



Establishment of Center of Excellence

Internet of Things (IoT)

[Established on 19/01/2024]

1. Introduction

The rapid growth of the Internet of Things (IoT), Artificial Intelligence (AI), Industry 4.0, Digital Twins, Edge Computing, and Cyber-Physical Systems is transforming industries, cities, healthcare, agriculture, transportation, and daily life. IoT is emerging as a key enabler for digital transformation by connecting devices, sensors, machines, and people through intelligent networks.

Recognizing the increasing demand for skilled professionals, innovative solutions, and research in IoT technologies, Amity University Rajasthan proposed the establishment of the Centre of Excellence Internet of Things (IoT) (CoE-IoT).

The Centre will serve as a multidisciplinary platform for research, innovation, product development, industry collaboration, startup incubation, skill development, and technology commercialization in emerging IoT domains. The Centre aims to bridge the gap between academia and industry while contributing to national missions such as Digital India, Smart Cities Mission, Industry 4.0, Startup India, and Atmanirbhar Bharat.

2. Vision

To establish the Centre of Excellence IoT as a nationally recognized hub for innovation, research, entrepreneurship, and industry-driven solutions in Internet of Things technologies.

3. Objectives

The primary objective of the Centre of Excellence IoT is to create a vibrant ecosystem for learning, innovation, research, entrepreneurship, and industry engagement in emerging digital technologies.

Specific Objectives

- Develop industry-ready IoT professionals through hands-on learning.
- Promote interdisciplinary research in IoT, AI, Digital Twins, Edge Computing, Smart Systems, and Industry 4.0.
- Encourage innovation, patent filing, and technology commercialization.
- Support startup incubation and entrepreneurial initiatives through Amity Innovation Incubator.



- Strengthen industry-academia collaboration through MoUs, internships, consultancy, and sponsored projects.
- Facilitate funded research proposals to national and international agencies.
- Develop smart solutions addressing societal and industrial challenges.

4. Sustainable Development Goals (SDGs) Linked with CoE- IoT Activities

The activities of CoE- IoT shall contribute to the following UN Sustainable Development Goals:

SDG 4 – Quality Education : Skill development and industry-oriented learning.

SDG 8 – Decent Work and Economic Growth : Entrepreneurship, startups, and employment generation.

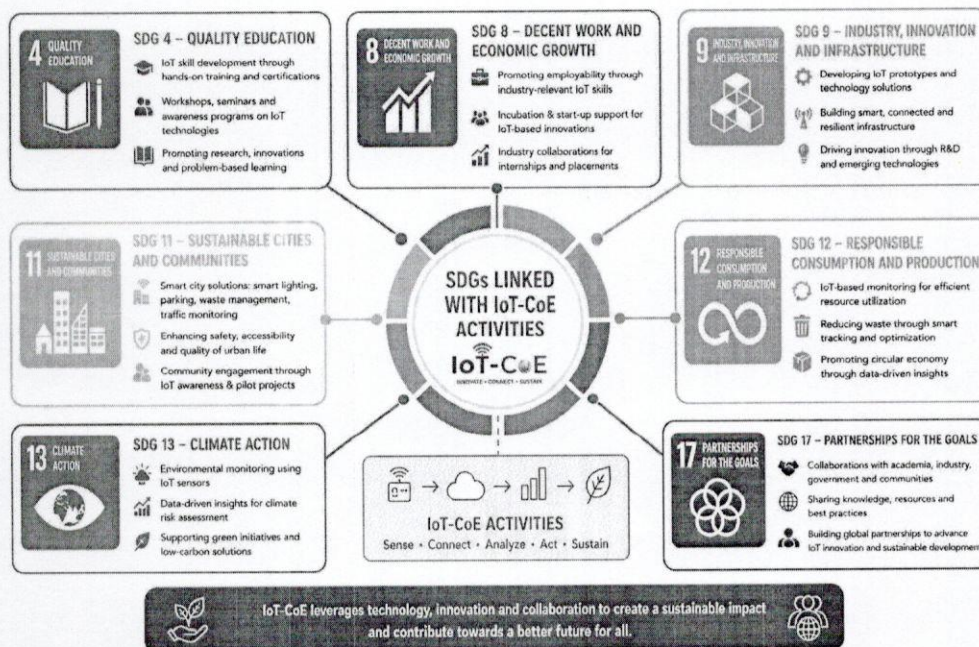
SDG 9 – Industry, Innovation and Infrastructure : IoT-enabled industrial innovation and smart manufacturing.

SDG 11 – Sustainable Cities and Communities : Smart city applications and intelligent urban infrastructure.

SDG 12 – Responsible Consumption and Production : Smart energy monitoring and resource optimization.

SDG 13 – Climate Action : Environmental monitoring and sustainability solutions.

SDG 17 – Partnerships for Goals : Industry-academia-government collaborations.



5. Functions of Centre of Excellence IoT

The Centre will perform multidisciplinary functions encompassing education, research, innovation, entrepreneurship, and industry engagement.



5.1. Research and Development

- Advanced research in IoT, AI, Digital Twins, Embedded Systems, and Edge Computing.
- Development of smart sensing and intelligent monitoring systems.
- Research publications in high-impact journals and conferences.
- Patent generation and technology transfer.

5.2. Skill Development and Training

- Hands-on workshops and certification programs.
- Faculty Development Programs.
- Industrial training and internship support.
- Student innovation projects.
- Summer training and Internship program

5.3. Innovation and Entrepreneurship

- Startup mentoring and incubation support.
- Hackathons, ideathons, and innovation challenges.
- Product development and prototype creation.
- Commercialization support through industry partners.

5.4. Industry Collaboration

- Industry-sponsored projects.
- Consultancy services.
- Collaborative research programs.
- Industrial visits and expert lectures.

5.5. Outreach and Community Development

- Awareness programs on Industry 4.0 technologies.
- School outreach activities.
- Technology demonstrations for rural and societal applications.

6. Operational Framework of the Centre

The CoE- IoT shall function through a collaborative governance structure consisting of:

- Industry Advisory Council
- Core Team
- Student Innovation Team

The Centre shall conduct quarterly review meetings to monitor progress against annual targets.

7. Outreach Activities

The Centre will organize Expert Lecture Series, Industry Connect Sessions, Workshops and Bootcamps, Hackathons and Competitions, IoT Innovation Expo, National Startup Day Celebrations, World IoT Day Celebrations, School and Community Outreach



Programs, National and International Conferences, and Summer training and Internship program etc.

8. Infrastructure and Facilities

The Centre shall utilize existing infrastructure and resources available at Amity University Rajasthan and shall progressively strengthen facilities to support its activities.

9. Expected Outcomes and Impact

The establishment of the Centre of Excellence Internet of Things (CoE-IoT) is expected to significantly contribute to teaching, research, innovation, entrepreneurship, and industry engagement at Amity University Rajasthan. The Centre shall strive to achieve the following outcomes annually:

- Train and certify more than 200 students in IoT, Embedded Systems, Industry 4.0, Artificial Intelligence, and related emerging technologies.
- Encourage and guide students to develop at least 10 innovative projects addressing industry and community needs.
- Facilitate the publication of a minimum of six research papers in reputed national and international journals and conferences.
- Promote innovation and intellectual property generation through the filing of at least three patents annually.
- Establish and strengthen collaborations through four industry partnerships/MoUs with leading organizations working in IoT and digital technologies.
- Submit at least two research and innovation project proposals to national funding agencies such as DST, AICTE, MeitY, MSME, and other relevant organizations.
- Mentor and support a minimum of six startup ideas emerging from students and faculty members.
- Facilitate the incubation of at least six technology-based startups through the Amity Innovation Incubator and associated entrepreneurial ecosystem.
- Enable twenty industry internships for students to enhance practical exposure and industry readiness.
- Undertake one to two consultancy assignments in collaboration with industry partners and government organizations.
- Mobilize external funding of approximately Rs. 2-3 lakh annually through sponsored projects, consultancy activities, training programs, and industry collaborations.
- Strengthen interdisciplinary research, innovation culture, and industry-academia engagement across the University ecosystem.

The Centre aims to emerge as a recognized hub for IoT innovation, digital transformation, and smart technology development.



10. Five-Year Activity Plan

Year 1: Establishment and Foundation

- Formation of Advisory Board and Core Team.
- Infrastructure setup and laboratory strengthening.
- Launch of IoT workshops and certification programs.
- Industry collaborations and MoUs.
- Student innovation projects.
- Research publication and patent initiatives.

Year 2: Expansion and Industry Integration

- Industry-sponsored projects.
- Consultancy activities.
- Advanced certification programs.
- National-level competitions and hackathons.
- Startup incubation support.

Year 3: Innovation and Product Development

- Development of market-ready IoT solutions.
- Technology commercialization.
- International collaborations.
- Increase in patents and funded projects.

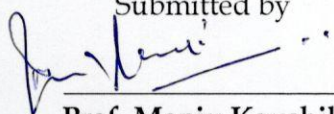
Year 4: Research Leadership

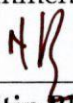
- Establishment of specialized research groups.
- International conference organization.
- Expansion of funded research portfolio.
- Development of smart city and Industry 4.0 solutions.

Year 5: National Centre of Excellence

- Recognition as a premier IoT innovation hub.
- International partnerships.
- Sustainable revenue generation.
- Large-scale technology transfer and startup ecosystem development.

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