



Date: 29th August 2018

Memorandum of Understanding

Texas Instruments Innovation Center (A partner of Texas Instruments India University Program)

1. Introduction

India has become a promising investment destination for foreign companies looking to do business here. Our Honorable Prime Minister of India Shri Narendra Modi has launched the '*Make in India*' initiative with the aim to give the Indian economy global recognition. This initiative is expected to spur development, economical growth and thereby improving the living standard of Indian Citizen.

Engineering education has to play very important role in providing huge pool of skilled and knowledgeable, and industry ready engineers. The future success of Indian industry depends on the growth of quality engineering education in India, especially since Indian industry is competing globally in areas such as software and hardware electronics, automobiles, pharmaceutical, chemicals, engineering equipment etc. In India, the brightest students opt for engineering after the 12th standard. This has resulted in a spurt of engineering colleges. However, the reality is that only a very small percentage of these students are readily employable (@25% or less as per the survey by Nasscom) and most lack industry specific skills. In order to bridge this gap between the academia and the industry and to ensure ready deployment in regular work streams, structured industry specific training is necessary.

2. Brief Introduction about Vaagdevi College of Engineering, Warangal

Vaagdevi College of Engineering is established in the year 1998 and sponsored by in the Viswambhara Educational Society (Estd. In the year 1993) of Warangal established by philanthropists and elite people, with a view to impart technical education to, students, of rural background. Since its commencement of Vaagdevi College of Engineering has produced more than 15000 graduates who are technically sound in their fields and thus enjoy the enviable reputation among the reputed institutions. The institution has been constantly growing in every aspect including infrastructure, placements and strength of students. The campus is located in a sprawling area of 25 acres land with picturesque surroundings prevailing serene and calm atmosphere. It is situated on the Khammam highway about 10 km from Warangal railway station. Today Vaagdevi College of Engineering is known for its academic excellence with well planned classrooms, well-equipped laboratories, seminar halls and an auditorium with 600 seating capacity and built-in audio-visual aids and good sport facilities along with gymnasium. The college has a huge collection of books and also subscribes various national and international journals. A state-of-art digital library has been established in order to provide access to NPTEL video lectures, several e-books and e-journals. The campus is Wi-Fi enabled and excellent infrastructure, and well designed buildings with aesthetic beauty.

It gives us immense pleasure to share our happiness that our college has been granted First Autonomous Engineering College status in Warangal by UGC, New Delhi for the period of six years from 2014-2015 to 2019-2020. Accredited by NBA, ISO 9001: 2008 certified institution and also applying for NAAC accreditation.

We have large number of doctoral faculty and senior faculty members from reputed institutions like IIT and NITs, nearly 52 faculty members are pursuing their Ph.D.

3. Brief Introduction about EdGate Technologies Private limited

EdGate Technologies Private Limited are Texas Instruments India University Program Partners. EdGate has an extensive presence all over the country and well established connectivity within the

academic and corporate communities. Our aim is to reach out to the Corporate, educators and the engineering student community to help them achieve more in their research and their learning initiatives.

Services offered to Universities under Texas Instruments India University Program

- Presales Guidelines
- Sales and Continuous Post Sales support
- Installation and Training
- Train the Trainer Program (Customized)
- Seminar/Workshop (Customized)
- Faculty Development programs (Customized).

EdGate has setup Texas Instruments Labs in various Engineering colleges across India. EdGate has signed 150 + MOU's and 25 TIIC's with Engineering colleges under Texas Instruments University Program

EdGate Technologies provide a whole range of services by leveraging its business expertise by strategic alliances with leading technology providers & are Sole authorized distributors of following Partners

- Mango Communication, USA : Mango has its roots in the Rice University Wireless Open-Access Research Platform (WARP) project, originally an NSF-funded research project that has grown into a self-sustaining open-source wireless research platform.
- SoftDB, Canada (Texas Instruments – Third party developer)
- Technosoftmotion, Switzerland (Texas Instruments – Third party developer)
- Next Dimension Technology, Korea (Texas Instruments – Third party developer)
- Rowley Associates, United Kingdom
- Embest Technology Co Ltd, China (Texas Instruments – Third party developer)
- Zeeis, China (Texas Instruments – Third party developer)
- Link Research, USA (Texas Instruments – Third party developer)

Texas Instruments University Program

The TI University Program is the intersection between TI technology, educators and the engineers of tomorrow. Our advanced analog and embedded processing technologies fuel the passions of students and educators in university labs worldwide. Established in 1982, the TI University Program is a global program dedicated to supporting educators, researchers and students in facilitating the inclusion of TI analog and embedded processing in engineering classrooms,

teaching and research labs, textbooks, design projects and course curriculum. By building relationships with educators, TI works to bridge the gap between the business and academic world. Incorporating TI technology into curriculum provides educators with the ability to teach real world concepts and complement this with a unique hands-on learning experience utilizing TI tools, making it more exciting, relevant and valuable to the student. Working with TI increases the knowledge base of future engineers so they interact with industry-standard technology before they graduate. TI helps develop the skills needed to tackle tomorrow's most challenging problems. By providing students access to the largest and most advanced analog and embedded processing portfolio, the TI University Program provides the tools necessary to inspire innovation and take engineering concepts from the book to the breadboard.

1. **Contribution and Expectation of EdGate Technologies under Texas Instruments India University Program**

As on-ground deliverables, EdGate Technologies will provide the following:

- a) **Curriculum:** EdGate will provide the Curriculum for Texas Instruments Labs .College Name should find ways to incorporate curriculum in their syllabus.
- b) **Lab Setup:** The College will set up a lab which will be entitled "Texas Instruments Innovation Lab" at its premises.
- c) **Faculty Development Program:** College Name will organize at least one faculty development program in its premise for its faculty members and faculty members of other Indian engineering institutions to teach TI Platform. The College will provide the infrastructure facility for conducting the faculty development program. **EdGate Technologies Pvt Limited** will help the college in conducting this program.
- d) **Workshops/Events:** If the College wishes to organize a national event in the area of TI Platform, **EdGate Technologies Pvt limited** will provide speakers.
- e) **Training Programs:** **EdGate Technologies Pvt Limited** will assist the college in organizing training programs/tutorials on topics related to TI Platform. Faculty members from the college who have undergone train-the-trainer program and who are certified by **EdGate Technologies Pvt Limited** as trainers may run certified training programs. College Name will provide certificates for the participants of such programs. (Valid for 1 year only)
- f) **TI Lab Engagement Program:** **EdGate Technologies Pvt. Limited** will help the **K. Ramakrishnan College of Technology, Trichy** to get engaged into the **TI Innovation Center Labs** under this program over a period of 3 months at three different levels i.e., Basic, Intermediate and Advanced.
- g) **Under TI Lab Engagement Program,** College Name in association with **EdGate Technology Pvt. Limited**, may organized and conduct Summer/Winter Training Program for the students from all the nearby engineering institutes along with students from their college by charging moderate fees. **EdGate Technologies** will provide experts for such program on subsidies charges. **EdGate** will certify those students.

2 **Contribution from Vaagdevi College of Engineering, Warangal**

Faculty Mentor: Qualified Faculty of Electronics & Communication Engineering, Instrumentation & Control Engineering, Biomedical Instrumentation, Computer Engineering, and Information Technology (preferably with programming knowledge on C; C++) will be made point of contacts and will mentor interested students.

Vaagdevi College of Engineering, Warangal should set up lab based on below:

Sr. No.	Item	Quantity	Approximate Cost
	Cost of Texas Instruments Innovation Center: Below items will be delivered	Below Package	3.75 LAKHS
1.	ROBOTICS ADVANCE CONTROL AND IOT		
A	Robotics System Lab Kit	8	
B	Senzband with Mind Sync and Memorie App	2	
C	RSLK compatible sensors and Bluetooth Module	2 Set	
a	PIR sensor		
b	HM-10 Bluetooth module		
C	ultrasonic sensor		
D	Servo motor		
E	moisture sensor		
F	Buzzer		
G	Dedicated Edgate Apps for RSLK		
2.	Analog Attach MCU Labs (ARM)/Embedded Lab: A secondary Element that attached to Micro controller Lab		
A	ASLK Pro	1	
B	Analog in A Box	2	
C	CC110L Booster pack	2	
D	TIVA TM4C123G Launchpad	10	
E	Sensor Hub Booster Pack	2	
3.	Connectivity Attach Lab (Ultra Low Power Lab/Internet of Things Lab (IOT)) : A secondary Element that attached to Micro controller Lab Or stand alone solution focusing on connectivity		
A	Ez430RF-2500 MSP430 Wireless Development Tools	2	
B	C2650 Bluetooth Booster pack	2	

C	SimpleLink Wi-Fi CC3100 Booster Pack	2	
D	CC3220SF- WiFi Launch Pad	2	
E	msp432p401R Launch Pad	3	
F	MSP430F5529 USB Launchpad Evaluation Kit	5	
G	Sensors: Sound Sensor 3-Axis Accelerometer Ultrasonic Sensor Electret Microphone Water Sensor Temperature Sensor Light Sensor	1 Each	
4	Training for Faculty(Advance Robotic Control and IOT)	3 Days	
5	Training to students(IOT Training) : Registration Material to all participants (Pens, Pads, Folders)- Internet facility is must for workshop, Certificate to all participating students	50- students/ 20 – faculty (3 Days for students)	
6	TI Lab Poster and TI Lab Signage(Branding Material)	1 Set	
Terms and Conditions :			
1. Payment: 100% Payment in advance 2. Warranty: 1 Year 3. Validity: TIIC Agreement is perpetual and Training agreement is valid for one year only 4. Taxes: GST @18%			

- a) Center: Institute will identify and maintain Texas Instruments Innovation Center with at least 10 desktops / laptops on latest home/ office configuration.
- b) Peripheral components: Institute will make arrangement for other equipment required for setting up the lab and for the maintenance of the lab.
- c) Financial: Institute will operate the center with the help of existing staff.

Vaagdevi College of Engineering, Warangal – Texas Instruments Innovation Center (TIIC)

EdGate Technologies aimed at establishing a collaborative bridge between companies and colleges with the objective of making students in the Engineering Colleges and Schools have a greater hands on experience in technologies related to :-

- a. Embedded systems
- b. Ultra Low Power Applications
- c. Analog System Design
- d. Internet of Things (IOT)
- e. Robotic lab

These programs would go a long way to get the students hands on project experience in state of the art Micro-controller boards which are being developed by Texas Instruments. The experience will include hands on software and hardware skills which are highly desired by industry. These projects will provide an experiential appreciation of the latest technologies giving the students significant edge across multiple dimensions like, knowledge, enhanced employability, project experience, etc.

Vaagdevi College of Engineering, Warangal – TIIC will bring in the following core values:-

Colleges:

- Analog System Design Lab using ASLK PRO
- Ultra Low power Microcontroller Lab
- Internet of Things technology is based on the traditional Internet technology, development and extension, due to its extremely wide range of applications, involving almost all walks of life, and therefore in order to meet the needs of industry professionals, a growing number of colleges and universities applied for Internet of Things engineering professional, in teaching programs arranged in Internet of Things technology courses.
- Strong Branding and ability to attract better quality students
- Better ranking amongst the competition

Students:

- Exposure to state of the art technologies through hands on learning experience
- Better employability opportunities
- Showcase talent and innovation
- Participating in Texas Instruments Innovation Challenge.(If Texas Instruments conducts any contest centre will be connected with the same)

Vision forward

Texas Instruments hopes that once these Innovation centres are in place and running, If Texas Instruments conducts any contest centre will be connected with the same.

Restrictions and Obligations Governing the Use of Confidential Information and Materials

- a) Recipient shall not disclose any Confidential Information/Confidential Material, to third parties without the prior written authorization of the Company. Notwithstanding the foregoing, the Recipient shall not at any time disclose to any third party any Confidential Information/Confidential Material or any Confidential Information of any other party to whom the Company owes an obligation. However, the Recipient may disclose Confidential Information in accordance with judicial or other governmental orders, provided the Recipient shall give the Company reasonable notice, prior to such disclosure and shall comply with any applicable protective order or equivalent.
- b) The Recipient shall not use any Confidential Information or Confidential Materials of the Company for any purposes except those expressly contemplated hereby or as authorized by the Company.
- c) The Recipient shall take reasonable security precautions, which shall in any event be as great as the precautions it takes to protect its own confidential information, to keep secure the Confidential Information.

- d) Recipient agrees to segregate all such Confidential Materials from the confidential materials of others to prevent co-mingling.

Rights and Remedies

- a) Recipient shall notify the Company immediately upon discovery of any unauthorized use or disclosure of Confidential Information or Confidential Materials, or any other breach of this Agreement by Recipient, and will cooperate with the Company in every reasonable way to help the Company regain possession of the Confidential Information and/or Confidential Materials and prevent further unauthorized use or disclosure.

For Vaagdevi College of Engineering, Warangal


Principal.

For EdGate Technologies Pvt Limited

Director.

