

प्रौद्योगिकी स्थानांतरण के लिए पसंद की अभिव्यक्ति

EXPRESSION OF INTEREST for TRANSFER OF TECHNOLOGY

**सीडैक शहरी यातायात नियंत्रण उपकरण
(क्यूट)**

C-DAC Urban Traffic control Equipment

“CUTE”



प्रगत संगणन विकास केंद्र

(भारत सरकार, इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय का आर एवं डी संगठन(माईटी))

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Issued by

CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING

(The Premier R&D organization of the Ministry of Electronics and Information Technology (MeitY), Govt. of India)

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1. Introduction

Centre for Development of Advanced Computing (C-DAC) invites “**Expression of Interest**” (EOI) from Indian companies for transfer of technology (ToT) from C-DAC and to subscribe, acquire licenses, market, sell and implement C-DAC Urban Traffic Control Equipment (CUTE)

This document gives details about

- The product
- The terms and conditions for companies to propose their Expression of Interest and
- How to enter into Transfer of Technology (ToT) agreement based on the terms given herein.

2. Brief about C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY), Govt. of India for carrying out R&D in IT, Electronics and associated areas. It is a national Centre of Excellence, pioneering application oriented research, design and development in Electronics and Information Technology.

The Centre has contributed significantly to the growth of the industry in general and the electronics sector in particular through the indigenous development of commercially viable systems and products, foreign technology absorption, adaptation and upgrades, consultancy and training and turnkey implementation of contract projects. The Centre has several firsts to its credits and is the recipient of prestigious national level awards for excellence in application- oriented R & D.

The Mission mode programmes of C-DAC include High performance computing, grid and cloud computing, Multilingual computing & Heritage Computing, Professional Electronics, VLSI and Embedded systems, Software technologies, Cyber Security & Cyber Forensics, Health Informatics, Intelligent Transportation Systems and others.

3. Brief description about the technology to be transferred

C-DAC Urban Traffic Control Equipment CUTE is a road traffic signal controller having features to perform as pre-timed controller or vehicle actuated controller at isolated intersections or part of a coordinated signal control system in pre-timed or vehicle actuated mode of operation or local level control of an Adaptive Traffic Control System (ATCS). CUTE supports distributed time synchronization using GPS enabled RTC and Server based time update. CUTE supports monitoring and management of signal plans from the Traffic Control and Command Centre over various medium of communication network. CUTE is highly power efficient for solar power compatibility. CUTE is designed for pole mounting as well as pedestal mounting. Please refer product datasheet for more information (refer Annexure – II)

4. Invitation for Expression of Interest

- 4.1. C-DAC invites “Expression of Interest” (EOI) in the format given in Annexure-1 (Part A & Part B). Companies can become TOT partner of C-DAC based on the information furnished in Annexure – I, subject to the assessment by the C-DAC.
- 4.2. This EOI invitation contains all the charges involved for procurement of subscription as well as hardware licenses. The charges mentioned here are non-negotiable.
- 4.3. This invitation of EOI will be open till 31st March 2022. Companies can become TOT partner of C-DAC for this product as per the terms and conditions specified in this EOI invitation on or before the EOI closure date.
- 4.4. Interested companies may submit the expression of interest (see section 5.0 and section 6.0)
- 4.5. Once an Expression of Interest is received at C-DAC, the same will be evaluated within 4 days of receipt of the EOI at C-DAC.
- 4.6. After the evaluation draft agreement will be shared with the eligible company. If the company agree to the terms and conditions of the agreement, the agreement can be signed after payment of the Onetime Technology Transfer fee (See Section 8). The company then become eligible for further production and commercialization.
- 4.7. Participation in this EOI does not guarantee any association with C-DAC, unless the agreement is signed.
- 4.8. The technology is offered on non-exclusive basis.
- 4.9. The submission of the EOI shall include all such documents that are specified herein to prove the authenticity of their offer and any claim made therein. All cost and expenses associated with submission of EOI shall be borne by the bidder while submitting the EOI and C-DAC shall have no liability, in any manner in this regard, or if it decides to terminate the process of short listing for any reason whatsoever.
- 4.10. C-DAC reserves the right of rejecting any offer without assigning reasons.
- 4.11. There is neither a business guarantee nor any commitment for funding support from C-DAC to the selected TOT partner.

5. Who can Apply

Any Indian Company or Start Ups willing to acquire licenses, market, sell and implement traffic signal controllers can apply.

6. How to Apply

Interested companies may send expression of interest by filling the template as per Annexure – 1 along with supporting documents to

Head, Technology Promotion Centre

Centre for Development of Advanced Computing (CDAC)

Vellayambalam, Thiruvananthapuram, Kerala, India, 695033

Phone: 0471 2727508 Fax: 0471 2723456

Email: tpc@cdac.in Website: www.cdac.in

7. TOT Agreement (How to Subscribe to CUTE)

- 7.1. The TOT partner is selected based on the expression of interest submitted by interested companies.
- 7.2. If selected, the company shall pay onetime Technology Transfer fee and sign the TOT agreement to become TOT partner of C-DAC for CUTE. Onetime Technology Transfer fee is specified in Table 1 of Section 14
- 7.3. CDAC shall sign the technology transfer license agreement with the companies on receiving the onetime Technology Transfer fee.
- 7.4. The license will be granted on Non-Exclusive basis.
- 7.5. **TOT partner is not allowed to quote for CUTE hardware unless he pays the Technology Transfer fee and enter into an agreement with C-DAC. The Technology Transfer fee is non-refundable. In case any party offer /quote the rates without an agreement with CDAC, CDAC will not honour the rates/ will not give the ToT to such party.** The decision of C-DAC in this matter shall be final.

8. Hardware licenses for Site Implementation

- 8.1. The hardware licenses can be purchased by TOT partner only if the partner has a valid TOT license agreement with C-DAC. These hardware licenses are required for the partner to activate the firmware to work for unlimited period when implemented at various cities. The demo hardware licenses provided as part of the TOT deliverable shall activate the firmware for 15days period for lab testing and any demonstration to customer. So a valid license should be obtained upfront and activated from CDAC before deploying CUTE hardware at client locations.
- 8.2. The details of Hardware license fee are mentioned in Table 2 of Section 14.

9. Validity of onetime Technology Transfer fee & Renewal of TOT agreement

- 9.1. Payment of one time Technology Transfer fee grants the partner to subscribe the hardware license of CUTE hardware for a period of **03 years** from the date of signing of the agreement.
- 9.2. For the period beyond 3 years the partner should renew the ToT license agreement before expiry of one time Technology Transfer license period by paying the TOT support charges as decided by C-DAC at that point of time. A TOT partner having a valid TOT license agreement can procure the CUTE hardware license for site deployment at client locations.
- 9.3. If the renewal is initiated after the stipulated period, a fresh TOT agreement need to be signed by the company based on the EOI conditions prevailing at that time.

10. C-DAC Deliverables

- 10.1. On payment of one-time Technology Transfer license fee and signing of ToT agreement, the following items shall be provided by C-DAC to the TOT partner for product marketing support and installations
 - A. TOT Partnership certificate
 - B. Product data sheet file in psd/cdr format
 - C. User Manual
 - D. Production Documents
 - I. Schematic Diagram
 - II. Bill of Materials
 - III. Sourcing Details
 - IV. Wiring Diagrams
 - V. Assembly Details
 - VI. PCB Gerber files
 - E. CUTE firmware Bin file (Executable)
 - F. Test plan & procedures
 - G. Installation manual

11. Training for TOT Partners

- 11.1. C-DAC shall arrange 3 days product level marketing & production and implementation level training on CUTE to the ToT partner at C-DAC(T) after signing of TOT agreement.
- 11.2. The training will be conducted at C-DAC(T) premises.
- 11.3. The travel and boarding and lodging expenses of the trainee(s) during the period of training shall be borne by the ToT partner.
- 11.4. For training requested outside C-DAC (T) premises air travel, boarding and lodging charges of C-DAC (T) officials shall be borne by the ToT partner. C-DAC shall also charge manpower as per C-DAC rules prevailing at the time of training for outstation training. Nomination of the C-DAC trainers and period of stay for outstation training will be decided by C-DAC on mutual consultation, depending on the type of training requested.

11.5. Additional training may also be given by C-DAC either at the premises of C-DAC (T) or at the location identified by the ToT partner on payment basis as per C-DAC rules.

12. Field implementation support

12.1. C-DAC(T) shall provide remote support to the ToT partner for the production & installation of CUTE during the TOT license period.

12.2. If any onsite support is requested by the ToT partner, C-DAC shall support on mutually agreed terms and conditions.

12.3. For onsite support outside C-DAC premises travel, boarding and lodging charges of C-DAC (T) officials shall be borne by the ToT partner. C-DAC shall also charge manpower as per C-DAC rules prevailing at the time of support request for outstation support. Size of the C-DAC team and period of stay for outstation support shall be decided by C-DAC on mutual consultation, depending on the type of support requested.

13. Direct implementation by C-DAC

13.1. C-DAC reserves the right to implement CUTE hardware directly at client locations where C-DAC is awarded ATMS orders for implementation directly by C-DAC.

13.2. If CDAC is implementing CUTE directly, then the cost at which C-DAC will be offering the CUTE hardware to the end user will be decided by CDAC at the time of implementation.

14. Rates for One Time Technology Transfer License fee, Hardware License and Subscription renewal

Sl. No.	Licence fee type	Amount in Lakhs	Remarks
1	One time Technology Transfer licence fee	Rs. 25.00L + taxes	First Instalment: Rs. 15 Lakhs plus applicable taxes on signing of TOT Agreement Second Instalment: Rs. 10 Lakhs plus applicable taxes at the time of document handing over or receiving the first commercial order, whichever is earlier. The 2 nd instalment is to be paid within a period of one year from the date of 1 st instalment. If the partner fails to pay the 2 nd instalment fee within the stipulated period, then the already paid amount shall be forfeited. No refund shall be applicable.

Table 2 : Hardware License activation & Royalty Fee Details			
Sl No	Hardware	Per Hardware License Cost in Rs	Remarks
1	CUTE Hardware	Rs 15,000/- + taxes	The royalty @ Rs.15,000 plus applicable taxes per CUTE Controller manufactured shall be paid upfront on every CUTE controller sold for of ten years from the date of receipt of first commercial order of CUTE. The royalty fee shall be paid in advance by the Partner to authenticate the CUTE firmware license before site implementation

For any queries please contact:

Section Head (Technology Promotion Centre)
Vellayambalam, C-DAC, Thiruvananthapuram
Contact: 0471 2727508, 0471 2723333 (extn: 220/450),
email: tpc@cdac.in

Annexure –I (Part-A)

Company Profile of the bidder

A.	Company Profile
1.	Name of the Organization: Website:
2.	Name of the Contact Person: Address: Mobile: Landline: Fax: E-Mail:
3.	Year of Incorporation:
4.	Type of Organization a. Public Sector/ Limited/Private Limited/ Partnership/Proprietary/ Society/ Anyother b. Whether 'Foreign Equity Participation (Please give name of foreign equity participant and percentage thereof) c. Names of Directors of the Board/ Proprietors d. Name and address of NRI(s), if any
5.	Category of the firm: Large/Medium/Small scale unit / Others
6.	Address of the Registered Office: (Include Certificate of Registration)
7.	Number of Offices with addresses (Excluding Registered Office): India, Abroad:.....
8.	Certificate of registration as a manufacturing unit
9.	Permanent Account Number
10.	GST Reg. No.
11.	ISO or any equivalent Certification

Annexure – I (Part B)**Technical Collaborations of the bidder**

B.	ESSENTIAL REQUIREMENTS
1.	The organization must be a reputed firm/company/SME/startup/R&D company incorporated in India.
2.	The turnover is to be supported by financial statements of accounts/ Annual reports duly certified by a Chartered accountant/ Balance sheets of last 3 years/ Income tax returns for the last 3 years period.
3.	Company profile, giving details of current activities and management/ personnel structure including evidence of incorporation. The company should be registered and ISO or equivalent certified
4.	Details of absorption of technology for a product/knowhow that has been taken up on production scale in the past may also be given
5.	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
6.	The list of machine tools /equipment/software/facilities available related with work to be furnished.
7.	The in-house technological expertise available to be furnished
8.	The list of equipment available for inspection and quality control to be furnished.
9.	The industry should have adequate space for undertaking this work. Available space - Covered & Open and location details to be furnished.
10.	List of products/technologies worked with as regular activity in last three years. Give the list of products/technologies with general specifications and the customers.
11.	List of PSUs/Govt. customers – with contact details (Address, Telephone no., Contact Person)
12.	The details of sales, marketing and maintenance network to be furnished
13.	The list of technical collaborators for various ongoing products may be furnished
14.	The bidder shall provide details of the sub-vendors in case they propose to employ for Part-work
C.	Expression of Interest: Spell out the extent of interest and envisaged market potential

I hereby declare that the above information is true to the best of my knowledge.

Signature with Name & Seal:

Place:

Date:

Annexure II



C-DAC Urban Traffic Control Equipment CUTE is a road traffic signal controller having features to perform as pre-timed controller or vehicle actuated controller at isolated intersections or part of a coordinated signal control system in pre-timed or vehicle actuated mode of operation or local level control of an Adaptive Traffic Control System (ATCS). CUTE is the latest edition of C-DAC traffic signal controllers after the UTCS and WiTraC. CUTE supports distributed time synchronization using GPS enabled RTC and Server based time update. CUTE supports monitoring and management of signal plans from the Traffic Control and Command Centre over various medium of communication network. CUTE is highly power efficient for solar power compatibility. CUTE is designed for pole mounting as well as pedestal mounting.



SPECIFICATIONS

Model	⊗ CUTE (CDAC Urban Traffic control Equipment)
Design	⊗ Modular
CPU	⊗ 32 bit
Memory	+ Internal Memory: Flash (512K), RAM (128K) + External Memory: EEPROM (1MB)
Real Time Clock Selection	⊗ Onboard RTC with 10Year Battery Backup
RTC update	⊗ GPS Enabled / ATCS Server Time
Time resolution	⊗ 100mSec
Output switching	⊗ Solid state, 24VDC 5A
Signal Lamp output	⊗ 16 to 64 Scalable in group of 16
Police Control Panel	⊗ Lamp OFF, Forced Flash, Manual selection and Advance, 4 Hurry-calls
Vehicle / Pedestrian Demand Actuation	⊗ 16 inputs
Signal Switching	⊗ Armoured Cable
ATCS Interface	⊗ 10/100Mbps RJ45 Ethernet port
Programming Facility	⊗ Using PC Software tool
Firmware update	⊗ USB /RS232
Status monitoring & data logging	⊗ RS232 / Ethernet
Input /Output Isolation	⊗ Optical
Signal Plan configuration	⊗ Laptop PC / Remote Server
ATC Compatibility	⊗ CoSiCoSt

▶ OPERATING MODES

- ⊗ Pre – timed (TOD facility)
- ⊗ Vehicle Actuated
 - ⊕ Variable Cycle length ⊕ Constant Cycle length
- ⊗ ⊕ Semi-actuated ⊕ Stage Skipping
- ⊗ ATCS
- ⊗ Combination of different modes
- ⊗ Lamps off
- ⊗ Flashing
 - ⊕ Amber ⊕ Red ⊕ User defined
- ⊗ Manual Advance
- ⊗ Hurry Call
- ⊗ Transit Signal Priority (TSP) for BRTS
- ⊗ Cable less Synchronisation
 - ⊕ Pre timed ⊕ Vehicle Actuated

▶ OPERATING PARAMETERS

- ⊗ 48 – Phases ⊗ 32 – Stages
- ⊗ 24 – Cycle Plan ⊗ 20 – Day Plan
- ⊗ 04 – Week Plan ⊗ 20 – Special Day Plan
- ⊗ 04 - Season Plans

Programmable Parameters

- ⊕ Conflict Plan
- ⊕ Start Amber ⊕ Red Extension
- ⊕ Stage skipping ⊕ Lamp dimming
- ⊕ Hurry call ⊕ Threshold Gap

Cycle Transitions

- ⊕ 32 cycle transitions per day in Pre – timed mode
- ⊕ Unlimited cycle transitions per day in VA mode

▶ EVENT LOGS

- ⊗ Request based & instantaneous logging up to 1000 events

Type of events

- ⊕ Power On/OFF ⊕ Mode Change ⊕ Time update
- ⊕ Plan commit ⊕ Lamp status ⊕ RTC status
- ⊕ Vehicle detector status

▶ ENVIRONMENT

- Operating Voltage ⊗ 24 V DC +/- 10%
- Temperature ⊗ 0°C to 55° C
- Relative Humidity ⊗ 95% RH Non- condensing at 40 °C
- Controller mounting ⊗ Pedestal

▶ POWER SAVING FEATURES

- ⊗ PWM based power saving

▶ REMOTE ADMINISTRATION

- ⊗ Lamp OFF
- ⊗ Forced Flash
- ⊗ Hurry Call
- ⊗ Real- time Clock (RTC) update
- ⊗ Signal Time update
- ⊗ Signal Plan download
- ⊗ Signal Plan up load

▶ PROGRAMMABLE TIMINGS

- Stage Time ⊗ 10 – 255 Sec
- Start-up Flash ⊗ 3 – 10 Sec
- Start up All RED ⊗ 3 – 10 Sec
- AMBER time ⊗ 2 – 10 Sec
- Min. GREEN time ⊗ 2 – 10 Sec
- Max. GREEN time ⊗ 5 – 99 Sec
- Pedestrian WALK time ⊗ 1 – 50 Sec
- Pedestrian FLASH time ⊗ 1 – 10 Sec
- Offset ⊗ 0 – 255 Sec
- Gap time ⊗ 1 – 10 Sec
- All RED time ⊗ 1 – 10 Sec
- Max Load per output Line ⊗ 120 Watts

▶ SAFETY FEATURES

- ⊗ Inter/Intra Group Conflict Monitoring
- ⊗ Auto shut down on power fluctuation beyond limits and Auto Start up on restoration

▶ SELF DIAGNOSTIC

- ⊗ Hardware/Software Watchdog
- ⊗ System Failure Detection
- ⊗ RTC checks
- ⊗ Protected Access to Critical Timing
- ⊗ Program Data Checks

▶ SIGNAL SEQUENCE

- ⊗ Straight through
 - RED – GREEN – AMBER - RED
- ⊗ Filter Green
 - RED – GREEN - GREEN FLASH - RED
- ⊗ Indicative Green
 - RED - GREEN FLASH - RED
- ⊗ Pedestrian
 - RED – GREEN - RED FLASH / GREEN FLASH - RED

▶ CERTIFICATION

- ⊗ IEC- 60068 (ERTL)



Intelligent Transportation and Networking Section
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