



F.No.PI/NAHEP/CAAST DFSRDA/Quot/ 142 /2020

Date: 15/ 09 /2020

To,

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Dear Sir,

**Subject: INVITATION OF QUOTATION FOR SUPPLY OF AGRI-BOTS TECHNOLOGY LAB**

1. You are invited to submit your most competitive quotation for the following Goods: -

S. N.	Brief Description of the goods	Specifications*	Quantity (Unit)	Delivery Period	Place of Delivery	Installation requirement if any
1	<b>Agri-Bots Technology Lab</b>	Detail Specifications are Given Below.	01	After awarding the contract & the period of validity of quotation	Office of PI, NAHEP-CAAST, VNMKV, Parbhani.	Yes, with installation and technical demonstrations.

Description	Technical Specification
<b>Technology</b>	Fused Deposition Modeling
<b>Print Heads</b>	1
<b>Dimensional Accuracy</b>	±0.2-0.4mm
<b>Build Size</b>	Approx. upto 3 ft X 3ft X 3ft
<b>Build Volume</b>	2600 cubic inches
<b>Layer Resolution</b>	100 to 400 Microns
<b>Filament Diameter</b>	Max 2 mm
<b>Dimensional Accuracy</b>	± 0.4mm to ± 0.2mm
<b>Maximum Material Flow Rate</b>	50mm <sup>3</sup> per second
<b>Print Head Travel Speed</b>	Upto 200 mm per second
<b>Printer Automation</b>	Automatic Z Calibration, Automatic Nozzle Calibration, Automatic Material Loading
<b>Product Testing</b>	Over 380,000+ hours of equipment testing and 160,000+ hours of smart extruder testing
<b>Material Possibilities</b>	PLA, Tough and other 3rd Party Filaments (for experimental extruder)
<b>Smart Performance Extruder</b>	Smart Extruder with 0.4 mm nozzle diameter which is removable and user replaceable i.e. easily swappable for another one. Magnetically swappable for easy maintenance and material switching with active jam prevention protects your extruder and your prints. Filament detection pauses print and notifies user if a spool runs out. Specifically optimized



	to print durable, usable parts with FDM filaments.
<b>Smart Performance Extruder for ABS and SR-30 (Optional)</b>	Dual performance extruders along with the usual dual extruder combination for model and support material.
<b>Experimental Extruder</b>	Interchangeable nozzles (0.4-0.8mm) with brass and stainless steel variants with a modified thermal core and a more secure thermal barrier tube for any thermoplastic material. Any third party filament under the melting range of 250 degree Celsius can be used.
<b>Tough Extruder</b>	Tough Smart Extruder with 0.4 mm nozzle diameter which is removable and user replaceable i.e. easily swappable for another one. Magnetically swappable for easy maintenance and material switching along with active jam prevention protects your extruder and your prints. Filament detection pauses print and notifies user if a spool runs out. Specifically optimized to print durable, usable parts with Tough filament.
<b>Nozzle Diameter</b>	0.4 mm, 0.6 mm and 0.8 mm
<b>Temperature</b>	Dry-Sealed Material Bays form a near-perfect seal to keep material free of damaging humidity. A suite of built-in sensors provides that material is stored in its optimal environment.
<b>Humidity Control</b>	
<b>Material Detection</b>	
<b>RFID</b>	
<b>Temperature</b>	
<b>Material Detection</b>	Fully loaded extruders with temperature Sag detection, material presence detection and automatic print pausing upon material non-availability, jam prevention and detection along with high grade thermostats and heating filaments.
<b>Encoder (Jam Detection)</b>	
<b>Lid – Open/Closed</b>	
<b>Door – Open/Closed</b>	
<b>Temperature Sensors – Heated Chamber</b>	
<b>Calibration Sensors</b>	Lid opening and closing sensor along both calibration sensors are provided for automated Z-axis offset auto calibration.
<b>Remaining Material</b>	
<b>Material Color</b>	
<b>Material Kind</b>	
<b>CAD Integration</b>	Accepts files from a majority of the CAD Software’s in more than 20 formats.
<b>Display</b>	User Accessible 3.5 inches Display. Instructions can be given indigenously without the requirement of a computer. This is to set up and maintain 3D printer, preview print files, do calibration, connect to wifi, load and unload filament and easily access object library.
<b>Software Bundle</b>	Perpetual License of OEM Print Software to prepare file for 3D print. It should cloud connected with optimized slicing algorithm and user friendly for automatic arrangement of assemblies across one or more build plates.
<b>Supporting File Types</b>	STL (.stl), SolidWorks (.sldprt, .sldasm), InventorOBJ (.ipt, .iam), IGES (.iges, .igs), STEP AP203/214 (.step, .stp), CATIA (.CATPart, .CATProduct), Wavefront Object (.obj), Unigraphics/NX (.prt), Solid Edge (.par, .asm), ProE/Creo (.prt, .asm), VRML (.wrl), Parasolid (.x_t, .x_b)
<b>Software Updates</b>	Software receives regular updates with updates per year.
<b>Firmware Updates</b>	The printers firmware updates must be in regular intervals with updates per year.
<b>Print Software</b>	The software should optimize and streamline the 3D printing process for any workflow. It should have features like Prepare, Print Preview,



	Auto arrange, Min. fill and Cloud Enabled.
<b>Advanced Print Settings</b>	Should include Standard, Balanced, Min. fill and High Quality print modes along with custom settings like Raft/Padded Base/Brims for rafts, travel speed, infill print speed, raft speed, outline print speed, start direction, support to model spacing, support angle and density, raft to model vertical and raft to model shell vertical offset. This is apart from the bases settings like infill, shell, layer thickness and support/rafts.
<b>Apps</b>	Dedicated OEM Mobile App for both iOS and Android Devices that gives you the power to wirelessly set up, monitor, and control all of network-enabled 3D printer over the Cloud. App and web connectivity to 3D printing community
<b>Operating Systems</b>	Windows 10 and higher version and Mac OS X (10.9+)
<b>Camera</b>	On-board camera for remotely monitoring print progress.
<b>Camera Resolution</b>	320 X 240 pixels
<b>Maximum Nozzle Temperature</b>	250°C
<b>Maximum Chamber Temperature</b>	Heated chamber temperature of 60 degree Celsius (max) for stable and good surface finish prints.
<b>Ambient Operating Temperature</b>	15-26°C
<b>Storage Temperature</b>	0-38°C
<b>Frame Construction</b>	Aluminum Die Cast Base with extruded Aluminum Uprights and Steel Weldment Gantry Frame
<b>Build Surface</b>	Flexible Spring Steel Build Plate with a Reusable Grip Surface - A precision-calibrated print base and spring steel build plate provide true flatness for unyielding part accuracy.
<b>Build Plate Leveling and Calibration</b>	Automatic Z Calibration, Automatic Nozzle Calibration, Automatic Material Loading
<b>Stepper Motors</b>	1.8° step angle with 1/16 micro-stepping
<b>XY Positioning Precision</b>	11 Microns
<b>Z Positioning Precision</b>	2.5 Microns
<b>Power Requirements</b>	100-240 V, 50-60 HZ upto 1 A
<b>Connectivity</b>	USB Drive, USB 2.0/3.0, Ethernet, Wi-Fi
<b>Safety and Compliance</b>	FCC and CE
<b>Technical Requirements</b>	
<b>PC</b>	RAM: 16 GB, Processor: i5 10 <sup>th</sup> Generation
<b>Operating System</b>	Windows Professional 10 X 64 bit Genuine OS
<b>Screen</b>	LED Monitor Size (19.5")
<b>Accessories</b>	Keyboard, Mouse
<b>Connections</b>	3 X USB 3.0, 2 X HDMI, VGA Port, Wire Connections

- The above price is including GST and other terms such as Technical support from purchase of goods from September 2020 up to March 2022.
- **Place of Delivery:** CENTER OF EXCELLENCE FOR DIGITAL FARMING SOLUTIONS FOR ENHANCING PRODUCTION BY ROBOTS, DRONES and AGVs. Vasantrao Naik Marathwada Krishi Vidyapeeth Parbhani.

\*\* Quantity of work may be varies.

\* Where ISI certification marked Goods are available in market, procurement should generally be limited to goods with those or equivalent marketing only.



2. Government of India has received a financing from the International Bank for Reconstruction and Development World Bank towards the cost of the National Agricultural Higher Education Project NAHEP (CAAST- DFSRDA, VNMKV, Parbhani) and intends to apply part of the proceeds of this loan to eligible payments under the contract for which this invitation for quotations is issued.
3. **Bid Price**
  - a) The contract shall be for the full quantity as described above. Corrections, if any, shall be by made by crossing out, initialing, dating and re writing.
  - b) All duties, taxes and other levies payable on the raw materials and components shall be included in the total price.
  - c) Sales tax in connection with the sale shall be shown separately.
  - d) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - e) The prices shall be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
5. **Validity of Quotation**

Quotation shall remain valid for a period not less than 60 days after deadline date specified for submission.
6. **Evaluation of Quotations**

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

  - a) are properly signed; and
  - b) conform to the terms and conditions, and specifications.

The quotations would be evaluated for all the item together/ would be evaluated separately for each item. [*Select one of the options.*]

Sales tax in connection with sale of goods shall not be taken into account in evaluation.
7. **Award of contract**

The purchaser will award the contract to be bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation prices.

  - 7.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process the reject all quotations at any time prior to the award of contract.
  - 7.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the supply/ Purchase order.
8. Part payment or part supply orders will not be accepted. The payment will be made immediately after delivery of Goods/Setup/installation/Training/Assignment as per signed up/award of contract.
9. The necessary catalogue, leaf lets, operational manual or any other printed material related to goods/material should be provided during completion of contract.
10. Normal commercial warranty/ guarantee shall be applicable to the supplied goods.



**CENTRE OF EXCELLENCE FOR DIGITAL FARMING SOLUTIONS FOR  
ENHANCING PRODUCTIVITY BY ROBOTS, DRONES and AGVs.**

**VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH, PARBHANI (M.S.) INDIA**

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[www.vnmkv.org.in](http://www.vnmkv.org.in) ; [www.nahep.vnmkv.org.in](http://www.nahep.vnmkv.org.in)



11. The rates/prices should be FOR, VNMKV, Parbhani (MS) India. All leakages-breakage and losses in transit including shortages, if any will be borne by the firm/supplier. Offer should clearly mention the locations for which rates are quoted.
12. The firm should provide proof of GST registration no. / Tin no. / PAN no. and all legislative documents required as per world bank/ICAR New Delhi procedure.
13. **Onsite installation with technical demonstration and training** to core team member and technical staff should be provided by the supplier in consultation with expert team member of NAHEP-CAAST DFSRDA, VNMKV, Parbhani office.
14. In case, any holiday is declared by the Government on the day of opening, the bids will be opened on the next working day at the same time. The Principal Investigator, NAHEP - CAAST DFSRDA VNMKV Parbhani, reserves the right to accept or reject any or all the bids.
15. The bids of firm (s) which have either been black-listed by VNMKV, Parbhani or any other Govt. organization will not be accepted. In this regards, the firm has to give an undertaking on the enclosed format.
16. You are requested to provide your offer latest by **05.00 PM on or before 06/10/2020 in the name of Principal Investigator, NAHEP-CAAST-DFSRDA, VNMKV, Parbhani – 431 402**. The bids will be opened on the last day of submission at the same time. All suppliers/firms are requested to be present in the chamber of undersigned.
17. Write the title Quotation for supply of “**Agri-Bots Technology Lab**” on top line of envelopment.
18. We look forward to receiving your quotations and thank you for your interest in this project.

**Principal Investigator**  
**National Agricultural Higher Education Project**  
CAAST DFSRDA, VNMKV, PARBHANI  
Pin Code-431402, (M.S.), INDIA  
Tel. No.:+91 9422111232,  
Email: [nahep.caast.vnmkv@gmail.com](mailto:nahep.caast.vnmkv@gmail.com)





**FORMAT OF QUOTATION FOR SUPPLIER**

Sl. No.	Description Goods	Specifications	Qty.	Unit	Quoted Unit Rate in Rs.	Total Amount	
						Rupees	
<b>TOTAL</b>	<b>In Figures</b>						
	<b>In Words</b>						
<b>GST</b>							

**Gross Total Cost: Rs. ....**

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. .... (Amount in figure) Rs. .... (Amount in words) within the period specified in the Invitation for Quotation.

We also confirm that the normal commercial warrantee/ guarantee of ..... Months shall apply to the offered goods.

We hereby certify that we have neither black-listed by VNMKV, Parbhani nor any other Govt. organization.

We hereby certify that we have no "Conflict of Interest" with NAHEP-CAAST, DFSRDA VNMKV, Parbhani office or staff.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in corrupt, fraudulent, collusive, or obstructive practices (as defined in the prevailing World Bank's sanction procedures) in competing for or in performing the Contract.

**Signature of Supplier**

**\* Supplier should also mention the discount offered.**