भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित

सैक्टर81,नॉलेजसिटी,प०ओ० मनोली, एस० ए० एस० नगर,मोहाली, पंजाब 140306

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Established by Ministry of Human Resource Development, Govt. of India)

Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab

PAN No. - AAAAI1781K TAN No. PTLI10692D

• **Phone : +91-172-2240086 & 2240121 • Fax : +91-172-2240124, 2240086 • http://www.iisermohali.ac.in • Email:** stores@iisermohali.ac.in

CPPP/Institute Website

IISERM(874)17/18Pur Dated- 09th November 2017

NOTICE INVITING E-TENDER

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial} for the supply of Gas distribution system for EHEP lab as per technical specification and drawing given below and BOQ list the original manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app**& Institute website **www.iisermohali.ac.in.**

-sd-

(Mukesh Kumar)

Assistant Registrar (S&P)

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E-TENDER NOTICE

Tender Ref.- IISERM(874)17/18Pur	Dated :- 09th October 2017

Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	09th November 2017	6:00pm
2.	Tender Document download start Date & Time	09th November 2017	6:00pm
3.	Bid Submission start Date &Time	09th November 2017	6:00pm
4.	Pre- Bid Meeting	27th November 2017	11am
5.	Bid Submission End date and Time	06th December 2017	Upto 11:00am
6.	Tender opening Date and Time	07th December 2017	At 11.30 am

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** {Technical and Commercial separately} for following item(s) from the original manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app**& Institute website **www.iisermohali.ac.in.**Tender fee in shape of DD/Banker Cheque of Rs 500/- (Non-refundable) and EMD of Rs. 1,20,000/- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali. However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summarily.

The Original EMD and tender fee should be sent to:

Assistant Registrar (S&P)
Indian Institute of Science Education and Research,
Mohali Sector 81, SAS Nagar, Mohali, Punjab, India,
Pin: 140306

Non-receipt of original EMD and tender fee will lead to rejection of tender.

Item Details:-

Sr.	Details of Specifications	Qty.
1	Gas distribution system for EHEP lab as per technical specification and drawing enclosed below. **NB :-** No query/clarification/representation will be entertained after 27/11/2017.	

SUBMISSION OF TENDER

I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. **https://eprocure.gov.in/eprocure/app** only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and EMD. Late tenders will not be accepted.

II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.

III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.

IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped.

V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

INSTRUCTIONS

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.

2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID

3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. Conditional tenders will be summarily rejected.

4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.

5. THE INSTITUTE IS EXEMPTED FROM EXCISE AND CUSTOM DUTY under notification no- 51/96 – CUSTOM DATED 23/7/1996 AND DSIR REGISTRATION NO TU/V/RG/-CDE(1062)/2016 DT. 30/08/2016 / EXCISE NOTIFICATION NO. 10/97- CENTRAL EXCISE DT. 01.03.1997.

6. Tax: This Institute is not exempted from the payment of GST. The current rate (i.e. percentage of Sales Tax should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, GST number duly self-attested.

7. The delivery period should be specifically stated. Earlier delivery will be preferred.

8. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.

9. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms.

10. The right to reject all or any of the quotation and to split up the requirements or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website https://eprocure.gov.in/eprocure/app and http:/www.iisermohali.ac.in

11. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

–sd/-
(Mukesh Kumar)
Assistant Registrar (S&P)

GAS Distribution System For EHEP Lab in AB2

Specification of Gas Distribution System

A.1	**Installation and commissioning of Appropriate Gas Distribution System:** • The applications are meant for the development of sensitive particle detector and other plasma related research. • The pressure of each gas will be kept just above atmospheric pressure (5-20 mbar or so) to allow the flow. (Inside Cleanroom area, A&B, pressure should be kept higher than cleanroom internal pressure) • The flow rates are very small in overall running; the mixed gas will be re-circulated through a gas-recycling systems with an over efficiency around 70%. Thus in inflow gas to the circulation will be ~300 cc/hour. However, N2 and Compressed air flow is much higher 4 or more lt/hour. • Entire network should be designed in such a way that the contaminations due to osmotic pressure remain zero. • Bidder should provide detailed schematics and estimation of piping in detail
A.2	**Detail of Gases:** • Inert gases (He, Ne, Ar, Kr), O_2, N_2, CO_2, CF_4, $C_2H_2F_4$, SF_6, CH_4, C_4H_{10}, $C_3H_2F_4$, H_2, C_2H_6, Cl_2. • Purity should be at least 99.999% or better ultra-pure research grade gas. • Piping for the distribution system should be done separately for each gas. • 5 Spare copies of pipe should be laid down up to the distribution panel in utility area for future extension of some gases. Tentative length of each line will be somewhere between 40-50 feet, but will be estimated properly on basis of the location of gas housing cage (schematic is attached). • Proposed schematic of gas flow lines are given with tentative dimensions. • The vendor must take final measurement before installation. • All gas lines must be anchored to a tray hooked to the roof. • All feed-through holes must be sealed properly. • Details of component and other accessories are discussed below • Nitrogen and compressed air gas lines should be of 1.0-inch diameter. • Compressed Nitrogen should have a common regulator for pressure control, whereas compressed air line should have multiple regulators at different places (6 points) along with a centralized regulator.
A.3	**Seamless tubing - (Electro Polished):** • Stainless steel tubing shall be Seamless, 316L, stainless steel, ASTM A 213, ASTM A 269, ASTM A632; • Should be electro-polished and bidder should agree to the condition that the leak test trial should be approved by end-user before installation. • X-Ray verification for all joints should be done and report should be provided. • The tubing supplied shall have the same heat number for the same size. • All gases must have SS pipes with orbital-wielded joints. All joints must be leak tested for ~10^{-9} mbar/s or better. • All gas lines must be purged with N_2 to remove particulates.

	• All flammable gases along with H_2 must have coaxial lines filled with nitrogen in the outer jacket. • All toxic and corrosive gases must have co-axial lines flowing with nitrogen (through respective gas cabinet close to the gas sensors) in the outer jacket. *Qualified Brands:* Dockweiler, Valex, Cardinal
A.4	**Primary pressure control Regulator Panel:** • All gas lines must have appropriate regulator capable of delivering 3-5 bar absolute pressures and must be connected via a manual purge plus changeover system. • Cylinder should be connected through a spiral piping to the gas pressure control panel mounted on the wall. • The control panels should be of the type of wall- and cabinet-mounting pressure control panels; • Control panels should be of Ergonomically designed for non-corrosive gases up to quality 6.0; Modular design (to be extended to 2, 3 etc. cylinders). • All process gases should come with single cylinder along with primary pressure control panel with NPT/Compression ends. • All manifold to be factory tested for $1x10^{-8}$ mbar l/s of He. • All manifold should be degreased as per the relevant industrial standard to ensure particle free components • The connection to the CGA must include a flexible pigtail/SS316 electro-polished hose with lash (hose or pigtail type depending on the safety of each gas) protection connecting to the cylinder valve fitting. • Appropriate pressure relief valves at the outlet of the regulator or in built to be connected to the vent for overpressure • Panel must have inbuilt sintered filer made of compatible materials. • The primary pressure control Regulator Panel should be with 3-way purge block for SF6, CL2 and other toxic and flammable gases (for neutral and noble gases self purging should provided). A cross purge block arrangement to flush the gases in a small connection volume in pigtail with Nitrogen as propellant gas. The flushed gases must go through the vent line to a safe vent location. • Vendor should provide a detailed schematics and plans on how the purging and cleaning would be done to have clean gas. *Qualified Brands for regulator:* AES, Spectron, Air Liquide
A.5	**Valves, clamps, diaphragm and related accessories**: • Filter at the process gas inlet valve: Diaphragm-type shut-off valves optimized for low internal volume with On/Off position indicator. • Should be of Pack-less bellows/diaphragm type rated for at least 250 psi. • Should be provided with 316L stainless steel bodies and downstream of seat with NPT/Compression fittings. • Outlet adapter with integrated relief valve and optional diaphragm-shut-off valve: A mechanism should be in place to prevent the outlet piping from draining while disconnecting the panel. • Must provide auto shutoff of all gases except nitrogen if any alarm is triggered. • Manual shutoff valve should be provided in utilities areas (two: one in cleanroom and

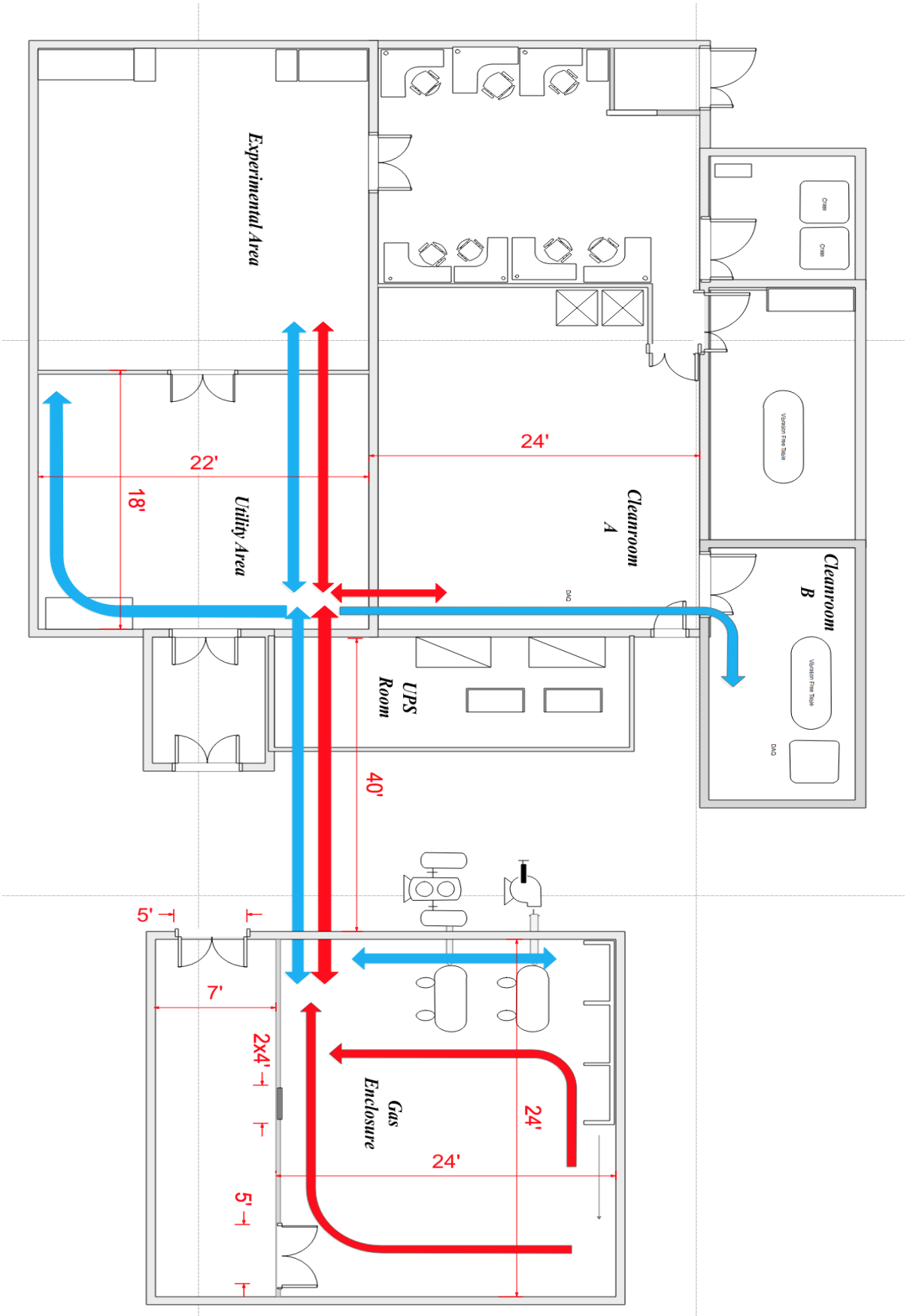
	other one in experimental-area), and inside gas-room (one). *Qualified Brands for Diaphragm Type Isolation Valves:* Cajon, Spectron, Swaglok, Hamlet *Qualified Brands for Tube Clamps:* Hilti, Stauff, unistruct, swaglok *Qualified Brands for Electro Pneumatic Actuated Valve:* Swagelok, Parker, Spectron, Asco
A.6	**Mass Flow Controller (MFCs): 5 Pcs** • Multi gas type mass flow controller • Expected flow rate upto 300cc/minutes • Ultra high accuracy in flow rate • Calibration should be done as per requirement at the site Qualified Brand: Fujikin, Bronkhrst, MKS
A.7	**Gas cabinet and housing of cylinder:** • All flammable gases including H2 and O2 should be kept in gas cabinet with appropriate purge block panel arrangement, detectors and exhausts. • All corrosive gases including CL2 should be kept in gas cabinet with appropriate purge block panel arrangement, detectors and exhausts. • All gas cabinets should have leak alarm for each gas, extraction should be done via scrubber: capable of auto-shutting via pneumatic supply valves if any alarm is activated. All key features of cabinet dedicated to gas distribution system should be provided in detail. • Provide appropriate centrifugal exhaust and simple exhaust system for all gas cabinet, tool extraction and pump exhaust via scrubber. • At point of use a separate valve manifold box with extraction should be provided for chlorine and hydrogen gases; the exhausts should be connected through respective gas cabinets. *Qualified brand:* Spectron, AES, Air Liquide, Asecos
A.8	**Gas Monitoring and alarm System:** • Gas detection system for each corrosive, toxic and flammable gas must be installed in appropriate places. • Alarms must be housed in a suitable enclosure and must sample all the welding joints. • Following sensor/detector must be installed and should be interlocked into the PLC with HMI • Provide auto shutoff all gases except N2 and Compressed Air if any alarms are triggered. • Hydrocarbon sensors and monitors should be provided • Cl2 sensors and monitors should be provided • SF6 sensors and monitors should be provided • O2 level Monitors should be provided in different places • Smoke Detectors should be installed in the gas bunker and other places wherever needed *Qualified Vendor:* Honeywall, Bionics, Draeger
A.9	**Personal Protective Equipment (PPE) and Accessories should be provided by vendor** • Mask with Compatible Cartridge for the Above Gases

	• Fuel Bodysuit • Nitrogen Gun • A mobile Gas leak detector
B. Nitrogen Generator with Storage container & Air Compressor	
B.1	**NITROGEN Generator:** • Vendor should quote for a complete solution for generator, compressor and receiver along with compatible accessories. • A nitrogen generator capable of 5N or better nitrogen at 5 LPM or better should be installed along with an oil free compressor. • Provide a 200 L Nitrogen storage tank made out of SS-304 or SS-316. • The vendor should provide a separate quotations • The bidder may tie up with nitrogen Generator Company or vendor to provide the integrated quotation. • N_2 will be used as purge gases. • Nitrogen must be supplied to tools and coaxial purge lines. • A dedicated nitrogen line should be brought to connect cleanroom spray guns. *Qualified Brands for Nitrogen generator:* Mathesoan gas, Parker, Peak Scientific
B.2	**Air Compressor:** • An oil free air compressor. • Vendor should provide a 200 Liters storage tank to be able to host gases at 11 bar or more pressure. • The bidder may provide a separate quotation, or if they have a tie up with compressor Company or vendor. • A dedicated line should be brought to supply compressed air to all pneumatic utilities around the lab. *Qualified Brands for Air Compressor:* Ingersoll Rand, Kaeser, Atlascapco
C. Gas Cylinders	
C.1	**Gas Cylinders: Vendor should provide ultra pure gases as per following specifications** • The vendor should provide a separate quotation for ultra high pure gas & cylinders (cylinders will be purchased) • Gas and supplied with manufacturer test certificate and certificate of approval from Chief controller of Explosive, Nagpur (or) equivalent • New, high pressure seamless Carbon dioxide gas cylinder of 47 liter water capacity, complete with neck ring and valve, painted as specified under gas cylinder act 2004 and filled with 30 Kg. • New high pressure seamless Hydrogen gas cylinder of 47 liter water capacity, complete with neck ring and valve, painted as specified under gas cylinder act 2004 and filled with 7.0 Cu. Meter of 99.999% pure Hydrogen gas • New, high pressure seamless Nitrogen gas cylinder of 47 liter water capacity, complete with neck ring and valve, painted as specified under gas cylinder act 2004

	and filled with 7.0 Cu. Meter of 99.999% pure nitrogen gas • A new Xenon gas cylinder with 99.999% purity of about 10 liter or more of gas with appropriate valve. • A new Helium gas cylinder with 99.999% purity of 40 liter of gas or nearest available gas with appropriate valve. • A new Neon gas cylinder with 99.99% purity of 50 liter of gas or nearest available gas with appropriate valve. • Two Argon gas cylinders with 99.9999% purity of 40 liter of gas or nearest available gas with appropriate valve. • A new Krypton gas cylinder with 99.999% purity of 10 liter of gas or nearest available gas volume with appropriate valve. • A new CF4 gas cylinder with 99.999% purity of 50 liter of gas or nearest available gas with appropriate valve. • A new SF6 gas cylinder with 99.999% purity of 50 liter of gas or nearest available gas with appropriate valve. • A new O2 gas cylinder with 99.999% purity of 50-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new CL2 gas cylinder with 99.999% purity of 10-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new CH4 gas cylinder with 99.999% purity of 45-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new C2H2F4 gas cylinder with 99.999% purity of 45-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new C4H10 gas cylinder with 99.999% purity of 45-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new C3H2F4 gas cylinder with 99.999% purity of 45-liter water capacity cylinder of gas or nearest available volume with appropriate valve. • A new C2H6 gas cylinder with 99.999% purity of 45-liter water capacity cylinder of gas or nearest available volume with appropriate valve. Note: The order can be divided into multiple purchase orders depending on availability from each source. Thus, vendor can quote for any subset of gases available with them. Vendor should provide separate quotations for cylinders with 10-litter water capacity (or nearest available capacity) and 50 litter water capacity (or nearest available capacity) gases. Technical committee will decided which one to purchase during the ordering time. Qualified Vendors: Linde, Praxair, Mathesongas, Inox Air products/Air Products
D. General Term and Conditions	
D.1	The bidder should provide authorization and proof of training from OEM for major gas distribution hardware like gas panel, cabinets and regulators. In the absence of such authorization certificates, bid will be disqualified.
D.2	Above specifications are meant to meet the general requirements; Any minor technical changes providing the same solution as per our requirement can be accepted or rejected by

	technical committee.
D.3	The equipment should carry three years on site comprehensive warranty. Warranty period Will start from the date of successful handing over all the items at site.
D.4	Comprehensive warranty includes spare parts and detector spare parts and any consumables excluding gases. During the warranty period, regular servicing/maintenance should be undertaken free of charge, including replacement of defective parts/travel cost, etc. Subsequently, servicing/maintenance should be undertaken by the authorized agency of the manufacturer / supplier as per the annual maintenance contract conditions.
D.5	In case of short supply or wrong supply of items, its parts or accessories or supply of items in damaged conditions, it is the responsibility of the bidder to arrange for the supply of the required items in working condition as per the purchase order, within a reasonable time. Any additional expenditure, whatsoever, for the above will be borne by the bidder only.
D.6	All the items to be supplied should be new, of good quality and standard and as per the technical specifications mentioned in technical bid document.
D.7	The vendor will provide operational manuals, OEM documents for peripherals, set of diagnostics to test all the sub-systems etc. along with the systems.
D.8	The bidder shall also mention the probable life expectancy of the equipment under normal conditions of operation should be stated wherever applicable
D.9	Terms for service contract (comprehensive or non-comprehensive) after the expiry of warranty period are to be included.
D.10	Parties should specify the make and model of each Item along with all other details.
D.11	Tender not conforming to any or all the above terms and conditions will be rejected and incomplete tenders are liable to be rejected.
D.12	All vendors participating in tender are expected to give a presentation of their proposal. If the committee finds they can do safe job the will be qualified technically.
D.13	End-user will also collect the feedback from various lab to qualify the vendor, therefore bidder must provided references (email, telephone etc.) from the previous installation in National Labs, IITs, IISERs and any other research institutions.
D.14	Any queries should be addressed during pre-bid meeting; no question/queries will be entrained after pre-bid meeting. Interested vendor may join the meeting.

D.15	After pre-biding, we will have technical presentation of the offered solution for qualifying the bids, we may ask for a written answers from technical person from the vendors, will be use for qualifying/disqualifying vendors.
D.16	Vendor should submit separate quotes for each group of items, however, the quotations should be complete as per specs and requirements within the group unless otherwise it is mentioned.


Experimental Area
Utility Area
Cleanroom A
Cleanroom B
UPS Room
Gas Enclosure
Vibration Free Table
Vibration Free Table
DAQ
DAQ
Chair
Chair
22'
18'
24'
40'
5'
7'
2x4'
24'
24'
5'