

प्रौद्योगिकी स्थानांतरण के लिए पसंद की अभिव्यक्ति

EXPRESSION OF INTEREST for TRANSFER OF TECHNOLOGY

ध्वनिक गनशॉट डिटेक्शन सिस्टम (स्थैतिक और वाहन पर लगे एजीडीएस)

**Acoustic Gunshot Detection System**

**(Static Deployed System and Vehicle Mounted System)**



प्रगतसंगणनविकासकेंद्र

(इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय, भारत सरकार)

तिरुवनंतपुरम, केरल 695033

द्वारा जारी।

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वेबसाइट: [www.cdac.in](http://www.cdac.in)

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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## Disclaimer

The Bidders may download the EOI Documents from [www.cdac.in](http://www.cdac.in) . The Bidders are requested to read this document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/ instructions given in this document may disqualify the bidders for the EOI exercise. The Bidders are required to upload their Bids as per the terms and conditions given in this Document.

While C-DAC(T) has taken due care in the preparation of information contained herein and believes it to be accurate, neither C-DAC or any of its authorities, agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

This information is not intended to be exhaustive and interested Bidders are required to make their own inquiries in order to submit the bids. The information is provided on the basis that it is non-binding on C-DAC, any of its authorities, agencies or any of their respective officers, employees, agents or advisors.

C-DAC reserves the right not to proceed with the Bid process at any stage without assigning any reasons thereof, or to alter the contents of this document or the timetable reflected in this document or to change the process or procedure to be applied.

It also reserves the right to decline to discuss anything with respect to the EOI/Bid further with any party submitting the bid.

C-DAC will not be liable to pay / reimburse any cost / losses / expenses / penalties / damages of whatsoever nature to any person (s)/entity (ties) submitting the bid. The Bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of bid, providing any additional information required by C-DAC to facilitate the evaluation process, and in negotiating a valid contract or all such activities related to this EOI. C-DAC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the EOI process.

Incomplete Interests, amendments and additions to EOI after opening or late Interests are liable to be ignored and rejected.

Each Bidder shall submit only one Bid for the transfer of Technology. The Bidder who submits more than one Bid or part Bid will be treated as non-responsive & rejected summarily.

Submission of false document(s) by bidder is strictly prohibited and will be liable for rejection of the bid.

Bidders who are confident of complying the terms and conditions of ToT need only participate in this EOI Process.

## 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 “**Acoustic Gunshot Detection Systems (Static Deployed System and Vehicle Mounted System)**” targeting strategic/ civilian applications on non-exclusive basis.

Through this EOI, sealed financial H1 bid is invited on behalf of M/s Technology Promotion Centre, C-DAC, Thiruvananthapuram from reputed firms / companies registered in India, with relevant experience / insights in the manufacturing / marketing / implementation of products through Transfer of Technology (ToT) and Licensing. Bidders from countries sharing a land border with India can participate in this EOI only if they are registered with the Department of Promotion of Internal Trade (DPIIT) of the Indian Government.

This document details about the product, 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, Strategic 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**

Acoustic Gunshot Detection System detects and conveys the location of gunfire or other weapon fire using an array of acoustic sensors. These systems can be used by military, law enforcement and security agencies to identify the direction of gunfire. Acoustic Gunshot detection systems can also be used in

- Surveillance of high security installations such as government buildings, military installations, museums etc. for alerting potential human targets to take evasive action and to direct security forces to neutralize threats.
- Counter insurgency and combing operations of in-land security forces against internal threats
- Operations of Indian Defense forces against external threats
- Collecting Forensic evidences after a Gunshot incident

Few products for Gunshot localization is available in the foreign market today and are very expensive. In India also, research is going on in this field, but a practical system could not be realized yet. Licensed production of the system with C-DAC technology would make it affordable, especially in cases where large numbers are required, as in for 24 x 7 security perimeter surveillance.

For detecting and localizing a gunshot, an array of acoustic sensors connected to a Signal Processing Unit (SPU) is employed. The sensors listen to acoustical events and the associated system continuously looks for any signal of interest. Following signal detection, Time Difference Of Arrival (TDOA) of the sound at the different sensors are processed using triangulation techniques, to extract the positional information of a gunshot. The positional information is presented in terms of Azimuth angle, Elevation angle and Range of the source of gunfire relative to the sensor array. Two variants of the product namely the Static Deployed System and Vehicle Mounted System are developed and available for ToT. The static deployed system is meant for static installation in applications such as perimeter security whereas the vehicle mounted units are intended for installation in mobile platforms like vehicles or unmanned robotic platforms.

The developed product snapshots are shown in Fig.1 and Fig.2:

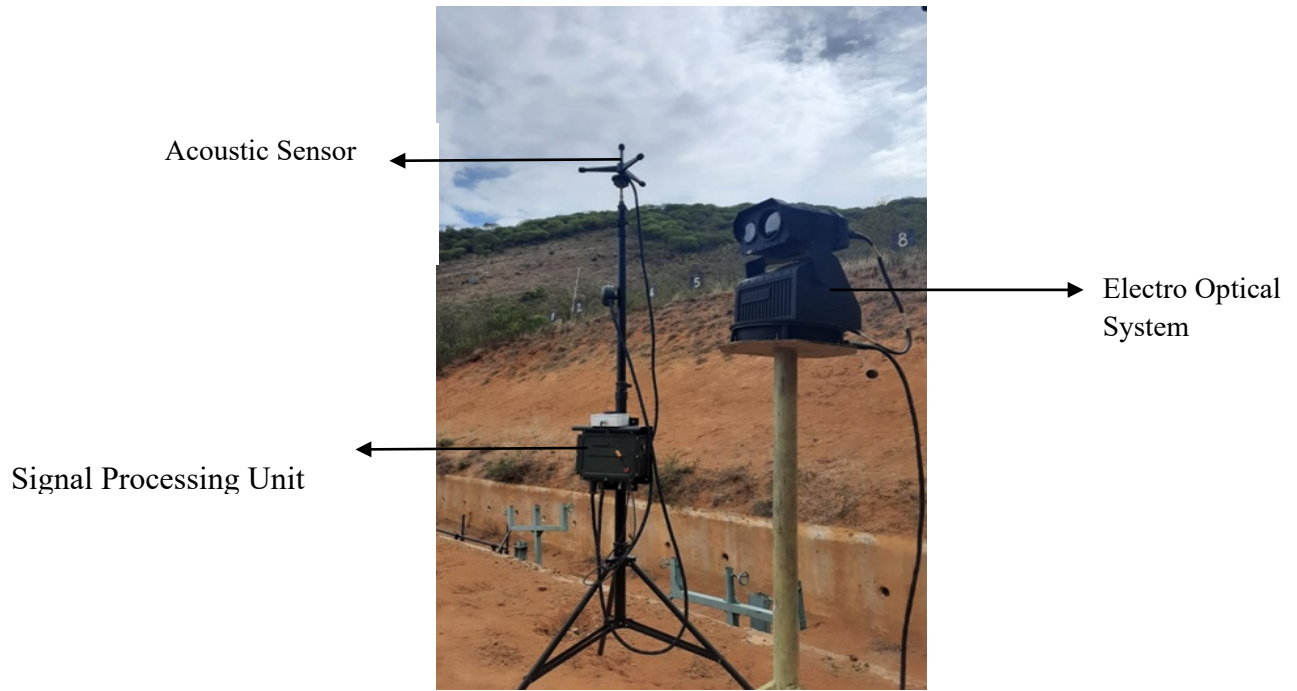


Fig. 1. Static AGDS in tripod mount



Fig. 2. Vehicle mount system mounted in AGV

## Brief Specification

Parameter	Static deployed AGDS	Vehicle mounted AGDS
Type of detected threat	Gun Shots from small arms of caliber 5.56 mm, 7.62 mm, 12.7 mm.	
Detection Range (from field trials)	At least 500 m (for 5.56 mm,7.62mm )	At least 500 m (for 5.56 mm, 7.62mm )
Accuracy	$\pm 3^\circ$ or better in azimuth $\pm 5^\circ$ or better in elevation	$\pm 5^\circ$ in azimuth $\pm 7^\circ$ in elevation
Detection rate	90% or better	90% or better
Coverage	360°	360°
EO System* (Optional)	Electro-Optical facility having Thermal Imaging Camera and Day colour camera	

**\*See Product video and brochure for more technical and operational details**

## 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 Expression of Interest (EOI) also seeks from interested industry vendors to offer the best price for onetime ToT license cost for all the listed items.
- 4.3 The minimum base price for the ToT of Acoustic Gunshot Detection System (Static Deployed System and Vehicle Mounted System) has been finalised by the ToT Committee (constituted by the Competent Authority) as per the terms of reference finalised by C-DAC. The highest price offered by a vendor in a category shall be designated as H1 price. If the value of H1 price is more than the minimum base price finalised by C-DAC, then H1 bid shall be considered as the final price under that category. If the value of H1 bid is less than the minimum base price finalised by C-DAC, then the base price finalised by C-DAC shall be considered as the final price under that category.

- 4.4 This invitation of EOI will be open till 15/12/2024. The financial bids received till the last date of EOI shall only be evaluated to arrive at the final cost of ToT license.
- 4.5 If there are no respondents to the EOI, the base cost already finalised by the ToT Committee shall be fixed as the license cost for the ToT.
- 4.6 Interested bidders may submit the expression of interest (see section 5.0 and section 6.0)
- 4.7 The EOI bids received from the bidders shall be evaluated to discover the best H1 bid. Evaluation of the received bids and its short listing shall be based on presentation by the bidders and the assessment of the technical and financial capability of the bidders through assessment as applicable.
- 4.8 After the evaluation, the cost finalised by C-DAC for the ToT will be informed to all the bidders who have participated in the EOI.
- 4.9 The draft ToT agreement will be shared with the eligible bidder. If the eligible bidder agrees to the terms and conditions of the agreement, the agreement may be signed after payment of the onetime ToT license fee as stipulated in the payment terms for that product. After the execution of the ToT Agreement and payment of one time license fees, the successful bidder then becomes eligible for procurement of licenses for the prescribed period from C-DAC.
- 4.10 Participation in this EOI does not guarantee any association with C-DAC, unless the agreement is signed.
- 4.11 The technology is offered on non-exclusive basis.
- 4.12 Sale of products generated using this technology transfer is limited within the territory of India. Any sales, transfers, or exports of the product manufacture using the acquired technology outside India shall require prior written approval from C-DAC.
- 4.13 The ToT granted will be non-transferable. The ToT partner shall not assign, sublicense, or transfer the acquired technology to any third party without obtaining prior written consent from C-DAC.
- 4.14 C-DAC reserves the right to publish the EOI again for ToT of the products mentioned in this EOI for other companies to acquire the technology in future.
- 4.15 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.

4.16 C-DAC reserves the right of rejecting any offer without assigning reasons.

4.17 C-DAC reserves the right to disqualify any bidder should it be deemed so necessary at any stage on the grounds of national security.

4.18 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 including MSMEs or Start Ups willing to acquire licenses, market, sell and implement “Acoustic Gunshot Detection System (Static Deployed System and/or Vehicle Mounted System )” can apply.

Bidders from countries sharing a land border with India can participate in this EOI only if they are registered with the Department of Promotion of Internal Trade (DPIIT) of the Indian Government. They have to submit the required self-declaration confirming their eligibility and restriction status as per the format attached herewith as Annexure -III.

## 6. How to Apply

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

**Section Head, Technology Promotion Centre**

Centre for Development of Advanced Computing (C-DAC)

Vellayambalam, Thiruvananthapuram, Kerala, India, 695033

Phone: 0471 2727508 Fax: 0471 2723456

Email: [tpc@cdac.in](mailto:tpc@cdac.in) Website: [www.cdac.in](http://www.cdac.in)

## **7. ToT Agreement (How to Subscribe)**

- 7.1 The ToT partner is selected based on the expression of interest submitted by interested bidders.
- 7.2 If selected, the successful bidder shall pay onetime ToT license subscription fee and sign the ToT agreement to become ToT partner of C-DAC. Onetime ToT license subscription fee finalised by C-DAC shall be informed to all the bidders who have participated in the EOI.
- 7.3 C-DAC shall sign the technology transfer agreement with the successful bidder on receiving the onetime ToT license subscription fee as stipulated in the payment terms.
- 7.4 The license will be granted on Non-Exclusive basis.
- 7.5 The company shall pay royalty to C-DAC for each unit manufactured. C-DAC will issue product activation licenses once royalty charges are paid by the company. The company can activate the product using the product activation license.
- 7.6 No ToT partner will be allowed to quote for any external projects based on the above charges unless they enter into an agreement with C-DAC and pays the one time ToT license fees. The subscription fees are non-refundable. In case any party offer /quotes the rates without an agreement with C-DAC, C-DAC will not honour the rates/ will not give the ToT to such party.

## **8. One time ToT license Subscription Validity & Renewal of ToT agreement**

- 8.1 Payment of one time ToT license fee grants the successful bidder, subscription validity for a period of 3 years from the date of signing of the agreement
- 8.2 For continued support beyond 3 years the successful bidder shall be required to renew the ToT agreement by paying the subscription charges of Rs. XX Lakhs plus applicable taxes (to be quoted in Annexure-II- Financial Bid Format) before the expiry of valid subscription, which will be valid for a further extended period of two years.
- 8.3 If the renewal is initiated after the stipulated period, a fresh ToT agreement need to be signed by the successful bidder based on the EOI conditions prevailing at that time.
- 8.4 After five years (from the date of signing the ToT agreement) a new ToT agreement is to be signed by the successful bidder based on the EOI conditions prevailing at that time.
- 8.5 The successful bidder should have a valid ToT subscription license for providing any technical support on the ToT deliverables made by C-DAC.

8.6 Any customisation requirements of the ToT partner shall be entertained by C-DAC only if a valid ToT subscription exists. Such customisations shall be undertaken by C-DAC at cost basis on mutually agreed terms and conditions.

## **9. C-DAC Deliverables**

9.1 On payment of one-time license fee and signing of ToT agreement, the following list of items shall be provided by C-DAC to the ToT partner for production, product marketing support and PoC demonstration.

1. Technical Manual
2. Bill of Materials
3. Sourcing Details
4. Assembly Details
5. PCB Gerber files
6. Binary Files
7. Schematics
8. Production documents
9. Test plan & Procedures
10. Training

## **10. Training for ToT Partners**

10.1 C-DAC shall arrange one day product level introductory training to the ToT partner at Thiruvananthapuram Centre (C-DAC(T)) after signing of ToT agreement.

10.2 Upon 100% payment of one time ToT subscription license fee detailed production level training and on application development Of Acoustic Gunshot Detection System (Static Deployed System and Vehicle Mounted System) shall be provided up to three working days.

10.3 The training will be conducted at C-DAC(T) premises.

10.4 The travel and boarding and lodging expenses of the trainee(s) during the period of training shall be borne by the ToT partner.

10.5 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.

- 10.6 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.

## **11.Field implementation support**

- 11.1 C-DAC(T) shall provide remote support to the ToT partner for installation and configuration of Acoustic Gunshot Detection System (Static Deployed System and Vehicle Mounted System) during the licence period on case to case basis upon mutually agreed terms and conditions.
- 11.2 If any onsite support is requested by the ToT partner, C-DAC (T) shall support on mutually agreed terms and conditions.
- 11.3 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 (T) team and period of stay for outstation support shall be decided by C-DAC(T) on mutual consultation, depending on the type of support requested.

## **12.Direct implementation by C-DAC**

- 12.1 C-DAC reserves the right to implement Acoustic Gunshot Detection System (Static Deployed System and Vehicle Mounted System) solution directly at sites where C-DAC is awarded orders for implementation directly by the end user.
- 12.2 If C-DAC is implementing Acoustic Gunshot Detection System (Static Deployed System and Vehicle Mounted System) directly, then the cost at which C-DAC will be offering the solution to the end user will be 140% of the product cost finalised by C-DAC.

## **13.Payment terms for One Time ToT Subscription License and Software subscription License**

- 13.1 Successful Bidders/Indian Companies including MSME shall pay the one-time ToT fee in two instalments. First instalment of 60% plus applicable taxes shall be paid upon signing the agreement and balance 40% plus applicable taxes should be paid at the time of the handover of ToT deliverables.
- 13.2 Start-up companies shall pay the one-time ToT fee in three instalments. First instalment of 30% plus applicable taxes shall be paid on signing the agreement. Second instalment of 30% plus applicable taxes shall be paid at the time of handing over of all hardware manufacturing documents. Balance 40% plus applicable taxes should be paid at the time of handing over of all remaining ToT deliverables including software for operationalizing the hardware resource. The payment of 3rd instalment shall be completed within 12 months period of payment of first instalment.
- 13.3 Activation license shall be procured in advance by ToT Partner from C-DAC after paying royalty fee for each unit manufactured and sold to the client.

**For any queries please contact:**

Section Head (Technology Promotion Centre)  
Vellayambalam, C-DAC, Thiruvananthapuram  
Contact: 0471 2727508, 0471 2723333 (extn: 3249),  
email: [tpc@cdac.in](mailto: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 <ul style="list-style-type: none"> <li>a. Public Sector/ Limited/Private Limited/ Partnership/Proprietary/ Society/ Any other</li> <li>b. Whether 'Foreign Equity Participation (Please give name of foreign equity participant and percentage thereof)</li> <li>c. Names of Directors of the Board/ Proprietors</li> <li>d. Name and address of NRI(s), if any</li> </ul>
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. If the bidder is from the countries sharing land border with India, then it must be registered with the Department of Promotion of Internal Trade (DPIIT) under the Indian Government.
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.	<b>Expression of Interest: Spell out the extent of interest and envisaged market potential</b>

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

Signature with Name & Seal:

Place:

Date:

## Annexure-II Financial Bid Format

(To be submitted in sealed envelope / by mail)

### Price bid for One Time ToT License Subscription cost

Sl. No.	Product	Company status	ToT Partnership licence cost for 3 years in Rs. (excluding taxes)	ToT Partnership licence cost for the extended period (4 <sup>th</sup> & 5 <sup>th</sup> year)in Rs. (excluding taxes)
1	Acoustic Gunshot Detection System (Static deployed System)			
2	Acoustic Gunshot Detection System (Vehicle Mounted System)			

### Price bid for Royalty Charges

Sl. No.	Product	Company status	Expected Selling price of the system (excluding taxes)	Royalty fee (in %) for the each unit manufactured
1	Acoustic Gunshot Detection System (Static deployed System)			
2	Acoustic Gunshot Detection System (Vehicle Mounted System)			

**Note:** Bidder can choose to bid on either one or both of the products offered for technology transfer, depending on their interest.



## Annexure-III Border Clause

FORMAT

for Undertaking with respect to Compliance of Restrictions for Countries which share land border  
with India

as stipulated by Govt. of India.

(On Company Letter Head, to be signed by the duly authorized person)

Date:

EOI NO. : .....

TITLE OF EOI : .....

To,

Centre for Development of Advanced Computing (C-DAC),

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sir/Madam,

In line with the guidelines issued for compliance of Restrictions for Countries which share land border with India – as issued by Govt. of India in July'2020, I/We have read the clause regarding restrictions on procurements from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.

a. I/We certify that we are not from such a country or if from such a country has been registered with the competent authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered.

b. I/We certify that this bidder is not from such a country or if from such a country has been registered with the competent authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the competent authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. (Applicable for works involving possibility of sub-contracting)

I/We hereby certify that I/We fulfil all requirements in this regard and am/are eligible to be considered. [Evidence of a valid registration by the Competent Authority shall be attached]

Name and Signature of the Authorised Signatory.