The Senior Manager (Project Purchase)   Date: 06.03.2024

Open Tender Reference No: MS/BOBY/164/2024/LAPARO

GEM NAR ID: GEM/GARPTS/06032024/RSFA6JXZHQ9C   Due Date/Time: 12.03.2024@ 3:00 PM

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, digitally signed online bids are invited in two bid system from Class-I local suppliers and Class II local suppliers, for the supply of: "**LAPAROSCOPY TRAINING MODULE**" Conforming to the specifications given in **Annexure -A.**

Tender Documents may be downloaded from Central Public Procurement Portal https://etenders.gov.in/eprocure/app. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website https://etenders.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at **"Help for Vendors".** [Special Instructions to the Vendors / Bidders for the e-submission of the bids online through this eProcurement Portal"]

Bidders can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT Madras'. Thereafter, click on "GO" button to view all IIT Madras tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website https://etenders.gov.in/eprocure/app as per the schedule attached.

No manual bids will be accepted. All tender documents including Technical and Financial bids should be submitted in the E-procurement portal.

1)	**Pre-bid Meeting Details**	:	If required will be intimated
2)	**ICSR Vendor Registration**	:	**Vendor registration:** Vendor registration with IC&SR (IITM) is mandatory for bidders to participate in tenders. ** **For Vendor Registration & Guidelines, Please follow the website :** https://icandsr.iitm.ac.in/vendorportal; Helpdesk: vendorhelpdesk@icsrpis.iitm.ac.in

Last date for receipt of tender	:	**12.03.2024@ 3:00 PM**
Date & time of opening of tender	:	**13.03.2024@ 3:00 PM**

3. Instructions to the Bidder:

A)	Searching for tender documents	:	- There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal. - Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective **"My Tender"** folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document. - The bidder should make a note of the **unique Tender ID** assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.
B)	Assistance to bidders	:	- Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender. - Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is [0120-4200462, 0120-4001002, 0120-4001005]
C)	Enrollment Process to Bidders	:	**REGISTRATION** - Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL:https://etenders.gov.in/eprocure/app by clicking on "Online Bidder Enrollment". Enrollment on the CPP Portal is free of charge. - As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts. - Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal. - Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) - Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse. - Bidder then may log in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken. - Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name

			is a prerequisite for registration and participating in the bid submission activities through https://etenders.gov.in/eprocure/app • Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://etenders.gov.in/eprocure/app under the "Information about DSC".
D)	**Preparation of bids**	**:**	• Bidder should take into account any corrigendum published on the tender document before submitting their bids. • Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid. • Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender document / schedule and generally shall be in PDF / XLS formats as the case may be. Bid documents may be scanned with 100 dpi with black and white option. • To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use **"My Documents"** area available to them to upload such documents. These documents may be directly submitted from the **"My Documents"** area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.
E)	**Submission of bids**	**:**	• Bidder should log into the site well in advance for bid submission so that he/she can upload the bid in time i.e. on or before the bid submission date and time. Bidder will be responsible for any delay due to other issues. • The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document. • Bidder has to select the bid security declaration. Otherwise, the tender will be summarily rejected. • A standard BOQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the detail with their respective financial quotes and other details (such as name of the bidder). If the BOQ file is found to be modified by the bidder, the bid will be rejected. • The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

			• The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues.
			• The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
			• Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
			• Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.
			• More information useful for submitting online bids on the CPP Portal may be obtained at: https://etenders.gov.in/eprocure/app.
			• All tender documents including pre-qualification bid, Technical Bid &Financial Bid should be submitted separately in online CPP portal as per the specified format only. Right is reserved to ignore any tender which fails to comply with the above instructions. **No manual bid submission will be entertained.**
F)	**Marking on Technical Bid**		• The bidder eligibility criteria, technical specification and supply of item for this tender is given in Annexure A.
			• The Bidders shall go through the specification and submit the technical bid.
			• The Technical bid should be submitted in the proforma as per Annexure-B in pdf format only through online (e-tender). No manual submission of bid will be entertained.
			• The technical bid should have a page-wise heading as "Technical Bid" and page no. in all pages with seal and signature of authorized signatory. The total no. of pages should be mentioned at the last page of the documents.
			• The technical bid should consist of bidder eligibility criteria details and all technical details along with catalogue/ pamphlet which will give a detailed description of product with technical data sheet so that technical compliance can be verified.
G)	**Marking on Price Bid**		• Financial bid (BoQ) should be submitted in the prescribed proforma format as per Annexure-C in xls format through e-tender only. No manual or other form of submission of Financial Bid will be entertained

4)	**Preparation of Tender**: The bidders should submit the bids in two bid system as detailed below.
	Bid I _Technical Bid
	The technical bid should consist of bidder eligibility criteria and technical specification compliance sheet as per the **Technical Bid Proforma** (**Annexure-B**).
	Bid II _Price Bid
	The price bid should be submitted in the Tabular format (BoQ) as per the **Financial Bid Proforma** (**Annexure -C**) uploaded in the e-Tender web site. The Quoted price should be for supply and installation of the item and inclusive of all cost and statutory levies at IIT Madras.
5)	**Price:**
	a) The price should be quoted only in INR net per unit (after breakup) and must include all packing, transit insurance and delivery charges to **The Department of Medical Science and Technology, IIT Madras.**
	b) The rate quoted shall be all inclusive of all taxes and no extra payment will be made other than statutory revisions as per the terms and conditions stipulated in this contract document.
	c) The percentage of tax & duties should be clearly indicated separately. IIT Madras is eligible for custom duty at a concessional rate, i.e., 5.5%. Relevant certificates will be issued by IIT Madras wherever necessary.
	d) The offer/bids should be submitted through online only in two bid system i.e. Technical Bid and Financial Bid separately.
6)	**Tenderer shall submit along with this tender:**
	(i) Proof of having ISO or other equivalent certification given by appropriate authorities.
	(ii) Name and full address of the Banker and their swift code and PAN No. and GSTIN number.
	(iii) GST registration proof showing registration number, area of registration etc.
	(iv) All of your future correspondences including Invoices should bear the GST No. and Area Code.
7)	**Terms of Delivery:**
	Supplier will be fully responsible for the safe carriage, Installation/Commissioning of goods up to **The Department of Medical Science and Technology, IIT Madras**, or named place as per PO, Insurance coverage will be in the scope of the supplier.
	The tenderer should indicate clearly the time required for delivery of the item (subject to the approval of the Exclusive Purchase Committee-IIT-Madras). In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
	In the event of delay or non-supply of materials/execution of Contract beyond the date of delivery/completion of job. The penalty will be levied @1% per week of delay subject to a max of 10% of the value of purchase order and if the delay is more than accepted time frame by IIT M, the PO would be partially or fully cancelled and liquidated damages will be enforced accordingly.
8)	**Period for which the offer will remain open:**
	The offer shall remain valid for 120 days from the date of opening of the tender. However, the day up to which the offer is to remain valid being declared closed holiday for the Indian Institute of Technology Madras, the offer shall remain valid for acceptance till the next working day.
9)	**EMD:**
	The EMD of **Rs.6,00,000** to be transferred to the account details mentioned in Annexure I and proof

should be enclosed in the Technical Bid. Any offer not accompanied with the EMD shall be rejected summarily as non-responsive.

As per rule no. 5.1.4 (vi) of the Manual of Procurement of Goods, no bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity. Withdrawal of a bid during this period will result in forfeiture of the bidder's bid security (EMD) and other sanctions.

The Institute shall not be liable for payment of any interest on EMD.

As per the Public Procurement Policy for MSEs, Order 2012 dated 25.03.2022, EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by the Department of Micro, Small and Medium Enterprises (MSME) and Startups as recognized by the Department of Industrial Policy & Promotion (DIPP). (MSE/MSME/DIPP PROOF should be enclosed in the cover containing the technical bid)

10)	**Performance Security: -**
	The successful bidder should submit Performance Security for an amount of 5% of the basic invoice value of the contract/supply. The Performance Security may be furnished in the form of an Insurance Surety Bond, Account Payee DD, FD Receipt in the name of "The Registrar, IIT Madras" from any scheduled commercial bank or Bank Guarantee from any scheduled commercial bank in India or online payment in an acceptable form. The performance security should be furnished within 14 days from the date of the purchase order.
	Performance Security in the form of Bank Guarantee: - In case the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed directly to IIT Madras from the Bank.
	The Performance Security Deposit should remain valid for a period of sixty days beyond the date of completion of all contractual obligations.
11)	For the same tender, either the OEM or the authorized dealer/service provider can only quote. But both of them cannot quote separately for the same tender.
12)	The offers/bids should be submitted only for an item/Equipment of the exact standard that is acceptable to IIT Madras without Prejudice. The details of a list of customers in India for whom the item is already supplied with must accompany the quotations. Quotations for a prototype machine will not be accepted
13)	Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the technical bid.
14)	Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal/OEM.
15)	**Risk Purchase Clause**
	In the event of failure of contractual obligation during the schedule, the Office of Industrial Consultancy and Sponsored Research, Indian Institute of Technology Madras has all the right to engage other sources on the total risk of the sanctioned vendor under risk purchase clause.
16)	**Payment:**
	(i) As per GFR 2017 Terms: 90% Payment after supply and 10% after installation are agreed to wherever the installation is involved.
	(ii) Advance Payment: No advance payment is generally admissible. In case a specific percentage of advance payment (not more than 30%) is required, the Vendor has to submit a Bank Guarantee from a scheduled commercial bank in India equivalent to the amount of advance payment.

17)	**On-site Installation:**
	The equipment/item or Machinery has to be installed or commissioned by the successful bidder within the number of days (as prescribed by PI) from the date of receipt of the item at the site of IIT Madras.
18)	**Warranty:**
	The offer should clearly specify the warranty period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately (For more details please refer our Technical Specifications).
	** Note: PO which involves installation, warranty shall be applicable from date of installation.
19)	**Acceptance and Rejection:**
	Failure to comply with any of the instructions stated in this document or offering unsatisfactory explanations for non-compliance will likely to lead to rejection of offers.
	I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
20)	**Debarment from Bidding:**
	In case of breach of Terms & Conditions, Bidder may be suspended from being eligible for bidding in any contract with the IIT Madras up to 2 Years [as per Rule 151(iii) of GFR] from the date as fixed by IIT Madras.
21)	**Disputes and Jurisdiction:**
	Settlement of Disputes: Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate on arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceeding shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai.
	a. **The Applicable Law:** The Purchase Order shall be construed, interpreted and governed by the Laws of India. Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
	b. Any legal disputes arising out of any breach of contact pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.
22)	**Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
	For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
	If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

23)	**Eligibility Criteria:**
	➢ **As per the Government of India Order, only "Class - I Local Suppliers" and "Class - II Local Suppliers" <u>can participate in this tender.</u>**
	➢ <u>**Bidder should confirm their acceptance that they comply with the provisions with report to "Guidelines for eligibility of a bidder from a country which shares a land border with India as detailed at Annexure-E. The bidder should submit Certificate for "Bidder from/ Not from Country sharing Land border with India & Registration of Bidder with Competent Authority" as per Order of DoE F.No.6/18/2019-PPD dated 23.07.2020 and No.F.7/10/2021-PPD(1) dated 23.02.2023 and No.F.7/10/2021-PPD(1) dated 23.02.2023.**</u>
24)	**Preference to "class I Local Suppliers"**: preference will be given to "**class 1 local suppliers**" (subject to class -I local supplier's quoted price falling within the margin of purchase preference) as per public procurement (preference to make in India) order 2017 .O.M No P- 45021/2/2017 – pp(BE - 11) dt 04/06/2020 subject to the conditions that the "class 1 Local Supplier" should agree to supply goods / provide service at L1 rate and furnish a certificate with the technical bid document that the goods/service provided by them consists local content equal to or more than 50%.(certificate from Chartered Accountant in case value of contract exceeds Rs 10 crore).
	➢ **'Class - I local supplier'** means a supplier or service provider whose goods, services or works offered for procurement consists of local content equal to or more than 50% as defined under the above said order. **Declaration to be provided as per Annexure-D per item/service/work.**
	➢ **'Class - II local supplier'** means a supplier or service provider whose goods, services or works offered for procurement consists of local content equal to 20% but less than 50% as defined under the above said order. **Declaration to be provided as per Annexure-D per item/service/work.**
	➢ **'Margin of purchase preference'**: - The margin of purchase preference shall be 20%. The Definition of the margin of purchase preference is defined in the Govt. of India Order No: **P-45021/12/2017-PP (BE-II) Dt.4th June, 2020) Order 2017. As per the Government of India Order – "Margin of Purchase Preference" means the maximum extent to which the price quoted by a "Class-I local supplier" may be above the L1 for the purpose of purchase preference.**
	**Note: Local content percentage to be calculated in accordance with the definition provided at clause 2 of revised public procurement preference to Make in India Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019and 04.06.2020) MOCI order No. 45021/2/2017-PP (BE II) Dt.16th September 2020 & P-45021/102/2019-BE-II-Part(1) (E-50310) Dt.4th March 2021
25)	**Evaluation of Bids**
	Bid evaluation will take place in two stages.
	Stage I Technical Bid evaluation
	All bids received within due date and time will be opened for technical evaluation as per scheduled time. All bidders who have fully complied with bidder eligibility criteria I, II and technical Specification (Annexure B) will only be considered for opening of financial bid.
	Stage II: Financial Bid Evaluation
	The Financial bid evaluation will be based on price quoted by the bidder. The rate quoted for **LAPAROSCOPY TRAINING MODULE** unit will alone be taken up for arrival of Lowest Bid (L1) value.
26)	In accordance to the Rule 173 of GFR,2017 and relevant provisions thereof in Procurement Manuals, 2022, IC&SR, IITM reserves the right to carry out the negotiation process through its purchase/technical committee with L1/H1 (as applicable) vendor to ensure price reasonability before final recommendation to the Competent Authority. The negotiation details, if any, on case-to-case basis shall be recorded in minutes of meetings suitably for records.

27)	**Selection of successful bidder and Award of Order** The order will be directly awarded to the technically qualified bidder as per the condition in para 3A of DIPP, MoCI Order No. 45021/2/2017-PP (BE II) dated 16th September 2020.
28)	All information including selection and rejection of technical or financial bids of the prospective bidders will be communicated through e-Tender portal. In terms of Rule 173(iv) of General Financial Rule 2017, the bidder shall be at liberty to question the bidding conditions, bidding process and/or rejection of bids.
29)	The tenderer shall certify that the tender document submitted by him / her are of the same replica of the tender document as published by IIT Madras and no corrections, additions and alterations made to the same. If any deviation found in the same at any stage and date, the bid / contract will be rejected / terminated and actions will be initiated as per the terms and conditions of the contract.
30)	Clarification to the queries and doubts raised by the bidders will be issued as a corrigendum/addendum in the e-tenders portal.
31)	In the e-tender process, participation of bidders after the due date is not possible. The eligible bidders can login to the e-Procurement portal to ascertain the tender status.

ACKNOWLEDGEMENT

It is hereby acknowledged that I/We have gone through all the points listed under "Specification, Guidelines, Terms and Conditions" of tender document. I/We totally understand the terms and conditions and agree to abide by the same.

SIGNATURE OF TENDERER ALONG WITH
SEAL OF THE COMPANY WITH DATE

Bidder Eligibility Criteria and Technical Specification for LAPAROSCOPY TRAINING MODULE
Tender No. MS/BOBY/164/2024/LAPARO

Bidder Eligibility Criteria – I (Public Procurement – Preference to Make in India)

Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE-II) dated 16th September 2020 and other subsequent orders issued therein (**ANNEXURE – D**)

Bidder Eligibility Criteria – II

1. Vendor Registration ID/Proof.

2. Land Border Certificate (**ANNEXURE – E**).

3. **OEM Certificate Form**-The Participating Bidder's firm shall be the Original Equipment Manufacturer (OEM) or OEM Certified authorized firm (**ANNEXURE – F**).

4. Non- Debarment Declaration **(ANNEXURE – H)**.

5. Mandate Form **(ANNEXURE – J)**

6. EMD as per Tender, to be remitted in the account number as given in the **(Annexure – I)** or EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) and Startups as recognized by Department of Industrial Policy & Promotion (DIPP). (MSE/MSME/DIPP PROOF should be enclosed in the cover containing technical bid).

III. Technical Specification for LAPAROSCOPY TRAINING MODULE

Top Characteristics Required.

1. The simulator should have "**Multidisciplinary Ergonomic Platform**" (e.g. Laparoscopy, Arthroscopy, Gynecology, and Urology) – same platform can be used for Laparoscopy Training, Gynecological Training, Reproductive Medicine Training, Arthroscopy Training & Urology Training by adding various Surgical Modules as and when required.
2. Laparoscopic training for General Surgery should include Essential Laparoscopic Training Skills, Suturing Training Skills and General Laparoscopy Training Skills
3. The simulator must have "**Patient Positioning**": anatomically accurate abdomen model should be rotatable allowing to practice different patient positions (e.g. Trendelenburg, anti-Trendelenburg). Rotation of abdomen should produce correct physical behavior of the organs inside simulation.
4. The simulator must have "**Trocar and Instruments Placement**": trocars and instruments should be freely placed on the abdomen model, allowing the trainee to learn instrument handling with different trocar placement.
5. The simulator must have "**Team Training**": the simulator should allow for a realistic OR team setup and the entire team can surround the abdomen model and learn how to collaborate in limited space.

S.no	Specification
1	**General Offering Required**
	1.1. The Laparoscopy Simulator should be a virtual reality simulator specifically designed to: - Train essential skills - Train diagnostic skills - Train key surgical skills - Train needle handling skills - Train knot tying skills. - Train suturing skills - Train general surgery skills - Train your skills in healthy anatomies as well as in anatomies presenting various pathologies. - Train handling of challenging situations and surgical complications
	1.2. The Laparoscopy Training Simulator should be based on a platform which is designed to: - Support an anatomically accurate abdomen rubber model. - Be extendable to further disciplines, such as arthroscopy, urology and gynecology including hysteroscopy, obstetric ultrasound, reproductive medicine. - The simulator should offer the possibility to change between the laparoscopy module and modules for further disciplines within less than 5 minutes.
	1.3. The Laparoscopy Training Simulator should be based on force feedback provided by the trocars and instruments that can be freely placed on the abdomen model.
	1.4. A highly realistic high-fidelity virtual reality image stream should be provided containing all relevant anatomical structures, pathologies, and complications.
	1.5. The Simulator should offer an efficient step-by-step learning approach focused on short training sequences teaching transferrable key skills.
	1.6. The Simulation should allow for team training with the entire team surrounding the patient and practicing the real OR team setup. Team training should take place simultaneously using the same anatomically accurate abdomen model and allow to practice instrument handling and collaboration in limited space.
2	**Ergonomic Platform Requirements**
	2.1. The Simulation should have an application specific mobile and height adjustable simulation platform.
	2.2. The Simulation should have a height adjustable touch screen monitor, lockable PC

	security cabinet, integrated wide input range (100V-240V / 50-60Hz) and main connections. The integrated touch screen should be: - Rotatable in 3 axes (sideways, up-down, front-back) - At least a 27' format - Must have integrated speakers.
	2.3.　Simulation platform should be electrically height adjustable to allow for an ergonomic training position.
	2.4.　Simulation platform should allow for easy access to audio and HDMI output ports.
	2.5.　Simulation platform should contain holders to store the instruments during simulator use. It should be possible to store the instruments without disconnecting them.
	2.6.　Simulation platform must have at least 4 lockable casters.
	2.7.　A multi-use transport case should be available upon request for the ergonomic platform for safe transport and easy loading.
	2.8.　Ergonomic platform should contain a high-end PC with: - Minimum 3.7 GHz CPU - Minimum 1x 512 GB SSD - Minimum 2x High performance graphics cards - Minimum resolution of 2560 x 1440 pixels for the monitor
	2.9.　The simulator should be in accordance with the provision of the following directives: - 2014/30/EU Electromagnetic compatibility (EMC) - 2014/35/EU Low Voltage (LVD) - 2006/42/EG Machinery Directive (MDR) and is in conformity with the standards: IEC61326-1, IEC61010-1, EN ISO 12100, FCC 47 CFR, Part 15
3.	**Abdomen Model Requirements**
	3.1. The laparoscopy simulator should include a realistic abdomen rubber model
	3.2. Abdomen model must be rotatable in different positions (for example Trendelenburg, anti-Trendelenburg) according to the simulated procedure.
	3.3. Abdomen model should provide at least 17 trocar portals for entry of instruments.
	3.4. The change of trocar and instrument positions should be possible without restarting the simulation.
	3.5. The Laparoscopy simulator should allow to freely change position of instruments and trocars during the case.
4.	**Instrument Requirements**

	4.1. The user should not require to configure or calibrate laparoscopic instruments, laparoscopic camera, or trocars.
	4.2. At least 4 haptic trocars should be provided which can be freely placed across the abdomen model.
	4.3. At least 2 sensorized needle holders with similar feel and functionality to those found in the operating room should be included in the system.
	4.4. At least 3 sensorized laparoscopic instruments with similar feel and functionality to those found in the operating room should be included.
	4.5. Laparoscopic instruments should have a handpiece that opens and closes like original instruments, it should also have mechanical ratchet.
	4.6. Laparoscopic instruments, camera, and trocars can be freely inserted and extracted from the anatomical model without external limitations or restrictions on range of movement or orientation.
	4.7. The simulator should provide multidimensional haptic feedback, it must include: - One directional force feedback (within the active haptic trocars) on the instrument upon collision of instruments with organs and upon pulling on organs. - Vibrotactile feedback effect during haptic events like clip placement, tissue cutting with scissors of needle grasping. - Direct haptic feedback when actual instrument shafts collide with each other inside the abdomen or when instruments touch the rubber skin of the abdomen model.
	4.8. Laparoscopic instruments simulate exchangeable tips must include: - Laparoscope - Atraumatic grasper - Bipolar Kelly grasper - Monopolar Kelly grasper - Monopolar hook electrode - Clip applicator - Monopolar Scissors - Surgical sponge holder - Suction and irrigation device - Ligating loop - Needle holder
	4.9. Laparoscopic instruments can be used with a realistic foot pedal to activate electrosurgical instruments and perform suction and irrigation.
	4.10. Laparoscopic instruments can be easily interchangeable without the need to restart

	the case or simulator.
	4.11. The laparoscopic simulator must provide multidimensional haptic procedure-based feedback (e.g. organ collisions, cutting, clip placements)
	4.12. Laparoscopic camera should support 0 degrees and 30 degrees angled optics.
	4.13. Laparoscopic camera should support zoom and focus functionality.
	4.14. Laparoscopic camera should support haptic feedback upon organ collisions.
	4.15. For individual training, the camera position can be fixed using virtual camera assistant and the laparoscopic camera removed from the abdomen model.
5.	**General Software Requirements**
	5.1 The software system should be capable of handling or upgrading to multiple diagnostic and surgical modules.
	5.2 The software should simulate the entire abdomen anatomy, including real time physical behavior of all organs in response to instruments and position of abdomen model.
	5.3 The software should provide an organ view giving 3D anatomical guidance and a full overview of the organs in the abdomen.
	5.4 The software should provide didactic guidance for the optimal position of the abdomen model, trocars, and operative team.
	5.5 The software visually should mimic a real procedure as closely as possible with photorealistic graphics, and include features such as acoustics, tactile feedback, blood loss, etc.
	5.6 The software should include efficient and short training scenarios to learn the key laparoscopic skills in a realistic anatomical environment.
	5.7 Each training case should be introduced with a short case description and a video of the task to accomplish.
	5.8 The software should include acoustic feedback from operating room background sounds and sound of instruments during operation.
	5.9 The software should include the ability to customize courses with customized scoring based on all patient cases available in the simulator.
	5.10 The software automatically must create certificates for users who successfully completed courses, which can be exported and downloaded in pdf format.
	5.11 The software should display an interactive open view of the simulated structures and instruments, manipulated by the user zooming and rotating the image via the touchscreen.
	5.12 The software should measure, assess, and score trainees' performance using established quantitative metrics such as: procedure time, idle time, camera and instrument

	path lengths, knot acceptance, as well as patient safety relevant metrics such as time of instruments outside camera view or collisions of instruments with organs.
	5.13 The software should track safety-relevant clinical errors during the simulated case and include them in the feedback report with error screenshots and reduction of the safety score.
	5.14 The software should contain and store feedback reports after each procedure, including screenshots and videos. All content of the feedback report including video, screenshots and measured metrics can be exportable.
	5.15 The software should generate printable feedback reports.
	5.16 The software should handle various users and store videos of the performances for each user with easy access for the administrator.
6.	**Training Goals Requirements**
	6.1 The laparoscopy simulator should enable training of key surgical skills including: - Patient and OR team positioning - Trocar placement - Camera navigation - Instrument triangulation and bimanual coordination - Safe needle handling - Correct knot tying (half knot, square knot, and surgeon's knot), independent of user's own technique (hold-needle, drop-needle, one-hand, two-hands techniques) - Interrupted suturing - Continuous suturing - Anastomosis training - Training with 2 different suture behaviors (including barbed sutures) - Safe exposure of target anatomies - Safe clip application - Safe resection and dissection techniques (including blunt dissection and appropriate use of electrocautery) - Management of complications
	6.2 The laparoscopy simulator should enable training in life-like conditions to ease the transfer of skills into the OR. Training goals should include: - The selection of the correct patient position and trocar placement according to the simulated procedure - Selection of trocar positions to allow for efficient instrument triangulation. - Understanding of ergonomic limitations and efficient collaboration as a surgical team (surgeon and assistants)
7.	**Essential Skills Module Software Requirements**

	7.1 The essential skills module for laparoscopy should enable psychomotor skills training in abstract condition. Training goals must include: - Acquisition of essential laparoscopic skills for camera navigation, including horizon control, image centering, and periscoping. - Development of ambidextrous motor skills - Hand-eye coordination and instrument triangulation - Bimanual coordination and object transfer - Diagnostic skills: handling of camera and lifting of objects at the same time. - Handling of the clip applicator and scissors in a virtual environment, including acquisition of control and precision in cutting - Safe placement of a ligating loop - Needle handling in a virtual environment - Practice of initial steps of suturing - Non-dominant hand and backhand training - Understanding of 0° and 30° optic angles
	7.2 The essential skills module for laparoscopy should contain at least 2 cases with 12 exercises for laparoscopic camera handling, including image centering, horizon control, and periscoping.
	7.3 The essential skills module for laparoscopy should contain at least 13 cases with 96 exercises for bi-manual skills training, including: - Hand-eye coordination and instrument triangulation - Bimanual object transfer with grasping exercises - Precision cutting exercises (circular and straight cutting) - Clip placement - Cutting - Needle passing and needle insertion - Loop ligation
	7.4 The essential skills module for laparoscopy should allow the user to select the dominant hand preference prior to starting an exercise.
	7.5 The essential skills module for laparoscopy training should allow the user to train in front or back hand positions to prepare for situations of difficult trocar access or anatomical access limitations.
	7.6 The essential skills module for laparoscopy should allow the user to train with 0° or 30° optic angles.
	7.7 The essential skills module for laparoscopy should use additional simulated laparoscopic instrument tips including a ligating loop and a laparoscopic needle holder
8.	**Suturing Module Software Requirements**

	8.1 The suturing module for laparoscopy should enable psychomotor skills training in abstract conditions. Training goals must include: - Acquisition of essential laparoscopic skills for grasping, rotating, and repositioning a needle in a grasper - Acquisition of essential laparoscopic skills for grasping, rotating, and repositioning a needle in a needle holder - Needle handling in a virtual environment - Practice of initial steps of suturing - Cumulative skills acquisition - Rotation of a needle by pulling on the suture or pushing on the needle to match a target. - Repositioning of a needle to the desired insertion position by passing it between instruments - Optimal passing of a needle through a small target while keeping pivot point - Secure completion of a half knot, a square knot, and a surgeon's knot at the designed location - Wrapping of a suture around an instrument (overwrap and underwrap techniques supported) - Practice of knot tying with "hold-needle" and "drop-needle" techniques. - Practice of knot tying with two-hand technique (use of one-hand technique for advanced users and trainers is supported, in unguided cases, users have the freedom to perform knots according to their own techniques without affecting the knot's acceptance) - Evaluation of proper knot-tying output - Development of ambidextrous motor skills - Hand-eye coordination and instrument triangulation - Bimanual coordination and object transfer - Non-dominant hand and backhand training

	8.2 The suturing module for laparoscopy should contain at least 15 cases for bi-manual skills training, including:
	
	- Needle orientation (to train rotation of a needle)
	Needle targeting (to train needle repositioning and passing it through a target (loops))
	- Needle insertion (to train needle re-positioning, passing it through a target (membrane), and keeping optimal insertion angle)
	- Half knot
	    o Overwrap and underwrap looping
	    o Hold-needle technique
	    o Drop-needle technique
	    o One-hand technique
	    o Two-hand technique
	- Square knot

	o Overwrap and underwrap looping
	      o Hold-needle technique
	      o Drop-needle technique
	      o One-hand technique
	     ▪ Two-hand technique surgeon's knot
	      o Overwrap and underwrap looping
	      o Hold-needle technique
	      o Drop-needle technique
	      o One-hand technique

	8.3 Two-hand technique: The suturing module for laparoscopy should allow the user to select the dominant hand preference before starting an exercise.
	8.4 The suturing module for laparoscopy should allow the user to train with or without guidance.
9.	**General Surgery Module Software Requirements**
	9.1 The general surgery module for laparoscopy training should contain at least 40 cases with at least 213 exercises, including: - Full diagnostic laparoscopy of a female patient - Establishing the critical view for a safe cholecystectomy - Cystic pedicle dissection and safe clipping - Gallbladder resection using various techniques - Control of hemorrhage in the liver bed - Vascular control of the cystic artery - Skeletonizing the appendix to prepare for ligation - Diagnostic of an incisional hernia - Lysis of adhesions to an incisional hernia site
	9.2 The general surgery module for laparoscopy training should include training goals for: - The correct identification of important anatomical landmarks and pathologies. - Learning different resection and dissection techniques, as well as bleeding control and management of surgical complications. - Ambidextrous and non-dominant hand training using situs inversus totalis cases derived from cholecystectomy, appendectomy, and incisional hernia.
	9.3 The general surgery module for laparoscopy should offer extensive training of basic and advanced cholecystectomy techniques such as blunt dissection of the gallbladder using different instruments.
	9.4 The general surgery module for laparoscopy should offer extensive training of basic and advanced appendectomy techniques such as adhesion removal, blunt dissection, and control of appendicular artery bleeding.
	9.5 The general surgery module for laparoscopy training should include at least 9 different anatomical variations of the cystic duct, the cystic artery, and at least 4 different variations

	of the appendix.
	9.6 The general surgery module for laparoscopy training should include adverse events such as arterial bleeding, organ injury, bile duct injury and bile leakage, thermal injury, and vision difficulty.
	9.7 The general surgery module for laparoscopy training must allow the user to select guided or unguided training cases.
	9.8 The general surgery module for laparoscopy training should use additional simulated laparoscopic instrument tips including surgical sponge holder, monopolar and bipolar graspers, monopolar scissors, monopolar hook electrode, suction and irrigation device and clip applicator.
10.	**Comprehensive Warranty**
	10.1 One-year comprehensive warranty on hardware and software should be provided.
	10.2 Spare parts should be available for at least 5 years after the warranty period is over.
	10.3 Service hotline with direct access to 2nd and 3rd level support and engineers' should be provided
	10.4 Extended comprehensive warranty for 2 years should be optional on both hardware and software.
	10.5 Remote Service & Support should be provided.
11.	**Training**
	11.1 On-site system administrator and user training should be provided by a trained specialist.
	11.2 Additional training should be provided.
12.	**Connect – online Simulator Management Software**
	12.1 The online simulation training management software can be accessed remotely, from any computer, tablet, or smartphone with internet access.
	12.2 The online simulation training management software can be used with simulators other than those supplied by the manufacturer.
	12.3 User-specific evaluation of training data can be accessed via the online simulation training management software.
	12.4 User groups can be created and modified via the online simulation training management software.

	12.5 An online course library, course editor and course assignment tool to create your own training curricula can be accessed via the online simulation training management software.
	12.6 Graphical data reports and video recordings of the simulation can be accessed via the online simulation training management software.
	12.7 Simulation data can be viewed and exported for statistical analysis via the online simulation training management software.
	12.8 Remote updates of the simulator's software, including security updates, can be performed via the online simulation training management software.
	12.9 Simulation and user data can be synchronized with Learning Management Systems (LMS) via industry standard protocols, including Lightweight Directory Access Protocol (LDAP).

TECHNICAL BID PROFORMA
Tender No. MS/BOBY/164/2024/LAPARO
Item Name: LAPAROSCOPY TRAINING MODULE

1.0   Bidder Eligibility Criteria:

I	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content Percentage	Ref. Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16th September 2020 and other subsequent orders issued therein (**ANNEXURE – D**)			

II	Bidder Eligibility Criteria-II	Complied/Not Complied	Ref Page No.
1	Vendor Registration ID/Proof		
2	Land Border Certificate (**ANNEXURE – E**)		
3	**OEM Certificate Form**-The Participating Bidder's firm shall be the Original Equipment Manufacturer (OEM) or OEM Certified authorized firm (**ANNEXURE – F**)		
4	Non- Debarment Declaration (**ANNEXURE – H**).		
5	Mandate Form (**ANNEXURE – J**)		
6	EMD as per Tender, to be remitted in the account number as given in the (**Annexure – I**) or EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) and Startups as recognized by Department of Industrial Policy & Promotion (DIPP). (MSE/MSME/DIPP PROOF should be enclosed in the cover containing technical bid).		

2.0 **Technical Compliance:**

S.no	Specification	Complied/Not Complied	Ref Page No.
Top Characteristics Required			
1	The simulator should have "Multidisciplinary Ergonomic Platform" (e.g. Laparoscopy, Arthroscopy, Gynecology, and Urology) – same platform can be used for Laparoscopy Training, Gynecological Training, Reproductive Medicine Training, Arthroscopy Training & Urology Training by adding various Surgical Modules as and when required.		
2	Laparoscopic training for General Surgery should include Essential Laparoscopic Training Skills, Suturing Training Skills and General Laparoscopy Training Skills		
3	The simulator must have "**Patient Positioning**": anatomically accurate abdomen model should be rotatable allowing to practice different patient positions (e.g. Trendelenburg, anti-Trendelenburg). Rotation of abdomen should produce correct physical behavior of the organs inside simulation.		
4	The simulator must have "**Trocar and Instruments Placement**": trocars and instruments should be freely placed on the abdomen model, allowing the trainee to learn instrument handling with different trocar placement.		
5	The simulator must have "**Team Training**": the simulator should allow for a realistic OR team setup and the entire team can surround the abdomen model and learn how to collaborate in limited space.		

S.no	Specification	Complied/Not Complied	Ref Page No.
1	**General Offering Required**		
	1.1 The Laparoscopy Simulator should be a virtual reality simulator specifically designed to: - Train essential skills - Train diagnostic skills - Train key surgical skills - Train needle handling skills - Train knot tying skills. - Train suturing skills - Train general surgery skills - Train your skills in healthy anatomies as well as in anatomies presenting various pathologies. - Train handling of challenging situations and surgical complications		
	1.2 The Laparoscopy Training Simulator should be based on		

	a platform which is designed to: - Support an anatomically accurate abdomen rubber model. - Be extendable to further disciplines, such as arthroscopy, urology and gynecology including hysteroscopy, obstetric ultrasound, reproductive medicine. - The simulator should offer the possibility to change between the laparoscopy module and modules for further disciplines within less than 5 minutes.			
	1.3 The Laparoscopy Training Simulator should be based on force feedback provided by the trocars and instruments that can be freely placed on the abdomen model.			
	1.4 A highly realistic high-fidelity virtual reality image stream should be provided containing all relevant anatomical structures, pathologies, and complications.			
	1.5 The Simulator should offer an efficient step-by-step learning approach focused on short training sequences teaching transferrable key skills.			
	1.6 The Simulation should allow for team training with the entire team surrounding the patient and practicing the real OR team setup. Team training should take place simultaneously using the same anatomically accurate abdomen model and allow to practice instrument handling and collaboration in limited space.			
2	**Ergonomic Platform Requirements**			
	2.1 The Simulation should have an application specific mobile and height adjustable simulation platform.			
	2.2 The Simulation should have a height adjustable touch screen monitor, lockable PC security cabinet, integrated wide input range (100V-240V / 50-60Hz) and main connections. The integrated touch screen should be: - Rotatable in 3 axes (sideways, up-down, front-back) - At least a 27' format - Must have integrated speakers.			
	2.3 Simulation platform should be electrically height adjustable to allow for an ergonomic training position.			
	2.4 Simulation platform should allow for easy access to audio and HDMI output ports.			

	2.5 Simulation platform should contain holders to store the instruments during simulator use. It should be possible to store the instruments without disconnecting them.		
	2.6 Simulation platform must have at least 4 lockable casters.		
	2.7 A multi-use transport case should be available upon request for the ergonomic platform for safe transport and easy loading.		
	2.8 Ergonomic platform should contain a high-end PC with: - Minimum 3.7 GHz CPU - Minimum 1x 512 GB SSD - Minimum 2x High performance graphics cards - Minimum resolution of 2560 x 1440 pixels for the monitor		
	2.9 The simulator should be in accordance with the provision of the following directives: - 2014/30/EU Electromagnetic compatibility (EMC) - 2014/35/EU Low Voltage (LVD) - 2006/42/EG Machinery Directive (MDR) and is in conformity with the standards: IEC61326-1, IEC61010-1, EN ISO 12100, FCC 47 CFR, Part 15		
3.	**Abdomen Model Requirements**		
	3.1. The laparoscopy simulator should include a realistic abdomen rubber model		
	3.2. Abdomen model must be rotatable in different positions (for example Trendelenburg, anti-Trendelenburg) according to the simulated procedure.		
	3.3. Abdomen model should provide at least 17 trocar portals for entry of instruments.		
	3.4. The change of trocar and instrument positions should be possible without restarting the simulation.		
	3.5. The Laparoscopy simulator should allow to freely change position of instruments and trocars during the case.		
4.	**Instrument Requirements**		
	4.1. The user should not require to configure or calibrate laparoscopic instruments, laparoscopic camera, or trocars.		

	4.2. At least 4 haptic trocars should be provided which can be freely placed across the abdomen model.		
	4.3. At least 2 sensorized needle holders with similar feel and functionality to those found in the operating room should be included in the system.		
	4.4. At least 3 sensorized laparoscopic instruments with similar feel and functionality to those found in the operating room should be included.		
	4.5. Laparoscopic instruments should have a handpiece that opens and closes like original instruments, it should also have mechanical ratchet.		
	4.6. Laparoscopic instruments, camera, and trocars can be freely inserted and extracted from the anatomical model without external limitations or restrictions on range of movement or orientation.		
	4.7. The simulator should provide multidimensional haptic feedback, it must include: - One directional force feedback (within the active haptic trocars) on the instrument upon collision of instruments with organs and upon pulling on organs. - Vibrotactile feedback effect during haptic events like clip placement, tissue cutting with scissors of needle grasping. - Direct haptic feedback when actual instrument shafts collide with each other inside the abdomen or when instruments touch the rubber skin of the abdomen model.		
	4.8. Laparoscopic instruments simulate exchangeable tips must include: - Laparoscope - Atraumatic grasper - Bipolar Kelly grasper - Monopolar Kelly grasper - Monopolar hook electrode - Clip applicator - Monopolar Scissors - Surgical sponge holder - Suction and irrigation device - Ligating loop - Needle holder		

	4.9. Laparoscopic instruments can be used with a realistic foot pedal to activate electrosurgical instruments and perform suction and irrigation.		
	4.10. Laparoscopic instruments can be easily interchangeable without the need to restart the case or simulator.		
	4.11. The laparoscopic simulator must provide multidimensional haptic procedure-based feedback (e.g. organ collisions, cutting, clip placements)		
	4.12. Laparoscopic camera should support 0 degrees and 30 degrees angled optics.		
	4.13. Laparoscopic camera should support zoom and focus functionality.		
	4.14. Laparoscopic camera should support haptic feedback upon organ collisions.		
	4.15. For individual training, the camera position can be fixed using virtual camera assistant and the laparoscopic camera removed from the abdomen model.		
5.	**General Software Requirements**		
	5.1 The software system should be capable of handling or upgrading to multiple diagnostic and surgical modules.		
	5.2 The software should simulate the entire abdomen anatomy, including real time physical behavior of all organs in response to instruments and position of abdomen model.		
	5.3 The software should provide an organ view giving 3D anatomical guidance and a full overview of the organs in the abdomen.		
	5.4 The software should provide didactic guidance for the optimal position of the abdomen model, trocars, and operative team.		
	5.5 The software visually should mimic a real procedure as closely as possible with photorealistic graphics, and include features such as acoustics, tactile feedback, blood loss, etc.		
	5.6 The software should include efficient and short training scenarios to learn the key laparoscopic skills in a realistic anatomical environment.		

	5.7 Each training case should be introduced with a short case description and a video of the task to accomplish.		
	5.8 The software should include acoustic feedback from operating room background sounds and sound of instruments during operation.		
	5.9 The software should include the ability to customize courses with customized scoring based on all patient cases available in the simulator.		
	5.10 The software automatically must create certificates for users who successfully completed courses, which can be exported and downloaded in pdf format.		
	5.11 The software should display an interactive open view of the simulated structures and instruments, manipulated by the user zooming and rotating the image via the touchscreen.		
	5.12 The software should measure, assess, and score trainees' performance using established quantitative metrics such as: procedure time, idle time, camera and instrument path lengths, knot acceptance, as well as patient safety relevant metrics such as time of instruments outside camera view or collisions of instruments with organs.		
	5.13 The software should track safety-relevant clinical errors during the simulated case and include them in the feedback report with error screenshots and reduction of the safety score.		
	5.14 The software should contain and store feedback reports after each procedure, including screenshots and videos. All content of the feedback report including video, screenshots and measured metrics can be exportable.		
	5.15 The software should generate printable feedback reports.		
	5.16 The software should handle various users and store videos of the performances for each user with easy access for the administrator.		
6.	**Training Goals Requirements**		
	6.1 The laparoscopy simulator should enable training of key surgical skills including: - Patient and OR team positioning - Trocar placement		

	- Camera navigation - Instrument triangulation and bimanual coordination - Safe needle handling - Correct knot tying (half knot, square knot, and surgeon's knot), independent of user's own technique (hold-needle, drop-needle, one-hand, two-hands techniques) - Interrupted suturing - Continuous suturing - Anastomosis training - Training with 2 different suture behaviors (including barbed sutures) - Safe exposure of target anatomies - Safe clip application - Safe resection and dissection techniques (including blunt dissection and appropriate use of electrocautery) - Management of complications		
	6.2 The laparoscopy simulator should enable training in life-like conditions to ease the transfer of skills into the OR. Training goals should include: - The selection of the correct patient position and trocar placement according to the simulated procedure - Selection of trocar positions to allow for efficient instrument triangulation. - Understanding of ergonomic limitations and efficient collaboration as a surgical team (surgeon and assistants)		
7.	**Essential Skills Module Software Requirements** 7.1 The essential skills module for laparoscopy should enable psychomotor skills training in abstract condition. Training goals must include: - Acquisition of essential laparoscopic skills for camera navigation, including horizon control, image centering, and periscoping. - Development of ambidextrous motor skills - Hand-eye coordination and instrument triangulation - Bimanual coordination and object transfer - Diagnostic skills: handling of camera and lifting of objects at the same time. - Handling of the clip applicator and scissors in a virtual environment, including acquisition of control		

	and precision in cutting - Safe placement of a ligating loop - Needle handling in a virtual environment - Practice of initial steps of suturing - Non-dominant hand and backhand training - Understanding of 0° and 30° optic angles		
	7.2 The essential skills module for laparoscopy should contain at least 2 cases with 12 exercises for laparoscopic camera handling, including image centering, horizon control, and periscoping.		

	7.3 The essential skills module for laparoscopy should contain at least 13 cases with 96 exercises for bi-manual skills training, including:
	
	  ▪ Hand-eye coordination and instrument triangulation
	  ▪ Bimanual object transfer with grasping exercises
	  ▪ Precision cutting exercises (circular and straight cutting)
	  ▪ Clip placement
	  ▪ Cutting
	  ▪ Needle passing and needle insertion
	  ▪ Loop ligation		

	7.4 The essential skills module for laparoscopy should allow the user to select the dominant hand preference prior to starting an exercise.		
	7.5 The essential skills module for laparoscopy training should allow the user to train in front or back hand positions to prepare for situations of difficult trocar access or anatomical access limitations.		
	7.6 The essential skills module for laparoscopy should allow the user to train with 0° or 30° optic angles.		
	7.7 The essential skills module for laparoscopy should use additional simulated laparoscopic instrument tips including a ligating loop and a laparoscopic needle holder		
8.	**Suturing Module Software Requirements**		
	8.1 The suturing module for laparoscopy should enable psychomotor skills training in abstract conditions. Training goals must include:		

	- Acquisition of essential laparoscopic skills for grasping, rotating, and repositioning a needle in a grasper - Acquisition of essential laparoscopic skills for grasping, rotating, and repositioning a needle in a needle holder - Needle handling in a virtual environment - Practice of initial steps of suturing - Cumulative skills acquisition - Rotation of a needle by pulling on the suture or pushing on the needle to match a target. - Repositioning of a needle to the desired insertion position by passing it between instruments - Optimal passing of a needle through a small target while keeping pivot point - Secure completion of a half knot, a square knot, and a surgeon's knot at the designed location - Wrapping of a suture around an instrument (overwrap and underwrap techniques supported) - Practice of knot tying with "hold-needle" and "drop-needle" techniques. - Practice of knot tying with two-hand technique (use of one-hand technique for advanced users and trainers is supported, in unguided cases, users have the freedom to perform knots according to their own techniques without affecting the knot's acceptance) - Evaluation of proper knot-tying output - Development of ambidextrous motor skills - Hand-eye coordination and instrument triangulation - Bimanual coordination and object transfer - Non-dominant hand and backhand training		
	8.2 The suturing module for laparoscopy should contain at least 15 cases for bi-manual skills training, including: - Needle orientation (to train rotation of a needle) Needle targeting (to train needle repositioning and passing it through a target (loops)) - Needle insertion (to train needle re-positioning, passing it through a target (membrane), and keeping optimal insertion angle) - Half knot - Overwrap and underwrap		

	looping
	    ◦ Hold-needle technique
	    ◦ Drop-needle technique
	    ◦ One-hand technique
	    ◦ Two-hand technique
	  ▪ Square knot
	    ◦ Overwrap and underwrap looping
	    ◦ Hold-needle technique
	    ◦ Drop-needle technique
	    ◦ One-hand technique
	  ▪ Two-hand technique surgeon's knot
	    ◦ Overwrap and underwrap looping
	    ◦ Hold-needle technique
	    ◦ Drop-needle technique
	    ◦ One-hand technique		

	8.3 Two-hand technique: The suturing module for laparoscopy should allow the user to select the dominant hand preference before starting an exercise.		
	8.4 The suturing module for laparoscopy should allow the user to train with or without guidance.		
9.	**General Surgery Module Software Requirements**		

	9.1 The general surgery module for laparoscopy training should contain at least 40 cases with at least 213 exercises, including:
	
	  - Full diagnostic laparoscopy of a female patient
	  - Establishing the critical view for a safe cholecystectomy
	  - Cystic pedicle dissection and safe clipping
	  - Gallbladder resection using various techniques
	  - Control of hemorrhage in the liver bed
	  - Vascular control of the cystic artery
	  - Skeletonizing the appendix to prepare for ligation
	  - Diagnostic of an incisional hernia
	  - Lysis of adhesions to an incisional hernia site		

	9.2 The general surgery module for laparoscopy training should include training goals for:
	  - The correct identification of important anatomical landmarks and pathologies.
	  - Learning different resection and dissection techniques, as well as bleeding control and management of surgical complications.		

	- Ambidextrous and non-dominant hand training using situs inversus totalis cases derived from cholecystectomy, appendectomy, and incisional hernia.		
	9.3 The general surgery module for laparoscopy should offer extensive training of basic and advanced cholecystectomy techniques such as blunt dissection of the gallbladder using different instruments.		
	9.4 The general surgery module for laparoscopy should offer extensive training of basic and advanced appendectomy techniques such as adhesion removal, blunt dissection, and control of appendicular artery bleeding.		
	9.5 The general surgery module for laparoscopy training should include at least 9 different anatomical variations of the cystic duct, the cystic artery, and at least 4 different variations of the appendix.		
	9.6 The general surgery module for laparoscopy training should include adverse events such as arterial bleeding, organ injury, bile duct injury and bile leakage, thermal injury, and vision difficulty.		
	9.7 The general surgery module for laparoscopy training must allow the user to select guided or unguided training cases.		
	9.8 The general surgery module for laparoscopy training should use additional simulated laparoscopic instrument tips including surgical sponge holder, monopolar and bipolar graspers, monopolar scissors, monopolar hook electrode, suction and irrigation device and clip applicator.		
10.	**Comprehensive Warranty**		
	10.1 One-year comprehensive warranty on hardware and software should be provided.		
	10.2 Spare parts should be available for at least 5 years after the warranty period is over.		
	10.3 Service hotline with direct access to 2nd and 3rd level support and engineers' should be provided		
	10.4 Extended comprehensive warranty for 2 years should be optional on both hardware and software.		
	10.5 Remote Service & Support should be provided.		

11.	**Training**		
	11.1 On-site system administrator and user training should be provided by a trained specialist.		
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12.	**Connect – online Simulator Management Software**		
	12.1 The online simulation training management software can be accessed remotely, from any computer, tablet, or smartphone with internet access.		
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	12.7 Simulation data can be viewed and exported for statistical analysis via the online simulation training management software.		
	12.8 Remote updates of the simulator's software, including security updates, can be performed via the online simulation training management software.		
	12.9 Simulation and user data can be synchronized with Learning Management Systems (LMS) via industry standard protocols, including Lightweight Directory Access Protocol (LDAP).		

(Note: It is mandatory for the bidders to provide the compliance statement (comply/not comply) for the above points with document proof as required). If the compliance statement (comply/Not comply) is not furnished for the evaluation Bidders will be disqualified.

**SIGNATURE OF BIDDER ALONG WITH
SEAL OF THE COMPANY WITH DATE**

FINANCIAL BID (PROFORMA) - BILL OF QUANTITIES (BOQ)

Item Name: LAPAROSCOPY TRAINING MODULE
Tender No. MS/BOBY/164/2024/LAPARO

It. No	Description of work	Quantity	Units	Basic Rate in INR	GST in Percentage	Total Amount with taxes in INR
1	Laparoscopy Training Module with One-year comprehensive warranty on hardware and software	1	No.			
2	Extended comprehensive warranty for 2 years on both hardware and software (Optional)	1	No.			
	Grand Total					

Total Amount Rupees in words _____

Note:

1. Price bid as per this format to be uploaded only at the financial document column in CPP Portal. Price disclosure at the technical bid will result in disqualification.

2. Technical Bid Should NOT Contain Price Bid/Financial Bid details (or) Indication. If the price Details are indicated, mentioned inside the technical bid, then bid will be disqualified and neither the Technical Bid nor the Price Bid/Financial Bid will be considered.

3. Optional Items – to be mandatorily quoted.

4. The Purchaser reserves the right to procure the optional items based on the budgetary provisions.

5. The Value mentioned for Optional items, if any, will not be considered for arriving L1 vendor.

I/We the bidder accept all the terms and conditions as per tender including all technical & commercial conditions.

Date: Authorized Signatory
Place: (_____)
                                                                                   Seal and signature

FORMAT FOR AFFIDAVIT OF SELF-CERTIFICATION UNDER PREFERENCE TO MAKE IN INDIA – PER ITEM

Tender Reference Number:

Name of the item / Service:

Date: _____
I/We_____S/o, D/o, W/o, _____
Resident of

_____

Hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019and 04.06.2020) MOCI order No. 45021/2/2017-PP (BE II) Dt.16th September 2020 & P- 45021/102/2019-BE-II-Part (1) (E-50310) Dt.4th March 2021 and any subsequent modifications/Amendments, if any and

That the local content for all inputs which constitute the said item/service/work has been verified by me and I am responsible for the correctness of the claims made therein.

Tick (✓) and Fill the Appropriate Category	
☐	I/We_____[name of the supplier] hereby confirm in respect of quoted items thatLocal Content is equal to or more than 50% and come under **"Class-I Local Supplier"** category.
☐	I/We_____[name of the supplier] hereby confirm in respect of quoted items that Local Content is equal to 20% but less than 50% and come under **"Class-II Local Supplier"** category.

- The details of the location (s) at which the local value addition is made and the proportionate value of local content in percentage

Address _____   Percentage of Local content: _____%
_____   Country of Origin of Goods: _____

For and on behalf of .... (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)
<Insert Name, Designation and Contact No.>

[Note: In case of procurement for a value in excess of Rs. 10 Crores, the bidders shall provide this certificate from statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.]

This letter should be on the letterhead of the quoting firm and should be signed by a competent authority.
      Non-submission of this will lead to Disqualification of bids.

Land Boarder Sharing Declaration

(To be given on the letter head of the bidder)

In-line with Department of Expenditure's (DoE) Public Procurement Division Order vide ref.
F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020

Tender No._____   Dated: _____

CERTIFICATE

(Bidders from India)

"I/ we have read the clauses pertaining to Department of Expenditure's (DoE) Public Procurement
Division Order (Public procurement no 1, 2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 &
24.7.2020) regarding restrictions on procurement from a bidder of a country which shares a land
border with India. I/We hereby certify that I/ we _____ (Name of the bidder) is/are

a) Not from such a country and eligible to be considered for this tender.

OR

(Bidders from Country which shares a land border with India)

I/We _____ (Name of the bidder) is/are from _____ (Name of the
Country) and has been registered with the Competent Authority. I also certify that I fulfil all the
requirements in this regard and is eligible to be considered. *(Copy/ evidence of valid registration by the
Competent Authority is to be attached)*

Place: Signature of the Bidder
Date: Name & Address of the Bidder with Office Stamp

OEM CERTIFICATION FORM
(In Original Letter Head of OEM)

Tender No: .... Dated: ....

We are Original Equipment Manufacturers (OEM) of... (Name of

the company) Ms.. (Name of the vendor) is one

of   our   Distributors/Dealers/Resellers/Partners   (tick   one)   for   the

…………………………………………………………………. and is participating in the

above-mentioned   tender   by   offering   our   product

model...(Name of the product with model number).

…………………………………………………………….. is authorized to bid, sell and provide

service support warranty for our product

as mentioned above.

Name and Signature of the

authorized signatory of OEM

along with

seal of the company with Date

<u>TENDER CHECKLIST – Mandatory to be filled and sent (inside the Main Bid Cover) along with Bidding Document.</u>

(1) I have registered as a Vendor with IC&SR. (Proof to be enclosed)   ☐
   To submit document proof pertaining to point.no: 6 of tender ISO certificate, Active GSTIN certificate, valid PAN details.

(2) Technical bid cover and Financial Bid cover to be submitted separately   ☐

(3) Completed and **Signed Form of Tender**. The Form of Tender   ☐
   document shall be signed by a person legally authorized. (Proof of Authorization to be enclosed)

(4) Completed Technical Compliance Statement   ☐

(5) Certification of Class I / Class II Local Supplier (Goods, Services, or Works) is   ☐
   submitted as part of the technical bid. **(Annexure – D)**

(6) EMD as per tender norms is deposited and the proof is enclosed (**Annexure – I**)   ☐

(7) Land Border sharing declaration document is submitted **(Annexure – E)**   ☐

(8) Authorized agent certificate from OEM is mandatory if Indian agent/Indian office   ☐
   of OEM is participating in this tender on behalf of OEM. (**Annexure F**)

The bid will be valid if all the above documents are provided. Bidders are asked to supply and tick off the required information. Failure to provide any of the stated documents as per tender norms may result in the bid being considered non-compliant and rejected.

Signature of the Bidder

FORM - A
NON- DEBARMENT DECLARATION

Date: XXXX

To,
The Indian Institute of Technology Madras,
Sardar Patel road,
Guindy, Chennai - 600036

Subject: Non-debarment declaration in connection with tender RFF No: XXXXXX for procurement of "XXXXXXXXXXXXXXXXXXXXXXXXXXXX"

Dear Sir,

This is to notify you that our Firm/Company/Organization *<provide Name of the Firm/Company/Organization>* intends to submit a proposal in response to the invitation for procurement of "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" In accordance with the above we declare that:

a.   We are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this assignment.

b.   We are not debarred by any Central/ State Government/ agency of Central/ State Government of India or any other country in the world/ Public Sector Undertaking/ any Regulatory Authorities in India or any other country in the world for any kind of fraudulent activities in last XX years.

Sincerely,

[BIDDERS NAME]
Name
Title Signature

CENTRE FOR INDUSTRIAL CONSULTANCY & SPONSORED RESEARCH (IC&SR)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI 600 036

ELECTRONIC CLEARING SERVICE (Credit Clearing)/ REAL TIME GROSS SETTLEMENT (RTGS) FACILITY FOR RECEIVING PAYMENTS

A. Details of Account Holder

Name of the Institution	Indian Institute of Technology - Madras
Complete Contact Address	Industrial Consultancy and Sponsored Research Indian Institute of Technology-Madras, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
Permanent Account Number (PAN)*	AAAAI3615G
GST REGISTERATION NO.	33AAAAI3615G1Z6
Telephone No./ Fax No.	Tel - 044-2257 8356
E- mail ID of the FO/AO/REG/DIR	dricsr@iitm.ac.in

B. Bank Account Details:

Institution Account Name (As per Bank Record)	The Registrar, Indian Institute of Technology - Madras
Account No.	2722101003872
IFSC CODE	CNRB0002722
SWIFT CODE	CNRBINBBIIT
Bank Name (in full)	Canara Bank
Branch Name	IIT-Madras Branch
Complete Branch Address	Canara Bank, IIT-Madras Branch, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
MICR No.	600015085
Account Type	Savings Account

Certified that the Institute's account is in an RTGS enabled branch.
I hereby declare that the particulars given above are correct and complete.

Date: 04|08|2023

कृते कनरा बैंक / For CANARA BANK

अधिकारी / Officer
अई अई टी चन्नई शाखा / IIT Chennai Branch
चेन्नई / Chennai - 600 036

करोसिन लेमिना..य
M. KAROLINE LEMINA
अधिकारी
OFFICER
S.P. No:64356

Signature of the Competent Authority
of the Institution with seal.

उप कुलसचिव (आईसी एवं एसआर)
DEPUTY REGISTRAR (IC & SR)
आईआईटी मद्रास
I.I.T. MADRAS

Phone : +91 (0) 44 2257 8062 / 8061 / 8060   Fax : +91 (0) 44 2257 0545 / 2257 8366   email : deanicsr@iitm.ac.in   website : http://www.iitm.ac.in

MANDATE FORM

ELECTRONICS CLEARING SERVICE (CREDIT CLEARING)/REAL TIME GROSS SETTLEMENT (RTGS) FACILITY FOR RECEIVING PAYMENTS.

*****

A. **DETAILS OF ACCOUNT HOLDER: -**

NAME OF ACCOUNT HOLDER	
COMPLETE CONTACT ADDRESS	
TELEPHONE NUMBER/E MAIL	

B. **BANK ACCOUNT DETAILS: -**

BANK NAME	
BRANCH NAME WITH COMPLETE ADDRESS, TELEPHONE NUMBER AND EMAIL	
WHETHER THE BRANCH IS COMPUTERISED?	
WHETHER THE BRANCH IS RTGS ENABLED? IF YES, THEN WHAT IS THE BRANCH **IFSC CODE**	
IS THE BRANCH ALSO NEFT ENABLED?	
TYPE OF BANK ACCOUNT(SB/CURRENT/CASH CREDIT)	
COMPLETE BANK ACCOUNT NUMBER(LATEST)	
MICR CODE OF BANK	

DATE OF EFFECT:

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the user institution responsible. I have read the option invitation letter and agree to discharge the responsibility expected of me as a participant under the Scheme.

(……….…………………………….)
Signature of Bidder

Date:
Certified that the particulars furnished above are correct as per our records.
(Bank's Stamp)

(……….…………………………….)
Signature of Bidder

Date :

1. **Please attach a photocopy of the cheque along with the verification obtained from the bank.**
2. **In case your Bank Branch is presently not "RTGS enabled", then upon its upgradation to "RTGS Enabled" branch, please submit the information again in the above pro-forma to the Department at the earliest.**