



**NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL – 506 004**



**Invitation for
Expression of Interest (EoI) and Request for Proposal (RFP)
for selection of Technology Partner to setup a Center of Excellence
for imparting High-end Skill Training, Industrial Consultancy & Research Works
in the Field of Industry 4.0 & Digitalization**

Ref. No. NITW/CS/EoI/2019-20

Date: 01.10.2019

1. Director, NIT Warangal invites proposals from eligible firms for “Selection of a Technology Partner to set up a Center of Excellence for Research & Development and imparting high-end skill training in the **field of Industry 4.0 & Digitalization.**
2. Participating Agencies must fulfill the following pre-requisites:

S. No	Pre-Qualification Criteria
1	Technology Partner should be a company recognized for providing technological products in the technology areas listed in the technical Section 4. They may execute it through their Authorized Partner and thereby name the Authorized Partner as Execution Partner
2	Technology Partner (TP) and the Execution partner should be an entity registered in India under the Companies Act/ LLP Act/ Societies Registration Act or as a Trust.
3	Technology partner should have been in existence for at least 10 years in India
4	Technology partner or the Execution partner should not have been blacklisted by any Government/ Department/ Body.

3. The bidding documents may be downloaded free of cost from the website < >
4. Interested firms shall submit the EOI and RFP in the prescribed format up to 3:00 pm on 14.10.2019 to The Director, National Institute of technology, Warangal.
5. The proposal shall be submitted in the Office of the Director, National Institute of Technology Warangal in a sealed envelope, with documents as indicated in Section-3 of this advertisement.
6. The last date for submitting the bids is **14.10.2019 up to 03:00 PM.**

7. The duly filled proposal in proper format should be submitted in person or sent by courier, registered/ speed post etc., to The Director, National Institute of technology, Warangal. Each page of the proposal should be signed by the competent authority of the applicant.
8. All amendments, time extension, clarifications etc. will be uploaded on the website only and will not be published in newspapers. The bidders should regularly visit the website to keep themselves updated.

Key dates:

Sl.	Description	Important Information
1.	EoI & RFP – Advertisement	01.10.2019
2.	Submission of EoI and RFP	14.10.2019 upto 3.00 p.m.
3.	Evaluation	15-17 Oct. 2019

Sd...
Registrar,
National Institute of Technology,
Warangal - 506004

SELECTION OF Technology Partner

Expression of Interest and Request for Proposal

EOI and RFP

for selection of Technology Partner to set up a Center of Excellence
for imparting High-end Skill Training Industrial Consultancy & Research
in the Field of Industry 4.0 & Digitalization



National Institute of Technology Warangal

Warangal, Telangana 506004

Issued on: 01 / 10 / 2019

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Section 1. Introduction

Scope of the Project

NIT Warangal is inviting Expression of Interest from Technology Providers to setup a Center of Excellence (CoE) that focuses on upcoming manufacturing technologies related to industry 4.0 & Digitalization at NIT Warangal. The CoE shall be setup in the available building with a floor space of 15000 Sq. Ft.

It is a turnkey project where the Technology Provider will be responsible for the supply of the technological product / lab Hardware and software, commissioning of it and should run the lab along with the institute faculty for a period of 3 Years. It must be state-of-the-art and industry relevant and should cater to the current and futuristic requirements of the industry. The COE will be under the overall administration of NIT Warangal.

NIT Warangal will provide infrastructure to setup the Center of Excellence. The Technology Provider (Technology Partner) should provide a grant of at least 80% on total project value and the balance will be funded by the Institute. The total value of the project should not exceed Rs. 200 Cr. The Technology Partner once selected must sign a Memorandum of Agreement (MOA). The services proposed in the CoE can be provided directly by the Technology Partner or through their authorized partner.

The Center of Excellence should be an interdisciplinary, industry backed center focused on developing skill excellence in the field of Design, Digitalization and Industry 4.0. Through the training and implementation of industry-relevant technology and processes, the center should facilitate a multi-disciplinary learning environment across Technology, Engineering, and Science and Management faculties. It should meet the demands of the industries' ever-changing processes and help build skills around collaboration and innovation. The center should leverage the Technology Partner's capability to draw upon the expertise from various areas of Automotive and their suppliers, Aerospace, Defense and their suppliers, Industrial Engineering, Electrical and Process Industries such as Pharma, Food and Beverage, Chemical etc. and provide its partners with knowledge and tools.

The center aims to focus on Research and Development and bridge the skill gap of students' vis-à-vis today's industry needs and impart state-of-the-art industry-oriented training. The mission of this CoE should be to promote advancement and implementation of advanced digitalization in manufacturing concepts through research and education partnership with the industry.

Objective

The COE should bridge the skill gap of students vis-à-vis industry needs and impart state-of-the-art industry-oriented training to help foster significant innovation and learning in technical education. The mission of the Center of Excellence is to promote implementation and advancement of Product

Lifecycle Management and advanced digital manufacturing-factory concepts through research and education partnership with the industry.

1. The center is aimed at Industry connected skill development programs and hence the proposal should also have a MoA with leading Technology Company.
2. This center should be on Build, Operate and Transfer Mode.
3. All the Hardware should be of industrial standards.
4. The software should not be restricted to educational limits. Should be provided with industrial features allowing the Client to offer Industrial consultancy and research as well, apart from the skill development.
5. The Technology Partner can depute their authorized partner for executing the COE in terms of supply and running the center. However the proposal should have a clear information on who is the Execution partner and who is the Technology Partner.

In this proposal, we invite Technology Partner to set up Center of Excellence in Industry 4.0 & Digitalization with NIT Warangal to address industrial needs of skill development and consultancy in the areas of engineering, product design & development and advanced manufacturing technologies towards the following domains:

1. Automotive – passenger vehicles, commercial vehicles
2. Aerospace
3. Industrial machinery – off highway vehicles, farm equipment and implements, electrical and mechanical machineries
4. Industry 4.0
5. Digital Factories.
6. Ship Building
7. Industrial Automation
8. Bio-Medical Engineering

Section 2. Instructions to Technology Partner (ITL) and Data Sheet

A. General Provisions

1. Definitions	<p>23.1. “Applicable Guidelines” means the policies of MHRD governing the selection and Contract award process as set forth in this RFP.</p> <p>23.2. “Applicable Law” means the laws and any other instruments having the force of law in India, as they may be issued and in force from time to time.</p> <p>23.3. “Client” means National Institute of Technology, Warangal.</p> <p>23.4. “Technology Partner (TP)” means a legally- established firm or an entity that is contracted with under this Contract.</p>
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	<p>23.5. “Contract” means a legally binding written agreement signed between the Client and the TP and includes all additional documents as may be specified by the Client.</p> <p>23.6. “Data Sheet” means an integral part of the Instructions to TPs (ITL) Section 2 that is used to reflect specific assignment conditions to supplement, but not to over- write, the provisions of the ITL.</p> <p>23.7. “Day” means a calendar day.</p> <p>23.8. “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the TP, Execution Partner or Consortium member(s).</p> <p>23.9. “Government” means the Government of India.</p> <p>23.10. “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.</p> <p>23.11. “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract.</p> <p>23.12. “ITL” (this Section 2 of the RFP) means the Instructions to TPs that provides the TPs with all information needed to prepare their Proposals.</p> <p>23.13. “Non-Key Expert(s)” means an individual professional provided by the TP or its Execution Partner and who is assigned to perform the Services or any part thereof under the Contract.</p> <p>23.14. “Proposal” means the response to this Request for Proposal“ submitted by the TP.</p> <p>23.15. “RFP” means the Request for Proposals to be prepared by the Client for the selection of TP.</p> <p>23.16. “Services” means the work to be performed by the TP pursuant to the Contract.</p> <p>23.17. “TORs” means the Terms of Reference that explain the objectives, scope of work, activities, and tasks to be performed, respective responsibilities of the Client and the TP, and expected outcomes.</p>
<p>2. Introduction</p>	<p>24.1. The Client named in the Data Sheet intends to select TP in accordance with the method of selection specified in the Data Sheet.</p> <p>24.2. The TPs are invited to submit a Proposal for the Labs named in the Data Sheet. The Proposal will be the basis for negotiating and ultimately signing the Contract with the selected TP.</p> <p>24.3. The TP’s should familiarize themselves with the local conditions and take them into account in preparing their Proposals,</p>
<p>3. Conflict of Interest</p>	<p>25.1. The TP is required to provide services, at all times holding the Client’s interest paramount, strictly avoiding conflicts with other assignments or its own corporate interests and acting without any consideration for future work.</p> <p>25.2. The TP has an obligation to disclose to the Client any situation of actual or potential conflict that impacts its capacity to serve the best interest of its Client. Failure to disclose such situations may lead to the disqualification of the TP or the termination of its Contract and/or sanctions by the Client.</p> <p>25.3. Without limitation on the generality of the foregoing, the TP shall not be hired under the circumstances set forth below:</p> <p>25.3.1. Conflicting projects</p>

	<p>25.3.2. Conflict among projects: A TP will not setup similar COE's at a vicinity of 200 km of the client.</p> <p>25.4. Conflicting Relationship: Relationship with the Client's staff: a TP (including its Experts) that has a close business or family relationship with a professional staff of the Client, who are directly or indirectly involved in any part of (i) the preparation of the Terms of Reference for the assignment, (ii) the selection process for the Contract, or (iii) the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Client throughout the selection process and the execution of the Contract</p>
4. Corrupt and Fraudulent Practices	<p>26.1. Client requires compliance with its policy with regard to corrupt and fraudulent practices.</p> <p>26.2. In further pursuance of this policy, TP's shall permit and shall cause their Experts, Partners, sub-contractors, services providers, or suppliers to permit the Client to inspect all accounts, records, and other documents relating to the submission of the Proposal and contract performance (in case of an award), and to have them audited by auditors appointed by the Client.</p>
5. Eligibility	<p>27.1. The Client permits TP's (individuals and firms, including Joint Ventures and their individual members) from India to offer services under this contract unless otherwise blacklisted</p> <p>27.2. Furthermore, it is the TP's responsibility to ensure that its experts, joint venture members, partners, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established in this document.</p> <p>27.3. Government / Government-owned enterprises or institutions in India shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) that they are not dependent agencies of the Client. To establish eligibility, the government-owned enterprise or institution should provide all relevant documents (including its charter) sufficient to demonstrate that it is a legal entity separate from the government; it does not currently receive any substantial subsidies or budget support; it is not obligated to pass on its surplus to the government; it can acquire rights and liabilities, borrow funds, and can be liable for repayment of debts and be declared bankrupt; and it is not competing for a contract to be awarded by the government department or agency which, under the applicable laws or regulations, is its reporting or supervisory authority</p> <p>27.4. Government officials and civil servants in India are not eligible to be included as Experts in the TP's Proposal unless such engagement does not conflict with any of the provisions of this engagement or employment or other laws, regulations, or policies of India.</p>
6. Ownership	The Ownership of the CoE lies with NIT Warangal

B. Preparation of Proposal

7. General Consideration	<p>7.1. In preparing the Proposal, the TP is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.</p>
8. Cost of Preparation of Proposal	<p>8.1. The TP shall bear all costs associated with the preparation and submission of its Proposal, and the Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the TP.</p>
9. Language	<p>9.1. The Proposal, as well as all correspondence and documents relating to the Proposal exchanged between the TP and the Client, shall be written in English.</p>
10. Documents Comprising the Proposal	<p>10.1. The Proposal shall comprise the documents and forms listed in the Data Sheet given in this RFP (Section-2).</p>
11. Proposal Validity	<p>11.1. The Data Sheet indicates the period during which the TP's Proposal must remain valid after the Proposal submission deadline. 11.2. During this period, the TP shall maintain its original Proposal without any change. 11.3. If it is established that any Key Expert nominated in the TP's Proposal was not available at the time of Proposal submission or was included in the Proposal without his/her confirmation, such Proposal shall be disqualified and rejected for further evaluation.</p>
a) Extension of Validity Period	<p>11.4. The Client will make its best effort to complete the negotiations within the proposal's validity period. However, should the need arise, the Client may request, in writing, all TPs who have submitted Proposals prior to the submission deadline to extend the Proposals' validity. 11.5. If the TP agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal. 11.6. The TP has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.</p>
12. Clarification and Amendment of RFP	<p>12.1. The TP may request a clarification of any part of the RFP during the period indicated in the Data Sheet before the Proposal's submission deadline. Any request for clarification must be sent in writing, or by standard electronic means, to the Client's address indicated in the Data Sheet. The Client will respond in writing, or by standard electronic means, and will send written copies of the response (including an explanation of the query but without identifying its source) to all TPs. If the Client deems it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure described below: 12.2. At any time before the proposal submission deadline, the Client may amend the RFP by issuing an amendment in writing or by standard electronic means. The amendment will be posted in the website of NIT Warangal.</p>

	<p>12.3. If the amendment is substantial, the Client may extend the proposal submission deadline to give the TPs reasonable time to take an amendment into account in their Proposals.</p> <p>12.4. The TP may submit a modified Proposal or a modification to any part of it at any time prior to the proposal submission deadline. No modifications to the Proposal shall be accepted after the deadline.</p>
13. Proposal Format and Content	13.1. The proposal shall be as per the formats included in this RFP (Section-4).
14. Commercials	14.1. The minimum contribution from the Technology Partner should be 80% of the project value. The balance will be contributed from the Client. The project value will not include the infrastructure cost provided by the Client.
15. Revenue Sharing	15.1. CoE will be used to conduct different training program, Industry Consultancy and research work. The Institute will only have all the share/rights on the revenue generated and IPR out of these activities.

C. Preparation of Proposal

16. Submission, Sealing, and Marking of Proposal	<p>16.1. The TP may submit a signed and complete Proposal comprising the documents and forms in accordance with Clause 10 (Documents Comprising Proposal). The submission can be done by hand/ courier/ registered post/ speed post.</p> <p>16.2. The Technology Partner can also authorize their partner to submit a signed and complete proposal comprising of all the documents and forms on their behalf.</p> <p>16.3. An authorized representative of the Technology partner or the Execution partner shall sign the original submission letter in the required format for the Proposal and shall initial all pages of both. The authorization shall be in the form of a written authorization letter specific to the Proposal.</p> <p>16.4. Any modifications, revisions, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the proposal.</p> <p>16.5. The signed Proposal shall be marked “ORIGINAL”, and its copies marked “COPY” as appropriate. The number of copies is indicated in the Data Sheet. All copies shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.</p> <p>16.6. The original and all the copies of the Proposal shall be placed inside a sealed envelope clearly marked “PROPOSAL”, “[Name of the Assignment]”, RFP reference number, name and address of the TP, and with a warning “DO NOT OPEN UNTIL [insert the time and date of the submission deadline indicated in the Data Sheet]”.</p> <p>16.7. The sealed envelope containing the Proposal shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, RFP reference number, the name of the assignment, TP’s name and the address, and shall be clearly marked “DO NOT OPEN BEFORE [insert the time and date of the submission deadline indicated in the Data Sheet]”.</p> <p>16.8. If the envelopes and packages with the Proposal are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the Proposal.</p>
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	<p>16.9. The Proposal or its modifications must be sent to the address indicated in the Data Sheet and received by the Client no later than the deadline indicated in the Data Sheet, or any extension to this deadline. Any Proposal or its modification received by the Client after the deadline shall be declared late and rejected, and promptly returned unopened.</p>
17. Confidentiality	<p>17.1. From the time the Proposals are opened to the time the Contract is awarded, the TP should not contact the Client on any matter related to its Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the TPs who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.</p> <p>17.2. Any attempt by TPs or anyone on behalf of the TP to influence improperly the Client in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal and may be subject to the application of prevailing Client’s sanctions procedures.</p> <p>17.3. Notwithstanding the above provisions, from the time of the Proposals’ opening to the time of Contract award publication, if a TP wishes to contact the Client on any matter related to the selection process, it should do so only in writing.</p>
18. Opening of Proposals	<p>18.1. The Client’s evaluation committee shall conduct the opening of the Proposals in the presence of the TPs’ authorized representatives who choose to attend (in person). The opening date, time and the address are stated in the Data Sheet.</p> <p>18.2. At the opening of the Proposals the following shall be read out: (i) the name of the TP or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member; (ii) any modifications to the Proposal submitted prior to proposal submission deadline.</p>
19. Evaluation of Proposals	<p>19.1. The TP is not permitted to alter or modify its Proposal in any way after the proposal submission deadline. While evaluating the Proposals, the Client will conduct the evaluation solely on the basis of the submitted Proposals.</p> <p>19.2. The Client’s evaluation committee shall evaluate the Proposals based on their responsiveness to the Terms of Reference and the RFP, applying the pre-qualifying criteria, evaluation criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score. A Proposal shall be rejected at this stage if it does not respond to important aspects of the RFP or if it fails to achieve the minimum technical score indicated in the Data Sheet.</p>
20. Award of Contract	<p>20.1. After completing the negotiations, the Client shall sign a MoA with the TP as per the instructions in the Data Sheet; and promptly notify the other shortlisted TPs.</p> <p>20.2. The TP is expected to commence the next steps on the date and at the location specified in the Data Sheet.</p>
21. Delivery Schedule	<p>23.1 From the date of award of contract, the entire CoE should be fully functional within a maximum period of 180 Days.</p>

D. Data Sheet

A. General		
ITL Clause		
A.1	Name of the Client: National Institute of technology, Warangal Method of selection: Quality Based Selection	
A.2	The name of the assignment is: Selection of a Technology Partner (TP) to set up an Center of Excellence for imparting high-end skill training, performing industry consultancy and research in the field of Advanced Digital Manufacturing.	
B. Preparation of Proposals		
B.1	English language.	
B.2	Proposals must remain valid for 90 (ninety) calendar days after the proposal submission deadline (i.e., 90 days from 14th October 2019).	
B.3	Clarifications may be requested no later than 4 (Four) days prior to the submission deadline.	
B.4	<u>The contact information for requesting clarifications is:</u> National Institute of Technology Warangal Warangal, Telangana 506004	
C. Submission, Opening and Evaluation		
C.1	The TP or their authorized Execution partner must submit: (a) Proposal: one (1) original and one (1) copy. In case of the Execution partner, then the Technology Partner should submit their authorization letter.	
C.2	The Proposals must be submitted no later than: Date and Time: 14/10/ 2019 upto 3.00 PM	
	The Proposal submission address is: National Institute of Technology Warangal Warangal, Telangana 506004	
C.3	The opening shall take place at: same as the Proposal submission address. Date: 14/10/2019 at 3.30 p.m.	
C.4	Criteria, sub-criteria, and point system for the evaluation of the Full Proposals:	
	Sl.	Evaluation Metric
		Documentary Proof
	1	Technology partner Authorizing their Executing partner
2	TP and Executing Partners should be such entities registered in India under the Companies Act/ LLP Act/ Societies Registration Act or as a Trust.	Certificate of Incorporation / registration Certificate
3	TP should have been in existence for at least 10 years in INDIA.	The Certificate of Incorporation of the TP should be submitted. The Technology Partner must have a Turnover of at least Rs. 100 cr. Per year in India in the each of the last 3 years.

4	TP and Executing partner should not have been blacklisted by any Government/ Department/ Body.	Self-declaration to be provided by TP and the Executing partner.
5	Existing CoE Setups	The Technology Partner must have experience of setting up COE's similar to the scope of this RFP. The Technology Partner should have executed a minimum 10 such CoE's within India during last 5 Years (in Central Govt./State Govt. Institutions with a minimum of 2 CoEs in Central Government Institutions. The requisite proofs shall be enclosed. Please note that the Technology Partner under which the Executing Partner is participating must be the same as mentioned in the copies of agreement submitted. Technology Partner must have a R&D Facility in India and have their direct and own training centers for some of the proposed labs.
6	Domain Expertise	The Technology Partner should be in the domain, in at least 60% of the labs and offering proprietary items in these labs completely manufactured by them. Barring general utilities items.
7	Training Expertise of Executing Partner (if Any)	The Executing Partner should be in the area of skill development and training at least for a period of 5 Years.
8	Certification	The MoA should also allow the client to use the Technology partner's Logo to award training certificates to the trainees. Technology partner or the Executing Partner should be certified as a Sector Skill Partner from NSDC or an equivalent in India.
9	e-Learning (Courseware)	The e-Learning (Courseware) materials should be a solution/product developed and owned by either the Technology Partner or the Executing Partner.
10	Customer Feedback	Customer feedback on the COE in the format of appreciation letters or public domain information such as website/published report on similar CoE should be submitted. If Website is being provided, then please provide the link to the site in the covering letter along with snapshots of different pages of the website. By similar CoE, it means that the CoE being shown should have established at least 6 out of the labs listed in the scope of supply.

The bids submitted by the interested parties who clear the pre-qualification round only will be evaluated as per the criteria provided below:

Evaluation Criteria (100 Points)

A. Profile of the TP (10 points)

● **Profile of the TP (maximum two pages).**

- An additional one-page profile for the Execution partner to be attached.
- Details about the business clients (national and international) that the TP is closely engaged with in various capacities in the different Industries.
- The TP / Execution partner should be able to show a continuous and on-going effort to use state of the art equipment/ machines/ tools as part of routine business activities.
 - Details about the existing training infrastructure available with the TP or their Execution partner.
 - Details of curriculum of its 3 best-in-class training programs with a clear indication of modules that are taught practically. Should include details such as the job profile, number of trainees trained, employed and relevance of the courses.

***Note:** Wherever the technology partner / Execution partner has relevant experience in training and skill development, this can be highlighted.

B. Technical Proposal of TP/Execution partner (50 points)

- The technical proposal will be evaluated on the basis of Section 4 requirement.
- The entire scope must be offered by one party – Technology Partner and their Authorized Execution Partner
- Additional scope will not be considered in the evaluation

C. Past Performance of TP and Execution Partner (if Any) (40 Points) Section details the selection criteria for the Technical partner

- All the conditions must be met for the Technical Partner
- All the conditions must be met for the Execution Partner (if any)
- If there is an Execution Partner, 5 points will be allotted to the Execution Partner out of the 30 Points

The Interested Parties who secure at least 75% of the points in the Evaluation Criteria A, B and C above will only be shortlisted and called for a presentation.

One bidder will be chosen as the TP at the end of the Presentation.

Section 3. Proposal – Standard Forms

All pages of the original Proposal shall be initialed by the same authorized representative of the bidder who signs the Proposal.

FORM TECH-1

A. PROPOSAL SUBMISSION FORM

[Location, Date]

To,

The Director,

National Institute of Technology, Warangal

Warangal, Telangana 506004

Dear Sir/ Madam,

We, the undersigned, intend to participate as a Technology Partner (TP) for setting up of Center of Excellence in accordance with your Request for Proposal dated [Insert Date].

Our execution Partner will submit proposal and execute it.

{Insert a list with full name and the legal address}.

We have attached a copy {insert: “Authorization letter”} authorizing our Channel partner to execute the project.

We hereby declare that we have read the Instructions to TP included in the RFP, and abide by the same, and specifically to conditions mentioned in Instruction to bidders. [In case of any declaration, reference to concerned document attached must be made]. We hereby declare that all the information and statements made in this Proposal are true and we accept that any misleading information contained in it may lead to our disqualification.

We undertake, if our Proposal is accepted, to sign the MoU and initiate the project as per the timelines prescribed.

Yours faithfully,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:

{In a consortium either all members shall sign or only the lead member, in which case the power of attorney to sign on behalf of all members shall be attached}.

B. Authorization letter from the technology partner to the Execution partner

<<Insert Letter here>>

C. Certificate of registration/incorporation of the Technology Partner and execution partner

<<Insert Certificate of registration >>

D. Self-Declaration against blacklisting of TP and the Execution partner

<<Certificate of self-declaration>>

Section 4. Technical Scope

Concept

The overall plan, as part of this programme is to encourage a TP to setup a Center of Excellence (CoE). The CoE is being setup to offer an interrelated high technology, modular, skilling facility and offer demand driven courses.

The CoE, to be designed by the TP, is envisioned to be setup as a State of the Art Center of Excellence (CoE) in which the TP brings in their best in class equipment/ tools/ machines/ simulators (commonly referred to as equipment) to be used for training purposes. The COE will be located in an appropriate space offered by the client. The CoE will be managed professionally by the TP. The infrastructure for the CoE will be made ready by the client as per the specifications given by the TP and the Execution Partner.

The CoE will run under the overall operational management of the Execution Partner. The Execution Partner, under the Guidance of the TP, will be responsible for devising and implementing a three-year rolling plan and ensuring that the CoE is constantly upgraded and provides a high technology ecosystem for skilling/ up-skilling/ re-skilling/ cross-skilling and multi-skilling. The Execution Partner, under the Guidance of the TP, will be expected to assist the client to mobilize students for training which will help generate revenues at the CoE which can help offset the overall costs of the CoE.

Overall administrative, quality and financial responsibilities including the management of the CoE, marketing, branding, placement, costing of courses, management of hostels, course content, pedagogy, funding etc. will be the responsibility of the Client. The Client may engage with, invite and sign MoUs with industries (such as equipment manufacturers, tool and device manufacturers that service the Industries) and continuously engage with the service providers to ensure that the CoE remains relevant at all times.

Digital Manufacturing

The proposed Center of excellence focuses at Digital manufacturing. Digitalization is changing our daily lives and revolutionizing the world economy. Successful companies are seizing the opportunities offered by digitalization for lower costs, improved quality, support individualized production, and provide flexibility and faster response to customer/market demands and new business models. We are in the midst of the digital industrial revolution.

Digital Twin

Industries are upgrading phase to Industry 4.0, which originates from the concept of Digital twin. Digital Twin is an accurate virtual representation of products, processes, operations, and performance. For products and assets, a digital twin flows from a geometric model. But it's not a single representation — it's a twin for each product sold, each piece of equipment in a factory, or every item in an installed base. The goal is to provide DVR-like capability — I can rewind to see what happened, play to see what is happening, and fast-forward to see what might happen (a simulation).

The value of the digital twin in manufacturing offers a unique opportunity to virtually simulate, validate and optimize the entire production system. It also lets you test how the product with all its primary parts and sub-

assemblies will be built using the manufacturing processes, production lines and automation. Hence in the center of excellence there should be advanced product design and process design software that can connect to the hardware provided in the other labs to form Digital twin / Digital manufacturing. The proposed list of labs in this Center of Excellence should encompass upcoming manufacturing technologies related to industry 4.0 (Digitalization).

Note: The Digital twin for at least 4 of the hardware labs should be recorded in a video format and submitted along with the proposal in a USB Drive (Mandatory labs for which the Digital Twin should be provided are industry 4.0 Lab, Mechatronics Lab).

Scope of the Labs:

S. No	List of labs
1	<p>Product Design lab</p> <p>The Design Lab should consist of advanced Computer Aided Design (CAD), Computer Aided Engineering (CAE) and Computer Aided Manufacturing (CAM) software. These Solutions assist the students to understand engineering design and analysis. The Product Design Lab would cater to the following areas</p> <ul style="list-style-type: none"> • Industrial Design & Styling • Package Design • Mechanical Design • Electromechanical Design • Mechatronics concept Designer • Mechanical Simulation • Electromechanical Simulation • Tooling, Die & Fixture Design • Machining • Quality Inspection • Design for Additive Manufacturing
2	<p>Design and Prototyping lab</p> <p>Rapid prototyping should have equipment that can quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data. In the Rapid Prototyping (RPT) Lab the students are taught how to design and manufacture using the RPT Machine. We are looking at a industrial based RPT with a minimum size of 350mm x 250mm x 350 mm (X, Y, Z).</p>
3	<p>Industry 4.0 - Smart Manufacturing lab</p> <p>Industry 4.0 / Smart manufacturing should have equipment with automated way of controlling and managing the manufacturing process in a factory. It should consist of many processes involved in manufacturing such as</p> <ul style="list-style-type: none"> • Manufacturing (Machining process) • Inspection & Quality Control • Assembly • Raw Material & Finished Good Storage • Material handling & Transfer Systems • Digitalization of manufacturing • Data Management and RFID communication system

	<p>The concept 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.</p> <p>The Industry 4.0 setup and the software provided in the Manufacturing process lab should be able to interface for the Digital Twin, which should emulate and simulate the physical system with identical properties and possible to transfer the program from the manufacturing Process lab to the Industry 4.0 lab – for control and operation of the hardware.</p> <p>It should be possible for the digital twin to be scaled up and shown as a complete factory in the Manufacturing Process Lab. The Product should be IoT ready and possible for an IoT system to be connected to the hardware and collect data and monitor performance, in the future.</p>
4	<p>PLC and SCADA automation lab</p> <p>This Lab should consist of Hardware and software allowing students to understand the requirement and functioning of Programmable Logic Controllers (PLCs). Here the students should learn how to Program Industrial PLCs, work with Industrial Human Machine Interface (HMI), Industrial SCADA (Supervisory Control & Distributed Acquisition) and PLC networking using profibus and profinet.</p> <p>The PLC and SCADA system should be able to connect to the software provided in the Product design lab. The Mechatronics setup built/designed in the product design lab should be able to simulate the PLC Program written in the PLC Software. The PLC program should be transferred to the software in the product design lab via Profinet/Ethernet or any latest protocol for communication.</p>
5	<p>CAD/CAM Manufacturing lab</p> <p>The CAD/CAM Manufacturing lab should involve some advance CNC Machining center with more than 3 Axis. This should be industrial grade CNC Machines with a 5 Axis rotary table and suitable controller. The setup should involve other accessories like cutting tools, maintenance tools, Raw Materials etc.</p> <p>The CNC Machine should be able to interface with the Computer Aided Manufacturing (CAM) module of the product design lab to learn & create CNC Programs and validate the Machine Tool cutting operations and parameters.</p>
6	<p>Internet of things</p> <p>The Internet of Things, or IoT should cover the following topics for the students in the Internet of Things (IOT) Lab:</p> <ul style="list-style-type: none"> ● Connecting Things – Appropriate Gateway should be provided to connect different sensors and collect Data. ● Data Analytics – Students should be able to write their own algorithm to analyze the kind of data needs to be filtered. ● Application Development – Students should be able to develop their own application to display the right Data. ● Enterprise Deployment – Application deployment in the cloud

	<p>The IoT lab should be able to connect to the Smart Factory Lab, mechatronics lab, CNC Machine lab for Data collection and analysis. If there are additional labs that can be connected to the IoT, Kindly list it out with details.</p>
7	<p>Manufacturing Process lab</p> <p>The Manufacturing process Lab should consist of Digital Manufacturing Solutions which assist the students to understand manufacturing planning and validation. The lab should also consist of the Product Lifecycle Management Solution which allows students to learn the enterprise solutions of product development from end to end. It should cater to the following areas:</p> <ul style="list-style-type: none"> • Process Planning, Electronic Work Instructions and BOM Management • Dimensional Quality • Layout and Plant Simulation with integration to Design of Experiments • Design for Assembly, Design for Manufacturing, Design for Maintenance • Ergonomic Analysis • Robotic Simulation, Offline Programming and Realistic Robot Simulation (RRS) • Virtual Commissioning • Build Quality Tracking & Shop Floor Integration
8	<p>Mechatronics lab</p> <p>The Mechatronic lab should have equipment that will bring together different technologies and departments of engineering like Mechanical, Electrical, Electronics & Communication and Computer Science. The equipment should allow students to work on a mini factory setup that consist of various items working on areas such as Pneumatics & Hydraulics, Sensors, Communication Protocol, PLC programming, PLC Networking using profibus and profinet. The mechatronics kit should be able to interface with the software in the Product design lab for digital twin. It should be possible for the digital twin to be scaled up and shown as a complete factory in the Manufacturing Process Lab. The Product should be IoT Ready and able to communicate to IoT system to collect data and monitor performance, in the future.</p>
9	<p>CNC Controller lab</p> <p>This Lab should have equipment that can enable students to understand the concept of CNC Programming and work real time different controllers for Turning and Milling applications. The students should be able to work on advanced controls that can support programming upto 31 Axis. This would enable students to program complex jobs.</p> <p>The CNC controller should be able to interface with the product design lab to learn & create CNC Programs and validate the Machine operations and parameters. The students can learn how to program and test the CNC Program. The Lab should also focus on the usage and functionality of HMI for diagnostics and troubleshooting. Should have a rack to explain how CNC Programs control the Drives and Motors.</p>

10	<p>Automatic welding using Robots</p> <p>In this lab there should be different types of welding which is controlled and programmed by robotics. We would be teaching the students to understand the working principals of a Robot, how to program it and apply it to an application. There would be two (2) robotics cells catering different applications, they are:</p> <ol style="list-style-type: none"> 1. Spot Welding 2. Pulse MIG Welding <p>The robot should be provided with the complete cell consisting of the below items.</p> <ul style="list-style-type: none"> - Articulated robot - Welding system, Welding fixtures & accessories - Wire feeder - Robotic Welding Torch - Electrical panel and accessories - Safety equipment like glass partition or Curtain - Welding machine consumables - Raw materials for testing. <p>The robots should be able to interface with the software provided in the Manufacturing process lab for Offline programming & Digital Twin. It should be possible for the digital twin to be scaled up and shown as a complete factory in the Manufacturing Process Lab. The Product should be IoT Ready and able to communicate to IoT system to collect data and monitor performance, in the future.</p>
11	<p>Sensors and Instrumentation lab</p> <p>The Process Instrumentation Lab should enable students and industries to work on Advance Automation using Distributed Control Systems (DCS) and understanding the working of the following equipment's in a plant. The types of sensors offered should include Temperature, Flow, Level, Pressure, Sensors/Measurements & Communications</p>
12	<p>Computer Aided Engineering (CAE) and analysis lab</p> <p>The CAE Lab should allow testing and mechanical simulation to model-based systems engineering. It should enable engineers to understand the functional performance engineering of mechatronic systems to solve noise, vibration and harshness (NVH), acoustics, durability, dynamics, performance, fuel economy and controls development issues.</p> <p>The 3D CAE should help students and industry predict performance across all critical attributes earlier and throughout the entire product lifecycle. The computational fluid dynamics solution should allow students & industry to simulate almost any engineering problem that involves the flow of liquids, gases (or a combination of both), together with all of the associated physics.</p> <p>It should also consist of a Physical Test Bed for carrying out analysis such as NVH, Acoustics, etc. on products such as a scaled down plane model and a two wheeler (2/4 Stroke IC Engine and Electric), along with appropriate sensors and SCADA Systems.</p>

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Motors and drive control lab

The Lab should consist of equipment focusing on the following areas;

- AC/ DC Drives: Should be able to teach students on the usage of drives from the industries where they are used to how to vary the speed as per process/application requirement and how it controls the various motor parameters. Drives PLC Networking using Profibus or Profinet.
- Switchgears: Students should be introduced to how in power system switchgears are used to control, protect and isolate electrical equipment's. Low voltages switchgears also used in residential, industrial and commercial segments.

Scope of Services:

<i>S. No</i>	<i>Description</i>
1	<p>Project Management</p> <p>Once when the MoU is signed and PO is released, the Partners should work closely with Institute in planning and execution of the COE.</p> <ul style="list-style-type: none"> - Should define the delivery timelines. - Should work closely with the Client for the site readiness - Responsible for commissioning of all the items and ensure the entire lab is up and running. - Conduct Train the Trainer - Conduct One Industry Seminar every Semester -
2	<p>E-learning courseware</p> <p>A complete list of interactive E-Learning covering the below topics should be also provided along with the entire setup. The courses should be clearly broken down into Number of hours, designed it in a structural way allowing the trainees to pick courses at different levels. These courses should be compatible to the NSDC aligned programs as well.</p> <p>All the courses should be online version. An evaluation login or access should be submitted along with the Proposal for evaluation for CNC and Robotics Technology.</p> <p>The Digital library should be a collection of Reference, Learning and Training material in Advanced Manufacturing Technology. The technologies covered are CNC, Robotics, Automaton and Mechatronics. This library should be applicable to all engineering levels – Universities, Institutions, Polytechnics, Training Centers and Corporate learning centers. Many institutions have already begun the task of converting their traditional collections of books and educational materials to electronic format: HTML, PDF formats or eBooks. Features of the Digital Library should be:</p> <p>Comprehensive Coverage</p> <p>The Digital Library should offer a wide range of content in Advanced Manufacturing Technology. The content should align with current industry demands and oriented to build skills while enhancing learning. Students can access the content across different branches of engineering and application.</p> <p>Access at Your Fingertips</p> <p>It should give access to multiple contents accessible from any computer in our institute and access must be through the internet. Students should be able to learn at their pace. Multiple students should be able access the same content from a Digital Library unlike a book which will have limited number of copies.</p> <p>Interactive Content</p> <p>The content should be highly interactive and interesting. Using this Multimedia Digital Library students should be able to understand various concepts with the help of rich</p>

	<p>Graphics, Animations, Videos and Voice over.</p> <p>The courses should be to be managed by a Learning Management System (LMS).</p> <p>Learning Management System – Features required are</p> <ul style="list-style-type: none"> ● Friendly and attractive user interface with a 3-tier architecture for managing clients ● Dashboard for viewing all relevant information on the platform in one glance (for each tier above) ● Comprehensive reports, based on users, courses, and enrolments ● Ability to add varied types of content, including PPT, PDF, videos, assignments, etc. ● Availability on mobile and tablet devices ● Batch user import (for adding a large number of users to the LMS in one go) ● Support for learning best practices such as spaced retrieval <p>It should be possible to generate the following reports from the MIS:</p> <ul style="list-style-type: none"> ● MIS on number of courses conducted. ● Course wise enrolment. ● Preferred Courses ● Enrollment Vs Successful Completion ● Categorization of trainees – students/ faculty / industry / specialization <p>eLearning Content to be offered for the following technologies:</p> <ul style="list-style-type: none"> ● Industry 4.0 - Smart Manufacturing ● PLC, Automation ● CNC ● Robotics ● Electrical Motors and Drives ● Mechatronics ● Sensors and instrumentation ● CAD ● CAM
3	<p>Lab Management</p> <ul style="list-style-type: none"> ● The COE should work in the BOT Model (Build, Operate and Transfer Mode) for a period of 3 years. ● At least 14 Engineers with mix of experience must be deputed for this period for individual labs who will be the technical resource for the respective labs. ● The Engineer’s activities are to conduct training activities, support our faculties technically in the research and industrial consultancy. ● The engineers should have good written & oral communication, domain expertise, flair for teaching & conversant with engineering software. ● Senior Trainers should have minimum graduate or post graduate qualification in engineering and minimum 3-4 years of experience. ● Trainers should have minimum Diploma or Graduate qualification in engineering and 2-3 years of experience. ● There should also be a center manager deputed by the technology partner or executing partner who would be supervising the activities like enrollment of students, certification for students, Seminars and conferences being conducted, Maintenance of reports of the center Activity.

- The center Manager should have minimum a graduate or Post graduate qualification in Engineering with minimum 6-8 years of experience and 2-3years of experience in Project management.

SCOPE OF WORK –

Supplier should provide the following –

- Managing the equipment in the lab and conducting the skill training programs
- Ensuring trainer availability for the training programs
- Provide update course material.
- Maintain the equipment for the duration of the BOT period
- The Center Head appointed by the TP will mobilize the students from institutes other than NIT Warangal. The TP should provide training to a minimum of 15,000 students over a period of 3 years during the period of MoU.

TP and their Execution partner will manage the labs assigned by performing the following activities -

COURSES SCHEDULING AND IMPLEMENTATION OF TRAINING PLAN

Supplier shall be responsible for scheduling, conducting Training. Supplier will present the schedule to the Project Manager of the institute and get it approved and declare it.

INSTITUTE will market the course and enroll the participants and schedule participants and other activities essential to training.

Training plan, including procedures for course enrolment, reporting of course progress, course completion and certification, monitoring of the training program, training records.

TRAINING METHODOLOGY

Supplier should use digital material to teach theory, to make the understanding easy. Supplier will follow theory in learning and simulation for practical and usage of equipment to complete the effective learning and completion of the course. Knowledge checks will be used effectively to monitor the process during the training.

EVALUATION PROCESS & CERTIFICATION

There should be pre and post course test will be conducted for the participant to monitor the learning and understand the knowledge level prior to the course.

The eligible participant should be given certificates. The evaluation process can be determined by the supplier and process it accordingly.

The certification should be a tripartite agreement between Institute, the technology Partner and the service provider partner (if any).

AUDITING

Institute may conduct periodical audit of the center.

The audit includes both academic, and general, one senior executive (from the Institute) will be visiting the center and go through the activities carried out in terms of courses conducted, performance of the students and feedback given by the participants. The process also involves collecting the feedback on faculty, course, course ware and suggestions separately, so that clear complete relevant data is collected to work towards improvement. This information will be analyzed, and suggestions will be given to the tenderer to work towards improvement of the center. The suggestion should be documented and

	<p>implemented within a mutually agreed timeframe. This will not include replacement of any hardware / software / content.</p> <p>REPORTS</p> <p>Supplier will provide the following reports every quarter. The below reports are not exhaustive.</p> <p>MIS on number of courses conducted.</p> <p>Course wise students' enrolment.</p> <p>Course wise skills gained</p> <p>List of successful students.</p> <p>Footfall to the Center.</p>
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Role of the TP and their Execution Partner:

The role of this TP and their Execution Partner shall include the following:

1. To design the CoE and to develop a three years strategic rolling plan for the CoE along with the client and be responsible for implementing the plan.
2. Identify and formulate training programmes to develop skills in futuristic/ disruptive technologies and associated skill sets required for industry ready.
3. To develop courses, course content, course work, manuals, standard operating procedures and standards, disseminate the same with the overall intent of improving the skill sets of individuals
4. To impart high-end skills (and not generic skills) to Students, unemployed individuals and employed individuals (looking to up skill/ re-skill themselves).
5. To conduct train the trainer programmes.
6. To conduct need based/ on-request training programmes to cater to specialized requirements of corporate, and to generate revenues through these programmes.
7. To carry out assessment, certification of trainees.