

प्रौद्योगिकी स्थानांतरण के लिए पसंद की अभिव्यक्ति

EXPRESSION OF INTEREST for TRANSFER OF TECHNOLOGY

यातायात संकेत सुदूर निगरानी और प्रबंधन **सॉफ्टवेयर**– वर्धित संस्करण

ट्राम- EnV

Traffic Signal Monitoring and Management Software - Enhanced Version

“TraMM-EnV”



प्रगत संगणन विकास केंद्र
(इलेक्ट्रॉनिकी और सूचना प्रौद्योगिकी मंत्रालय, -भारत सरकार)

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द्वारा जारी ।

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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 Adaptive Traffic Management solutions using “**Traffic signal Monitoring and Management Software – Enhanced Version (TraMM-EnV)**” on nonexclusive basis.

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

Traffic signal Monitoring and Management Software - Enhanced version (TraMM-EnV) is a data acquisition system (DAS) and User Interface application for C-DAC Adaptive Traffic Control System (ATCS). This software tool is used to monitor and manage a network of C-DAC Adaptive Traffic Control (ATC) compatible Vehicle Actuated (VA) Traffic Signal Controllers installed at different junctions in a road traffic network from the City Advanced Traffic Management System (ATMS) Command and Control Centre. TraMM-EnV has a user friendly Human Machine Interface, dashboard to visualize the status of traffic signals remotely, Alarm & report module, etc. It provides option to monitor the data in different visual formats such as Trends, Charts, Reports and Live Animation Screens. Dedicated User Management System of

TraMM-EnV provides specific authorization to different levels of users to access TraMM-EnV software modules. Centralized junction configuration tool in TraMM-EnV facilitates plan download and upload functionality to configure the junctions remotely. It receives traffic parameters in real time from different junction controllers and the same will be distributed to associated software modules for online junction monitoring, reporting and processing by the Adaptive Traffic Control System (CoSiCoSt) for optimal signal timings. Please refer product datasheet for more information.

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 software licenses. The charges mentioned here are non-negotiable.
- 4.3. This invitation of EOI will be open till 31st March 2022. No companies can become TOT partner of C-DAC for this product as per the terms and conditions specified in this EOI invitation after 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 License fee (See Section 8). The company then become eligible for procurement of software licenses for the prescribed period from C-DAC.
- 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

- 5.1. Any Indian Company or Start Ups willing to acquire licenses, market, sell and implement traffic management solutions 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: 098470 69184/04712723333(450) Fax: 0471 2723456

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

7. TOT Agreement (How to Subscribe to TraMM-EnV)

- 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 license fee (Subscription fee) and sign the TOT agreement to become TOT partner of C-DAC for TraMM-EnV. Onetime license fee is specified in Table 1 of Section 14
- 7.3. CDAC shall sign the technology transfer agreement with the technology partner on receiving the onetime license fee.
- 7.4. The license will be granted on Non-Exclusive basis.
- 7.5. **No TOT partner will be allowed to quote based on the above charges unless he enters into an agreement and pays the subscription fees. The subscription fees are non-refundable. In case any party offer /quotes the rates without an agreement with CDAC, CDAC will not honour the rates/ will not give the ToT to such party.**

8. Software licenses for Site Implementation

- 8.1. The software licenses can be purchased by TOT partner only if the partner has a valid subscription with C--DAC. These software licenses are needed for the partner to implement the ATMS solutions in various cities.
- 8.2. The TOT partner will be granted license to implement TraMM-EnV software in the server based on the licenses purchased by them. The software license fee has two parts.
 - I. Server License Fee: is the license fee applicable for the deployable version of TraMM-EnV software in a physical server / Virtual machine
 - II. Junction License Fee: is the license fee applicable to connect junction traffic controllers (Model:CDAC WiTraC & CUTE) to TraMM-EnV server software for the remote monitoring and management of the traffic junction.
- 8.3. The details of software license fee are mentioned in Table 2 of Section 14.
- 8.4. The cost for the server software is applicable for the specified category of deployment (Standalone mode or High Availability mode). For one server software license of a

specified category (Sl. No.1 and 2 of Table 2 in Section 14) of deployment there is no discount. A discount of 15% will be applicable for two licences, 20% for 3 licenses and 25% for 4 licenses and above for the same category of server software license. One Server Software License for the Primary DC site / DR site shall support a maximum of 500 junctions. For junctions more than 500 nos., additional Server software license (Sl. No. 1 or 2 of Table 2, as the case may be) shall be purchased. The software will have a one year period of warranty support from the date of purchase of server software license. During this period, any software updates/releases shall be made available to the client through the ToT partner. For the period beyond the one year warranty support, ToT partner has to pay C-DAC an AMC support charge of 10% of the cost of server software license and associated junction license fee procured for that project site.

9. Subscription Validity & Renewal of TOT agreement

- 9.1. Payment of one time license fee grants the partner subscription of TraMM-EnV software for a period of **3 years** from the date of signing of the agreement
- 9.2. For continued support beyond 3 years the partner shall be required to renew the ToT agreement by paying the subscription charges of Rs. 2.00 Lakhs plus applicable taxes before the expiry of valid subscription, which will be valid for a further extended period of two years.
- 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.
- 9.4. After five years (from the date of signing the ToT agreement) a new TOT agreement is to be signed by the company based on the EOI conditions prevailing at that time.
- 9.5. The partner should have a valid subscription for purchasing new software licenses from C-DAC.

10. C-DAC Deliverables

- 10.1. On payment of one-time 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 POC installation
 - i. Product datasheet file in psd format
 - ii. Demo version license of TraMM-EnV software limited edition (includes server software with 10 junctions license activated, traffic signal phasing time simulator, license validity for 30 days for one instance of installation)
 - iii. User manual
- 10.2. On payment of software license fee the following items shall be provided by C-DAC to the TOT partner for the deployment of software
 - i. Server software license
 - ii. Junction license
 - iii. System Architecture & Functional description manual (Technical)
 - iv. Installation & Configuration manual

11. Training for TOT Partners

- 11.1. C-DAC shall arrange two days product level marketing/ sales training on TraMM-EnV software to the ToT partner at C-DAC(T) after signing of TOT agreement.
- 11.2. Upon payment of software license fee, product implementation level training for installation, configuration and administration of TraMM-EnV software shall be provided up to four working days.
- 11.3. The training will be conducted at C-DAC(T) premises.
- 11.4. The travel and boarding and lodging expenses of the trainee(s) during the period of training shall be borne by the ToT partner.
- 11.5. 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.
- 11.6. 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 at mutually agreed terms and conditions.

12. Field implementation support

- 12.1. C-DAC(T) shall provide remote support to the ToT partner for installation and configuration of TraMM-EnV software during the subscription 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 TraMM-EnV solution directly at sites where C-DAC is awarded ATCS / ATMS orders for implementation directly by the end user.
- 13.2. If CDAC is implementing TraMM-EnV directly, then the cost at which C-DAC will be offering the solution to the end user will be 140% of the software license cost.

14. Rates for One Time License, Software License and Subscription renewal

Table 1: Onetime license fee for TraMM-EnV Subscription			
Sl No	Partner Type	One Time License Fee (Exclusive of taxes)	Payment terms
1	New TOT partner (Agency who wish to take ToT for TraMM-EnV software, afresh)	Rs 3,00,000 /-	To be paid in single instalment to subscribe TraMM-EnV software
2	Existing TOT partner of CDAC (Agency already having TraMM software and wish to take ToT for the TraMM-EnV software)	Rs 1,50,000/-	To be paid in single instalment to subscribe TraMM-EnV software
3	Startups	Rs 3,00,000/-	<p>The onetime license fee can be paid in two instalments</p> <p>(i) Rs. 30,000 plus applicable taxes to subscribe the TraMM-EnV software and</p> <p>(ii) Rs.2,70,000 plus applicable taxes to activate the subscription account of TraMM-EnV software. Failing to complete the TraMM-EnV subscription activation by the agency within 12 months of making the first installment of subscription fee is liable to get terminated automatically and, whatever money paid to C-DAC for acquiring the TraMM-EnV license will be forfeited. The agency cannot claim any refund for the amount of initial payments, what so ever be.</p> <p>If the Startup company wishes to enter into TraMM-EnV TOT at a later date, then the company has to respond to the EOI open at that time and the terms and conditions will be as per the EOI prevalent at that time.</p>

Table 2 : Software License Fee Details			
Sl No	Software	Per License Cost (Exclusive of taxes)	Conditions
1	Server Software License fee (standalone deployment)	Rs 25,00,000/-	One server license base pack can serve up to 500 junctions
2	Server Software license License fee (for deployment in High Availability (HA) mode)	Rs. 31,25,000/-	Required only if HA is an end user requirement One server license can serve upto 500 junctions
3	Per Junction License (1 to 250 Licenses)	Rs 10,000/-	Per junction license cost for the first 250 junctions that are associated to a server license.
4	Per Junction license (250 to 500 licenses)	Rs 5,000/-	Per junction license cost after the first 250 junctions that are associated to a server license.

For any queries please contact:

Section Head (Technology Promotion Centre)
Vellayambalam, C-DAC, Thiruvananthapuram
Contact: 098470 69184/04712723333(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:

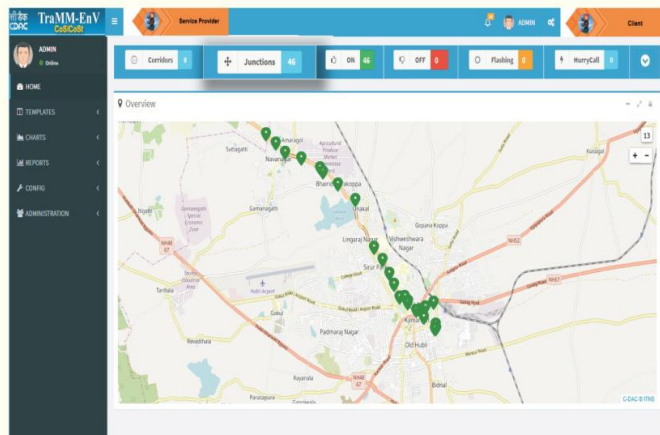
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TraMM-EnVTraffic Signal Monitoring and Management Software-
Enhanced Version

TraMM-EnV is one of the major building blocks of Advanced Traffic Management System (ATMS). This software tool is used to monitor and manage a network of C-DAC Adaptive Traffic Signal Controllers (WiTraC & CUTE) installed at different junctions in a City/Zone from the ATMS Command and Control Centre. TraMM-EnV incorporates user friendly Human Machine Interface, Dashboard to configure, visualize, analyze traffic patterns and control traffic signals remotely. It provides options to monitor the data in different visual formats such as Trends, Charts, Reports and Live Animation Screens. Dedicated User Management System of TraMM-EnV provides user based alarms and user specific authorization to access TraMM-EnV software modules. Centralized junction configuration tool in TraMM-Env facilitates plan download and upload functionality to configure the junctions remotely. It receives online junction pattern periodically from different junction controllers and the same will be distributed to associated software modules for display, reporting and processing by the Adaptive Traffic Control System CoSiCoSt.

SALIENT FEATURES

- ❖ User Friendly GUI with Dashboard
 - Lock feature
 - Full Screen feature
 - Overall Summary
- ❖ GIS based status display of intersection controllers
- ❖ User Management System
 - Application Management
 - Privilege Management
 - User Group Management
 - User Management
 - Alarm Management
- ❖ Alarm Management with SMS, MAIL and Dashboard alerts.
- ❖ Corridor Based DOS Limit Management.
- ❖ Junction configuration
- ❖ Active and Passive configurations
- ❖ On the fly configuration update
 - Junction
 - Phases – vehicular/ indicative/ filter/pedestrian/dummy
 - Stages
 - Cycles
 - Day Plan
 - Week Plan
 - Season Plan
 - Special Plan
 - Hurry Call
 - Setup
 - Controllers
 - Detectors
 - Junction plan download
 - Junction plan upload
 - Corridor
 - DOS Limits, Speed, GSO
 - Database
 - Housekeeping



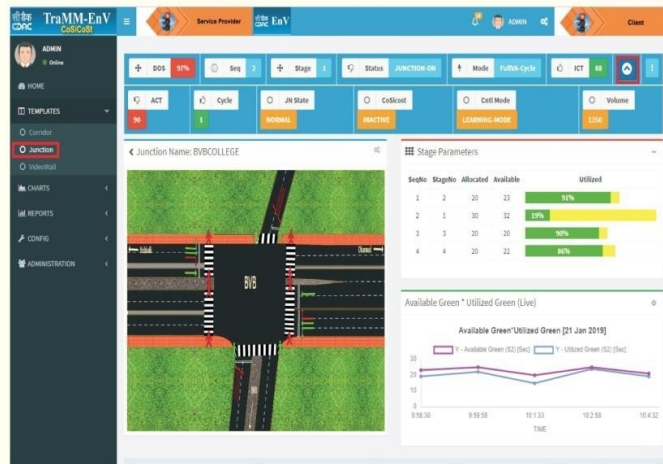
Dashboard

- ❖ Junction animation configuration
 - Component palette
 - Standard editing components
 - Traffic components
 - Junction Status
 - Vehicular
 - Indicative Green
 - Filter Green
 - Pedestrian
- ❖ Process monitor
- ❖ Backup and restore
- ❖ Template based configuration for corridor and junction displays
- ❖ Key Performance Index Template
- ❖ Grouping of junctions for Green corridor
- ❖ Data analysis
 - Historic Charts and Online Trends for Corridor and Junction parameters
 - Customizable user input
 - Configurable update frequency for displays
 - Dynamic creation of corridor and junction templates

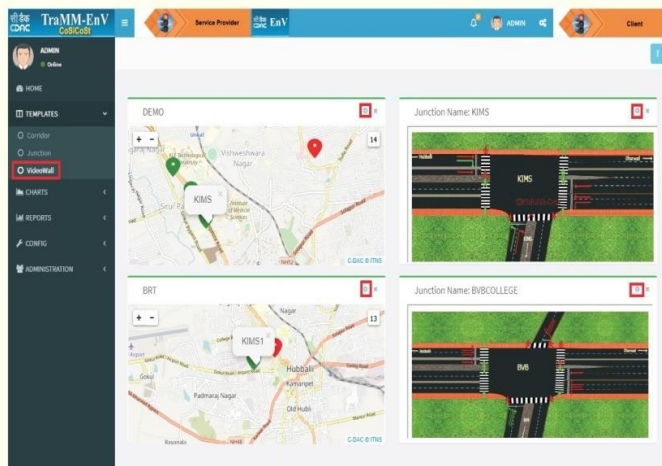
Annexure – II – PRODUCT BROCHURE

❖ Junction Animation

- Signal pattern display
- Stage timings details
 - Stage No
 - Allocated
 - Available
 - Utilized
- Template based Online Graph for all parameters
- Online junction summary
 - Mode of Operation
 - Running Cycle
 - Stage of execution
 - Intersection Cycle Time
 - Corridor Cycle Time
- Remote administration
 - Flash / Auto
 - Hurry Call / Auto
 - Lamp off



Junction Animation



Video wall

- ❖ Saturation Chart
- ❖ Template based Video Wall display
- ❖ Client and Service provider Logo configuration
- ❖ User image configuration
- ❖ White-lister configuration for remote access
- ❖ Web Service for Smart City dashboards

❖ Time Space Diagram

❖ User defined permanent and temporary scheduler

❖ Standard and custom Reports

➤ Corridor Report

- Corridor Performance
- Corridor Speed

➤ Junction Reports

- Switching Reports - Stage/ Mode/Cycle
- Timing Report - Stage/Cycle
- Synchronization
- Event Reports
 - Power up and Down
 - Link Status
 - Re-Join Status
 - Intensity Change Time
 - Plan Change
 - RTC Failure
 - Time update
 - Battery Voltage
 - Mode Change
 - Lamp Failure
 - Loop Failure
 - Inter-green conflict

OPERATING PLATFORM

Windows Server 2012 or above

DATABASE

PostgreSQL 9.3



Intelligent Transportation and Networking Section
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