

I.	<p>NAME OF THE CENTER ALONG WITH FULL ADDRESS AND CONTACT DETAILS (E-MAIL, MOBILE, FAX, ETC.)</p> <p>National Institute of Electronics and Information Technology, P.B. No. 5, NIT Campus Post, Calicut – 673601, Kerala.</p> <p>Contact : Executive Director, email : dir-calicut@nielit.gov.in calicut@nielit.gov.in Telephone: 0495 2287123, Mob: +91 9446026809, Fax: 0495 2287168</p>
II.	<p>RGENERAL INTRODUCTION ABOUT THE CENTER, ITS HISTORY, AREAS OF EXCELLENCE, EXPERTISE, INTERNET FACILITY (WITH SPEED), ETC.</p> <p>National Institute of Electronics and Information Technology, Calicut (<i>erstwhile Centre for Electronics Design and Technology-CEDT</i>) was established in the year 1989. Since then the Centre is engaged in the conduction of industry oriented quality education and training in the state-of-the-art areas through various formal and non formal courses. Also implementing various Government Schemes related to capacity building , R & D , product development and industrial consultancy services in the field of Information, Electronics & Communications Technology (IECT). The infrastructure is developed in a 25 Acre campus (<i>adjacent to NIT Calicut</i>) with several sophisticated laboratory , smart class rooms, IEEE on line access, NKN connectivity ,Mini Data Cente & 24x7 WiFi facility to students.</p> <p>In association with Dr APJ Kerala Technological University, the centre is successfully conducting AICTE approved M.Tech program in Embedded Systems & Electronics Design Technology . The centre is a recognised research centre of Calicut University to undertake PhD program in Electronics.</p> <p>In addition, PG Diploma programs & number of Advance Diploma, Diploma & Certificate courses in specialised areas like Embedded Systems, IoT, Industrial Automation, VLSI , Big Data Analytics , AI, 3D printing & Additive manufacturing, Cyber Security etc., are being offered by the Centre. These non-formal courses are aimed to provide value addition to formal degree programs to improve the employment opportunities.</p> <p>The beautiful lush green scenic campus houses, staff quarters, student hostel (Boys & Girls), canteen & guest rooms and recently a SBI ATM. It has highly motivated and dynamic engineers, many of who have been trained abroad in reputed universities & industries. The unique Kerala style architecture of the buildings, its proximity to world class institutes like IIM & NIT, and friendly atmosphere, make it an ideal place to pursue higher studies & research.</p> <p>The Centre has 5 excellent laboratories, fully equipped with the latest systems and development tools in the area of Embedded/IoT Systems, VLSI, Information Technology, Product Engineering and Process Control & Instrumentation.</p> <p>The centre is ISO 9001:2015 certified More details and ongoing programs are available at www.nielit.gov.in/calicut.</p> <p>Internet: Provided with NKN facility 1 Gbps & Multiple BSNL FTTH</p>

III.	DETAILS OF ACADEMIC AND PHYSICAL INFRASTRUCTURE INCLUDING:
i.	Title of the Land: National Institute of Electronics and Information Technology, Calicut
ii.	Areas of total available land in acre: 24.72
iii.	Areas of total available land in sq. mt.: 100038.29
iv.	Land type: Free-hold
v.	In case of lease hold, period of lease hold(in months): N/A
vi.	Total Built up area of Administrative building (in sq. meter): 311
vii.	Total Built up area of Academic building (in sq. meter): 2042
viii.	Total Built up area of Departmental Library and Central Library (in sq. meter): 252
ix.	Total Built up area of Other facilities (in sq. meter): 323
x.	No. of Lecture Halls: 7
xi.	No of Hostels (Boys and Girls separately) with students' accommodation: 5
xii.	No. of Teacher residence with faculty accommodation: 08
xiii.	Details of other common and recreational facilities: 1 Room for recreational facilities
xiv.	Playground area details: 300SqM
IV	Course wise details of the academic departments, Year of starting, number of programs, number of students in the department, number of teachers in the department, etc.
	<p><u>FORMAL COURSES :-</u></p> <p>M.Tech In Embedded Systems Design; APJ Abdul Kalam Technological University, Kerala ; Intake – 18, year of starting : 2004-05,</p> <ol style="list-style-type: none"> 1. M.Tech In Electronic Design Technology; APJ Abdul Kalam Technological University, Kerala ; Intake - 18 2. M.Tech in VLSI and Embedded Systems jointly with DIAT, Pune, Intake – 20, Year of Starting :2017-18 <p>➤ Embedded Systems Group & VLSI Group , No. of students : 56 No. of Teachers : 10 (2021-22)</p>

INFORMAL COURSES :-

The following informal programmes are conducted by the Embedded Systems Group, VLSI Design Group, Power Electronics Group, IOT Group, Information Technology Group, CAD/CAM group, and Control & Instrumentation Group.

- 1.PC100: PG Diploma in Industrial Automation System Design (Online & Regular class)
- 2.CAD100: Certificate Course in Computer Aided Design using CREO
- 3.CAD200: Certificate Program on CNC Machines & NC Part Programming
4. CAD100: Certificate Course in Computer Aided Design using CREO
5. Lab workshop on FPGA Architecture and Programming using Verilog HDL
6. Solar Power System
7. Solar Power Installation
8. EV Technology & Public Charging Station
9. Basics of MATLAB and Simulink
10. Cyber security Tools
11. Data Analysis using Python
12. Industrial Automation with PLC & SCADA
13. Industrial Training on 3D Printing/ Additive Manufacturing
14. EV Technology & Public Charging Station
15. Cyber security Tools
16. Machine Learning using Python
17. Certificate Course on Sustainable Manufacturing
18. CSEH100: Certificate Course in Cyber Security & Ethical Hacking
19. Training in CNC Mill and Lathe
20. Internship Program on Embedded & IoT Systems
21. Internship Training - Embedded System Design with Arduino Microcontrollers
22. Internship Training on Digital Signal Processing and its application (Ultrasound Imaging)

Projects:- Presently under implementation

- ✓ Skill Training for Empowering SC/ST in Kerala and Karnataka (MeitY)
- ✓ Chip to Systems Design (C2SD) (MeitY)
- ✓ ISEA – Phase 2 (MeitY)
- ✓ Future skills prime in 3D Print /Additive Manufacturing (Lead Centre) (MeitY)
- ✓ Future skills prime in AI, IOT (Co-lead centre) (MeitY)
- ✓ CARS (DRDO) (MeitY)
- ✓ Ultrasound scanner probe design & Development with CMET(MeitY)

V DEPARTMENT WISE LIST OF FACULTIES (BOTH REGULAR AND CONTRACTUAL) INCLUDING THEIR DESIGNATION, QUALIFICATION, PAY SCALE AND NO OF RESEARCH PUBLICATIONS, ETC.

Faculty Details attached

VI	<p>DETAILS OF ACTIVITIES BEING UNDERTAKEN BY THE RESPECTIVE CENTERS INCLUDING CAPACITY BUILDING AND R&D PROJECTS, OTHER PROJECTS, CENTER OF EXCELLENCE, DETAILS OF COURSES BEING OFFERED(FORMAL, NON-FORMAL, NSQF, ETC.), GENERAL ACHIEVEMENTS AND MAIN HIGHLIGHTS OF THE CENTER. INDUSTRIAL TIE-UPS, ETC.</p>
	<p>Details of ongoing Research Programs:</p> <p>1. Title and scope of the project: Design and development of ultrasonic transducer probes for medical imaging. Scope: To design and develop ultrasonic transducer probes (linear, phased and convex) for medical imaging applications</p> <p>Sponsoring agency : MeitY, GoI. Project Leader: Dr. Jayaraj U Kidav. Year in which started: 2021 Duration in Months: 36 Capital (Estimated in Lakhs): 305.5 Recurring (Estimated in Lakhs): 157.98 Total (Estimated in Lakhs): 463.48 Foreign Exchange (in INR): Nil Remarks: Project is jointly implementing by C-MET Thrissur and MCC Kannur.</p> <p>2. Title and scope of the project: Setting up of Skilled Manpower Advanced Training and Research facility under Chip to Start up Programme of MeitY, GoI. Sponsoring agency if any: MeitY, GoI. Project Leader: Dr. Jayaraj U Kidav. Year in which started: 2022 Duration in Months: 60 Capital (Estimated in Lakhs): 160.0 Recurring (Estimated in Lakhs): 240.0 Total (Estimated in Lakhs): 400.0 Foreign Exchange (in INR): Nil Remarks: Design and setting up of a remote hardware and embedded system design lab.</p>

3. Title and scope of the project:

Sponsoring agency if any:
Project Leader:
Year in which started:

Study and development of an efficient platform independent Memory Centric scheduler for Embedded Multi-core processors
DRDO, GoI.
Shri. Rajesh M
2021

COLLABORATIONS

1. IIT Madras- Biomedical Engineering Department for m signal processing and research.
2. IIT Madras - Electrical Engineering Department for VLSI Design
3. IIT Indore - Environmental CPS.
3. Defence Institute of Advanced Technology (DIAT) Pune- Electronics Engineering Department for joint M.Tech. in VLSI and Embedded Systems, Research collaboration.
4. NIT Trichy for R & D in electronics.
5. Centre for Materials for Electronics (C-MET) Thrissur for ultrasound sensor array development.
6. Malabar Cancer Centre - Radiology department, Thalassary for medical ultrasound imaging.
7. Govt. Polytechnic College for skill development in IECT.

LIST OF MOUS

1. MOU with Calicut University
2. MOU with NIT Puducherry
3. MOU with NIT Trichy
4. Research Collaboration with C-MET Thrissur for Ultrasound sensor Array Devt. & MCC Thalassery for medical ultrasound imaging
5. MOU with DIAT Pune (Deemed University) for joint M.Tech. in VLSI and Embedded Systems, Research collaboration
6. Industry Academia Collaborative Project with NIT Trichy
7. Govt. Polytechnic College for skill development in IECT
8. MOU with IIT Madras - Electrical Engineering Department for VLSI Design
9. MOU with IIT Madras- Biomedical Engineering Department for medical ultrasound signal processing and research
10. MOU with Malabar Christian College Kozhikode
11. MOU with TKMICTP Kollam for Open Skill Certification
12. MOU with Nextet Computer & Technical Centre Kannur for Open Skill Certification
13. MOU with ICFOSS, Govt. of Kerala

	14. MOU with IIT Kurnool 15. MOU with IHRD for Capacity building under funded project 16. MOU with Keltron for Capacity building under funded project 17. MOU with GTec for Capacity building under funded project 18. MOU with CPC Mysore for Capacity building under funded project 19. MOU with KASE for Skill Development Courses 20. MOU with VHSE for NSQF Courses																																
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IX	DETAILS OF THE STATE OF THE ART INFRASTRUCTURE, UNIQUE EXPERTISE, ETC. IF ANY.																																
	<p>NIELIT Calicut Lab Infrastructure for R & D(Lab space, number of Workstations/Servers etc with specification).</p> <table border="1"> <thead> <tr> <th>Sl. No</th> <th>Lab Name</th> <th>No. of server/workstations</th> <th>Space</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>VLSI Design Lab</td> <td>2</td> <td>1400 Sq. Ft</td> </tr> <tr> <td>2.</td> <td>Advanced VLSI System lab</td> <td>1</td> <td>800 Sq. Ft</td> </tr> <tr> <td>3.</td> <td>SMDP-C2SD Lab</td> <td>1</td> <td>400 Sq. Ft</td> </tr> <tr> <td>4.</td> <td>Embedded System Design Lab</td> <td>2</td> <td>1400 Sq. Ft</td> </tr> <tr> <td>5.</td> <td>IoT Lab</td> <td>1</td> <td>1400 Sq. Ft</td> </tr> <tr> <td>6</td> <td>Information Technology & Software Lab</td> <td>19</td> <td>2000 Sq. Ft</td> </tr> <tr> <td>7</td> <td>Control & Instrumentation Lab</td> <td>1</td> <td>1200 Sq. Ft</td> </tr> </tbody> </table>	Sl. No	Lab Name	No. of server/workstations	Space	1.	VLSI Design Lab	2	1400 Sq. Ft	2.	Advanced VLSI System lab	1	800 Sq. Ft	3.	SMDP-C2SD Lab	1	400 Sq. Ft	4.	Embedded System Design Lab	2	1400 Sq. Ft	5.	IoT Lab	1	1400 Sq. Ft	6	Information Technology & Software Lab	19	2000 Sq. Ft	7	Control & Instrumentation Lab	1	1200 Sq. Ft
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8	CAD/CAM Lab	1	1000 Sq. Ft
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List of Capital equipment along with model numbers, specifications etc.

Sl. No.	Hardware/Software/Equipment	Nos	Year of Purchase	Cost (Lakhs)
1	FPGA Development Kits			
	a. Xilinx Kintex-7 FPGA KC705 EVM	4	2019	12
	b. Xilinx Virtex-7 VC705 EVM	2	2020	8
	c. Xilinx ZynqSoC ZC702 EVM	4	2020	12
	d. Xilinx ZynqUltrascale ZCU102 EVM	1	2020	4
	e. XilinxKintexUltrascale KCU102 EVM	1	2020	4
	f. Kintex-7 XC410T FPGA based High end custom Board (Designed and developed by NIELIT)	2	2019	9
2	RF Frontend Boards	2	2020	2
3	Arbitrary Waveform Generator (up to 50 MHz)	1	2020	4.5
4	Vector Signal Generator (up to 6 GHz)	2	2020	6
5	Vector Signal Analyzer	1	2020	6
6	Mixed Signal Oscilloscope(4 Channel 4GHz)	1	2020	5
7	Logic Analyzer (36 Channel, 2 GHz),	1	2020	8
8	Spectrum analyzer, Vector Network Analyzer	1	2020	6.5
9	FPGA Design & Verification Tools Xilinx and ALTERA	25 user Licenses. *	2016	5
10	VLSI Frontend and backend Tool suite from CADENCE and Synopsis	10 user Licenses. *	2016	20

10	MATLAB Tool Suite	5 user Licenses. *	2017	10
11	HP Workstations	4	2018	16
12	Soldering Station	1	2017	1
13	DC Electronic Load Equipment	1	2020	1.5
14	High efficient Power Supplies, Multimeters, CROs, etc.		2020	10
15	Ultrasound Research Platform for Medical Ultrasound imaging research.	1	2017	40

NIELIT Calicut – IT Group

Lab Infrastructure for IT Group (Lab space, number of Workstations/Servers etc).

Sl. No	Lab Name	No. of server/workstations	Space
1.	Server Room & Software Lab	10/4	1376 Sq. Ft
2.	IT Lab	0/1	1301 Sq. Ft

List of Capital equipment

Sl. No.	Hardware/Software/Equipment	Nos	Year of Purchase	Cost (Lakhs)
1	HP Workstations	5	2020/2021	30
2	Servers	10	2013,2016,2020	32
3	NAS Storage – NetGear	2	2016,2020	4

Software

- VmWareVsphere
- Citrix XenServer
- Windows OS all versions and applications through Microsoft Imagine Subscription
- Adobe CS Master Collection
- Photoshop, Flash

- Rational Rose
- RT Linux
- VMWare
- Kylix
- Cold Fusion
- Corel Draw
- Page Maker
- Director

Services

- Terminal services
- Internet access (Proxy Server)
- Email Server
- DNS Server
- Web Servers
- DHCP, RADIUS and LDAP Server
- Elearning server, Server provisioning etc.
- Video Server for Library
- C D Image Server

NIELIT Calicut – Embedded System Group

Lab Infrastructure for Embedded System Group (Lab space, number of Workstations/Servers etc).

Sl. No	Lab Name	Servers	Space
1.	Embedded System Lab		1000SqF
2.	Remote hardware lab	1	600 SqF

List of Capital equipment

Sl. No.	Hardware/Software/Equipment	Nos	Year of Purchase	Cost (Lakhs)
1	VxWorks	1	2004	6.2
2	KeilUlink pro D Debug Unit	23	2015	11
3	Proteus virtual simulator for ARM	1	2020	1.6

4	Vitual Lab Simulator IoTfy	10	2020	6.24
5	Altair ST-EMB-EDU-NET-PDUP	2	2020	2.95
6	Rugged server	1	2021	6.33

CAD/CAM Group

List of Capital equipment

Sl. No.	Hardware/Software/Equipment	Nos	Year of Purchase	Cost
1	Ultimaker S5 3D Printer with PLA, ABS, BAM Filaments	1	2020	9,26,876
2	CNC Drill Tap Machining Centre – Model SPARK M14-501	1	2020	18,20,079
3	ACE CNC Lathe Model: Tutor	1	2020	14,63,200
4	UV LED 65” TV	1	2020	61250
5	HP 830 G6 Business Notebook	1	2020	1,20,360
6	Upgrade : CREO (University Plan Academic Pack to 6.3.0)	1	2020	6,19,500
7	DELL OPTIPLEX 5070 with Dell 22” Monitor	1	2020	1,08,710
8	Additive Manufacturing and Design Software – Netfabb Premium 2021	1	2020	4,32,706
9	Netgear RN626X – NAS	1	2020	2,06,500
10	High Strength Functional Part 3D Printer – Markforged MK2	1	2020	19,05,700
11	HPZ2-G4 Workstation with 21.5” Monitor	1	2020	11,76,000
12	CAD/CAM/CAE Software – CATIA 3DS	1	2020	18,71,826
13	Self Positioning Handheld 3D Scanner	1	2020	21,24,000

	14	HP Z2 G4 IDS Workstation	1	2020	15,67,040
	15	3D Printer SLA TYPE – FORMLABS FORM 3	1	2020	10,70,782
	16	HP Z2- G4 Workstation with 21.5” Monitor	1	2021	8,82,000
	17	DATA CENTER SETUP	1	2021	2,47,875
	18	Additive Design Skill Development System	1	2021	23,95,400

Attachments

1.Faculty Details

2.Details of courses being offered by the centers with students intake capacity, academic calendar, etc. (MIS Latest)