



UGANDA CANCER INSTITUTE

EAST AFRICA'S CENTRES OF EXCELLENCE FOR SKILLS AND TERTIARY EDUCATION IN BIOMEDICAL SCIENCES PHASE 1 PROJECT

TERMS OF REFERENCE

FOR

PROJECT BIOMEDICAL ENGINEER

**TO SUPPORT THE CONSTRUCTION COMPLETION AND EQUIPPING OF THE
PROPOSED MULTIPURPOSE BUILDING FOR CANCER TREATMENT,
RESEARCH AND TRAINING**

REF: UCI/CONS/2023-2024/00055/2

MAY 2024

PROJECT BIOMEDICAL ENGINEER

1.0 Background

The Government of the Republic of Uganda received a loan financing from the African Development Fund (ADF) towards Project for establishing the East Africa's Centre of Excellence in Oncology Phase 1 at the Uganda Cancer Institute, Mulago Kampala.

The overall objective of the project is addressing the crucial labour market shortages in highly skilled professional in oncology sciences and cancer management in Uganda and the EAC region in general. Component 1 of the project includes Expansion and Improvement of the Infrastructure and Equipment at the Uganda Cancer Institute (UCI) as a Centre of Excellence in Cancer Research and Management. This will involve among others expansion of infrastructure at the UCI to provide required research laboratories, training facilities for postgraduate and doctoral training, faculty and research scholar offices, conference facility, adequate ancillary spaces to enable the institution to offer state of the art training and provision of medical equipment for laboratories and training facilities.

The project implementation arrangements require the services of a project support team under Component 3 to enhance the capacity of the Project Coordination Unit for the smooth implementation of the Project. One of the project support personnel (Individual Consultants) required is a **Biomedical Engineer**.

UCI now invites suitable qualified individuals, with qualifications and experience as detailed below to apply for the position of **Project Biomedical Engineer**.

2.0 Objectives of the Assignment

To offer biomedical engineering technical support to the Project including medical equipment, instruments, and furniture for equipping the proposed Multipurpose Building. The assignment includes the development of costed list of equipment and its specifications, preparation of tender documentation, and supervision and monitoring of implementation activities.

3.0 Type of Contract

The type of Contract shall be Individual Consultant.

4.0 Expected Start Date

The successful candidate will be required to commence work not later than 1st July 2024.

5.0 Duration

This is a full-time assignment for a period of two (02) years.

6.0 Scope of Work

In accordance with the Project objectives, the Biomedical Engineer shall undertake the following tasks:

Task 1: Technical Support to the PCU

- a. Play an advisory role to the Project Coordination Unit in handling medical devices, instruments, and furniture to equip the proposed Multipurpose Building.

- b. Coordinate closely with the project team, consultants, contractors, service providers and stakeholders in planning and acquisition of medical equipment, instruments, and furniture on the project.
- c. Provide support to manage the consultants hired to undertake Design Review/Optimization and Construction Supervision and the Contract Management Team(s) assigned.
- d. Participate in Project Coordination Unit meetings and enhance ownership and co-operation of the users and stakeholders in the implementation of the project.

Task 2: Identification of medical equipment, instruments, and furniture requirements

- a. Review the architectural designs of the proposed Multipurpose Building and make recommendations for their optimization.
- b. Review Project Documents and determine medical equipment requirements for the project, with consideration of stakeholder proposals.
- c. Study the Ministry of Health standard medical equipment lists and refine the existing preliminary medical equipment and furniture requirements proposed for the Uganda Cancer Institute, in liaison with the project technical sub-committee on medical equipment.
- d. Define pre-installation measures related to construction works.

Task 3: Technical Support in the tender process and acquisition of medical equipment

- a. Develop a costed list of the equipment and its technical specifications. The lists to include a room-by-room distribution of medical equipment and furniture.
- b. Identify the necessary pre-installation requirements to be incorporated in the construction completion works (civil, electrical, mechanical).
- c. Support the implementation teams in evaluation and identification of suitable medical equipment suppliers.
- d. Supervision of the delivery, verification, training, installation, and commissioning, while ensuring diligent management of time, cost, and quality.
- e. Keeping and maintaining properly inventoried records of electronic and hard copies of all documents pertaining to medical equipment implementation activities under the project including installation shop-drawings, site meeting minutes, minutes of contract administration meetings, reports, instructions issued to suppliers, and others.
- f. Certifying practical completion, ensuring handover user and technical documentation.
- g. Conducting regular visits to the construction site to resolve any technical challenges as may arise or as reported and confirmed through the site inspection.
- h. Communicating with end users, stakeholders and service providers including reviews and recommendations on deliverables, payments, extensions, amendments, and variations.
- i. Project completion report for medical equipment and furniture component including an asset register (database) of the medical equipment install base acquired under the Project including brands, model, cost and other details.
- j. Formulating post-occupancy medical equipment management and disposal policy and guidelines including maintenance schedules and life cycle costing advice for the equipment install base of the project.
- k. Monitoring and resolving of equipment defects during warranty period.

Task 4: Monitoring & Reporting

- a. Visit the construction site regularly to monitor implementation of the site activities by the Suppliers and provide guidance where needed.
- b. Preparation of monthly, quarterly, semi-annual, and annual technical reports compliance with relevant standards and contractual requirements for submission to the Project Coordinator (PC), Head Biomedical Engineering UCI, and African Development Bank (AfDB); providing updates on physical and financial performance, any challenges met and how they were addressed, emerging risks, issues for Management's attention, redress, etc.
- c. Preparation of technical presentations and reports required from time to time by the Project Coordinator or the Bank
- d. Providing regular briefs on construction activities whenever required and in collaboration with the Project Coordination Unit.

Task 5: Capacity Building

- a. Undertake capacity development of the project implementation teams, Consultants, and Contractors during project implementation with respect to planning and implementation of biomedical engineering activities, including conduct of awareness, communication, and sensitization of stakeholders.
- b. Develop training plans and provide training on medical equipment issues during implementation of the project to the project implementing staff, equipment users, UCI engineers and technicians, and other relevant project stakeholders.
- c. Formulate post-occupancy facilities management policy and guidelines including maintenance and life cycle costing advice for the medical equipment install base.

Task 6: Any Other Duties

- a. Fulfil other functions and responsibilities as requested by the Executive Director UCI and Project Co-ordinator as envisaged within the scope of the financing agreement and other related documents.
- b. Perform any other duty assigned.

7.0 Duty Station

Uganda Cancer Institute, Upper Mulago Hill, Kampala. Working Hours are 8:00am - 5:00pm

8.0 Qualifications and Competences

- a) At least an honours University degree in Biomedical Engineering or a University Degree in other fields of Engineering with a postgraduate diploma in Biomedical Engineering/ postgraduate diploma in project planning and management or its equivalent from a recognized University/Institution
- b) At least eight (08) years professional experience in preparation of medical equipment needs assessment and technical specifications for hospitals including installation and commissioning large scale maintenance networks of biomedical and hospital equipment.
- c) Membership of a relevant and recognized professional body.
- d) Proven working knowledge of Computerised Maintenance Management Software (CMMS).

NB: Attach at least two (02) Contracts and Terms of Reference of previous work undertaken or appointment letters and their Job Description.

9.0 Deliverables and their timing

The deliverables for the assignment of Project Biomedical Engineer and their timing are as indicated in the table below. All the deliverables shall be submitted electronically and in hard copies.

Table of Deliverables

Deliverable	Description	Timing
1. Work Plan & Inception Report	Outlining the approach, methodology and work plan for fulfilling the TOR for the assignment. This will include a breakdown of work, timelines, risks and an overview of stakeholders to be engaged during the assignment	14 days after the start of the assignment
2. Reports on review of existing documentation	Detailing findings, strength, weaknesses, and recommendations on areas to be improved on, regarding the existing preliminary list medical equipment and furniture requirements and the and the reviewed architectural and engineering designs	21 days after the start of the assignment.
3. Reports on review of medical equipment and furniture requirements	Detailing discussions with relevant stakeholders; findings, strength, weaknesses, and recommendations on areas to be improved on.	45 days after the start of the assignment.
4. Reports on lists of medical equipment and furniture	Detailing cost estimates, technical specifications and room-by-room allocation including necessary pre-installation measures	60 days after the start of the assignment
5. Reports on the tendering process	Review of SPNs, participate in Prebid period answering questions asked by Bidders, report on the results of the tender	Within 10 days after tender award
6. Monthly Progress Reports	Concise summary of progress and key achievements in the reporting month; planned activities; challenges and solutions or corrective measures recommended.	Monthly within 5 days after end of the reporting period
7. Quarterly Progress Reports	Update activity and staff schedule showing actual against planned progress and achievement of deliverables. Description of work completed in the reporting period and planned activities for coming quarter. Summary of issues addressed. Identification of potential problems, delays, etc	Quarterly within 5 days after the end of the reporting quarter.

Deliverable	Description	Timing
8. Annual Progress Reports	Outlining progress against agreed work plan activities and outcomes, including enabling/inhibiting factors, challenges, risks and options to mitigate them. Recommendations.	Annually within 5 days after the end of the reporting year.
9. Mission Reports	Addressing mission discussions, decisions reached, and action points	3 days after return from mission
10. Training Reports	Training objective, goals to be achieved, methodology and approach, organizational arrangements, expected results, post-training questionnaire and evaluation.	5 days after training
11. Draft Completion Report	Detailing actual progress versus original planned activities, inputs, costs with reasons; key issues raised and addressed during the assignment; outstanding issues; deliverables. Including a CMMS equipment database. A frank assessment of capacity development and recommendations to inform decisions around future AfDB support to the health sector. What went well and why; what went wrong and why; what could be done differently; Lessons learned and recommendations.	Within 21 days prior to end of contract
12. Final Completion Report	Update Draft Project Completion Report by incorporating comments from stakeholders	Within 5 days after end of contract

The Work Plan and Inception Report will be discussed and approved by the Project Coordinator after review.

10.0 Reporting

The Biomedical Engineer shall report managerially to the Project Coordinator and functionally to the Head Biomedical Engineering UCI. He or She will work in close collaboration with the Project Coordination Unit.

The Project Biomedical Engineer will submit to the Project Coordinator a monthly report and supporting Claim/Demand Note as a basis for payment for his or her services.

11.0 Facilities to be Provided by UCI

UCI will be responsible for provision of the following:

- Office space equipped with access to the internet, shared printers, and document binding.
- General office supplies stationery
- Access to necessary documents

NB: The Project Biomedical Engineer is required to own a personal computer.

12.0 Remuneration

The successful candidate shall be paid a competitive, negotiated and agreed monthly pay commensurate with qualification in accordance with the project financing provisions.