

Invitation
For
Expression of Interest

**Innovation cum Training Lab Setup with Supply of Adult Male
HPS - (Human Patient Simulator)**

EOI Doc Version	IHFC/EOI /MCC/ 10012022
Document Date:	10 January 2022
Security Classification:	Restricted
Author:	IHFC



**I-Hub Foundation for Cobotics
Indian Institute of Technology
Hauz Khas, New Delhi-110 016
Contact: 011-2654 8493**

Confidential

TABLE of Contents

1. About EOI
2. Objective of EOI
3. Company Profile
4. Definition
5. Qualification Criterion
6. Scope of Work
7. Schedule
8. EOI submission and Opening
9. Contact Details
10. Evaluation Criteria
11. Conflict of Interest
12. Additional Terms and Conditions
13. Appendix-A/B/C

1. ABOUT EOI

IHFC (I-Hub Foundation for Cobotics, a Technology Innovation Hub (TIH) of Indian Institute of Technology Delhi invites online EOI (Expression of Interest) **“For Innovation cum Training Lab Set up with Supply of Adult Male HPS (Human Patient Simulator) at Medical Cobotics Centre”** (MCC) from eligible and experienced OEM (Original Equipment Manufacturer) or OEM Authorized Dealer for supply, installation & integration with warranty.

2. OBJECTIVE

The HPS (human Patient simulator) is an attempt to reproduce the exact or nearly exact phenomenon likely to occur in real-world human being. A human simulator is a computer-controlled device with a mannequin of a human body. This has anatomical features, physiological pharmacological models all geared to imitate the responses of a human body in health and disease. This has the capability to provide training of responses of the body in various medical conditions, physiological changes, and crisis situations in a controlled environment without endangering patients. Students can see the result of their management and try different treatments again and again. Therefore, simulators can allow learning and practice the use of new equipment, equipment failure, procedures, monitors, without subjecting the real patient to dangers of the “learning curve”. Thus, the students become competent with practice before treating patients.

The primary goal of all medical personnel is to ensure patient safety. All studies have shown that majority of accidents in modern anesthetic and medical practices are a consequence of a human mistake. Some errors occur due to equipment failure also. In a hospital, mistakes occur because of poor training of personnel, lack of skills and exposure to critical events in the training period, ill-organized team approach. The patients die because of mishandling of emergencies where the time for management is very little and mismanagement can result in death. Take an example of airway obstruction during anesthesia a patient’s safety is important and senior physicians must assume control.

If a trainee is allowed to handle the emergency, the patient may die. Also, you cannot produce unusual emergencies like a severe allergic response to a drug, equipment failure, to train students. Therefore, medical personnel must be adequately and uniformly trained, acquire skills necessary to handle serious contingencies.

Clinical management requires knowledge, analysis of many facts, monitoring, inputs, results of investigations and, synthesis of the treatment plan. Students have all bits of basic knowledge but combining this information in the mental management model is difficult to teach in lectures. On a simulator, the instructor repeats scenarios and can teach important aspects of physiology, pharmacology, anesthesia, emergency medicine, critical care to all personnel involved. Those include medical students, trainees in an emergency, medicine, critical care, surgery, para-medical personnel like nurses, ambulance men, and fire-fighters all can be taught essentials of emergency.

IHFC is inviting industry (individual or consortium) to express their interest and share their expert opinion with substantial inputs on various aspects associated. The purpose of the exercise is to learn the available industry expertise, decide the strategy, the scope of the work, and budgetary assessment for subsequent selection of interested and worthy industry vendors for its execution.

APPLICATIONS OF HPS

- Education of undergraduate, postgraduate students in engineering, physiology, pharmacology & for clinical evaluation of the patients
- Training of related health professionals like nurses, ambulance personnel, firemen, in crisis management.
- Training of medical students in routine and special clinical situations.
- Training of junior doctors and nurses in handling critical events
- Evaluation of medical equipment before purchases
- Staff training in the use of equipment
- Performance assessment
- Research on decision making by a clinician, machine handling, and factors that may affect performance such as fatigue
- Recreation of the disease and probable treatment for teaching and training unexpected diseases like Covid19.

The main advantages of Patient Simulators in Medical Teaching & Training are enumerated below:

- No risk to patients
- Many situations can be represented including uncommon but critical ones, which may require rapid responses and there is a possibility to repeat and master these skills.
- Can readily see the results of their decisions and actions.
- Errors can be created deliberately to arrive at the best options.
- Identical situations can be presented to different teams and responses compared.
- Actual medical equipment can be utilized. They are mastered and their limitations are also understood. The personnel can be exposed and the best selections found.
- With the creation of actual clinical situations, the interaction among members of the teams can be analyzed and identified the weak links. Training methods can also be evolved for teamwork, leadership, and communication.
- The simulation response can be documented and used later for research, and performance assessment accreditation.

3. COMPANY PROFILE

I-Hub Foundation for Cobotics (IHFC), Technology Innovation Hub (TIH) of IIT Delhi,

IHFC is a Section 8 company, registered under The Companies Act, 2013 having registered office at MZ-122 IIT Room No. Hauz Khas, Delhi, India-110016, established under the mandate of the Govt. of India through the Department of Science and Technology (Ministry of Science and Technology), under its NM-ICPS (National Mission on Interdisciplinary Cyber-Physical Systems) mission for promoting research and development, incubating/promoting individuals/start-ups, entrepreneurs, organizations and corporations individually or in collaboration with faculty and other parties for harnessing the new wave of technological innovation in India. Medical Cobotics Center (MCC) shall be a multi-purpose facility for enhancing the research and development capabilities in technologies associated with Medical Simulators, Digital Health, Healthcare Robotics, and associated areas to provide best-in-class infrastructure for the same.

4. DEFINITIONS

“PARTICIPANT” is a company that is participating in the IHFC EOI exercise and is willing to express its interest to offer its services for the prescribed requirements. In case, one individual company does not meet all the qualification criteria described below, it can associate with other companies to form a consortium to gain eligibility collectively and meet specific expertise requirements to be able to execute the required work efficiently. A company, if a member of a consortium cannot participate as an individual company and cannot be a member of another consortium for the same EOI.

5. QUALIFICATION CRITERIA

A. INCORPORATION

- i) PARTICIPANT (incl. all members of the consortium, if any) should be registered under the Indian Companies Act 2013.
- ii) PARTICIPANT needs to submit their certificate of incorporation.
- iii) PARTICIPANT should be in the active business in a related field for at least the last three years.

B. EXPERIENCE

- i) PARTICIPANT should have substantial experience and expertise in the supply and commissioning of such Simulation labs.
- ii) PARTICIPANT should have end-to-end system expertise for Design, Development & Implementation of Hardware, Software, and Scenarios building in various medical fields.
- iii) PARTICIPANT should have a demonstratable track record of successful execution of medical projects in India. Necessary proof of the project execution needs to be submitted to establish that the company/consortium is actively contributing to the development of the Indian ecosystem of indigenous product development and research.
- iv) PARTICIPANT should describe expertise available with their organization/consortium with specific experience of related exercise as mentioned in “Scope of Work” Section.

C. FINANCIAL CAPACITY

- i) PARTICIPANT should submit technical and financial details of (up to) the **best 3 related projects already executed in the last 2 years.**
- ii) The information should include the project descriptions, values of the project, size of the project, duration, and the successful project execution certificate/proof.
- iii) Pre-qualification of the PARTICIPANT companies will be done based on the submitted documents to substantiate the qualification criteria mentioned in this section.

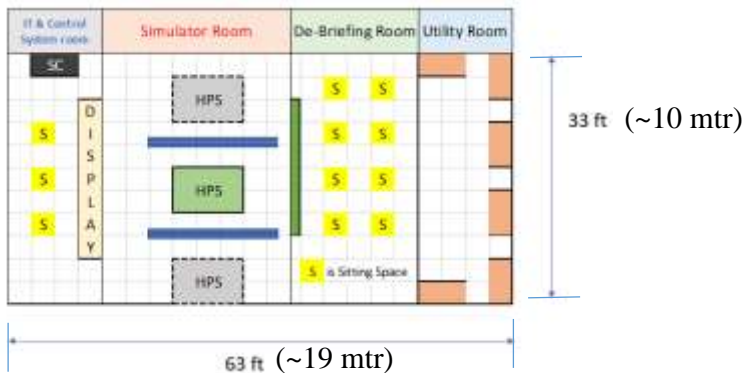
6. SCOPE OF WORK

1. Infra Development for MCC
2. Supply of Simulation Devices
3. Operation Management
4. Course Module
5. Faculty support

A) *Infra Development*

This includes the development of Civil Space, a Hall-type infra for the suitability of the MCC set up and development like

- i) Planned layout for Lab which includes Simulator room, briefing room, waiting room, Surgery Practice room, Portioning of space, etc.
- ii) The installation and successful layout design will be approved by IHFC before implementation.
- iii) A rough sketch of the layout is shown below:



B. *Supply of Simulation Devices*

- i) Supply and commissioning of simulators including all accessories to run a medical center on like Bed with wheels, Bedding for Mannequin, all monitoring devices, and connectivity to cover multiple scenarios of Crisis management.
- ii) Supply of all peripheral devices to be connected to Mannequin for recording/Monitoring/Scheduling etc.
- iii) HPS Hardware which includes
 - a. HPS – Mannequin
 - b. System Controller
 - c. Medical Grade Patient Monitor
 - d. Medical Grade ANAESTHESIA Machine
 - e. Medical Grade DEFIBRILLATOR
 - f. ICU Ventilator
- iv) HPS Software
 - a. User Manager for access and security

- b. System Manager
- c. Integrate
- d. Recording
- e. Review
- f. Reports
- g. Track
- h. Schedules

C. Operation Management

- a. Operation and Maintenance of all Mannequins devices for at least 2-3 years to keep them in working condition @ 99% availability.
- b. Regular maintenance and replacement of consumables for Simulator devices.
 - a. Supply of consumables with minimum stock availability of critical items.
 - b. To provide Electrical/ Electronic and Mechanical support in the maintenance of devices.
 - c. Help the purchaser in handholding the project for 1 year including an end-to-end activity and its consultancy with manpower like
 - Centre -In-charge,
 - Technician/Bio-Medical Engineer,
 - Nursing and one office boy.

PARTICIPANT to demonstrate Functional Capability in HPS

- a. Airway System
- b. Pulmonary System
- c. Cardio Vascular System
- d. Metabolic System
- e. Genito Urinary System
- f. Neurologic System
- g. Advanced Cardiac Life Support System
- h. Trauma Features:
- i. Pharmacology & Drug Recognition System
- j. Anesthesia and Scavenging

PARTICIPANT to demonstrate files & Scenarios Support

- a. Anesthesia
- b. Obstetric
- c. Allied Health
- d. Advanced Cardiac Life Support (ACLS)
- e. Advanced Life Support (ALS)
- f. Digital Video & Audio Management System

PARTICIPANT to demonstrate the Basic Features of HPS

- a. blink
- b. dilate pupils
- c. sweat
- d. breathe
- e. register pulse
- f. Cannula tube insertion

- g. Respond verbally or by Signals

D. Course Module

- i) All support related to the design of a particular course for U/G and P/G medical and paramedical staff.
- ii) Help in deciding the Target audience and batches /Batch size, Training frequency with duration.
- iii) To decide the parameters of effectiveness of training and its certification provisions.
- iv) PARTICIPANT will help in Train the Trainer program and complete handholding of same to make it successful

E. Other Support

FACULTY SUPPORT

- i) **PARTICIPANT** will arrange necessary faculty and schedule for the Train the Trainer Program.
- ii) help create multiple trainers to operate and manage the various scenarios
- iii) help in Faculty selection for the institution.

UPGRADE

- i) After the initial setup at MCC, it is expected to be upgraded with the latest firmware/software in the system controller to suit research objectives FREE OF COST for 3 years from date of Installation.
- ii) The PARTICIPANT is to define efforts and resources proposed to upgrade operations for 2-3 years if any.

MONETIZATION ASSESSMENT

PARTICIPANT should provide their vision of how the MCC can be monetized by opening its usage to external organizations. The assessment may include the rough assessment of investment requirements and the monetization potential.

ADDITIONAL CONTRIBUTION

PARTICIPANT should articulate how they would like to provide their additional contributions and ideas that can further improve the Utilisation of the Simulation devices and Center for various programs.

7. **SCHEDULE**

Name of Organization	I-Hub Foundation for Cobotics, IIT Delhi
Tender Type (Open/Limited/EOI/Auction/Single/Global)	EOI
Tender Category (Services/Goods/works)	Goods and Services
Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell)	Goods and Services
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	Others
Date of Issue/Publishing	14/01/2022 (11:00 Hrs.)
Document Download/Sale Start Date	14/01/2022 (11:00 Hrs.)
Document Download/Sale End Date	04/02/2022 (15:00 Hrs.)
Last Date and Time for Uploading of Bids	04/02/2022 (15:00 Hrs.)
Date and Time of Opening of Technical Bids	07/02/2022 (15:00 Hrs.)
Bid Validity days (180/120/90/60/30)	60 days (from the last date of opening of bids)
Address for Communication	IHFC, 6th Floor, Vishwakarma Bhawan, IIT Delhi, Hauz Khas, New Delhi 110016, India Or IHFC, MZ-122, IIT Delhi, Hauz Khas, New Delhi 110016, India
Contact No.	(91)-11-2654-8493
EOI offer availability for download	www.ihfc.co.in or www.IITdelhi.ac.in .
Email Address	mcc@ihfc.co.in

Note:

- PARTICIPANTS are advised to seek clarifications over the email at <mcc@ihfc.co.in> within three (3) days after issuance of the Invitation for EOI.
- All received questions will be clarified over email or in an online/offline meeting with the individual PARTICIPANT.
- All the question received and their responses will become part of the Invitation for the EOI document.
- The EOI submission date is 3 weeks after the issue date of Invitation for EOI. In no circumstances, EOI submission date will be extended further.
- After receiving all the EOI responses, all PARTICIPANTS will be asked to make presentations on their offer in the next 2-3 days.

Important dates are summaries as:

i) Issue of EOI	:	T0
ii) Submission of written queries	:	T0 +3days
iii) Online meeting to clarifying questions	:	T0 +7days
iv) Submission of EOI	:	T0 +3Weeks
v) Presentation of EOI Proposal	:	T0 +3W+2days
vi) Selective Subsequent Interactions if required:	:	During further evaluation
vii) Completion of Evaluation	:	As required

8. EOI SUBMISSION AND OPENING

As per the schedule mentioned above

9. CONTACT DETAILS

- i) Any clarification on the EOI process:
Position: Head-Operation, IHFC
Email: mcc@ihfc.co.in
Phone: (91)-11-2654-8493 (*Not for EOI clarification*)
All queries should be sent over email.
- ii) All PARTICIPANTS should mention the contact details of their representatives.

10. EVALUATION CRITERIA

- i) Screening of EOIs will be carried out as per eligibility conditions mentioned in this document and based on verification of testimonials submitted.
- ii) EOI will be further evaluated based on the submitted response on the aspects of:
 - a. Relevant technical expertise of the team.
 - b. Relevant compliance of requirements in the product offered in EOI by the PARTICIPANT.
 - c. Related projects successfully accomplished in the past.

- d. Degree of interest shown in submitting a response on various aspects defined under section scope of work.
 - e. Strategic contribution potential that vendor can offer to make this project successful.
 - f. Contribution to budgetary assessment.
- iii) All the PARTICIPANTS will be asked to make a presentation of their offer immediately after the EOI closure date.
 - iv) Subsequent interactions with select participants to get further clarification on their offer may be required.
 - v) The qualified PARTICIPANTS as per the selection criteria will be allowed to participate in the subsequent bid. EOI exercise will be terminated if none of the EOI responses are found suitable.

11. CONFLICT OF INTEREST

- i. Where there is any indication that a conflict of interest exists or may arise, it will be the responsibility of the PARTICIPANT to inform in the email to the designated IHFC contact point. The details of the visualized conflict should also be attached to the EOI.Response as Appendix-B.
- ii. IHFC will be the final arbiter in cases of potential conflicts of interest. Failure to notify IHFC of any potential conflict of interest will invalidate any verbal or written agreement.
- iii. A conflict of interest is where a person who is involved in the procurement has or may be perceived to have a personal interest in ensuring that a particular PARTICIPANT is successful. Actual and potential conflicts of interest must be declared by a person involved in an EOI process.

12. ADDITIONAL TERMS & CONDITIONS

- i) PARTICIPANT should clearly define the IPR generation, sharing, and usage policies along with the associated monetary implications.
- ii) Indian companies should be compliant with the prescribed norms of the Government of India.
- iii) Appropriate penalty clauses will be imposed to ensure that the claimed objectives are executed in time without compromising on the quality.
- iv) This inquiry is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. The buyer also reserves the right to withdraw the inquiry, should it become necessary at any stage without assigning the reasons whatsoever.
- v) Late offers will not be considered. No responsibility will be taken for non-delivery non-receipt of EOI Response documents.
- vi) Pointwise Compliance statement addressing every functional requirement/Specification mentioned will be submitted. Non-compliance if any will be clearly marked with reasons.
- vii) PARTICIPANT is required to furnish the complete details for both technical as well as commercial aspects.
- viii) Incomplete, ambiguous, conditional submissions are liable to be rejected by the Buyer. Also, a Bidder's nonresponse at the EOI opening stage will make the Bidder non-compliant.
- ix) Pointwise Compliance statement addressing each and every aspect mentioned in this document (i.e., Invitation to EOI) shall be submitted.
- x) The offer should remain valid for 60 days from the opening date of EOI.

APPENDIX-A
BUDGETARY ASSESSMENT

A: Hardware Cost estimates			
Items as per Scope of work , to be given along with its sub breakup			
S. No.	HW Item Description	Potential Suppliers	Estimated Cost
1			
2			
3			
4			
5			
Total			
*Note: Cost should be INR without GST/Import duty			

B: Others(Services) Cost Estimates					
S. No.	Category	No of Resources	No of Months	Monthly Rates	Total
1	Infra Development and Lab Setting				
2	Training and faculty facility				
3	Operation /Upgrade				
4	Any other category				
Total					
*Notes: Rates will be in INR (without GST)					

APPENDIX-B
CONFLICT OF INTEREST

FROM:

CONFLICT OF INTEREST IDENTIFIED: YES/NO

IF YES, CONFLICT DESCRIPTION:

APPENDIX-C
FORMATS FOR SUBMISSION
PARTICIPANT's EOI: Format-1

To,

Sub: Submission of Expression of Interest to undertake work as specified in Invitation of EOI

Dear

In response to the Invitation for Expressions of Interest (EOI) published _____, 2022 for the above purpose, we would like to express interest to carry out the above-proposed task. As instructed, we are submitting the following documents as our response:

S. No.	Required Document	Submitted (Yes/No)
1.	Incorporation Certificate of all members of the consortium	
2.	Organisation /Consortium Details as per Format-2	
3.	Experience of the Organisation / Consortium as per Format-3	
4.	Profile of two (02) experts proposed to lead the execution exercise as per Format-4.	
5.	Related projects successfully executed by the PARTICIPANT as per Format-5.	
6.	Pointwise compliance of EOI Document as per Format-6.	

Authorised signatory on behalf of Company/Consortium

Name:

Company:

Signature:

Stamp and date:

Note: This is to be furnished on the letterhead of the organization.

B. FORMAT-2: CONSORTIUM DETAILS:

CONTACT INFORMATION	
<i>Contact details of all member companies of the consortium are to be furnished here</i>	
Member-1 of the Consortium	
Name	
Designation	
Phone	
Email	
Member-2 of the Consortium	
Name	
Designation	
Phone	
Email	
CONSORTIUM DESCRIPTION (SPECIFIC VALUE PROPOSITION BY DIFFERENT MEMBER COMPANIES)	
AUTHORISED SIGNATORY OF ALL MEMBER COMPANIES	
Signature	
Name	
Company	
Stamp & Date	

C. FORMAT-3: EXPERIENCE OF THE ORGANISATION

Relevant experience of the organization is to be submitted in any format but clearly addressing all the requirements mentioned in the experience part of qualification criteria and the specific requirements as mentioned in the Scope of Work section of the document. To be signed by the authorised signatory of the company/consortium

D. FORMAT-4: PROFILE OF TWO (02) EXPERTS PROPOSED TO LEAD THE EXECUTION EXERCISE:

NAME		
RELEVANT EXPERIENCES OF MINIMUM 3 PROJECTS – in last 2 year		
S.NO.	EXPERIENCE DESCRIPTION	
1	PROJECT DESCRIPTION	
	EXPERT'S SPECIFIC CONTRIBUTION IN THE PROJECT	
	PROJECT OUTCOME	
	PROJECT DURATION	
2	PROJECT DESCRIPTION	
	EXPERT'S SPECIFIC CONTRIBUTION IN THE PROJECT	
	PROJECT OUTCOME	
	PROJECT DURATION	

To be signed by the authorised signatory of the company/consortium

E. FORMAT-5

RELEVANT PROJECTS SUCCESSFULLY EXECUTED BY PARTICIPANT:

Description of projects already executed by Company (individual or collectively) in last 2 years :

DETAILS OF SUCCESSFULLY EXECUTED BEST 3 PROJECTS in last 2 years		
S.NO.	PROJECT DETAILS	
1	DESCRIPTION	
	VALUE (INR)	
	SIZE (MAN-MONTHS)	
	CLIENT COMPNAY	
	PROJECT EXECUTION COMPNAY	
	PROOF OF COMPLETION	
	PROJECT DURATION	
2	DESCRIPTION	
	VALUE (INR)	
	SIZE (MAN-MONTHS)	
	CLIENT COMPNAY	
	PROJECT EXECUTION COMPNAY	
	PROOF OF COMPLETION	
	PROJECT DURATION	
3	DESCRIPTION	
	VALUE (INR)	
	SIZE (MAN-MONTHS)	
	CLIENT COMPNAY	
	PROJECT EXECUTION COMPNAY	
	PROOF OF COMPLETION	
	PROJECT DURATION	

To be signed by an authorised signatory of the company/consortium

F. FORMAT-6

POINTWISE COMPLIANCE OF EOI DOCUMENT:

SECTION	CLAUSE NO	REQUIREMENT DESCRIPTION	COMPLIANCE	EXPLANATORY REMARK

To be signed by an authorised signatory of the consortium company/consortium

BID SUBMISSION

Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online as explained below: -

S No.	Details	File Types
1.	Budgetary assessment as per Appendix-A	.PDF
2.	Conflict of Interest as per Appendix-B	.PDF
3.	Formats submission are in Appendix-C , PARTICIPANT EOI as per Format-1	.PDF
4.	Organizational/Consortium Details as per Format-2	.PDF
5.	Experience of the organization as per Format-3	.PDF
6.	Profile of two (02) experts Format-4	.PDF
7.	Related Projects Successful executed as per Format-5	.PDF
8.	Pointwise compliance as per Format-6	.PDF