

GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
HEALTH PHYSICS DIVISION

Ref : BARC/HPD/RPS(NF)/TELE/2022/ 01

June. 14, 2022

Sub.: Development of a system of 16 Teledosimeters for real-time occupational dose monitoring and data logging through LoRa based Internet of Things (IOT) technology.

Sealed quotations are hereby invited for the aforementioned work for which detailed specifications / descriptions are given in Annexure-1. You are requested to submit the sealed quotation **by Registered Post/ Speed Post only**. You are requested to submit your sealed quotation by 07.07.2022 before 13.00 hrs. Any quotation reached us after this date and time will not be considered. The same will be opened on the same day at 15.30 hrs. Please note that the standard terms and conditions of the contract applicable to the work should be acceptable and no deviation will be allowed. The time allowed for completion of the above work is 90 working days from the issue of the work order.

The pre qualification documents and quotation in separate labeled sealed envelopes with tender no. should be addressed to :

K.Sreekumar

Officer in Charge

Health Physics Unit

IREL (India) Limited, Manavalakurichi

Kanyakumari Dt, Tamil Nadu PIN 629252

Name of work

- (1) Design, fabrication, test, calibration, supply and commissioning of set of 16 Number of Teledosimeters to measure Personal dose equivalent $H_p(10)$ from gamma radiation, integrated with long range Internet of Things (IOT) LoRa transmitters at and a set of 03 Number of 8 Channel LoRa WAN Repeaters and 01 number of 8 channel LoRaTM WAN Master telemetry module for occupational radiation measurements and estimation of radiation dose received by the workers. All the communication devices must be operating in ISM 865-867 MHz band.
- (2) Technical support and Maintenance for 3 years after the warranty period.

Scope of Work

The party shall design, fabricate, test, calibrate and supply a set of 16 number of Teledosimeters with the given specifications

- (a) Si PIN Semiconductor based radiation detector with sensitivity 300 counts per μSv , 5V, TTL output (TEVISO BG51 OEM or equivalent) for detection and measurement of high energy ionizing electromagnetic radiation namely x-ray and γ rays. Party shall submit test and calibration certificate for the detectors supplied.
- (b) Dosimeter calibration [$H_p(10)$] to be done at accredited centre and calibration certificate to be produced.
- (c) Integrated with suitable IOT transceiver module. Semtech LoRaTM or equivalent module to operate at Indian Industrial Scientific and Medical (ISM) band of 865-867 MHz.
- (d) Display to show cumulative whole body dose and instantaneous dose rate.
- (e) 1000 mAh Lithium Polymer or Lithium ion battery with suitable charging and discharge circuit.
- (f) Mini Solar Photovoltaic panel of $\geq 0.3\text{W}$ capacity mounted on side of the dosimeter for charging the device from ambient light.
- (g) Additional charging port for direct charging from AC supply.
- (h) Telemetry module shall fetch data from individual dosimeters and input to the computer for dose management.
- (i) Suitable shielding against RF and microwave interference.
- (j) Instrument enclosure ABS or any other suitable IP 65 material.

Place of work

Health Physics Unit, IREL (India) Limited, Manavalakurichi

Special Condition of Contract (SCOC)

Subjected to work area suitability of the components used, appropriate modifications can be made on the items if required.

Period of Contract

90 days

Payment terms

Scope of work	% payment
01 Design, fabrication , test, calibration and supply of set of 16 Number of teledosimeters and set of 03 Number of 8 channel repeaters ,01 Number of 8 chanel LoRa WAN Master Telemetry module,Accessories. All at Indian ISM band of 865-867 MHz.	90% of the fabrication & supply part within 30 days of supply, testing & commissioning of supplied system
	10% of the fabrication & supply part within 30 days of completion of warranty/guarantee period.
02 Technical support and Maintenance for 3 years after the warranty period.	33.33% of the service part at the end of second, third and fourth year.

LD/Penalty

Liquidated damages- For delays in supply of items as attributable to the party (Scope 1), LD charges as per BARC/DPS procedure may be collected.

Price Schedule

(1)	Fabrication and supply part	Amount Rs
	Design, fabrication , test, calibration and supply of set of 16 Number of teledosimeters and set of 03 Number of 8 channel repeaters ,01 Number of 8 chanel LoRa WAN Master Telemetry module.	
(2)	Service part	Amount Rs
	Technical support and Maintenance for 3 years after the warranty period.	
Total(1) +(2) amount Rs.		
GST 5%		

Total amount will be considered for awarding the contract.

Guarantee (For the supplied items)

18 Months from date of supply of item or 12 Months from date of commissioning, whichever is earlier

Pre- Qualification Criteria

- (1) The party shall submit copies of similar orders executed by them during last 2 years with reputed parties. (Similar order means Supply of Radiation detectors, instruments)
- (2) Financial soundness through latest Balance sheet and Profit & Loss Account for financial year ending 31st March 2021.

Note: Relaxation will be provided to startups MSME from submission of prior turnover. The tenderer has to submit documentary evidence for startups MSME.

PARTIES SHALL SUBMIT TECHNICAL BID CONTAINING PRE-QUALIFICATION DOCUMENTS **SEPARATELY** BEFORE DUE DATE OF TENDER OPENING. OTHERWISE THEIR COMMERCIAL BIDS WILL NOT BE CONSIDERED FOR EVALUATION.

Parties shall submit separate Pre- Qualification criteria documents and prize bid to the address given below, preferably through India Post Registered /Speed Post service.

OFFICER IN CHARGE

HEALTH PHYSICS UNIT

IREL (INDIA) LIMITED

MANAVALAKURICHI 629252

KANYAKUMARI DT, TAMILNADU