

*Dear Manufacturer,*

*Thank you for your interest in transfer of technology of the CDAC's electronic products. The indigenously developed products are hereby offered for transfer of technology to eligible Indian manufacturers. Complete documentation and handholding support shall be provided by the CDAC, Mohali. The transferee shall productionise and sell the product(s) as per the terms / MOU. If required, the physical appearance or packaging of the unit may be upgraded for ergonomics / competitive edge. The products currently available include –*

- 1. Mini Hydroponics system for rooftops*
- 2. Wireless auscultation training system*
- 3. MK-1 ARS*

*A brief overview of the products is provided herewith in the following pages. The physical products are available for inspection and demo at CDAC, Mohali on any working day.*

*The interested parties may fill their details in attached format and send it to the following before 30<sup>th</sup> of Nov., 2021.*

**Executive Director**

Centre for Development of Advanced Computing (C-DAC)  
A 34, Phase VIII Industrial Area,  
Mohali, Punjab, INDIA

*With Best wishes.*

Executive Director  
C-DAC, Mohali, INDIA

# प्रौद्योगिकी के हस्तांतरण में रुचि की अभिव्यक्ति

Expression of Interest

For

Transfer of Technology



Issued By

**CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING**

(A Scientific Society of the Ministry of Communications and Information Technology, Govt. of India)

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## List of Abbreviations

Sr. No.	Abbreviation	Description
1.	C-DAC	C-DAC Centre for development of Advanced Computing
2.	MeitY	Ministry of electronics and Information Technology
3.	Eoi	Expression of Interest
4.	R&D	Research and Development
5.	IT	Information Technology
6.	TOT	Transfer of Technology
7.	PCG	Phonocardiography
8.	A2DP	Advanced Audio Distribution Profile
9.	SPP	Serial Port Profile
10.	PCB	Printed Circuit Board
11.	ADC	Analog to digital conversion
12.	KHz	Kilo Hertz
13.	V	Volts
14.	mm	millimeter
15.	PC	Personal Computer

## 1. Introduction

CDAC, Mohali, originally established as CEDTI (Center for Electronics Design & Technology of India) in the year 1989 is a leading organization of the Ministry of Electronics and IT, Govt. of India for electronics and related technologies. The electronics section has executed several Govt. Of India projects in fields of medical and agriculture. A few products / technologies developed during the course of different projects / initiatives have been refined are being offered for 'Transfer of technology'. At this point of time, the following products are offered on a non-exclusive basis. After due process as per the CDAC's ToT policy, the successful bidder shall be provided full technical support to productionise and market the products in Indian markets as per the applicable norms.

1. Mini Hydroponics system &
2. Wireless auscultation training system
3. MK-1ARS

Brief details/ specifications of the products are given in Annexure – B. For complete inspection and evaluation, kindly visit the CDAC, Mohali on any working day.

## 2.About C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of Ministry of Electronics & Information Technology (Meity) for carrying out R&D in IT, Electronics and associated areas. More details about C-DAC can be found at [www.cdac.in](http://www.cdac.in)

## 3. The technology will be transferred on non-exclusive basis.

The procedure shall involve the following steps –

1. Call for Expression of interest. The interested Organizations/Entrepreneurs/Agencies can inspect the prototype of the product at CDAC Mohali, before submitting their sealed bid of EoI.
2. The TOT committee will analyze received EoI's on the basis of Technical and financial position, capability and reputation of the applicants. The short listed applicants shall be asked for submission of their sealed best price (financial) bids.
3. TOT Committee will do the screening and issue offer letters for TOT to one or more applicants based on highest bid or higher than the certain minimum fixed by the empowered authority.

4. The selected Organizations/Entrepreneurs/Agencies will pay the TOT fees and sign the agreement for TOT. CDAC will then transfer the technology, hand over all the supporting documents and will provide full technical support and training to the TOT partner.

### **The ToT package shall contain the following**

1. Document(s) for design and fabrication with block diagram and schematic level explanation of the system.
2. Bill of Materials of the total system.
3. Gerber files for PCB design.
4. Source code of the software.
5. Test plan and procedure.
6. Guidelines for field trial and commissioning.
7. Training.
8. Handholding support for a period of 6 months.

#### **Contact Person for queries**

**Ms. Brijinder Kaur**

**Tel: + 91-172-6619073,**

**Fax: + 91-172-2237052.**

**Email: [brijinder@cdac.in](mailto:brijinder@cdac.in)**

### **4. General terms & conditions**

1. **The last date for receipt of EoI in the attached template (format) is 6 pm. of 30<sup>th</sup> November, 2021.**
2. **This transfer of technology shall be on a non-exclusive basis.**
3. An expert committee will scrutinize the applications for follow-up action. The applicants may be called for a presentation regarding their strengths and business proposals.
4. All incidental expenditure incurred in preparation/ submission or presentation of the EoI shall be borne by the participating Organizations/Entrepreneurs/Agencies.
5. Participation in this EoI does not guarantee any association with C-DAC unless notified by C-DAC in writing.
6. C-DAC reserves the right of rejecting any offer without assigning reasons.
7. Any offer received after due date/time will not be accepted.
8. There is neither a business guarantee nor any commitment for funding support from C-DAC to the appointed/ Empanelled agencies.
9. A Committee of experts constituted by the competent authority (Director General, CDAC in congruence with Executive Director, CDAC Mohali) will assess capabilities and strengths of the applicant/industry before finalizing the TOT. The minimum turnover of the organization in last three years and/or the manufacturing capabilities may be fixed as one of the eligibility criteria for short listing of the applicants.

10. The shortlisted applicants shall then be invited for financial bidding. C-DAC Mohali reserves the right for asking security fee. Based on value quoted and subject to minimum fixed by committee; one or more of the applicants shall be selected for TOT.
11. The selected applicant willing to take technology for commercial exploitation will be required to enter into a ToT agreement with C-DAC as per the terms and conditions approved by the competent authority for the purpose.
12. The decision of the committee/ Director General, C-DAC / Executive Director C-DAC, Mohali shall be binding on all concerned.

## 5. Who can apply?

- Organizations/Entrepreneurs/Agencies with experience or interest in Electronics or Information and Communications Technology (ICT)
- Organizations/Entrepreneurs/Agencies willing to take up the local production and manufacturing of Electronic Stethoscope.

## 6.How to apply?

Interested Organizations/Entrepreneurs/Agencies may send expression of interest with their details by filling the questionnaire as per Annexure – A along with supporting documents to following address.

The participants may then be asked for financial bidding for the transfer of technology.

### **Executive Director**

Centre for Development of Advanced Computing (C-DAC)  
A 34, Phase VIII Industrial Area, Mohali(Near Chandigarh)Punjab ,INDIA  
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**Note:** For any queries please contact :  
Ms. Brijinder Kaur Tel: + 91-172-6619073,  
Email: [brijinder@cdac.in](mailto:brijinder@cdac.in)

## Annexure A - Template for the EoI for Technology Transfer

A	Company Profile
1.	Name of the Organization  Website
2.	Details of the Contact Person  Name:  Address:  Telephone :Fax:  E-mail
3.	Year of Incorporation
4.	Type of Organization  Public Sector/ Limited/Private Limited/ Partnership/ Proprietary/ Society/ Any other  Whether 'Foreign Equity Participation (Please give name of foreign equity participant and percentage thereof)  Names of Directors of the Board/ Proprietors  Name and address of NRI(s), if any
5.	Category of the Firm Large/Medium/Small Scale Unit
6.	Address of the Registered Officer
7.	Number of Offices with Address (Excluding Registered Office :  India  Abroad
8.	Certificate of Registration as a Manufacturing Unit
9.	Permanent Account Number (PAN No.)
10.	Sales Tax Number/VAT
11.	Status of ISO9001/ISO13485 Certificate



**Kindly attach the following documents along with EoI:**

1. Organization Brochure
2. Certificate of Registration / Incorporation
3. Certified copies of balance sheets for last three financial years
4. Permanent Account Number.
5. Write up on technical capabilities.
6. Three year business plan.
7. The list of machine tools /equipment's/software's/facilities available related with work to be furnished.
8. The manpower strength (Technical: Mechanical, Electrical, Electronics, Software & Non-Technical etc.) at various levels to be furnished

**Technical:**

- a. B.E./ B.TECH/PhD
- b. DIPLOMA
- c. SKILLED TECHNICIANS
- d. UNSKILLED

**Non-technical:**

9. For start-up companies, instead of three years balance sheets, future business plan for three years should be mentioned.

Note: Expression of interest should be stamped and signed by authorized signatory.

## Annexure B –

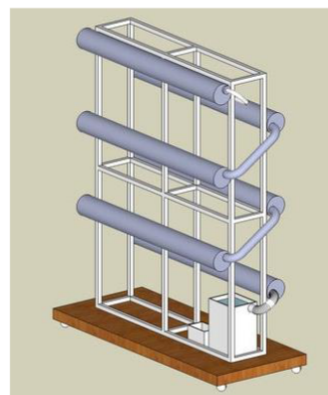
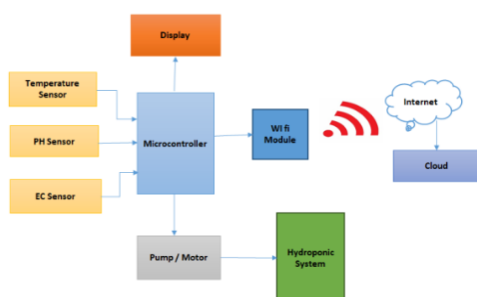
## Rooftop based Low Cost Smart Hydroponics System



Hydroponics cultivation is a technology under which plants are grown soil-less media. Plant's roots are exposed to the nutrient mix solution, or the roots may be supported by an inert medium, such as perlite or gravel. The nutrients mixed with water are pumped through the gullies where plants are hanged with wire in specially designed plastic cups.

### Economy Features

- ❖ Indigenously developed low cost automated hydroponics system with space management for maximum crop yield
- ❖ Less water consumption
- ❖ Less electricity consumption as the same water is being recycled at regular time interval.
- ❖ Remote monitoring Internet enabled web interface



### Salient Features

#### Agri-Features

- ❖ Consumes  $\frac{1}{20}$  of water quantity as compared with conventional cropping
- ❖ Fast growth of crop than traditional farming
- ❖ More Nutrient value in vegetables to that of the conventional cropping method
- ❖ Freedom from Soil born disease/infection
- ❖ No pesticides required as there is no soil born infection
- ❖ Vertical arrangement of gullies (Vertical Farming) to increase the crop yield per unit volume

#### Smart Features

- ❖ Nutrient solution EC, pH and temperature Monitoring
- ❖ Timer based motor/pump control
- ❖ LCD display for Monitoring
- ❖ Capacity: 30 plants Approx. Vertical type
- ❖ Nutrient tank: 100 ltrs
- ❖ Pump: 01 Nos, 24 watt
- ❖ Metal free media

### Specifications:

Following parameters are measured using the smart CDAC Hydroponics system:

- ✓ EC : 0.55 to 500,000  $\mu\text{s}/\text{cm} \pm 2\mu\text{s}/\text{cm}$
- ✓ pH : 0 – 14 pH  $\pm 0.20$  pH
- ✓ Temp. : Monitoring

### Dimensional Specifications

- ✓ Dim. : 1.2x0.5x1.3 meters (L x W x H)
- ✓ No. of Gullies : 6 @ 1 metre each
- ✓ Tank capacity. : 100 litres
- ✓ Plants capacity : 30 Nos (Approx)

Designed and Developed by:

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## simplifying Auscultation Training



- UPTO EIGHT SIMULTANEOUS TRAINEES
- INDIVIDUAL VOLUME CONTROLS
- WIRELESS CONNECTIVITY TO CHESTPIECE

Indicating  
Auscultatory events  
To trainees, normally requires sequential  
Auscultation with specialized teaching stethoscope.

### NOT ANY MORE !

With the CDAC's wireless teaching stethoscope, auscultation training of eight trainees can be done simultaneously. Each of the trainee can individually control his volume and see the waveform on the common screen. In addition, the chest piece can be connected to the training station wirelessly.

- Wireless Bluetooth connectivity of chest piece
- Up to eight simultaneous trainees. Facility to cascade more units
- \* User-friendly GUI with touch controls
- \* Individual volume control.
- \* Digital audio recording in .wav format
- Real-time Audio waveform display
- Aesthetic and appealing design

# Multi-Student Auscultation Training System

Indigenous Technology  
Patent Pending



सी डैक  
CDAC

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## CDAC's e-Stetho Mk-I ARS

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### *Amplifying & Recording Stethoscope*

**S**tethoscope is a diagnostic instrument used by various health care professionals to listen to the sounds of patient's heart, lungs, abdomen, etc. It is an important tool for initial non-invasive examination of the patient. Careful listening of the sounds is imperative for detecting subtle manifestations of various abnormalities. In order to facilitate this particular examination, CDAC-Mohali has developed a high-fidelity Digital Electronic Stethoscope. It is designed for direct auscultation with a wired headphone and recording of body sounds on a computer.

#### Salient Features

- Convenient handheld chest-piece.
- Diaphragm based pickup for auscultation.
- Wide band pickup enabling better auscultation.
- Amplify the barely audible sounds and murmurs of heart.
- Excellent ambient noise immunity for cardiac auscultation
- Electronics designed around ARM microcontroller
- Sound output on connected (wired) headphones or USB port.
- Supported by PC application for acquiring / recording audio waveform.

#### Brief Specifications

- Audio Amplification : 30dB (fixed)
- Sampling rate: 4kHz
- Frequency response: 16 Hz to 800 Hz
- Power supply: 3.7 V rechargeable Li-polymer Battery
- Battery life: 8 hours (approx) listening time