all available post processing functions without the help of the satellite workstation as well as film exposure.
6. Should have 3GHz or latest processor with at least 16GB RAM.
7. Raw Data storage with at least 1TB Hard disc having a minimum of 1,500,000 images storing capacity in 512x512 format.

8. Additional external hard disk of minimum 2TB should be provided.

9. System should be menu driven operation. Applications like image reconstruction, filming, curve MPR, CT Angiography; VRT, auto bone removal.

10. Lung nodule evaluation software to be provided in workstation, and not in operator console.

L. CONSOLE COMMON FEATURE:

1. The workstation should be interconnected for two-way transfer of images andreports.
2. Spatial alignment and visualization of two different data sets of one patientgenerated on different modalities or with different acquisition time.
3. Cine display should be available, both interactive and automatic.
4. Window width and Centre should be freely selectable.
5. Patient online Registration, pre- registration facility and transfer of informationfrom HIS/RIS via DICOM should be possible.
6. Should have dedicated pediatric protocol for low dose imaging.

M. WORKSTATIONS: Total two (1 at operator console room & 1 at Radiologist room)

1. Should have Flat screen Medical Diagnostic monitor (minimum 1Mega pixels coloured) of **at least 24"** with fast image refresh rate should be fast and preferably instantaneous and flicker free with Hard Disk of 1TB or more, capable of simultaneous viewing of all post processing functions and filming independently without the help of main console. Data transfer between the operator console & thesatellite workstation should be instantaneous.

N. Processor/chipset CPU: intel xeon E5-1650V2/3.5 GHz, Max Turbo speed. 3.9GHz, number of cores.6-Core, chipset type. Intel C602, processor main futures. Hyper - threading technology, intel Turbo boost technology 2, processor socket. LGA 2011 socket

1. Operating system: licensed window 10 professional

2. Microsoft office: Microsoft office 2019 professional

3. Antivirus: include antivirus software

4. Radiology monitor

- **Size: 24 inches**
- **Backlight: LED**
- **Native resolution: 1536x2048(3:4 aspect ratio)**
- **Display colour:** 10-bit (display port):1.07 billion from **a palette of 543 billion(13-bit) colours.**
- **8-bit: 16.77 million from palette of 543 billion (13-bit) colours.**

- **Video signals: display port x 3,HDMI, DVI-D(dual link)**
- **USB:3 Ports of USB 3.0**
- **Certifications & standards: CE (Medical device), EN60601-1,ANSI/AAMI, ES60601-1,CSA C22.2 No. 601-1, IEC 60601-1,VCCI-B,FCC-B, CAN-ICES-3 (B), RCM, Ro HS, China RoHS, WEE,CCC,EAC**

O. IMAGE EVALUATION TOOLS:

1. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.
2. Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.
3. Profile cuts: horizontal, vertical and oblique views.
4. Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.
5. Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.

P. IMAGE QUALITY PARAMETER:

1. It should be specified at the lowest scan time available at the system.
2. High Contrast Spatial Resolution should be 17 LP/cm or higher (Mention slice thickness, scan time phantom, mA, scan field, dose and MTF) up to 10% full FOV.
3. Low contrast detect ability should be 5mm at difference using 20cm CATPHAN (please mention phantom, scan time, mA, filter for image reconstruction, scan field, dose, slice thickness).
4. High Contrast Resolution and Low Contrast Resolution for spiral must be same as that for axial.

Q. DOSE REDUCTION TECHNIQUE:

1. Should be available.
2. Pre-patient collimation to reduce unnecessary dose to patient.
3. Specify the Dose reduction software.

R. POST PROCESSING TOOLS:

1. 2-D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.
2. Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR.

3. **Standard 3D applications:** CT angiography, MIP, MinIP, SSD, VRT, and other advanced **3D applications** and colour coding for different tissues.

4. Post Processing Software: Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, Vessel segmentation, Virtual Endoscopy software to be provided in all workstations.

5. Spatial alignment and visualization of two different data sets of one patientgenerated on different modalities or with different acquisition times.

6. Volume measurements.

S. PATIENT COMMUNICATION SYSTEM:

An integrated intercom and Automated Patient Instruction System (API) should beprovided.

T. CONNECTIVITY AND ARCHIVAL

1. DICOM connectivity (specify version) should be compatible and optimised for networking with other imaging systems.

2. DICOM converters for linking the camera with other imaging systems of the department should be provided, if required separately.

3. It should have sufficient memory to store images from the CT as well as other systems connected to it.

4. Filming parallel to other activities, including independent scanning, documentationand post-processing and configurable image text.

5. Archiving: Multi - burner DVD/CD writer should be provided for archival. Specify minimum number of uncompressed and compressed images that it can store per disc.

6. Option of viewing these discs on any PC without DICOM viewer should be available.

7. Should be capable of IT system integration with PACKS storage capacity of at least 30T.

U. UPGRADABILITY:

1. Software upgrades that enhance existing applications must be provided by the vendor indefinitely at **no cost to the purchaser**. These no charge upgrades shall include any circuit boards or parts if software is added to enhance existingcapabilities.

2. System should have capability to being upgraded as new technology emerges forat least 10 years

3. Additional or new software must have the capability of being downloaded byremote computer access. Software must include a free trial period before purchase.

V. POWER SUPPLY:

1. Power input to be 3 Phase, 380-480VAC, 50/60Hz, as appropriate fitted with fore required items.

4. Suitable servo controller stabilizer provided with resettable over current breakershall be fitted for protection.

5. Online UPS of suitable rating of 30 minutes backup shall be supplied for thecomplete system including computers.

W. ACCESSORIES, SPARES AND CONSUMABLES:

1. Standard Patient positioning acc and restraining devices : 2 sets

2. Good quality light weight vinyl Lead Eye Goggles, Thyroid Shields, Aprons and of 5mm lead equivalent : 3 units each

3. Lead Glass 150x100cmx 2mm lead : 1 unit

4. Patient transport trolley : 2 units

5. Instrument trolley: 2 units.

6. Non Invasive Monitor of 12" screen with TFT colour display with the following accessories:

   - Should be USFDA & CE (Notified body)
   - ECG /Resp: 5 lead ECG cable with clip - 2 sets per monitor and 10 lead ECGcable with clip 1 set per monitor.
   - NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs -oneper monitor. (Complete sets)
   - SpO2: Adult SpO2 sensor with cable - two units per monitor and PediatricSpO2 Sensors - one unit per monitor.
   - Temperature: Central temperature Probe - two per monitor and Skintemperature probe - one unit per monitor
   - Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to360 Joule :
   - Should be USFDA & CE (Notified body). It should be mains and batteryoperated.
   - Should deliver at least 25 shocks with fully charged battery with the following accessories:
   - Adult and paediatric paddle : 1 each
   - Disposable pads: 10 units.

8. **Dual head Pressure Injector with the following:**

   - Should be CE (Notified body) approved.

- Flow rate 0.1-10 ml/sec, Volume - 1 ml to syringe capacity, programmable pressure limit of 325 psi with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.
- Should be provided with head mounting device and integral IV pole.
- 1000 unit's syringes with tubing's to be provide with the machine.
- Unit will be provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.

9. **Other items to be supplied:**
   - Post processing room chairs : 5 units
   - Executive Chairs for reporting: 2 units
   - Executive Tables for reporting : 2 units
   - Patient waiting chairs : 8 units in 2 rows (4 Chairs in one row)
   - One laptop and one laser printer with scanning & copy facility should beprovided with latest specification for reporting & tele-radiology.

NB. The make & model of all the additional equipment should be specified in the compliance statement for the technical evaluation, assessment &record.

X. SITE:

1. A complete site preparation plan will be required to be submitted along with its financial components in separate cover. The vendor will be eligible to inspect the proposed site after obtaining permission. Care must be taken to address placement of the equipment, sitting, viewing and reporting area, patient preparation space, storage area etc.
2. Requirements of power and air conditioning must be clearly specified in aseparate section of the offer. The temperature of the gantry room to be maintained at $20^{o}C$.

Y. WARRANTY & CMC:

- **Should have 2years warranty, and three years comprehensive and collective maintenance inclusive spare parts for entire CT system (X-ray TUBE and all accessories) including all turn key items (Patient Monitor, Defibrillator, Laser Imaging Camera, Digital film printer, Pressure Injector, UPS, Air Conditioner).**

Cost of CMC (Comprehensive Maintenance Contract) must be quoted in the price bid for the next 5 years after the expiration of the warranty period (i.e.: 6th, 7th, 8th, 9th, 10th).

Lifetime support; spare parts, consumables should be available throughout thelifetime period of the machine.

Uptake time should be a minimum of 90%.

Proof of locally available technical support personnel, including CVs and work permit for foreign personnel.

Availability of technical personnel within the country should be stated; this shouldinclude CVs, work permits for foreign personnel.

Software should be flexible and provide the room for upgrade to add newparameters to be measured by the Machine and report format.

Z. MANDATORY REQUIREMENTS:

Vendor shall have to process the documents and get all the necessary clearances of the unit from all regulatory authorities such as TAEC, TMDA and TBS.

AA. TRAINING & DOCUMENTATION:

- At least 2 weeks on site training by application specialist for two radiologists, two radiographers.
- At least 6 weeks certified comprehensive service training biomedical engineers at manufacturer's site.
- Safety aspects of Radiation dosage leakage should be spelt out.
- User manual in English incorporating the newer applications.
- Service manual in English
- Log books with instruction for daily, weekly, monthly and quarterly maintenance checklist.
- The job description of the hospital technician and company service engineershould be clearly spelt out.
- Adequate books and journals within the warranty period

TECHNICAL SPECIFICATIONS

LOT 2: CT SCANNER 128 SLICES

CT scan 128 Slices specifications

2 years warranty, three years comprehensive Maintenance and spare parts

Inclusive.

Level of use: Zonal hospitals and above

The system shall be of latest technology allowing full and continuous rotation, multi-slice scanning (128 slices acquisition per rotation) with true isotropic volume acquisition and sub-millimetre resolution of at least 0.4mm for body, cardiac and vascular application. Pitch to be specified used for each application to achieve the resolution. True future upgradability to higher slices per rotation and future applications should be possible. The speed should be adequate to all body, neurological and cardiovascular examinations.

Technical Specifications or Requirements:

A. CT EXAMINATIONS:

1. Head and Neck CT

2. Cardiothoracic CT

3. Abdominal CT

4. Pelvic CT

5. Spine CT

6. Musculoskeletal CT

7. CT Angiography

8. Specialized CT examinations such as Cardiac CT, coronary CT, interventional Procedures

B. DETECTOR:

1. Should be 1 2 8 detectors a r r a y system (h a r d w a r e)

2. The detectors shall be large area detector with Z axis coverage of 38mm and/or above.

3. Detector system should not require frequent calibrations (at least once a month).

4. Specify the number of rows and the total number of detector cells (670

elements or more).

C. GANTRY:

1. Aperture: 70 cm or more

2. Control Panel: on either side

3. Entire range of rotation times for full 360 degree should be specified. Minimum rotation time should be 0.4 seconds or less for whole body application.

4. Should have positioning laser lights.

5. Maximum scan FOV should be at least 50 cm.

6. Tilt-Remote >= +/- 30 deg.

7. Should have CT fluoroscopy with separate monitor in the gantry room for CT guided biopsy.

D. X-RAY GENERATOR:

1. High Frequency type

2. Power output 75KW or more to support continuous and sustained operation.

E. X-RAY TUBE:

1. Tube current: 20 to 800mA or more

2. Real Time mA modulation for dose regulation.

3. Tube Voltage: 80 to140 KV

4. Anode Heat Storage Capacity should be 6 MHU or more

5. Should have anode Temp Monitoring System.

6. Heat Dissipation: 1600 KHU or more

7. Specify Focal Spot size and number according to IEC recommendation.

8. The tube should have dynamic focal spots.

9. The X-ray cooling unit should be inbuilt in the gantry.

10. Warranty of tube: Comprehensive warranty for all parts including x-ray tubes for at least 2 years irrespective of number of scans.

F. PATIENT TABLE:

1. Minimum Load capacity of at least 200Kg ±10% with 1 mm positioning accuracy.

2. Table speed: Horizontal up to 100mm/sec.

3. Vertical Table travel: 50mm/sec or more

4. Minimum table top height should be 55cm or less from the ground level for easy transportation of trauma patient.

5. Longitudinal Scan Range: at least 150cm or more

6. Manual movement of the table should be possible in case of power failure.

7. Reproducing positional accuracy should be mentioned.

8. Remote Up/Down and forward /backward should be standard.

9. Facility of positioning aid for horizontal isocentric positioning of the patient.

10. Should have Carbon Fibre Table Top.

G. SPIRAL CT:

1. Scan Time: Minimum scan time 0.4 sec or less for full 360 degree rotation.

2. Min slice thickness should be 0.625 mm or less

3. Max slice thickness: 10 mm or more

4. Slice increment.-specify scan and selectable slice thickness

5. Pitch Factor (volume pitch): variable between 0.5 sec to 1.5 sec or more and should be user selectable. Specify all possible pitch selections.

6. Single Continuous scan time should be at least 120 sec.

7. Should optimize radiation dose and resolution for each selection.

8. Bolus Triggered Spiral acquisition should be possible.

9. Facility of multi-spiral, bi-directional spirals and back to back spirals.

10. Facility for monitor contrast enhancement and automatically commenced scanning.

H. TOPOGRAM:

1. Length and width: Specify range

2. Scan Time: Specify range per examination/procedure

3. Views: Frontal & lateral views.

4. Should be able to interrupt acquisitions manually once the desired anatomy is obtained.

A. DATA ACQUISITION SYSTEM:

1. Detector should capable of acquiring 128 or more slices per 360 deg of rotation.
2. Number of rows with their thickness, number of element in each rows
3. Inbuilt mechanism for adapting the tube current during each scan this should enable radiation dosage reduction where body part thickness is less.
4. Detector system should not require frequent calibration.
5. Should have inbuilt paediatric protocols based on patient weight.

J. IMAGE RECONSTRUCTION:

1. Real Time reconstruction speed: 15 images per sec or more at 512x512 matrix.
2. Display Matrix: 1024x1024 or more
3. Reconstructed slice thickness: ≤1mm to 10mm.
4. Should have selectable Scan Field and reconstructed field.

B. OPERATOR CONSOLE:

1. Radiology Monitor Resolution: 1280x1240
2. Pixel Size < 0.3 mm.
3. Two Flat screens medical grade LCD Type of at least 24" with fast image refresh rate should be fast and preferably instantaneous and flicker free.
4. Should be non interlaced and progressive display type & sturdy.
5. Should perform Registration, scheduling, protocol selection , volume rendering, Volume measurements, Multiplanar Reconstruction, and standard evaluation application and all available post processing functions without the help of the satellite workstation as well as film exposure.
6. Should have 3GHz or latest processor with at least 16GB RAM.
7. Raw Data storage with at least 1TB Hard disc having a minimum of 1,500,000 images storing capacity in 512x512 format.
8. Additional external hard disk of minimum 2TB should be provided.
9. System should be menu driven operation. Applications like image reconstruction, filming, curve MPR, CT Angiography; VRT, auto bone removal, CT brain perfusion, CT bronchoscopy, Bolus tracking should be available.
10. Lung nodule evaluation software to be provided in workstation, and not in operator console.
11. System should be offered with complete Cardiac Acquisition and post processing

packages.

C. CONSOLE COMMON FEATURE:

1. The workstation should be interconnected for two-way transfer of images and reports.
2. Spatial alignment and visualization of two different data sets of one patient generated on different modalities or with different acquisition time.
3. Cine display should be available, both interactive and automatic.
4. Window width and centre should be freely selectable.
5. Patient online Registration, pre registration facility and transfer of information from HIS/RIS via DICOM should be possible.
6. Should have dedicated pediatric protocol for low dose imaging.
7. Should be offered with complete cardiac acquisition and post processing package.

M. **WORKSTATIONS:** (Total two (1 at operator console room & 1 at Radiologist room)

1. Should have Flat screen Medical Diagnostic monitor (minimum 1Mega pixels coloured) of at least 24" with fast image refresh rate should be fast and preferably instantaneous and flicker free with Hard Disk of 1TB or more, capable of simultaneous viewing of all post processing functions and filming independently without the help of main console. Data transfer between the operator console & the satellite workstation should be instantaneous.

Processor / Chipset CPU: Intel Xeon E5-1650V2 / 3.5 GHz, Max Turbo Speed. 3.9 GHz, Number of Cores. 6-core, Chipset Type. Intel C602, Processor Main Features. Hyper-Threading Technology, Intel Turbo Boost Technology 2, Processor Socket. LGA2011 Socket,

Operating System: Licensed Windows 10 Professional

Microsoft Office: Microsoft Office 2019 Professional

Antivirus: Include antivirus software

Radiology Monitor

Size: 24 inch

Backlight: LED

Native Resolution: 1536 x 2048 (3:4 aspect ratio)

Display Colors: 10-bit (DisplayPort): 1.07 billion from a palette of 543 billion (13-bit) colors

8-bit: 16.77 million from a palette of 543 billion (13-bit) colors

Video Signals: DisplayPort x 3, HDMI, DVI-D (dual link)

USB: 3 Ports of USB 3.0

Certifications & Standards: CE (Medical Device), EN60601-1, ANSI/AAMI ES60601-1, CSA C22.2 No. 601-1, IEC60601-1, VCCI-B, FCC-B, CAN ICES-3 (B), RCM, RoHS, China RoHS, WEEE, CCC, EAC

2. Should have 3GHz or latest processor with 16GB RAM.

3. Should have lung nodule evaluation software as standard.

4. CT Angio – post processing software should include VRT, MIP, 3D SSD, Image fusion.

5. The advance vessel analysis, auto bone removal, small volume quantification, CT Colonography with polyp measurement and auto registration of prone and supine views. CT reporting should be possible independently of workstation.

6. Digital Subtraction Angiography should be available for Neuro Angiography

7. System should be offered with complete & latest Cardiac Post Processing packages on workstation.

8. Advanced Neuro package to be offered.

a. Hemoperfusion CT: Evaluation of dynamic CT data of Brain. Different Diagnosis of Acute ischemic stroke. Assessment of dynamic cerebral perfusion, CBV, CBF, TTP and tissue at risk classification.

b. Tumour evaluation: Automated evaluation of Blood Brain Barrier disruptions in Brain Tumour.

c. Neuro perfusion weighted map (NWM): Visualization of colour coded CTA source images for 3D display of acute stroke.

d. Neuro DSA CT should provide Visualization of intracranial vascular structures based on digital bone removal.

9. The system should be user friendly with all functions menu driven. It should be modern user interface and 50 DVD blank (medical grade) should be provided.

10. All workstations should be full loaded with licensed post processing software capability.

N. IMAGE EVALUATION TOOLS:

1. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.

2. Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.

3. Profile cuts: horizontal, vertical and oblique views.

4. Distance & angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.

5. Dynamic evaluation of contrast enhancement in organs and tissues, calculation of time-density, curves, peak enhancement images and time-to-peak images.

O. IMAGE QUALITY PARAMETER:

1. It should be specified at the lowest scan time available at the system.

2. High Contrast Spatial Resolution should be 17 LP/cm or higher (Mention slice thickness, scan time phantom, mA, scan field, dose and MTF) up to 10% full FOV.

3. Low contrast detect ability should be 5mm at difference using 20cm CATPHAN (please mention phantom, scan time, mA, filter for image reconstruction, scan field, dose, slice thickness).

4. High Contrast Resolution and Low Contrast Resolution for spiral must be same as that for axial.

P. DOSE REDUCTION TECHNIQUE:

1. Should be available.

2. Pre-patient collimation to reduce unnecessary dose to patient.

3. Specify the Dose reduction software.

Q. POST PROCESSING TOOLS:

1. 2-D, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring; image filter functions, including advanced smoothing algorithm and advanced bone correction.

2. Real-time multi-planar reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved & orthogonal MPR.

3. Standard 3D applications: CT angiography, MIP, MinIP, SSD, VRT, and other

advanced 3D applications and colour coding for different tissues.

4. Post Processing Software: Perfusion CT, Image Fusion, Image reconstruction, filming, Curve MPR, CT Angiography, Auto bone removal, CT brain perfusion, CT bronchoscopy, Bolus tracking, Vessel segmentation, Virtual Endoscopy software to be provided in all workstations.

5. 3D images for CT guided biopsy, 3D virtual endoscopy, colonoscopy, bronchoscopy should be possible.

6. DSA and advanced neurological imaging packages should be provided.

7. Spatial alignment and visualisation of two different data sets of one patient generated on different modalities or with different acquisition times.

8. Perfusion CT for study of brain. Liver, kidney, pancreas etc.

9. Volume measurements.

10. Fusion of morphological data obtained on CT, MR or DSA.

R. PATIENT COMMUNICATION SYSTEM:

An integrated intercom and Automated Patient Instruction System (API) should be provided.

S. CONNECTIVITY AND ARCHIVAL

1. DICOM connectivity (specify version) should be compatible and optimised for networking with other imaging systems.

2. DICOM converters for linking the camera with other imaging systems of the department should be provided, if required separately.

3. It should have sufficient memory to store images from the CT as well as other systems connected to it.

4. Filming parallel to other activities, including independent scanning, documentation and post-processing and configurable image text.

5. Archiving: Multi - burner DVD/CD writer should be provided for archival. Specify minimum number of uncompressed and compressed images that it can store per disc.

6. Option of viewing these discs on any PC without DICOM viewer should be available.

7. Should be capable of IT system integration with PACS storage capacity of at least

30T.

T. UPGRADABILITY:

1. Software upgrades that enhance existing applications must be provided by the vendor indefinitely at no cost to the purchaser. These no charge upgrades shall include any circuit boards or parts if software is added to enhance existing capabilities.

2. System should have capability to being upgraded as new technology emerges for at least 10 years

3. Additional or new software must have the capability of being downloaded by remote computer access. Software must include a free trial period before purchase.

U. POWER SUPPLY:

1. Power input to be 3 Phase 380-480VAC, 50/60Hz, as appropriate fitted with for required items.

2. Suitable servo controller stabilizer provided with resettable over current breaker shall be fitted for protection.

3. Online UPS of suitable rating of 60 minutes backup shall be supplied for the complete system including computers.

V. ACCESSORIES, SPARES AND CONSUMABLES:

1. Standard Patient positioning accessories and restraining devices : 2 sets

2. Good quality light weight vinyl Lead Eye Goggles, Thyroid Shields, Aprons and of .5mm lead equivalent : 3 units each

3. Lead Glass 150x100cmx 2mm lead : 1 unit

4. Patient transport trolley : 2 units

5. Instrument trolley: 2 units.

6. Non Invasive Monitor of 12" screen with TFT colour display with the following accessories:

• Should be USFDA & CE (Notified body)

• ECG /Resp: 5 lead ECG cable with clip – 2 sets per monitor and 10 lead ECG cable with clip 1 set per monitor.

• NIBP: Adult cuff -2 units per monitor and two sizes of Pediatric Cuffs –one per monitor. (Complete sets)

• SpO2: Adult SpO2 sensor with cable – two units per monitor and Pediatric SpO2 Sensors – one unit per monitor.

• Temperature: Central temperature Probe – two per monitor and Skin temperature probe – one unit per monitor

7. Defibrillator Monitor/ Inbuilt Recorder Biphasic with auto and manual mode up to 360 Joule :

• Should be USFDA & CE (Notified body). It should be mains and battery operated.

• Should deliver at least 25 shocks with fully charged battery with the following accessories:

• Adult and paediatric paddle : 1 each

• Disposable pads: 10 units.

• ECG Cable- 5 lead: 1 units.

• ECG Electrodes 100 units.

8. Dual head Pressure Injector with the following:

• Should be CE (Notified body) approved.

• Flow rate 0.1-10 ml/sec, Volume - 1 ml to syringe capacity, programmable pressure limit of 325 psi with 200 ml disposable sterile syringes. Syringe heater range 35 deg C+/- 5 deg C.

• Should be provided with head mounting device and integral IV pole.

• 1000 units syringes with tubings to be provide with the machine.

• Unit will be provided with display monitor to provide Pressure Monitor graph, Flow Profile, Stop Watch Feature, Scan Display, multiphase capability and protocol locking capabilities.

9. Other items to be supplied:

• Resuscitation accessories including Silicone resuscitation bag, Intubation set with laryngoscope (Adult & Pediatric) should be supplied.

• Insufflation pump sets for CT colonography with facility for delivery of heated CO2 gas and automatic regulation of flow rate and pressure with high degree of precision. Accessories like tubing (10 units) & CO2 cylinders (5 units) to be provided.

• Fire extinguisher, smoke detector with alarm system to be provided (Suitable

quantity for 500 Sq. ft area).

• Post processing room chairs : 3 units

• Executive Chairs for reporting: 2 units

• Executive Tables for reporting : 2 units

• Patient waiting chairs : 8 units in 2 rows (4 Chairs in one row)

• One laptop and one laser printer with scanning & copy facility should be provided with latest specification for reporting & tele-radiology.

NB. The make & model of all the additional equipment should be specified in the compliance statement for the technical evaluation, assessment & record.

W. SITE:

1. A complete site preparation plan will be required to be submitted along with its financial components in separate cover. The vendor will be eligible to inspect the proposed site after obtaining permission. Care must be taken to address placement of the equipment, sitting, viewing and reporting area, patient preparation space, storage area etc.

2. Requirements of power and air conditioning must be clearly specified in a separate section of the offer. The temperature of the gantry room to be maintained at 20oC.

X. WARRANTY & CMC:

2 years warranty, three years comprehensive Maintenance and spare parts inclusive. CT system (X-ray TUBE and all accessories) including all turn key items (Patient Monitor, Defibrillator, Laser Imaging Camera, Digital film printer, Pressure Injector, UPS, Air Conditioner).

Cost of CMC (Comprehensive Maintenance Contract) must be quoted in the price bid for the next 5 years after the expiration of the warranty period (i.e.: 6th, 7th, 8th, 9th, 10th).

Lifetime support; spare parts, consumables should be available throughout the lifetime period of the machine.

Uptake time should be a minimum of 90%.

Proof of locally available technical support personnel, including CVs and work permit for foreign personnel.

Availability of technical personnel within the country should be stated; this should include CVs, work permits for foreign personnel.

Software should be flexible and provide the room for upgrade to add new parameters to be measured by the Machine and report format.

Y. MANDATORY REQUIREMENTS:

Vendor shall have to process the documents and get all the necessary clearances of the unit from all regulatory authorities such as TAEC, TMDA and TBS.

Z. TRAINING & DOCUMENTATION:

At least 2 weeks on site training by application specialist for two radiologists, two radiographers.

At least 6 weeks certified Comprehensive service training for Biomedical Engineer's at Manufacturer's site.

Safety aspects of Radiation dosage leakage should be spelt out.

User manual in English incorporating the newer applications.

Service manual in English

Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.

The job description of the hospital technician and company service engineer should be clearly spelt out.

Adequate books and journals within the warranty period

You are required to fill the table below as per specified details above

NB: Non declaration will lead to penalty or disqualification.

AGREED NEGOTIATIATED TERMS

AGREED NEGOTIATED TERMS

IT WAS AGREED THAT;-

1. Delivery timeline is within 10 to 12 weeks or less.

2. Procurement schedule of the supplier must be submitted.

IT WAS AGREED THAT;-

1. Submission of technical drawing & specification as per TAEC recommendation and provision of UPS

2. Timely site visit for advice and approval at each stage of renovation.

3. Site in charge should communicate early with TAEC for pre installation inspection

IT WAS AGREED THAT;-

1. Submission of original warrant certificate from manufacture during delivery of the equipment.

2. Submission of performance bond of the contract in form of premium insurance bond

We agreed that;-

Draft of SLA's shall be submit prior signing of contract and shall be discussed for the benefit of both side for win-win situation and shall form part of the contract.

We agreed that;-

Comprehensive Service and maintenance shall be done as per tender document.

IT WAS AGREED THAT;-

Submission of the list as per recommendation of the manufacture

IT WAS AGREED THAT;-

Contract price Tsh. 7,400,000,000/= for four (4) 64 slices CT SCANNER, and Tsh. 2,100,000,000/= for one (1) 128 slice CT SCANNER.

BOTH PARTIES agreed that;-

1. Advance payment (50% of the contract) shall be given after submission of premium insurance bond guarantee of 50% of the advance payment and due diligence and thorough assessment of the insurance company will be done by the PE. This will be paid 14 days after signing the contract.

2. The remaining 50% will be paid after supplying, inspection, testing, installation, commissioning, training and certification for use. (within 14 days)

PAYMENT SCHEDULE

S/N	DESCRIPTION	PERIOD	PERCENTAGE
1	Advance payment (after submission of advance payment guarantee)	14 days after signing the contract	50%
2	After full installation, testing, commission and training.	Within 14 days	50%
3	Warranty and maintenance	Two (2) years warranty and three (3) years maintenance	0%

COMPREHENSIVE MAINTANACE SCHEDULE

S/N	**DESCRIPTION**	**PERIOD FOR PPM**	**PERIOD FOR CORRECTIVE MAINTANCE**
1	Year 1	EVERY SIX MONTHS AFTER COMMISSIONING	FOR ALL BREAKDOWN AT ANY TIME IN A YEAR
2	Year 2	AFTER EVERY SIX MONTHS	FOR ALL BREAKDOWN AT ANY TIME IN A YEAR
3	Year 3	AFTER EVERY SIX MONTHS	FOR ALL BREAKDOWN AT ANY TIME IN A YEAR
4	Year 4	AFTER EVERY SIX MONTHS	FOR ALL BREAKDOWN AT ANY TIME IN A YEAR
5	Year 5	AFTER EVERY SIX MONTHS	FOR ALL BREAKDOWN AT ANY TIME IN A YEAR

PROCUREMENT SCHEDULE

IN WITNESS WHEREOF, the **Supplier** and the **Purchaser** have dully executed these presents in the manner and on the respective dates hereinafter appearing.

SEALED with the **COMMON SEAL** of the said
BUGANDO MEDICAL CENTRE (BMC)
And **delivered at MWANZA** in the presence
Of us this.....day of 2022

.....
COMMON SEAL

Name: DR. FABIAN A. MASSARA
Signature: .....
Postal Address: 1370 MWANZA
Designation: DIRECTOR GENERAL

Name (Witness): Cornelius H. Ntungwele
Signature: .....
Postal address: Box 1370, Mwanza
Designation: Advocate

CORNELIUS H. NTUNGWELI ADVOCATE NOTARY PUBLIC & COMMISSIONER FOR OATHS P.O. Box 135, NGARA

Name: DR. MFAUME SALUM KIBWANA **GEITA RRH**
Signature: .....
Postal Address: BOX 40 GEITA
Designation: MEDICAL OFFICER IN CHARGE

GEITA REGIONAL HOSPITAL
MEDICAL OFFICER INCHARGE
P. O. Box 40.
GEITA.

Name: Dr. Osmund Pyuk **MUSOMARRH**
Signature: .....
Postal Address: 21 Musoma
Designation: .....

MEDICAL OFFICER IN CHARGE
MUSOMA REGIONAL
REFERAL HOSPITAL
P. O. Box 21
MUSOMA

Name: Dr. Luzila John **SHINYANGA RRH**
Signature: .....
Postal Address: Box 17
Designation: MEDICAL OFFICER INCHARGE

MEDICAL OFFICER INCHARGE
28 FEB 2022
SHINYANGA RRH BOX 17

Name: Dr Mabimbi MJ ..... **SIMIYU RRH**

Signature: .....

Postal Address: 17 Bariadi Simiyu

Designation: MOI

MEDICAL OFFICER IN-CHARGE
SIMIYU REGIONAL REFERRAL
HOSPITAL

Name: Brian Mawalla ..... **CHATO ZRH**

Signature: .....

Postal Address: 43 Chato

Designation: MOI/C

MEDICAL OFFICER IN CHARGE
01 MAR 2022
P.O.BOX 43
CHATO-GEITA
CHATO ZONAL REFERRAL HOSPITAL

SEALED with the **COMMON SEAL** of the said

M/S PACIFIC DIAGNOSTICS LIMITED

And **delivered** at MWANZA

In the presence of us this..... Day of..... 2022

PACIFIC DIAGNOSTICS LIMITED
DAR-ES-SALAAM

COMMON SEAL

Name: ADAM PHILIP

Signature: .....

Postal Address: 34056 DSM

Designation: C.D.O

Name (Witness): STEPHEN LUISEGI

Signature: .....

Postal Address: 34056 DSM

Designation: Medical Representative