



Central Tool Room & Training Centre

MSME - TOOL ROOM, BHUBANESWAR

AS 9100, ISO 9001, 14001, 50001 & OHSAS 18001 Certified
A Govt. of India Society, Ministry of Micro, Small and Medium Enterprises



Notice for Expression of Interest(EOI) to set up Industry 4.0 Lab.

Central Tool Room & Training Centre (CTTC) Bhubaneswar, invites proposals from interested Original Equipment Manufacturers (OEMs)/Authorized Resellers, meeting eligibility criteria as detailed in the EOI document, to set up Industry 4.0 Lab for 60 student capacity on turnkey basis. For detail Scope of Work on Turnkey Basis under the EOI Please visit the website: www.cttc.gov.in . Interested parties need to submit their proposals along with requisite documents by post or by hand to General Manager, Central Tool Room & Training Centre, B-36, Chandaka Industrial Area, Bhubaneswar – 751024. The last date and time for submission of response to this EOI is 21.07.2021, 5.30 PM.

The bidders meeting the eligibility criteria and securing minimum qualifying score as per the EOI Document shall be shortlisted.

The shortlisted bidders has to participate on e-tender for techno commercial bidding by logging on to e-procurement portal <http://eprocure.gov.in/eprocure/app>. Central Tool Room & Training Centre, Bhubaneswar reserves the right to accept or reject any EOI, and to annul the process and reject all EOIs at any time prior to short listing of bidders without assigning any reason whatsoever.



General Manager.

Central Tool Room & Training Centre

B-36, Chandaka Industrial Area, Bhubaneswar-751024

Phone: (0674) 3011710

Fax: (0674) 3011750/3011710, Email: cttc@cttc.gov.in

CTTC Bhubaneswar invites Expression of Interest (EOI)

For

Selection of OEM/Reseller for
establishment of Industry 4.0
lab at its campus on turnkey
basis

(Last date of Submission: 21.07.2021)

CENTRAL TOOL ROOM & TRAINING CENTRE
BHUBANESWAR

(A MSME Technology Centre under Ministry of MSME, Govt. of India)

B-36, Chandaka Industrial Area, Near Infosys, Po-KIIT, Bhubaneswar, Odisha – 751 024,

Email: cttc@cttc.gov.in, Website: www.cttc.gov.in

ABOUT CTTC BHUBANESWAR

Central Tool Room & Training Centre (CTTC), Bhubaneswar has been established under the Technical Co-operation programme between the Government of India and Denmark as a Govt. of India Society. The management of affairs of the centre rests with the Governing Council constituted by Ministry of MSME, Govt. of India. The centre started functioning in 1991 with the Training department followed by Production in the year 1994. The centre has emerged as one of the pioneer institute & technology centre of world class in India having state-of-the-art machines and equipment.

Name of the work: Turnkey installation of Industry 4.0 Laboratory at Central Tool Room & Training Centre (CTTC), Bhubaneswar for 60 student's capacity.

CONCEPT

CTTC Bhubaneswar intends to offer high technology demand driven modular courses on Industry 4.0 and is interested for establishment of a suitable lab in its main centre premises. The allotted space should be designed for delivery of all lessons & practical and students can learn and practice Industry 4.0 without any hindrance. The project is a turnkey project where the selected Bidder will be responsible for the supply of the technological product / lab Hardware and software, commissioning of the lab along with Training of institute personnel & faculties. It must be state-of-the-art and relevant to the industry and should cater to the current and futuristic requirements. About **750** Square Feet (32 x 24 feet) of covered area has been considered for establishment of lab purpose. The details of the area & layout of the space is enclosed as Annexure. The Industry 4.0 Lab should be an interdisciplinary focused on developing skill excellence in the field of Design, Digitalization and Industry 4.0 and should meet the demands of the industries' ever-changing processes. The lab Launchpad has 3 core stages:

- EXPERIENCE** - Industry 4.0 on high-end systems powered by Setup IOT where students and participants can experience content.
- LEARN** - Learn the basics on how to conceptualize, plan the flow and develop these interactive experiences. Consume learning content on the go with tracking and get a certificate at the end.
- CREATE** - Create Experiences and showcase to peers (prototyping, testing feedback). See how well their concepts fare with respect to their peers.

SCOPE OF WORK UNDER EOI.

The scope of work encompasses the following key activities:

Step1: Preparation of the Laboratory

A room of size **750** Square Feet (32 x 24 feet) is available for the purpose. It is required to supply and install all the materials to build the Industry 4.0 laboratory to fulfill the required objectives. The Expression of Interest should include Planning, design, preparation of working drawing for interior and execution of works. The Industry 4.0 facility will be used by CTTC team including faculties and other students. The scope of work encompasses the following key activities:

- The lab should bring together manufacturing, automation and data management leading to intelligent collaboration, monitoring and process management in real-time.
- It should be a modular setup enabling the training to be conducted in increasing order of complexity: modules, stations and complete system.
- The Industry 4.0 setup and the software provided in the Manufacturing process lab should emulate and simulate the physical system with identical properties.
- The setup should be IOT enabled and compatible for an IOT system to be connected to the hardware and collect data and monitor performance, in the future.
- The Lab setup for Industry 4.0 as per our infrastructure and should produce proposed complete layout design & drawing along with the equipment/ machines/ tools/ hardware/ accessories specification to be supplied with the quotation.

Step2: Supply of Lab. Equipment:

Industry 4.0 - Smart and Modular Manufacturing system: Industry 4.0 / Smart manufacturing should have equipment with fully automated way of controlling and managing the manufacturing process in a factory and equipped with intelligent maintenance system with augmented reality (AR). It should consist of following and other processes involved in manufacturing:

- Modular system
- Manufacturing
- Inspection & Quality Control
- Automatic Raw Material & Finished Goods Storage
- Material handling & Transfer Systems
- Digitalization of manufacturing
- Data Management and Radio-frequency identification (RFID) communication system
- Intelligent maintenance system
- Energy Management
- Augmented Reality
- Manufacturing Execution System
- Over All Equipment Effectiveness (OEE)
- Management Information System
- Troubleshooting simulation systems

Note: The above mentioned system are indicative only. OEMs/Resellers may suggest better system with latest specifications and futuristic technology. The bidders should produce proposed complete layout design & drawing along with the equipment/ machines/ tools/ hardware/ accessories specification to be supplied with the budgetary offer.

Step 3. Services & Training of Personnel:

1. Integration, Configuration and testing of the supplied software.
2. Project documentation including user manuals and operation and troubleshooting guides.
3. Training to CTTC team for operation and user level maintenance of the system.
4. Curriculum development and Training of Trainers.

The selected agency shall be required to undertake to provide the technical training to the personnel involved in the use of the **industry 4.0** lab at the Institute premises immediately after completing the installation of the lab.

The supplier is required to install and demonstrate of the equipment as per the approved design & drawing within the stipulated delivery schedule. Otherwise Penalty clause may be applicable.

The bidders should produce proposed complete layout design & drawing along with the equipment's/machines/tools/hardware items specification to be supplied with the EOI and it should consist of the Bill of Materials along with standard printed catalogue.

The learnings shall enable the students/lecturers utilize the industry 4.0 Lab to successfully create simulations, learnings, training and engaging content for higher learning curve and immersive demonstration.

Live working demo of the functionality may be perform in the presence of staff members/faculties and students.

1. GENERAL DESCRIPTION OF THE SYSTEM:

- a. The system shall produce at least 3 types of work piece with different materials.
 - b. The work piece may be in cylindrical or square shape.
 - c. The complete system shall be made up of a different stations and a main control unit to the different processes like, Material feeding, inspection, buffer stocking, drilling process and finished goods storage.
 - d. The industry 4.0 system kit shall be sleek in design and portable one with castor wheels.
 - e. The industry 4.0 system shall be provided with standard Aluminum based mounting board (modular type) to make the mounting of components easier.
 - f. The industry 4.0 system shall be possible for interconnecting with different upstream and downstream stations.
 - g. All the products to be provided with suitable one touch fittings.
 - h. Provide the learning resources.
 - i. Pneumatics.
 - j. Electro-pneumatics.
 - k. Programmable Logic Controllers.
2. IOT based application.
 3. Operation & maintenance manual: One set hard copy and one set soft copy with the equipment to be supplied.
 4. Web application.
 5. Required bundle of software with license (30 users)

LEARNING OBJECTIVES:

1. Learn about Industry 4.0 and Digitization of entire Value chain management
2. Understand and simulate the concept of various building blocks associated with Industry 4.0 such as Vertical, Horizontal, Integrated & Digital workforce.
3. Understand the concepts of IoT.
4. Learn about the architecture and design of IoT systems.
5. Understand the benefits of IoT systems.
6. Learn about the remote monitoring and controlling of machine in real time.
7. Experiencing AR (Augmented Reality) through Mobile application
8. Understand the Data communication to cloud through IOT Gateway module and Open Platform Communications (OPC).
9. Understand the concepts of technology Mechanics, Pneumatics, Vacuum, Electrical drives, Sensors, PLC controls, Industrial communication interface

Function:

The complete system will be made up of a minimum of 5 different stations and performing different type of industrial work. The System with Industry 4.0 should represent a miniature factory which shall include the industry standard processes such as

1. Raw Material feeding station (1st station)

- Function like ensures steady flow of components to the process station by allowing component for processing. It can store work pieces with a particular number and if the count has exceeded more than that value then it must stop the process.

2. Transport station/Buffer (2nd station)

- It ensures steady flow of components to the process station by allowing component for processing. It can store work pieces with a particular number and if the count has exceeded more than that value then it's must stop the process.

3. Manufacturing station /Process (3rd station)

- This Station performs some kind of the mechanical operations like Drilling, milling, grinding, polishing type of work. After the completion of work the work piece should be transferred to the next station.

4. Quality control station /Inspection (4th station)

- In this stage it perform some measures the height/diameter/ weight/ or color of the components received from its previous station and transfers the correct one to the next station and separate incorrect components.

5. Finished Goods Storage station/Sorting. (5th station)

- This station should have storing function where the finished product will store in warehouse.

MANAGEMENT SOFTWARE:-

This will consist of a suitable interface software package which includes an Implementation System of the integrated Manufacturing Execution System (MES) Production, with AR (Augmented Reality) through Mobile application and IOT based application.

Note: The specification of above mentioned equipment are indicative only. OEMs/Resellers may suggest better equipment with latest specifications and futuristic technology.

ELIGIBILITY CRITERIA

- ❖ Bidder should be the manufacturer/authorized Reseller. Letter of Authorization from original equipment manufacturer (OEM) specific to the EOI should be enclosed.
- ❖ An undertaking from the OEM is required stating that they would facilitate the Bidder on a regular basis with technology/product updates and extend support for the warranty as well.
- ❖ OEM should be nationally / internationally reputed Company.
- ❖ In the EOI, either the authorized dealer on behalf of the OEM or OEM itself can submit EOI, but both cannot submit simultaneously for the same item/product in the same EOI.
- ❖ If an authorized dealer submits bid on behalf of the OEM, the same authorized dealer shall not submit a bid on behalf of another OEM.
- ❖ Sample photograph for offered items may be asked from EOI during technical evaluation & Presentation.

- ❖ OEM engaged in development & selling of similar type of turnkey project execution in at least 2 projects all over India.
- ❖ The OEM should have annual turnover Rs.8 crores for the any two financial years (2017-18, 2018-19 and 2019-20) and should submit audited statement and Financial assessment copy/Income Tax Return Copy showing their net balance / Profit for last three financial years.
- ❖ The bidder should not have black listed by any Govt. Agency. A declaration in this regard to be submitted in the letterhead of the bidder.

PROCEDURE OF EOI EVALUATION AND FOR SHORTLISTING

- ❖ CTTC Bhubaneswar will evaluate the technical proposal received on EOI closing date.
The scrutiny will be based on profile and track record of bidder, past experience of similar nature & magnitude.
- ❖ The shortlisted interested bidder has to participate on e-tender for techno commercial bidding through e-Procurement portal. <http://eprocure.gov.in/eprocure/app>. The bidders would be required to enroll / register on the e-procurement website <http://eprocure.gov.in/eprocure/app> For Submitting bids, the bidders are required to have Digital Signature Certificates issued by any of the Certifying authority of India
- ❖ Scrutiny of EOI: The EOIs received will then be assessed on the eligibility criteria mentioned at EOI document. EOIs found not meeting the eligibility criteria shall be considered non-responsive and shall be rejected.
- ❖ CTTC reserves the right to revert back to individual bidders with further clarifications / queries on the EOI. The bidder has to respond to the queries within the specified time mentioned in the covering letter.
- ❖ The EOIs shall be evaluated by the committee on following parameters against the maximum marks as shown against each:

Sl No.	Parameter	Maximum marks to be awarded
1	Experience in similar turnkey projects (min.2) with successful completion and performance certificate from the reputed customers during last 3 years ending on 31.03.2020. <ul style="list-style-type: none"> • Past Experience on similar Turnkey Projects : 2 or more projects: - 40 Marks • 1 Project: - 20 Marks. 	40
2	Financial Strength of OEM: <ul style="list-style-type: none"> • Annual Turnover \geq 08 Cr - 25 Marks. 06 to 07.99 - 20 Marks. 04 to 05.99 - 15 Marks. • Less than 4 crore: - 0 Marks. 	25
3	Overall concept & proposal for the project: <ul style="list-style-type: none"> • Meeting all the 5 function, each station carries 05 marks. 	25
4	After sales support/Product Support network: <ul style="list-style-type: none"> • OEM/Reseller must submit address and number of employee of functional service centre in India. 	10
TOTAL		100

Note: Minimum qualifying marks is 60. CTTC reserve the right to lower the qualifying mark for shortlisting the agency, if there is inadequate eligible agency.

- ❖ **PRESENTATION BY THE ELIGIBLE BIDDERS:** The bidders meeting eligibility criteria shall next may be asked to make a presentation (approx. 30 minutes) about their proposals including architectural virtual model, drawings & proposed specifications of items in their Technical Proposal before a selection committee constituted by CTTC, Bhubaneswar.