

INVITATION FOR EXPRESSION OF INTEREST (EOI)

Setting-up an Integrated Lab to enable Data Acquisition (from heterogeneous Sources/ Devices/ Sensors), Data Storing, Processing, Integration, Analysis, Reporting and Visualization under Smart Campus Initiative in IIT Kharagpur

Submission of EOI Proposal: Upto 12:30 pm, 12th February, 2019 (New Date)

Opening of EOI Proposal: 1:30 pm, 12th February, 2019 (New Date)

Presentation: 3:00 pm, 12th February, 2019 (New Date)



**INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR**



भारतीय प्रौद्योगिकी संस्थान खड़गपुर
Indian Institute of Technology
Kharagpur

No. IITKGP/FOC/EOI/2018-19/01

Dated: 15th January, 2019

Sub: Setting-up an Integrated Lab to enable Data Acquisition (from heterogeneous Sources/ Devices/ Sensors), Data Storing, Processing, Integration, Analysis, Reporting and Visualization under Smart Campus Initiative in IIT Kharagpur

Sealed Expression of Interest (EOI) are invited by Indian Institute of Technology Kharagpur from firms with relevant proven track record and capabilities in design, supply, installation, system integration, commissioning and maintenance for Setting-up an Integrated Lab to enable Data Acquisition (from heterogeneous Sources/ Devices/ Sensors), Data Storing, Processing, Integration, Analysis, Reporting and Visualization under Smart Campus Initiative in IIT Kharagpur, West Bengal.

The EOI document can be downloaded from Institute website (www.iitkgp.ac.in; Link: Tenders) and the same is also available on CPP Portal (<https://eprocure.gov.in>). The EOI submission fee is Rs.10,000/- (non-refundable) and same must be submitted in the form of Demand Draft drawn in favour of "Indian Institute of Technology Kharagpur" payable at Kharagpur. **The estimated cost of the whole project is Rs. 2.5 crores (Rupees two and half crores)**. Any corrigendum and addendum shall only be published on the Institute Website and CPP Portal.

Interested firms are requested to send their sealed EOI as per Annexure I under a sealed envelope superscribed with "**Setting-up an Integrated Lab to enable Data Acquisition (from heterogeneous Sources/ Devices/ Sensors), Data Storing, Processing, Integration, Analysis, Reporting and Visualization under Smart Campus Initiative in IIT Kharagpur**" by post or submitted in a locked drop box in the RCG School of Infrastructure Design and Management (RCGSIDM) of IIT Kharagpur on or before date and time mentioned on the title page of this document.

The EOI Proposal will be opened on the date and time mentioned on the title page of this document in RCGSIDM, IIT Kharagpur in the presence of the Committee. Authorized representative of the bidders are hereby encouraged to be present during the opening of bids.

The Institute will examine the credentials of the firms, based on the submitted documents as per the eligibility criteria. After evaluation of eligibility criteria, as part of short listing exercise, vendors will be required to make a focused presentation on company, expertise and experience in the relevant field, details of the proposed solution etc. for not exceeding 30 minutes to the Technical Committee of IIT Kharagpur.

Based on the proposed acceptable solution (taken in part or whole from all submissions) RFP/Tenders may be issued to the shortlisted vendors to submit their two part (Part A: Technical and Part B: Commercial) offers as per Institute rules. The shortlisted vendors may be requested to submit their two part (Part A: Technical and Part B: Commercial) offers within a short time period for necessary evaluation and finalization of contract within two weeks.

The Institute reserves the right to (i) issue Request For Proposal (RFP)/Tenders to bidders if deemed eligible and qualified based on the evaluation of the EOI submitted by the bidders, presentations, etc. (ii) reject any or all proposed solutions from this EOI in part or in whole, (iii) create specifications based on any or all proposed solutions from this EOI in part or in whole and use them in limited or

open tendering for this and/or other projects, etc. The decision of the Institute in this regard shall be final.

The Director, Indian Institute of Technology Kharagpur reserves the right to reject any or all the offers without assigning any reason. Any attempt on the part of any firms to influence, negotiate directly or indirectly with the Institute will lead to exclusion from consideration.

Please note: This is not a Request for Proposal (RFP) and commercial bids are not to be submitted with EOI.

Bhargab Maitra
Head, RCG School of Infrastructure Design and Management
IIT Kharagpur

1. INTRODUCTION

Indian Institute of Technology Kharagpur, fondly referred to as IITKGP by its kin, right from its inception formed the bridge between India's ancient wisdom and modern technology. IITKGP is not just the place to study technology, it is the place where students are taught to dream about the future of technology and beam across disciplines, making differences enough to change the world. IIT Kharagpur is a residential campus spreading over 8.5 square kilometres. Management of infrastructure and facilities in IIT Kharagpur campus is an important aspect to enhance the quality of life for residents in the campus. The need for a comprehensive database, consisting of static and dynamic data, is well accepted for formulating policy decisions and management strategies. The real time data acquisition, analytics, visualization, etc. are also important to promote quality research and encourage students to address various real life problems. Accordingly, it is aimed to develop IIT Kharagpur campus as a Smart Campus and develop an integrated lab to enable data acquisition (from heterogeneous Sources/ Devices/ Sensors/UAV/IOT), data storing, processing, integration, analysis, reporting and visualization using necessary equipment and networking. The lab will provide a platform for the students to develop innovative solutions, apply them for monitoring and improvement of Infrastructure (Roads, Building, etc.), Transport, Energy, Environment, Education, and Security in the test bed of IIT Kharagpur campus.

2. MINIMUM ELIGIBILITY CRITERIA

Bidders who are interested to participate should meet the following minimum eligibility criteria:

- (a) Bidder must have completed designing, supplying, installation and commissioning of **similar/relevant projects** in a reputed government or corporate organization during previous five years from the date of tender submission deadline. Name, address/contact details of the present and past satisfactory clients to be provided as per the format in Annexure -II.
- (b) Bidder must submit copies of audited Statement of Accounts for the last three years ending 31st March this year along with the EOI.
- (c) Solvency certificate minimum of Rs. 1 crore in a prescribe format (Annexure -III) is required from any scheduled bank.
- (d) Proof of Registration of the bidder under relevant law, such as Companies Act, and / or Shops & Establishment Act or Trade License from appropriate authority etc.
- (e) All bidders should submit along with their EOI, copies of PAN Card, GST Registration certificates.
- (f) A certificate (Affidavit) to be signed by MD / CEO of the company that they have not been debarred or blacklisted for any services, supplies or products dealing in, by any organizations or educational Institute/ University or state/ central government and no criminal case/legal proceeding or industrial dispute is pending or contemplated against them.
- (g) The bidder must submit copies of acknowledgement of Income Tax return for the last three financial years ending on 31st March this year.

(h) Filled in declaration as per the Annexure –IV

Bidders must submit the documentary proof in support of meeting the minimum eligibility criteria. Simply an undertaking by the Bidder for any item of the criteria shall not suffice the purpose. All the documentary proof must be listed on the letter head, to be submitted with the EOI proposal.

3. EOI SUBMISSION FEE

For amount given on page 1 of this document (non-refundable) must be submitted in the form of Demand Draft drawn in favor of “Indian Institute of Technology Kharagpur” payable at Kharagpur.

4. SCOPE OF WORK

This EOI is prepared to shortlist prospective bidders for developing an integrated lab (both hardware and software) for data collection (from heterogeneous sources/devices/sensors/UAV/IOT), storing, processing, analysis, reporting and visualization under Smart Campus Initiative in IIT Kharagpur. It is aimed to develop this lab for smart management of IIT Kharagpur campus using data analytics, image processing, 3D visualization, and providing real time information with metrics and stream visuals.

- Developing an integrated solution (turn-key basis) considering both hardware and software.
- The focus is on acquisition of data near real time for Pan Campus with ICT solutions and integrated services including control systems for real-time data collection & analysis
- Develop computational system that can handle near real time data with parallel computing capability
- Serve as a test bed where data are collected using various technologies, sensors, UAV, IOT, etc. and used for visualization and applications in key areas such as Infrastructure (Roads, Building, etc.), Transport System, Energy, Environment, Education, and Security.
- Provide an interactive platform to access these data through visualization

The scope of work is outlined below. The prospective bidders may contact IIT Kharagpur in the correspondence address given below for clarifications, if any, regarding the scope of work.

4.1 Supplying Necessary Equipment, Software, etc. and Designing the solution for setting-up an integrated lab to enable data acquisition (from heterogeneous Sources/ Devices/ Sensors), data storing, processing, integration, analysis, reporting and visualization. This includes

- i. Development of data visualization based on functional requirements with large tiled display wall to facilitate (a) research on interactive display technology and algorithms, (b) technical presentations, (c) video conferencing, (d) distance learning, etc.
- ii. Devices/ sensors/UAV/IOT, etc. for data acquisition and necessary equipment and networking
- iii. Technological platform to acquire data, access, store, and analyze structured & unstructured data from various sources including sensors and drones. The platform should include capable deep learning clusters to handle at least 150 petaflops per minute of near real time data operations, and have solid state data storage.
- iv. Develop & customize the solution that would:
 - Extract entities and their relationships and perform all analytics using NLP techniques and data mining algorithms
 - Allow user to perform various types of search and data visualization
 - Present information to users in visually intuitive manner in the form of graphs and visually presentable material

- Map available information on GIS interface and allow user to perform location based query
- Allow user to create custom dashboards/ reports based on their analysis

The solution should be implemented on a Big Data framework, and have integrated security features to protect from external threats. This hardware system and solution must be integrated with the network communication of IIT Kharagpur.

4.2 Implementing the Solution

- (a) Configure and deploy the necessary hardware and software solution in the test/lab environment for testing purpose
- (b) Coordinate and carry out the intermediate and final testing of the configured solution
- (c) Coordinate and provide necessary support to conduct acceptance testing
- (d) Prepare & provide necessary documentation in the form of user manual

4.3 Operating and maintaining the hardware and provided software solution

- (a) Adhere to the contracted service level agreements to ensure necessary uptime of the solution during the warranty & AMC period
- (b) Train specific groups of users to be able to manage and optimally utilize the created system

4.4 Providing enhancements, post commissioning of the solution

- (a) Suggest desirable features to maximize the usefulness of the solution over and above the basic user requirements
- (b) Design and develop/ customize modules/features as per evolving user requirements during the warranty & AMC period – 3 years
- (c) Integrate the new customized modules / features in the live solution
- (d) Train the users and provide necessary documentation

The EOI should include the following:

- I. Cover letter
- II. Relevant experience including supply, integration, and implementation of such systems, and necessary documents with respect to minimum eligibility criteria
- III. Proposed concept and design solution to set-up a visualization lab with data storing, processing, analysis and reporting by acquiring data from heterogeneous sources/devices/sensor
- IV. Requirements of hardware and software with detailed specification
- V. System integration and maintenance plan
- VI. Any other details necessary for proper planning and development of the proposed lab

5. OTHER TECHNICAL AND COMMERCIAL REQUIREMENTS

- I. Single vendor/System integrator will be responsible for supplying, executing/installing, and commissioning of all the above towards developing the lab
- II. Complete system solution and integration has to be done by the same vendor
- III. Instructions for its operation and maintenance must be provided
- IV. Training for its use must be provided
- V. Dedicated on-site troubleshooting for the system must be provided for a period of 3 years from the date of commissioning
- VI. Inventory of essential spares must be maintained

- VII. Warranty for all hardware must be provided for 3 years
- VIII. Protection against lightning and electrical surges/shocks should be provided

6. PERIOD OF VALIDITY: 120 days from the date of opening

7. INTELLECTUAL PROPERTY OWNERSHIP

By submitting a bid, regardless of whether the bidder's solution wins or not, bidder transfers all copyright and intellectual property ownership in perpetuity to IIT Kharagpur for use of the solution in part or whole in any academic, non-academic, promotional, non-promotional, commercial and non-commercial manner. Any loss or damage resulting from submission is not IIT Kharagpur's responsibility. Any revision, publicity, editing and formatting of bidder's submission are completely in IIT Kharagpur's discretion.

8. CORRESPONDENCE

For any query pertaining to this document, correspondence may be made to:

Prof. Bhargab Maitra
Head, Ranbir and Chitra Gupta School of Infrastructure Design and Management
2nd Floor, P. C. Ray Block (Twin Science Building), B-Block
Indian Institute of Technology Kharagpur, Kharagpur-721302
Email: bhargab@infra.iitkgp.ac.in with a copy to bharathaithal@gmail.com

9. EOI SUBMISSION ADDRESS:

Prof. Bhargab Maitra
Head, Ranbir and Chitra Gupta School of Infrastructure Design and Management
2nd Floor, P. C. Ray Block (Twin Science Building), B-Block
Indian Institute of Technology Kharagpur, Kharagpur-721302
Tel: +91-3222-282235 (Office), +91-3222-282234 (Head)

Annexure -II

DETAILS OF EXISTING /COMPLETED RELEVANT CONTRACTS

Sl. No.	Name and address of the organisations/ Institutes Name, designation and contact phone/fax numbers of the Officer concerned	Details regarding the contract	Value of contract (in INR)	Duration of contract		Additional information/ remarks, if any
				From dd/mm/yy	To dd/mm/yy	

Signature of the Authorised Person

Date : -----

Full Name : -----

Place : -----

Company Seal : -----

Note :

The above details be duly signed and sealed by the authorised signatory of the firm/company, and be enclosed with the EOI document.

Annexure -III

Solvency Certificate
[Format for Solvency Certificate]

Solvency Certificate

This is to certify that to the best of our knowledge and information, M/s..... (address) a customer of our bank is respectable and be treated as good for an engagement up to a sum of Rs..... (Solvency amount) only as on..... (Date of Certificate).

This Certificate has been issued without any risk and responsibility on the part of the Bank or any of its officers. This certificate is issued at the specific request of the customer.

Yours faithfully,

For..... Bank
Bank Officer with designation

DECLARATION

1. I, ----- Son /Daughter of Shri -----
----- Proprietor/ Partner/ Director/ Authorised Signatory of M/s. -----
----- am competent to sign this declaration and execute this EOI document.
2. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief.
4. I/ we/ am are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

Signature of the Authorised
Person

Date : -----

Full Name : -----

--

Place : -----

Company Seal : -----

-

Note: The above declaration, duly signed and sealed by the authorised signatory of the firm/company, should be enclosed with the EOI document.