

भारतीय प्रौद्योगिकी संस्थान गोवा

गोवा अभियांत्रिकी महाविद्यालय परिसर, फार्मागुडी, फ़ोंडा – 403401, गोवा

Indian Institute of Technology Goa

Goa College of Engineering Campus, Farmagudi, Ponda – 403401, Goa



IIT Goa

GSTIN: 30AABAI1653D1ZF

PAN: AABAI1653D

TAN: BLRI08261B

Enquiry No: IITGOA/2024-25/004

Date: 29/07/2024

IIT Goa invites online bid(s) from the manufacturers/ suppliers for supply of item(s) / goods as per specification mentioned in Appendix-1 of tender document available at our website www.iitgoa.ac.in and central public procurement portal i.e. www.eprocure.gov.in.

Sl. No.	Description of Item	Qty. (Nos.)
1	Class 10,000 (ISO 7) Cleanroom Fabrication in RHS3, PG Block (Detailed specifications are attached at Appendix – 1)	As per Appendix-1

Terms & Conditions: -

1. The technical bid and the financial bid should be submitted through www.eprocure.gov.in before the last date & time of submission specified in tender document.
2. Technical bid should contain all the technical details and specification of the product. It should also contain techno-commercial terms and conditions, compliance certificates, Makes Check List of HVAC system and various other components, proprietary certificates (if applicable), undertaking/self-declaration for bid security, declaration of local content, any other certificates/details etc. along with Annexure-A.
3. Financial bid should contain duly filled BOQ in excel format and a scanned copy of the detailed breakup duly signed and stamped on the company letterhead in pdf format.
4. All taxes and duties will be paid extra and such amounts of mandatory/statutory taxes & duties shall be explicitly mentioned in BOQ while submitting bid. If GST amount not quoted in the BOQ (financial bid), the total cost will be treated as inclusive of GST. The prices filled in the e-procurement site will be treated final and shall be binding on the bidder.
5. At any time prior to the due date for submission of bids, the Institute may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing a corrigendum.
6. Corrigendum related to the tenders issued by this Institute shall be placed in its website. As such, all prospective bidders are expected to visit IIT Goa website before formulating and submitting their bids to take cognizance of the corrigendum, if any.
7. Estimated cost of the tendered items is Rs. 105 Lakhs (Inclusive of taxes).
8. Bid(s) must be valid for at least 90 days from the date of opening of technical bid.

9. The GSTIN should invariably be mentioned in your offer. The bidder has to submit a copy of GSTIN, last filled ITR and last filed GST return.
10. Bid Security or EMD: 2% of the estimated cost of the tender or bidders should submit "Bid Securing Declaration Form" on company letter head as per Annexure-B of this tender document.
11. EMD amount can be deposited in IIT Goa Main Account by RTGS/NEFT/SWIFT.
Account No. : 520101252594859
Bank Name and address : Union Bank of India, Farmagudi Branch
IFSC Code : UBIN0913286
A copy of the transaction details of EMD must be submitted along with the technical bid.
12. Kindly attach a compliance certificate along with the technical quote.
13. Model no. of the product and HSN or SAC code should be given with catalogue (if any).
14. Price: Price should be quoted in INR, with free delivery at IIT Goa campus at the site.
15. Payment terms: 100% within 30 days after the delivery and successful installation of items against submission of performance security.
 - Note: All payments due under the contract shall be paid after deduction of statutory levies at source (Like ESIC, IT(TDS), GST etc.), wherever applicable.
16. Delivery should be made within 60 days from the date issue of Purchase Order.
17. Installation should be made within 60 days after the successful delivery (if applicable).
18. The items after inspection, if found defective or damaged or not according to the specifications of the supply order will be returned at the bidder's cost and risk.
19. Part supply and billing is not acceptable unless permitted by the Competent Authority.
20. Liquidated Damages: If the items are not delivered and installed within 120 days from the date of issue of Purchase Order, 0.5% as pre-estimated damages per week of the total amount subject to maximum of 10%.
21. Successful bidder has to submit a Performance Bank Guarantee as per Annexure- C for 3% of the purchase order value and valid till one year or up to warranty period, plus 60 days whichever is later from the date of successful installation of the item.
22. On site comprehensive warranty:
The successful bidder shall provide a comprehensive warranty for minimum period of 03 years (not applicable for consumable item(s)) after the installation and commissioning of the instrument/software/items. If within a warranty period after installation any such product or component is proven to be defective such product shall be repaired or replaced by the supplier. Such repair and replacement shall be sole obligation of supplier. Supplier shall be responsible for payment for all charges (to-and-fro) for repair/ replacement. Any design defects or installations deficiencies or any outer defects, if noticed during the warranty/ maintenance period, shall be rectified promptly by the successful bidder with no cost at all the places, which also includes the field installations.
 - (i) Down-time call attendance should be within 72 hrs.

- (ii) In case the equipment/system remains non-operational for more than 5 days then warranty period will be extended for the equal period for which equipment/system remained non-operational. Warranty extension in such case shall be done without prejudice to any other term & condition of the contract.
23. The bidder shall provide the banking details along with their quote on their letterhead duly signed and stamped.
24. The Institute is following and shall abide with the revised Public Procurement (Preference to Make in India), Order 2017 P- 45021/2/2017 – B. E. -II dated 16.09.20 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India & subsequent amendments/instructions of Ministry. Accordingly, preference will be given to the make in India products while evaluating the bids. However, it is sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India along with respective documentary evidence in the technical bid itself. A self-declaration as per Annexure- D related to local content should be submitted with technical bid.
25. If the bidder is a Micro or Small Enterprise as per latest definitions under MSME rules, the bidder shall be exempted from the requirement of “EMD/Bid security”, "Bidder Turnover" criteria and "Experience Criteria". If the bidder is OEM of the offered products, it would also be exempted from the "OEM Average Turnover" criteria. In case any bidder is seeking exemption from Turnover/Experience Criteria or EMD/Bid security, the supporting documents to prove his eligibility for exemption must be submitted with technical bid.
26. If the bidder is a Startup, the bidder shall be exempted from the requirement of “EMD/Bid security,” "Bidder Turnover" criteria and "Experience Criteria". If the bidder is OEM of the offered products, it would also be exempted from the "OEM Average Turnover" criteria. In case any bidder is seeking exemption from Turnover / Experience Criteria or EMD/Bid security, the supporting documents to prove his eligibility for exemption must be submitted with technical bid.
27. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Department for Promotion of Industry and Internal Trade (DPIIT). This is also applicable for bidders bidding for finished goods procured directly/indirectly from the vendors from the countries sharing land border with India. A self-declaration as per Annexure- E should be submitted with technical bid.
28. IIT Goa reserves the right to accept and/or reject any/all bids or to cancel the entire tendering process at any stage of the procurement process without assigning any reason in public interest. All disputes are subject to Goa Jurisdiction only.
29. A self-declaration is to be submitted as per Annexure- F that the organization has not been blacklisted during last 3 years by any Central/State Government Department/Organization.
30. Bidder who does not manufacture the goods it offers to supply shall submit Manufacturers' Authorization Form as per Annexure- G specified in the bidding document to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and / or supply the goods/services.

31. Evaluation of bids: The technical bid shall be evaluated based on technical and other parameters usually taken in to consideration. Financial bid shall be evaluated based on financial parameters. Govt. of India rules shall be taken in to account for evaluating both technical and financial bids.
32. The bidders who do not fulfil the eligibility, technical and financial qualification criteria shall be rejected during the evaluation of technical bid.
33. For any technical clarification, you may kindly contact Dr. Santosh Kumar (E-mail: skumar@iitgoa.ac.in). For any other clarification, you may contact the Assistant Registrar, Stores & Purchase section (email: purchase@iitgoa.ac.in / ar_sp@iitgoa.ac.in).
34. The bidders are expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the bidder's risk and may result in rejection of its bid.
35. As per directive of the CVC all organizations including IIT Goa have to adopt an Integrity pact (IP) to ensure transparency, equity and competitiveness in major Public procurement having procurement value above Rs.1 Crore. The integrity pact envisages an agreement between the prospective bidders / vendors with the buyer committing the persons / officials of both the parties with the aim not to exercise any corrupt influence on any aspect of the contract. Only those bidders / vendors, who are willing to enter in to such an integrity pact with the Purchaser, would be competent to participate in the bidding. IP also envisages Panel of Independent External Monitors (IEMs) which shall be provided / recommended by MoE and institutes with the approval of by CVC. The integrity Pact would be effective from the date of invitation of bids till complete execution of the contract. The bidder is required to sign Pre-Contract Integrity Pact as per the format given in Annexure-I.
36. Settlement of Disputes:
- i. The Parties shall use their best efforts to negotiate and amicably settle any disputes, controversies or claims arising out of, or in connection with, the Contract / Purchase Order or its interpretation.
 - ii. If the Parties fail to settle the dispute amicably within thirty (30) Days of commencement of the negotiations, the dispute shall be settled through arbitration. One (1) sole arbitrator shall be appointed by the Director of IIT Goa who shall have full powers to make final and binding decisions subject to prevailing laws of India. The appointing authority shall be the Director of IIT Goa. The place of arbitration shall be Goa and the language used in the arbitration proceedings shall be English.
37. Online bids should be submitted through www.eprocure.gov.in latest by 17:00 Hrs. on or before 19th August, 2024.

Sd/-
Registrar, IIT Goa

TECHNICAL SPECIFICATION
of
Cleanroom Facility
at
School of Physical Sciences, IIT Goa

- SQuP (Solid-state Quantum Photonic) Lab, School of Physical Sciences, at Indian Institute of Technology Goa is seeking bids from qualified bidders for an ISO 7 Cleanroom. See a few Tables below for detailed specifications:
- Companies need to submit two bids, a technical bid and a commercial bid, in two separate sealed envelopes. The technical bid must contain complete details of the design and calculations used for the design.
- Deviations from the technical specifications requested are allowed. Such deviations must be highlighted and justified. Their acceptance or rejection will be left to the discretion of the technical committee.
- The technical response, corresponding to the offered, should be in the form of a compliance table with at least 5 columns. Serial number in column 1. Each of the numbered technical items below should be addressed in a separate row of the table in column 2. Compliance to this requirement, in Yes/No, deviation from it and justification should be provided in the neighbouring columns 3-5. Post the opening of a hard copy of the technical bid the committee will request for a soft copy of the files for further processing. Companies should NOT mail soft copies of the files unless specifically requested for.
- Detailed technical specifications of the equipment being offered should be included.
- Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.
- If multiple systems can fulfil the requirements, vendors can submit multiple bids.
- If the available space for HVAC systems, as shown in Drawing 1, is not sufficient for fixing them then bidder may propose to stack them vertically. Alternatively, a Mezzanine structural floor may be constructed in the same area.
- The commercial bid should be broken up to the maximum extent possible into separate items with a cost against each to enable better comparison of price for various configurations across the bidders. As an option, please provide itemized cost for any suggested accessories/add-ons that may enhance the usability, capability, accuracy, or reliability.

A. Cleanroom specifications:

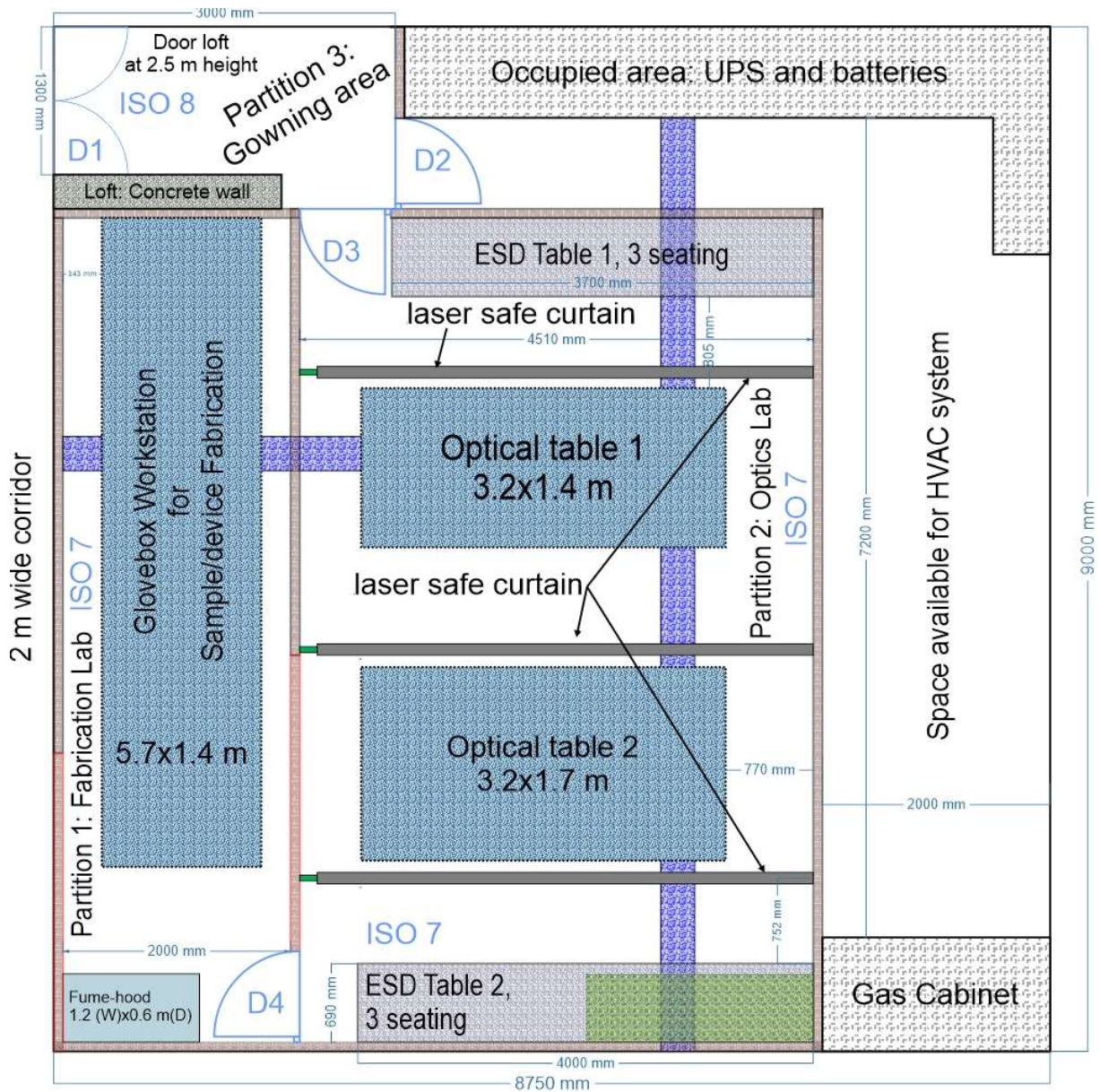
Sr.No.	Description		Specification
1	Clean Room Class as per ISO 14644-1:2015 standards		ISO 7 (in operating condition) recirculating
2	Utilization of Clean Room	Partition 1: ISO 7	Semiconductor samples preparation Semiconductor devices fabrication
		Partition 2: ISO 7	Dark Room for Table-top Quantum-optics Experiments Design of air flow should be such that it avoids/minimize the air turbulence in the optical table areas (see drawing)











			Positioning of lighting elements must be outside of the optical tables regions.
		Partition 3: ISO 8	Gowning Room
3	Safety System		1. Fire detection 2. OMS (Oxygen Monitoring System) 3. Door interlock and access
4	Laser Safety Curtain Installation		In partition 2: For 02 No. of Optical Tables (see drawing)
5	Approx. Area, Sq.m (see drawing 1)	Partition 1	15
		Partition 2	50
		Partition 3	5
6	Air changes per hour (ACPH)		>60
7	Air flow		Laminar
8	Air returns		Low wall
9	Air filters		HEPAs with efficiency $\geq 99.995\%$ (for 0.3 – 1 μm)
10	Ceiling filter coverage		$\geq 15\%$
11	Temperature, deg.C		22 \pm 2
12	Humidity RH, %		50 \pm 5
13	Positive Differential Pressure, Pa		10 - 15
14	Sound level, dB		Less than 60 dB
15	Digital Display System		Continuous monitoring of temperature, humidity RH, and differential pressure
16	Room Occupancy		7
17	Lighting Level, Lux	Partition 1	500
		Partition 2	300*
	*In addition to the individual ON/OFF switch, each lighting element shall have an intensity adjustment knob. All lighting elements shall be connected with a Master ON/OFF switch to make partition 2 completely dark.		
18a	Equipment power consumption, kW		40
18b	Partial electrification of existing equipment in the lab. 1 Φ , 20 kVA and 3 Φ , 20 kVA UPS are available on the site. As the lab is in full operational, appropriate numbers of MCBs and DBs are available; bidder shall utilize them in best possible ways.		Electrical Raceway Systems on two inner walls, adjacent to the ESD table, containing the power sockets and switches for both the ESD tables. <ul style="list-style-type: none"> - each ESD table shall have 10 No. of sockets. 04 No. of 16 Amp rated, and 06 No. of 6 Amp rated (1Φ, 3 wires). Electrical Raceway Systems with power sockets and switches on the perimeters of MS Rack/Shelf <ul style="list-style-type: none"> - 15 No. of sockets., 10 No. of 16 Amp rated and 05 No. of 6 Amp rated (1Φ, 3 wires).

		<p>Electrical Raceway System with power sockets and switches on the wall, adjacent to the Glovebox Workstation and Fume hood, in Partition 1.</p> <ul style="list-style-type: none"> - 10 No. 16 Amp rated sockets (1Φ, 3 wires) - 02 No. 15kW rated sockets for 3Φ, 5 wires power supply <p>10 No. of 16 Amp (1Φ, 3 wires) rated socket for another MS rack containing various control units of the equipment.</p>
19	Process Exhaust, CFM	500
20	Cleanroom Heat load, kW	Bidder shall provide this value based on provided details of the cleanroom
20	Gas lines with Distribution points (See drawing 2)	<ol style="list-style-type: none"> 1. 06 lines for gases (SF₆, CF₄, N₂, Ar, O₂, 95+5: N₂:H₂). MOC: SS316L EP 2. 01 line of compressed air. MOC: Aluminium
21	Utilities Required	<ol style="list-style-type: none"> 1. 5N (99.999%) Purity Modular Nitrogen Generator (using existing Screw Compressor) 2. Fume hood for Wet chemical (HF/BHF/Solvent) processing 3. ESD safe Laboratory Working Desks and Chairs 4. MS Rack/Shelf system for optical table of dimension 3.0 m x 1.2 m. 5. Sound-proof enclosure under the ESD table 2, half the length. This will be used to place existing Helium Compressor.
22	Gowning area Utilities required	<ol style="list-style-type: none"> 1. Change over Bench 2. Dynamic garment cubicle 3. Shoe cover dispenser 4. Safety goggle dispenser
23	Validation by Nationally and Internationally recognised and authorized firm and as per ISO 14644-1:2015 specifications. Technical documents shall mention the name of the firm.	<ol style="list-style-type: none"> 1. Temperature 2. Relative Humidity 3. Particle count 4. Sound level 5. Filter Integrity test 6. Air velocity test 7. Differential room pressure test (pressure Zoning) 8. Recovery test 9. Air balancing. 10. Pressure balancing
24	<p>Warranty: Bidder should warranty entire facility including clean room and other installed service for a period of 03 years for all materials and machines. During warranty period bidder should monitor the complete facility and installed services and carry out necessary corrections,</p>	

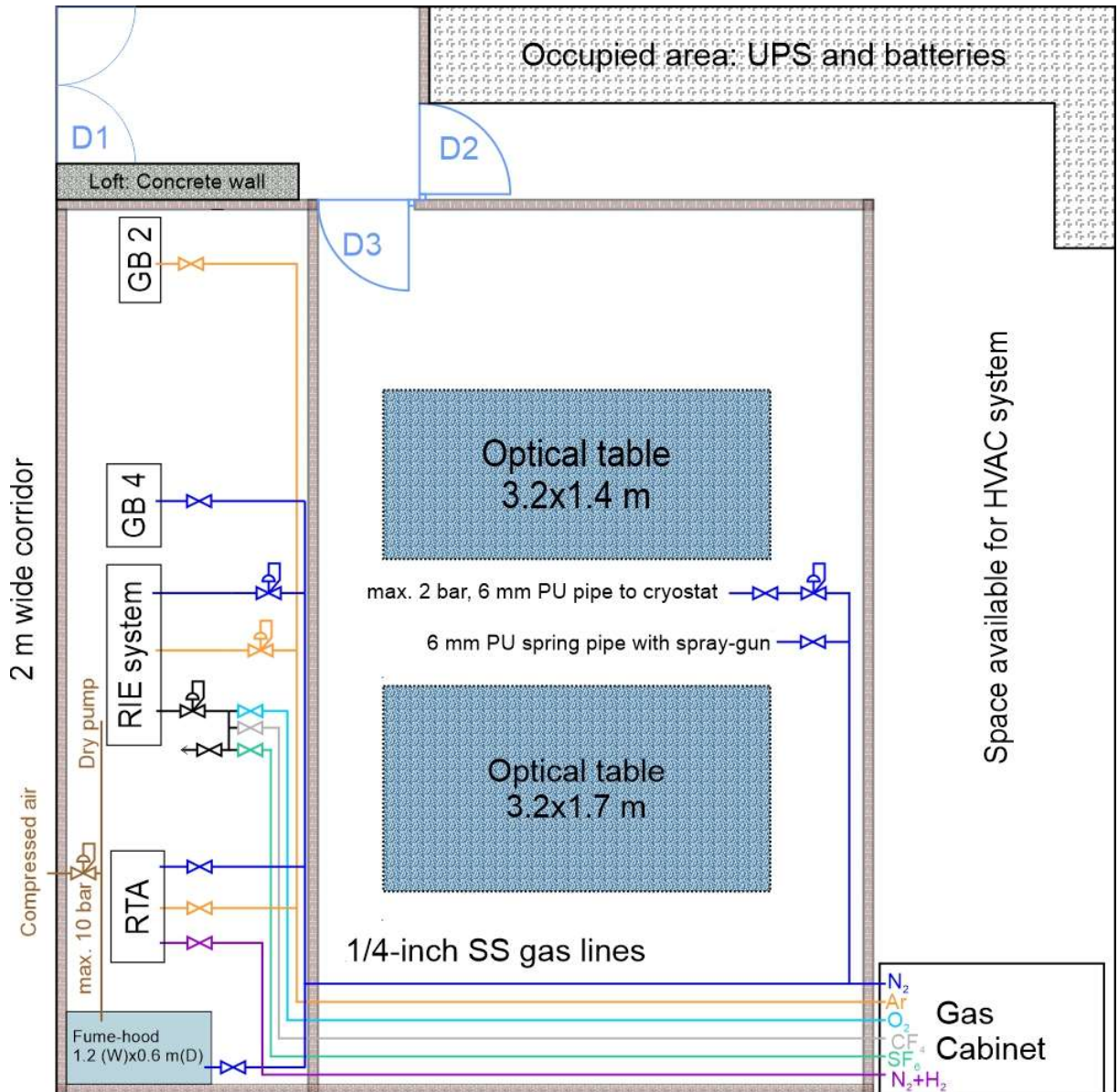
	repair or replacements, if required, for smooth operation of the clean room facility & services as per laid down specifications.
25	<ol style="list-style-type: none"> 1. The successful bidder should setup the clean room facility as per the clean room plan drawing is given. 2. Schematic of setting up an HVAC system in the designated space (see drawing) shall be provided by the bidder. The bidder is advised to contact Dr. Santosh Kumar (skumar@iitgoa.ac.in) for any space related enquiries. 3. The bidders are advised to make a site visit prior to bidding in order to ascertain the exact quantum of work to be undertaken and be able to quote their best for the specification and quantity as mentioned in BOQ. 4. The bidder should submit test certificates for major OEM components as required by user during the supply of materials. 5. Installation & Commissioning: Bidder should be responsible for installation / commissioning and for after sales service during the warranty period and thereafter as mentioned in the order. 6. Any other item/work not specified above but required for completion of intended work shall be deemed to be part of the scope of work to be executed by the successful bidder. 7. Bidder should bring tools, consumables and manpower required for implementation of the work. 8. All the industrial safety practices must be followed during implementation of the project 9. For HVAC work with HEPA filtration validation of particle count test, temperature & relative humidity, air velocity, AHU capacity & Air changes has to be confirmed after commissioning of work by the successful bidder. 10. Documentation for DQ-IQ-OQ has to be submitted with a set of as built drawing after completion of the work including OEM test reports of critical components.

B. Drawing 1:



- | | | | | | |
|---|------------------------|---|-----------|--|--|
|  | Occupied area |  | ESD table |  | D1 Double leaf door, 1300 m |
|  | Al. honeycomb panel |  | Equipment |  | D2 Single leaf door, 750 mm |
|  | Future removable panel |  | Trench |  | D3 Sound-proof enclosure for helium compressor |
| | | | |  | D4 |

C. Drawing 2:



Al. honeycomb panel

Equipment

In-line regulator with output pressure (max., 2 bar) gauge

In-line shut-off valve

Purge valve

D. Summary of the Work:

Sr. No.	Summary of Work to be done
	<ul style="list-style-type: none"> • Fabrication of cleanroom as per ISO 14644-1:2015 standards • Class 10,000 (ISO 7) cleanroom in an operating condition
1	<p>Room Interiors: 3 Partitions (see drawing)</p> <ol style="list-style-type: none"> 1. Partition 1 (Fabrication Lab): 15 Sq. m, 2. Partition 2 (Optics Lab): 50 Sq. m, 3. Partition 3 (Gowning area): 05 Sq. m, 4. Aluminium honeycomb insulation panel with Aluminium skin sheet of minimum 0.8 mm thickness on both sides with powder coating and epoxy finish; Minimum thickness: 50 mm. Filling material: Mineral wool, minimum density: 80 Kg/m³ 5. Al. honeycomb Wall Panel 6. (Dark-grey inside-walls in partition 2: optics lab) 7. Al. honeycomb Ceiling Panel at a height of 2.5 m 8. Al. honeycomb Doors 9. Aluminium coving R 50 10. Without any view panels 11. ESD-safe epoxy flooring and PVC welded joints 12. Airlock and interlock Doors: <ul style="list-style-type: none"> Interlocking between door D3 & D1 Interlocking between door D3 and D2 13. Water and Electrical Wires conduits through trenches on the floor (see drawing) 14. Walkable coverings of trenches on the floor, airtight for maintaining the cleanness of cleanrooms 15. SS316L EP Gas lines and Aluminium Compressed-air line 16. Cleanroom compatible ESD safe: <ul style="list-style-type: none"> Working Desks: working surface height: 1 m, with built-in one-layer drawers underneath but not at the seating locations, depth: 690 mm, total length: 8.9 m: see drawing, Chairs: 07 No. with foot ring, without wheels, 200 mm stroke seat height 500 - 700 mm adjustment, and 17. Illumination: Rectangular lighting elements, embedded in the ceiling, not above the equipment/machine 18. Partial electrification (using existing UPS, Batteries & DBs with MCBs)
2	<p>HVAC & Air Filtration (see details in Sec. C):</p> <ol style="list-style-type: none"> 1. Air Handling Unit 2. Indoor Chiller units (02 No. – 01 Working + 01 Standby) 3. Duct work 4. Damper 5. HEPA's filters 6. Display and Control
3	<p>Safety System:</p> <ol style="list-style-type: none"> 1. Fire detection 2. OMS (Oxygen Monitoring System) 3. Door interlock and access

4	<p>Laser Safety Curtain System:</p> <ol style="list-style-type: none"> 1. 03 No. separating the Optical Table sections (see drawing). 2. Regular Duty Black Flex-Guard® material. 3. Laser-rated at 100W/cm² for 100 seconds. 4. Magnetic Non-Contact Safety Interlock, Right (curtain on the left- and Lock on right- side)
5	<p>MS Rack/Shelf for Optical Table:</p> <ol style="list-style-type: none"> 1. Stable and freestanding, 2 levels overhead shelves for the optical table. These shelves will be used to store the various control units of the equipment, power supplies, other accessories. 2. The dimensions of the optical table are 1200 mm x 3000 mm x 1000 mm. See https://www.newport.com/g/optical-tables to know more about an optical table. 3. The supporting frame must not touch the optical table (, to maintain the vibration isolation of the table), and therefore, a 3100 mm length of the frame is advised. 4. Details of the supporting frame: <ol style="list-style-type: none"> a. The frame must be capable of supporting a load up to 350 kg. b. The supporting frame should have four stable legs; 2 legs on each shorter sides of the table. c. These 2 legs must be fitted on a single horizontal strong bar using a proper arrangement of right-angle brackets. d. The horizontal bars must be fitted with height adjusting cups/screws to compensate the uneven surfaces of the floor. 5. Details of shelves: <ol style="list-style-type: none"> a. The bottom shelf of dimensions 1100 mm x 3100 mm must support a load up to 250 kg, and the top shelf of dimensions 500 mm x 3100 mm must support a load up to 100 kg. b. Both shelves must be made of Melamine-faced MDF (medium density fiberboard), and they must be mounted on proper railing arrangements to support the loads specified above. c. For the management of electrical and optical cables, the bottom shelf must have through hole of dimensions of 100 mm x 2000 mm and in the center of the shelf. d. The frame must have several mounting points for allowing the height adjustment of the shelves. The height (measured from floor) of the bottom shelf must be adjustable from 1400 mm to 1700 mm with a step of 100 mm. The height of the top shelf must be adjustable from 2000 mm to 2300 mm with a step of 100 mm.
6	<p>Fume hood for Wet Chemical processing:</p> <ol style="list-style-type: none"> 1. 1.2 m wide and 0.6 m depth HF/BHF/Solvent type (often called CMOS) chemical bench 2. Hood designed as per ASHRAE: 110-2016 3. Fabricated with polypropylene with interior flame-retardant polypropylene and epoxy work surface. 4. Includes fluorescent light and vertical safety glass sliding sash. 5. With a small sink on the left 6. 2 No. of water supply (DI-water and clean-water) taps (inside) with valves (outside) 7. 2 No. of Gas supply (Nitrogen & compressed air) leak-proof airgun (inside) with valves (outside)

- Work need to be completed in an **existing building/room:**
 - with masonry walls on all 4 sides
 - with a concrete floor of **area of 8.75 x 9.00 Sq. m**
 - with a false ceiling at a height of 5 m
 - with a sloping tin roofing
 - with a 1.3 m (width) x 2.0 m (extension in the room) x 2.0 m (height) loft structure at the entrance
 - containing various immovable research-equipment/machines

E. Detailed specifications of the cleanroom:

Sr. No.	Specification	Qty.
1.	Air Handling Unit (AHU)	01 No.
1.1	<p>AHU Casing:</p> <ol style="list-style-type: none"> 1) AHU shall be of modular construction and of draw through type comprising of pre-filter section, fine filter section, cooling coil section and fan section. The framework shall be of extruded Al sections joined by moulded high tensile reinforced plastic and shall be assembled to provide a sturdy, strong and self-supporting framework for various sections. Each section shall be complete with its own independent base and mounted on 14G galvanised sheet steel and aluminium die cast channels. Zinc deposition on the GI sheets shall be minimum 120 gsm. 2) AHU shall be of double skin, with 50 mm thick PUF insulation sand-witched panel, 0.8 mm thick percolated GSS outer skin and 0.8 mm thick plain GSS sheet inside. The density of PUF insulation shall be minimum 40 Kg/m³. 3) The framework for each section shall be joined together with soft rubber gasket in between to make joints air tight. 4) Suitable air tight access doors with Aluminium die cast heavy duty hinges and locks shall be provided for various sections. 5) The casing shall incorporate thermal break profile and all other necessary design features to ensure that condensation does not occur during all seasons. 6) The AHUs shall be having sound attenuators at the suction and delivery. 	
1.2	<p>Circulation Fan:</p> <ol style="list-style-type: none"> 1) Fan Type: Direct driven, Plug type high efficiency centrifugal fan 2) Desired noise level should be reduced to 70 dB or less by suitable sound attenuators on supply and return air path. 3) Required total static pressure: 150 ± 2 mm WG. 4) Fans should have backward curved blades to improve efficiency. 5) Fan blades should be made of Aluminium alloy for stability. 6) Motor and fan assembly should be floor mounted and to be placed on extruded aluminium sections and on the vibration isolators to reduce amplitude to less than 25-50 microns. 7) Motor Requirement: Adequately sized, TEFC Squirrel cage induction motor with VFD drive and suitable for 415V ± 10%, 3 phase, 50 Hz ± 5% AC power supply. 8) The motor should be of high Efficiency IE3 class as per IS 12615 – 2011- Non FLP. 9) Motor should be compatible for VFD operation. 10) Epoxy based coating shall be provided on all the surfaces of ferrous fan housing. 	
1.3	<p>Cooling coil:</p> <ol style="list-style-type: none"> 1) Cooling medium requirement: Chilled water at a temperature of 8 ± 1°C 	

	<ol style="list-style-type: none"> 2) The velocity across the cooling coils should not exceed 2.25 m/s. accordingly, cooling coil area should be selected. 3) Coils should be of seamless copper tubes with Al fins, 8 rows deep, with 12-13 fins/inch, with copper header, flange connection and SS304 enclosure. 4) Copper tubes should be 25±5% SWG and hydrostatically tested for 21 kg/cm². 5) Cooling coil condensate tray should be of 14±5% SWG SS304 material. 6) Vertically stacked Cooling coils should have SS304 drip trays between them and SS pipe drain connection left at the drain tray and finally should be connected to drain point with suitable trap to check ingress of outside air. 7) Fouling factor requirement: 0.0002 hr. m² °C/Kcal or better 8) Accessories Requirement: Frame, support, inlet and outlet header, vent connection and drain connection with valves, pressure gauges with valves at inlet and outlet and their associated fittings.
1.4	<p>Heater:</p> <p>The AHUs should have Electrical heaters section to maintain the clean room temperature in the specified range.</p> <ol style="list-style-type: none"> 1) Strip/Tubular heaters of sufficient capacity should be selected in the AHU to maintain the area temperature. 2) The heaters should be complete with mounting frame, Thermostat, Humidistat, AirStat in redundant arrangement along with all control devices which will be controlled by Thyristors.
1.5	<p>Humidifier:</p> <ol style="list-style-type: none"> 1) Type: Pan type, Electrical heating 2) Humidification capacity: Sufficient capacity to maintain the required RH levels inside the cleanrooms in the dry season. 3) For calculating humidification by the above humidifier so as to maintain dew point temperature of the treated fresh air at 20 ± 1 °C, an outside peak-winter (night) temperature as per the outdoor condition to be considered.
1.6	<p>Filter:</p> <ol style="list-style-type: none"> 1. There should be 3 stages of filtration in the AHU: <ul style="list-style-type: none"> - 1st stage Pre-filters should be of G4 grade as per EN 779, non-woven synthetic material sandwiched between HDPE mesh on both sides with minimum thickness of 150 mm flange type with an initial pressure drop of 5 mm WG or less, suitable for cleaning with dry air or water jet. - 2nd stage Bag filters should be of F7 grade as per EN779, non-woven synthetic material sandwiched between HDPE mesh on both sides and suitable for minimum thickness of 300 mm initial pressure drop of 6-8 mm WG or less, suitable for cleaning with dry air or water jet. - 3rd stage HEPA Filters should be of H14 grade, suitable for AHU capacity. Filter media should be of micro fibre glass, Efficiency required: 99.995% down to 0.3 micron. The filters should have Anodized Al frame with a module size of 600mm x 600mm (preferably). The filter media should be epoxy/PU bonded to the filter casing, Pressure drop < 15 mm of WG. 2. Filters face velocity should not exceed 2.25 m/sec. 3. Filter mounting frame should be made out of extruded aluminium material. The frame should be strong enough to withstand the weight of two persons for climbing the frame during the filters replacement. 4. Between Filter sections, minimum spacing of 600 mm should be maintained. 5. Filters should have a quick release mechanism and sealing gasket. 6. All the filters should have Al frame (flange type) with a module size of 600 mm x 600 mm (preferably). 7. Accessories Requirement: Frame, supports, sealing gasket (Neoprene gasket pasted on the back side of the flange), quick release mechanism.

2.	Chillers: 2 No. of chillers; 1 working & 1 standby	02 No.
2.1	<ol style="list-style-type: none"> 1. Energy efficient Air-cooled, high efficiency Scroll chillers of Tonnage NOT LESS THAN 11.0 TR, using environment friendly refrigerant (Non CFC), suitable for indoor installation shall be provided. The bidders shall provide justification if lower tonnage chillers would suffice the required project. 2. Microprocessor-control panel along with chiller load management option inbuilt, to be hooked up to BMS for parameters monitoring and control. 3. The total load to be catered by preferably multiple scroll compressor as per seasonal load demand. 4. OEM (Original Equipment Manufacturer) to stand guarantee to supply chiller spares for a minimum period of 10 years after warranty. 5. Chillers' OEM shall have local trained personnel in India, in case of imported chillers. The chillers should be AHRI certified. 6. The footprint of the chiller shall not exceed more than 2 meter in any directions. 	
2.2	<p>Chilled Water Piping:</p> <ol style="list-style-type: none"> 1) The line shall be Seamless SS304 SCH 10 pipes. 2) Booster pumps with one working and one stand-by arrangement (for each AHU) shall be provided in the chilled water line. 3) The line shall be complete with all the fittings like valves, flanges, bends etc. 4) The flanges shall be SS heavy duty (rating PN 16). 5) The gaskets shall be good quality neoprene of appropriate thickness. 6) Pressure gauges having suitable range and ½” connection size shall be of 4” dial type, with Bourdon movement. All internal parts shall be of SS316. The over range protection shall be 125% of maximum range. 7) The temperature gauges of suitable range shall be 4 inches dial type. The sensor, capillary and thermo- well shall be SS316. 8) The bolts and nuts shall be of not less than 8.8 Grade. Spring washers of required thickness shall be used with pumps, motors and other moving machinery while plain washers of required thickness shall be used at all other places. 9) Insulation on chilled water piping, valves, fittings, pumps etc. shall be done using PUF of 50 mm thickness and having density not less than 40 Kg/m³. The pipes and the other surfaces where insulation is to be applied shall be cleaned so that surface is free from rust, dust and other foreign materials. 10) Two coats of 85/25 bitumen/CPRX shall be applied on the entire pipe surface and the inside surface of the pipe section/slabs (as required) of insulating material so that the insulating mass sticks with the pipe properly. Thereafter white transparent polyethylene sheet of thickness not less than 500 gauge shall be wrapped all along sealing the insulation mass, overlapping the joints by not less than 50 mm and sealing them properly using bitumen/CPRX/ good quality adhesive tape. Over the polyethylene sheet, 0.5 mm thick aluminium sheet shall be used as cladding to cover the insulation in a quality manner. 11) Water flow direction to be marked on the respective pipes. Insulation shall be applied only after the piping system has been satisfactorily tested for leaks as per specifications. 	
2.3	<p>Butterfly Valve:</p> <ol style="list-style-type: none"> 1) The butterfly valve should be SS304 body with EPDM liner and SS316 disc preferably in two-piece construction. 2) The disc should consist of disc pivot and driving stem shall be in one piece centrally located. 3) The valve seat should be synthetic material suitable for water duty. It shall line the whole body. 4) The disc should move in slide bearings on both ends with ‘o’ ring to prevent leakage. 5) The handle should have arrangement for locking in any set position. 6) All valves 200mm Dia. and above should be gear operated. 7) The valve should be PN16 rating (suitable for 16 Kg/cm² working pressure). 	

2.4	Ball Valve: <ol style="list-style-type: none"> 1) All Valves should be of SS304 single piece type PN 16 rated. 2) Ball type Valves with (FPT) female threads conforming to class 2 of IS 778 and mating flanges fitting. 3) All Ball valves should be ISI Marked. 	
2.5	3 Way Modulating Valve: 3-Way proportioning control valve with a PN16 rating suitable for required pipe sizes (with all necessary concentric reducers and flange connections to be included) shall be provided. Materials of Construction (MOC): Cast Iron (CI).	
2.6	Dual Plate Check Valve: <ol style="list-style-type: none"> 1) The body of the PN16 rated check valve shall be made from SS304, single piece casting in cylindrical shape. 2) There shall be two plates, which should be hinged in the centre of the circle. 3) Both plates should have springs attached to them for assisting in closing action of the valve. 4) There should be properly/designed metal to metal seal between the plates and the outer body, to ensure non leaking sealing. 5) The valve design should confirm to API 594 or equivalent specifications. 	
2.7	Strainers: <ol style="list-style-type: none"> 1) Strainers should either be pot type or 'Y' type SS304 body PN 16 rated, tested upto pressure applicable for the valves as per design. 2) 2) The strainers should have a perforated bronze sheet screen with 3 mm perforation and with a permanent magnet, to catch iron fillings. 	
2.8	Joining: <ol style="list-style-type: none"> 1) All pipe lines should be joined using the TIG welding. 2) Square cut plain ends should be welded for pipes upto and including 100 mm diameter. 3) All pipes 125 mm diameter or larger should be bevelled by 35 deg. before welding. 	
2.9	Pipe Supports/Hangers: <ol style="list-style-type: none"> 1) Pipe supports should be provided and installed for all piping wherever indicated, required or otherwise specified. Wherever necessary, additional hangers and supports shall be provided to prevent vibration or excessive deflection of piping and tubing. 2) All vertical pipe support should be made of 12 mm thick Mild Steel (MS) rods and the horizontal support should be of MS angles of appropriate thickness. 3) Pipe supports should be adjustable for height and prime coated with rust preventive paint & finish coated with black paint using approved grade of paint. 	
2.10	Testing: <ol style="list-style-type: none"> 1. Various tests should be performed to the piping before connecting equipment and appliances. In no case should the piping, equipment or appliances be subjected to pressures exceeding their test ratings. 2. The tests should be completed and approved before any insulation is applied. Testing of segments of pipe work will be permitted, provided all open ends are first closed, by blank offs or flanges. 3. After tests have been completed the system should be drained and flushed 3 to 4 times and cleaned of all dust and foreign matter. All strainers, valves and fittings should be cleaned of all dirt, fillings and debris. 4. All piping should be tested to hydraulic test pressure of at least one and half times the maximum operating pressure but not less than 10 kg/cm² for a period of not less than 12 hours. All leaks and defects in the joints revealed during the testing should be rectified to the satisfaction. 	
3	Chiller Water Pumps: 1 working & 1 standby	02 No.

	<ol style="list-style-type: none"> 1. They shall be capable of providing a pump flow rate required by the chillers and other cleanroom equipment. 2. Heavy duty pumps for continuous operation 3. MOC: SS304 4. Impellor: SS304 5. Motor: Adequately sized TEFC, squirrel cage induction motor having high efficiency rating IE3 Class and suitable for 415V + 10%, 3 Phase, 50 Hz + 5%. 6. Pump shall be horizontal, closed coupled, single stage, centrifugal, end suction with back pull-out design. Hence, the rotating unit can be removed and serviced without disconnecting the suction and discharge pipe. 7. The noise level shall not exceed 75 dBA at 1 m from the source. 8. Accessories: Pressure gauges at suction and discharge, isolating butterfly valves at suction and discharge, check valve, strainer, integral piping, base frame, foundation bolts, nuts, vibration isolator/rubber pads etc. 	
4	<p>Instrumentation & Control:</p> <ol style="list-style-type: none"> 1. Three-way flow control valve, complete with all the accessories and with a manual bypass line with an isolation valve. 2. All three areas/partitions shall have temperature sensors with accuracy of ± 0.2 degC or better and humidity RH sensors with accuracy of $\pm 1\%$ or better. 3. The cooling coil water-inlet and water-outlet shall have temperature sensors cum transmitters. 4. Pressure gauges with isolation ball valves at inlet and outlet of the coils. In order to ensure a protection, a temperature gauge shall come with a thermowell. 5. Pressure gauges with isolation ball valves at inlet and outlet of all the pumps 6. Differential pressure sensor across pre filters and fine filters. 7. VFDs for AHU fans. 8. HMI control panel for monitoring Temperature, T and humidity, RH of all partitions/rooms. AHU supply air volume shall be varied based on the room exhaust flow rates. 	
5	<p>Ducting:</p> <ol style="list-style-type: none"> 1. Ducts shall comprise of factory fabricated uninsulated GI sheet metal ducting with zinc deposition of 120 gm/m² as per SMACNA with all required accessories and fittings with RTV sealant, gaskets complete with GI supports, MS flanges duly painted, fully threaded GI rods, GI nuts and bolts, vanes, splitters etc. as per SMACNA standards for pressure class rectangular ducts. 2. Air flow direction to be marked on the respective ducts. The gauge of ducting material shall depend upon the sizes as per Standards mentioned below: <ol style="list-style-type: none"> a) 18 G (1.27 mm thick) suitable for > 50 inch diagonal ducts b) 20 G (0.95 mm thick) for > 40 inch ducts c) 22 G (0.8 mm thick) for > 30 inch ducts d) 24 G (0.64 mm thick) for > 20 inch ducts <p><i>Construction Features (applicable only for factory fabricated ducts):</i></p> <ol style="list-style-type: none"> 3. All ducts transformation pieces and fittings shall be made on CNC profile cutters and all ducts shall be factory made using lock forming machine. The sheet thickness, brazing, flanges and length of the ducts shall be as per ISO standards. 4. Non-toxic, AC-application grade PE or PVC gaskets shall be provided between all mating flanged joints gasket sizes shall conform to flange manufacturing specifications. 5. To avoid leakage silicone sealant shall be used and leakage from duct joints shall be minimum (3 to 5% or better). 6. The specific class of transverse connectors for a given duct dimensions shall be as per SMACNA 2005 standard for duct pressure class of 4" wg (1000 Pa). 7. Rectangular duct shall be supported from roof / purlins / truss / ceiling using hanger rods. Ducts shall rest on supporting MS slotted angle or channel. The supporting angle or channel shall be supported by MS rods with threads. Steel anchor fasteners shall be 	

	<p>provided by contractor for duct hanging (wherever required). Anchor fasteners shall be loaded to maximum 20% of the maximum rated capacity specified by the manufacturer, engineer in charge shall approve all anchor fasteners used for supporting duct.</p> <p>8. The size of angle and round rod above are indicative of general requirement. However higher sizes of MS angle and MS rod shall be provided for duct supports if required. Lock nuts (double nuts) shall be provided to each MS rods supporting the ducts, lock nuts (double nuts) shall be provided to each GI rods supporting the ducts.</p> <p>9. All bends offsets and branch connections shall be made for smooth and noise less flow of air and minimum pressure drop. In case of full radius elbow optimum ratio of centreline radius of elbow to duct dimension of 1.25 shall be considered. However due to space constraint shorter radius elbow or square elbow with guide vanes may be provided contractor shall furnish the details of guide vanes i.e. Number of vanes, Location etc., in the drawing.</p> <p>10. All curved elbows shall be provided with air turning vanes consists of curved metal blades of vanes arranged so as to permit the air to make abrupt turns without appreciable turbulence.</p> <p>Exhaust ducting shall be of PP+FRP type. Exhaust blower should be FRP moulded.</p>
6	<p>Insulation: Supply and installation of 19 mm thick Class O Insulation with one side Aluminium faced. The Insulation Material should be FM Approved. The insulation should have fire performance such that it passes Class 'O' as per BS 476 Part 6 for Fire Propagation and Class 1 as per BS 476 Part 7 for surface spread of flame. All insulation joints (including Flange joints) to be sealed with 3" width Self Adhesive tape. All the exposed ducts shall be aluminium clad 0.5 mm thick for protection against rain and other extreme atmospheric Conditions.</p>
7	<p>Fire dampers:</p> <ol style="list-style-type: none"> 1. The damper should be multi blade louvre type. The blades should remain in the air stream in open position and should be constructed with minimum 1.8 mm thick galvanised sheets. The frame should be of 1.6 mm thickness. Other materials should include locking device, motorised actuator, control panel to trip AHU motor etc. 2. The fire dampers shall be capable of operating automatically on receiving signal from a fire alarm panel. All control wiring should be provided between fire damper and electric panel. 3. A hinged and gasketed access panel measuring at least 450 mm x 450 mm should be provided on duct work before each reheat coil and at each control device that may be located inside the duct work.
8	<p>Gas/compressed air piping/tubing:</p> <ol style="list-style-type: none"> 1. SS 316 EP Tubing (Compatible to withstand ≥ 10 bar pressure) with all specials e.g. elbow/bend/Tee/Reducer etc., mounting & suspension system complete. 2. Aluminium tubing for compressed air 3. Creation of user's points with line-pressure regulator and valves.
9	<p>Civil works:</p> <ol style="list-style-type: none"> 1. AHU foundation etc. 2. Dismantling masonry walls for making pockets for Duct, Cable, Pipe entry and making good the same. 3. Making cut-outs/ penetrations etc. for routing ducts etc. in the building and making goods the same with painting is in the vendor's scope of work.
10	<p>Electrical works:</p>

	<p>1. General Design Consideration</p> <p>a) System configuration</p> <ol style="list-style-type: none"> i. Voltage Supply: 415 V ± 10% ii. Frequency :50 Hz ± 5% iii. No of Phase and grounding: 3 Phase & Solidly ground earth iv. Power Distribution: AC, 3 Phase 5 wire for 3 Phase system, 1 Phase 3 wire system <p>b) Bidder shall provide an estimate of Total Power Consumption for the complete Cleanroom system.</p> <p>c) Bidder shall also provide sufficient information on requirement of Generator Set and/or backup UPS.</p> <p>d) Code & Standards: All electrical equipment and accessories to be furnished, installed and commissioned shall be designed, manufactured, tested and installed in accordance with relevant Indian Standard Specifications (ISS), Indian electricity rules and any other applicable regulations.</p> <p>2. Cabling for electrical supply from wall mounted electrical panel to respective AHUs/Chillers/Pumps/Humidifier/Exhaust Blower shall be armoured copper cables.</p> <p>3. Copper lugs should be used for cable termination.</p> <p>4. Bus bar for incoming should be of Copper.</p> <p>5. Cabling for all the equipment shall be laid through GI ladder or conduit.</p> <p>6. AHU blower should operate on VFDs</p> <p>7. Heaters control should be through SCR</p> <p>8. Star-delta starter for chilled water pumps</p> <p>9. Electrical Panel with bypass arrangement: DOL/SD type electrical control panel.</p> <p>10. Electrical panel with provision for connection to AHU (Heaters, Blower, Humidifier) and Pumps.</p> <p>11. Microprocessor controller with display for Temperature, RH controlling, monitoring with AHU status (AHU) interlocking with 3 way modulating valve & Strip heater system and with SCR for Heater controllers.</p> <p>12. AHU panel shall have following interlocks</p> <ol style="list-style-type: none"> i) Flow Switch interlock ii) AHU Door interlock iii) Smoke and Fire interlock iv) Thermal Interlock v) Access control Emergency interlock
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F. Recommended makes for HVAC system:

Sr. No.	Description	Makes
1	Air handling unit (AHU)	Citizen / VTS / Flaktwoods Systemair/ Zeco
2	Motors for AHU	Crompton/ Greaves/ ABB/ Siemens/ Schnider
3	Chillers	Daikin, Trane
4	Starter	Siemens/ ABB/ L&T/ Schneider
5	Fire dampers	Air Master/ Caryaire/ Ajanta/ System Air/ Cosmos
6	Pan type humidifier	RAPID COOL/ NORDAMANN/ Walter Meier/ Appidi
7	Ducting – GI Sheets	SAIL/TATA/Jindal
8	Duct insulation	ARMAFLEX/K FLEX/SUPREME/AEROFLEX/ TROCELLENE
9	Butterfly & ball valves	Regin/Siemens
10	3-way, 2-way mixing valve	Honeywell/Siemens/Johnson/Belimo/Regin

11	Balancing valve	L&T/Advance/Bell & Gossett/Tour & Anderson
12	Y-Strainer	Sant /DS Engg/Lehry
13	Pumps	Johnson/ Grundfos /Armstrong
14	Pipe SS	TATA/Ratanamani/Jindal
15	Pressure and Temperature gauges	WIKA/FORBE MARSHALL/HGURU/WAREE

G. Recommended makes for Process Gases and various other Components:

Sr. No.		
1	Seamless and Coaxial Tubing SS316L Electro polished and Bright Annealed	Valex/ Sandvik/ Dockweiler/ 4. Air Liquide/ Linde/
2	Ball Valve with OD ends or Double compression ends	Swagelok/ TK Fujikin/ Parker SCT Kitz/ AP Tech/
3	Venturi Valves / Check Valves	Aptech/ Parker/ SVT/ TK Fujikin/ SCT Kitz/ Carten
4	Exhaust Blowers	Alpha Projects Pvt Ltd/ Pilani Envirotech/ Flaktwood/ Transtech
5	In-line pressure regulator	Swagelok/ GCE Druva/ Tescom/ Rotarex/
	Shut-off valve	Spectron

Annexure - A

Check List Documents for comprising the bid

Sr. No.	Enquiry/tender requirement	Compliance	Document Submitted
1	Name of the Firm / Agency / Dealer / Supplier with full address including contact number and email id etc as per Annexure-H	Yes / No	Yes / NA
2	GSTIN of the Supplier/Firm/Bidder.	Yes / No	Yes / NA
3	PAN of the Supplier/Firm/Bidder	Yes / No	Yes / NA
4	Up to date GST return / any other tax clearance certificate. (last filed GST return)	Yes / No	Yes / NA
5	Up to date Income Tax Return (Last filled ITR)	Yes / No	Yes / NA
6	"Bid Security Declaration form" on Company Letter Head as per Annexure-B	Yes / No	Yes / NA
7	Certification of non-black listing (Self Certification) as per Annexure-F.	Yes / No	Yes / NA
8	Certification as per memorandum No. F.18/37/2020-PPD dated 8th February 2021, Dept. of Expenditure, Ministry of Finance, Govt. of India as per Annexure-E.	Yes / No	Yes / NA
9	Declaration of local content as per Annexure-D.	Yes / No	Yes / NA
10	Proprietary Certificate from OEM to be uploaded along with the Technical Bid in case of Proprietary items	Yes / No	Yes / NA
11	Manufacturers Authorization Form (MAF) (If applicable) as per Annexure - G	Yes / No	Yes / NA
12	Certificate under MSME, NSIC, Make-in-India & Startup as per Govt. of India Norms (if applicable).	Yes / No	Yes / NA
13	Experience, if any, with govt. sector /Public Undertaking /Private sector (if applicable) (May be relaxed for MSME, NSIC & Startup as per Govt. of India Norm)	Yes / No	Yes / NA
14	Agree to sign & submit the Pre-Contract Integrity Pact as per Annexure - I	Yes/No.	Yes/NA
15	Supplier/Firm/Bidder should accept all Terms & Conditions and specification of the items given in the Tender Document.	Yes / No	

(Signature of the Bidder, with date and seal)

Undertaking/Self-Declaration for Bid Security

(To be issued by the bidder on company's letterhead in lieu of EMD)

To,
The Registrar,
Indian Institute of Technology Goa,
At GEC Campus, Farmagudi, Ponda – Goa

We, M/s (name of the firm), with ref. to enquiry no. dtd hereby undertake that:

- 1) We accept all the terms and conditions of the tender document.
- 2) We accept that, we will not modify our bid during the bid validity period, submit performance guarantee within the stipulated period and honor the contract after award of contract.
- 3) In the event of any modification to our bid by us or failure on our part to honor the contract after final award or failure to submit performance guarantee, our firm may be debarred from participation in any tender/contract notified by Indian Institute of Technology, Goa for a period of one year.

Yours faithfully,

(Signature of the bidder with date and seal)

FORMAT FOR PERFORMANCE BANK GUARANTEE

(To be typed on **Non-judicial stamp paper** of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,
The Registrar,
Indian Institute of Technology Goa
Farmagudi, Ponda,
Goa – 403401

LETTER OF GUARANTEE

WHEREAS Indian Institute of Technology Goa (Buyer) have invited Tenders vide Tender No..... Dt. for purchase of

AND

WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, Indian Institute of Technology, Goa**” in the form of Bank Guarantee for Rs (**3% (three percent) of the purchase order value**) and valid till **one year plus sixty days or up to warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. (Indian Rupees only).
2. This Bank Guarantee shall be valid up to(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before (date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at (Address of local branch).

Date:

Yours truly,

Signature and seal of the Guarantor:

Name of Bank:

Instruction to Bank: Bank should note that on expiry of PBG Period, the Original PBG will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of PBG period.

DECLARATION OF LOCAL CONTENT

(To be given on company letter head - For tender value below Rs.10 crores)
(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 crores)

Date:

To,
The Registrar,
Indian Institute of Technology Goa,
At GEC Campus, Farmagudi, Ponda - Goa

Sub: Declaration of Local content

Tender Reference No: _____

Name of Tender: - _____

Country of Origin of Goods being offered:

We hereby declare that an item offered has % local content. _____

“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

We understand that, as per Office Memorandum dated 04/03/2021 issued by Ministry of Commerce and Industry, services such as transportation, insurance, installation, commissioning, training and after sales support like AMC/CMC etc. are not considered as local value addition.

“*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.”

Yours faithfully,

(Signature of the Bidder, with date and seal)

(To be submitted on the bidder's letterhead)

(As applicable)

Sub: Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 and OM No. F.18/37/2020-PPD dated 8th February, 2021 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017.

Item Name:	
Enquiry No.:	

We M/s.(name of the bidder company) have read the clauses pertaining to the 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 that shares a land border with India.

(*Tick wherever applicable)

We hereby certify that we are not from such a country and eligible to be considered for this tender.

OR

We are from such a country which shares a land border with India & have been registered with the Competent Authority as specified in the above-said order. We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.

Evidence of valid registration by the Competent Authority is attached.

(Note: Non-compliance of above said GoI Order and its subsequent amendment, (if any), by any bidder(s) shall lead to commercial rejection of their bids by IIT Goa)

For and behalf of(Name of the bidder)

(Signature of the Bidder, with date and seal)

NON-BLACKLISTING SELF CERTIFICATE

[To be submitted on the bidder's letterhead]

I/We hereby certify that the ----- [Name of the company / firm] has not been ever blacklisted/debarred by any Central / State Government / Public Undertaking / University / Institute on any account.

I/We also certify that firm will provide material as per the specification given by IIT Goa and also abide all the terms and conditions stipulated in the bid document.

I/We also certify that the information given in bid is true and correct in all aspects and in any case at a later date it is found that any details provided are false and incorrect, contract given to the concerned firm or participation may be summarily terminated at any stage, the firm will be blacklisted and IIT Goa may impose any action as per the rules.

(Signature of the Bidder, with date and seal)

MANUFACTURERS' AUTHORIZATION FORM (MAF)

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.]

Date : [insert date (as day, month, and year) of bid submission]

Tender No. : [insert number from invitation for bids]

To : [insert complete name and address of purchaser]

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with clause 14 of the terms and conditions, with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]

(To be printed on letterhead of the bidder)

Bidder's Information

1.	Name of the Bidder	
2.	Address of the Bidder	
3.	PAN No.	
4.	GSTIN	
5.	E-mail	
6.	Contact Person's Name & Designation	
7.	Mobile No.	

Place: _____

Date: _____

(Signature of the Bidder, with date and seal)

PRE-CONTRACT INTEGRITY PACT

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on.....day of the month of.....2024, between, on one hand, Indian Institute of Technology Goa, Acting through The Registrar, (hereinafter called the "BUYER/Principal", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s.represented by Shri.....,(hereinafter called the "BIDDER/Seller/Contractor" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure Class 10,000 (ISO 7) Cleanroom Fabrication in RHS 3, PG Block at IIT Goa and the BIDDER/Seller is willing to offer/has offered the goods and

WHEREAS the BIDDER is a private company / public company / Government undertaking / partnership / registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is an Autonomous body that comes under the Ministry of Education Government of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:

Enabling the BUYER to obtain the desired said Services/stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortional impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to preventing corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this integrity Pact and

agree as follows: **Section I - Commitments of the Principal**

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand; take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

c. Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/Contractor(s)

(1) The Bidder(s)/Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further, the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any, similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. *The guidelines and terms and conditions for Indian agents of foreign suppliers shall be as per the provisions in Annexure-XVI (a) of this document.*

e. The Bidder(s)/Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s)/Contractor(s) who have signed the Integrity Pact shall not approach the courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s)/contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from the tender process and exclusion from future contracts

If the Bidder, before contract award, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Principal is entitled to disqualify, the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

(1) If the Bidder/Contractor/Supplier has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is also entitled to exclude the Bidder/Contractor/Supplier from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case. In particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage, the exclusion will be imposed for a minimum of 6 months and a maximum of 3 years.

(2) A transgression is considered to have occurred if the Principal, after due consideration of available facts and evidence within his/her knowledge concludes that there is a reasonable ground to suspect a violation of any commitment listed under Section 2 i.e. "Commitments of Bidder(s)/Contractor(s)".

(3) The Bidder accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

(4) If the Bidder/Contractor/Supplier can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely."

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to the Earnest Money Deposit/Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes an incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 - Equal treatment of all Bidders/Contractors/Subcontractors

(1) In the case of Sub-contracting, the Principal Contractor shall take responsibility of the adoption of the integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidder(s)/Contractor(s)/Subcontractor(s)

If the Principal obtains knowledge of the conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitor

(1) The Principal appoints a competent and credible Independent External Monitor for this pact after approval by the central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/ her functions neutrally and independently. The Monitor would have access to all contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders/contractors as confidential. He/she reports to the Director, IIT Goa.

(3) The Bidder(s)/contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the principal including that provided by the contractor. The contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/contractor(s)/Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Director, IIT Goa and recuse himself/herself from that case.

(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual

relations between the principal and the contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Director, IIT Goa within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the Director, IIT Goa, a substantiated suspicion of an offence under the relevant IPC/PC Act, and the Director, IIT Goa has not, within the reasonable time taken visible action to proceed against such offence or reported it to the chief vigilance officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

The validity of this Integrity Pact shall be from date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

Section 10 - Other provisions

(1) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(2) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(3) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement with their original intentions.

(4) Issues like Warranty/Guarantee etc. shall be outside the purview of IEMs.

(5) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

Section 11 - Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books

of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Section 12 - Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

Section 13 - Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

(For & On behalf of the Principal)

(For & On behalf of Bidder/Contractor)

(Office Seal)

(Office Seal)

Place -----

Place -----

Date -----

Date -----

Witness 1:

Witness 2:

(Name & Address)

(Name & Address)

Pre-Contract Integrity Pact:

The bidders will have to upload along with their offer, the duly filled-in, signed and stamped (on each page) Pre-Contract Integrity Pact on plain paper as per the format enclosed failing which their offer may not be considered. The tenderer should sign and stamp all pages of the Pre-Contract Integrity Pact with the name and designation of the signatory and witnesses on the last page of the Integrity Pact.

Name of the Independent External Monitor(s) (IEMs) for this tender are as follows:

Sl. No.	Name of IEM(s)	Address	E-Mail Id
1	Dr. Parvez Hayat	B-4/69-A. Safadarjung Enclave,	Email: phayatips@gmail.com

		New Delhi - 110 029	
2	Shri. Dinesh Kumar Batra,	G-1/106, Elegant House, Ramprastha Greens, Vaishali , Sector - 7, Ghaziabad - 201 012 (UP)	Email: dineshbatra11@gmail.com

In case of any grievance, bidders may approach Independent External Monitor(s) (IEMs). The e-mail or the envelope should carry the subject line “Complaint to the IEM regarding Tender”.

Failure to confirm the above may render the offer liable for rejection without any further correspondence.