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Department of Post Harvest Engineering
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PI, SERB ,DST Project

Ref. No: FAE/PHE/SERB-DST/006 Dated: 13.07.2018

Ref. e-Tender Id : 2018_BCKV_181362_1

NOTICE INVITING e-TENDER

Principal Investigator of the Project entitled "**Design and Development of low cost novel absolute encoder for industrial applications (**EMR/2017/005036)" under **SERB Core Research Grant, DST, Govt. of India** is inviting e-tenders from competent and *bonafide* vendors/ parties/ distributors/ dealers/agents/ manufacturers having registration of GST for supply of the following item to the Department of Post Harvest Engineering, BCKV, Mohanpur campus **within 28.07.2018 up to 6.00 pm** as per specifications appended bellow.

Terms & Conditions:

i) Preparation of bids: the tender should be submitted under two bid system (i.e. technical and financial bid) with validity for a period of 6 (six) months.

ii) Technical bids will be evaluated by the Indenter and other expert members of the office and the financial bids will be opened of those bidders who qualified in technical bids.

iii) In case of indian items - The price of items should be quoted in INR & net per unit (including taxes and duties, etc). The bidders must stipulate the delivery period of the same.

iv) In case of imported items - The prices of all the equipment and items, including imported ones, should be quoted in net per unit (including all taxes and duties, etc.). However, University will provide valid DSIR and authorization certificate to the clearing agent, if required. Quotation must include essential accessories like, gas cylinder, regulator, computer, etc. (as mentioned for each equipment) from branded company, in Indian Rupees only, even if the main equipment is quoted in foreign currency. Without essential accessories tender will be considered as incomplete. Quoted rates must be FOR DESTINATION (including packing, insurance and delivery charges up to the laboratory at BCKV, Mohanpur) with satisfactory installation and demonstration. The bidders must stipulate the delivery period of the same.

v)Reduced rate of GST (5%) is applicable to the University. Requisite certificate will be issued by the university authority.

vi)) Payment will be made after satisfactorily performance of the items.

vii) EMD: Rs. 20,000 (Rupees twenty thousand only) in the form of Bank Draft / Bankers Cheque in favour of 'Bidhan Chandra Krishi Viswavidyalaya' payable at Kalyani (IFSC: SBIN0001082). Scanned copy of the demand draft must be uploaded as supporting document during submission of e-tender. Without EMD quotations /bids will not be considered for technical and financial comparison. Draft must be in favour of 'Bidhan Chandra Krishi Viswavidyalaya' payable at Kalyani (IFSC: SBIN0001082). EMD exemption certificate must be attached, if any.

viii)The vendor should have some experience for supplying of different items to any Government / Semi Government organization.

ix) Important safety standards

The instrument must confirm to International EMC and Safety standards.

x)Warranty

Warranty period minimum 3 Year or more from the date of supply. Manufacturer must have their own dedicated Service Centre available in India and details of Service Centre must be provided while submitting their Quotations

xi)General

Quotations should be submitted either by an OEM or their Authorised Distributors only. Valid Authorisation Certificate from OEM is must in case of Quotations are submitted by Distributors.

xii) Supporting documents (as applicable):
a) Bid papers should accompany authorization certificate from original manufacturer, GST registration, Latest IT return, PAN and other statutory documents, if any.
b) Scanned copy (self attested) of the original supporting document in favour of the specification –claim for each items must have to be uploaded separately
c) User list along with certificate from reputed users also need to be uploaded.
e) Price bid of the vendors will be compared only if technical specificity as appended against the item is fulfilled.
f)The Viswavidyalaya reserves the right to accept or reject any tender without showing reason.

SNo.	Items with Description	Quantity (No.)

1.	**Cathode Ray Oscilloscope (CRO):** Bandwidth : 70MHz or more Sample Rate (Each Channel) : Minimum 1GS/s Real Time on each Channels Channels : 2 Display : Minimum 7 inch, Active TFT Color Display Zoom : Oscilloscope should be able to horizontally and vertically expand or Compress live or stopped Waveforms Frequency Counter : should have built-in dual channel 10 Hz to 70 MHz Frequency Counter FFT : FFT function should be capable of showing both Time domain and Frequency domain signals simultaneously Trend plot: Should be available to plot Measurement values over long period of Time. Limit Test : should be available to provide quick Pass/Fail comparison between an input Signal and user defined Template Data Logger : Oscilloscope should have built-in Data Logging facility to save user Specified triggered waveforms to a USB device Storage memory : must be available for waveform storage in USB Flash drive Input / Output Ports: USB host port on front panel for flash drives and USB device on back Panel for PC connectivity and Printers. Accessories : should be supplied with 2 Nos. 100MHz Oscilloscope Probes, Operating Manual, Software for PC connectivity, USB Cables, Power Cord and any other standard Accessories	**1(One)**
2.	**Cathode Ray Oscilloscope (CRO):** 70 MHz,2 Channel, 1 GS/s Sample Rate, 20 M Points record length (Memory depth), 9” Display, Wifi connectivity	**1(One)**

3.	**Data Acquisition Device:** NI myRIO-1900 Kits: *NI myRIO-1900 *Starter Kit Common Sensors and Components for NI myRIO *Mechatronics Kit Common sensors and actuators for Mechatronics projects. *Embedded Kit Common sensors, Devices, and Display for Embedded projects. MathCAD for project Mathematical Operation Tool. NI ELVIS II Hardware: Data Acquisition Card (Analog Input Sampling Rate 100 MS/s single channel, 8 Differential Input channel, Input Range +/-10V)with inbuilt 12 most commonly used measuring instruments (Function Generator, Oscilloscope, Variable Power Supply, Digital Multimeter, Arbitrary waveform Generator, Bode Analyzer, Dynamic Signal Analyzer, Digital Reader, Digital writer, 2 Wire I-V Analyzer, 3 Wire I-V Analyzer, Impedance Analyzer)	**1(One)**
4.	**LabVIEW all toolkits with Solid Thinking Embedded**	**1(One)**
5.	Digital Multimeter: 6 and ½ Digit Bench Top True RMS Digital Multimeter. Voltage (AC and DC) : Ranges 100mV to 1000V with resolution of 100nV, Voltage accuracy of 0.002% reading for 1V@90 Days, Current (AC and DC) : ranges 10µA-10 A with resolution of 1 pA , Resistance: Ranges 1Ω - 100MΩ with resolution of 1 µΩ, Frequency: 3 Hz to 300KHZ/333ms to 3.3µs (reciprocal counting technique) , Temperature: Direct Thermocouple, RTD (2,3,4 wire) and thermistor and Capacitance : Ranges 1nF-100µF with the accuracy at 1nF range 1%. Communication Interface : USB,LAN LXI,optional GPIB , Memory : 7 million data points, 5 inch high resolution touch screen display, Triggering option: Level,edge and window, Direct display of graph and table on screen, 2 year calibration cycle, 10 channel card option with 3 years warranty.	**1(One)**

6.	**Laptop:** 15.6 inch high resolution display, core i7/8GB RAM/1TB Hard Disk + SSD Drive (optional)/Windows 10/ 4GB Graphics, back led keyboard (3 years onsite warranty). **Make: HP/Dell/Toshiba**	**1(One)**
7.	**iMac Desktop:** 21.5 inch, 2.3 GHz Dual core Intel Core i5 (7^{th} Generation), 1TB HDD, 8GB DDR4 RAM (1 Year onsite warranty).	**1(One)**
8.	**Function Generator:** 60 MHz, 2 Channel , Arbitrary Function Generator Built-in waveforms**:** Must have Sine, Square, Pulse, Ramp, Noise, and other frequently used arbitrary waveforms Frequency range : Minimum 1 µHz to 60 MHz Sine wave, Minimum 1 µHz to 30 MHz Square Wave and Pulse waveforms Amplitude 1m$V_{p-p}$to 10V_{p-p}amplitude ($\leq$ 25 MHz Frequency) and 1 mV_{p-p} to 5 V_{p-p} (> 25 MHz Frequency) Must have 2 Channel independent Output Should have minimum 300 MS/s sampling rate and 14-bit vertical resolution Should have Built-in 200 MHz counter with 6-digit resolution for frequency/period/pulse width/duty cycle measurement Minimum 1Mpoint length of memory for user defined arbitrary waveforms Should be with Built-in Modulation (AM, FM, PM, ASK, FSK, PSK, PWM), Noise Generator, Burst, and Sweep modes Should have minimum 3" color screen displays to display both graphical and numeric waveform information simultaneously	**1(One)**

Dr Badal Chakraborty
PI of the Project.

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