Pre-bid Clarifications Against Tender No. IITH/CC/SATHYA-P/2020/T010				
Sr. No.	**Section No. / Page no**	**Cluase/ Para No**	**Query**	**Clarifications**
1	Chapter 2 / 13 of 68	3. Eligibility Criteria 3.3 The Bidder should have an in-house service / support team in Hyderabad and must resolve the issue/complaints within 12 hrs.	Our Office is based in Mumbai, but we will provide OEM local support. Major component failure Resolution Time will be as per OEM SLA.	In case bidder does not have inhouse support, bidder shall submit MOU with the authorized Service Provider of the OEM present in Hyderabad fulfilling this requirement. There shall be no change in the response time mentioned in the tender.
2	Chapter 3 / 18 of 68	5. Warranty The warranty or guarantee period for the machinery/equipment shall be 36 months from the date of successful commissioning.	Whether 36 months or 12 months to be considered as DLP Warranty Period	DLP shall be 12 months from the date of successful commissioning and handing over of data Centre to IIT Hyderabad and shall be applicable for whole system. Whereas 36 months warranty shall be applicable for the individual equipments.
3	Chapter 3 / 19 of 68	6. Defect Liability Period (DLP) The DLP shall be 12 months from the date of Handing over of the equipment after successful commissioning.	Whether 36 months or 12 months to be considered as DLP Warranty Period	DLP shall be 12 months from the date of successful commissioning and handing over of data Centre to IIT Hyderabad and shall be applicable for whole system. Whereas 36 months warranty shall be applicable for the individual equipments.
4	Chapter 4 / 31 of 68	CHAPTER-4 SCHEDULE OF PAYMENTS On delivery of material to the site	We request to also provide advance payment	Tender conditions shall prevail
5	Chapter 5 / 33 of 68	5.1 General requirement The existing gypsum board partition between existing datacenter room no. 007 and expansion area room 006 must demolish and combine as a single datacenter room.	Only demolish of gypsum board is asked to combine existing DC and expand. As per the layout of existing and proposed given in tender, need clarity on whose scope will be for existing : 1. Shiting, repositioning & reinstallation of PAC 8.5 Tr x 2nos 2. UPS 5 & 6 UPS & Batterires 3. Racks reposioning 4. Cabling length feasibility check & rewiring as per new layout As per tender only 18 racks setup & its cabling has been asked	1) Shifting, repositioning & reinstallation of existing 8.5TR pac shall be executed by another vendor in a separate contract. Successful bidder may co-ordinate during the work execution. 2) Tender scope 3) Rack reposioning work is in IITH Scope. 4) Tender scope
6	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring Supply, installation, testing and commissioning of suitable size DB panels for installation of 2x160 kVA UPS	UPS supply is 1 x 160kVA Then UPS DB requirement of design 2 x 160kVA is considering future 160kVA expansion? If Yes, then what load needs to be considered for future 160UPS. If No, then for which UPS this 2nd DB is needed?	Power distribution system is desinged for 2X160 KVA System and wiring shall be done in the same manner by successful bidder.
7	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring 4. Dual-source 3-phase power cabling for 20KW load from the two UPS DBs to all the 18 racks.	12 Racks are Single-Phase & 6 Racks are Three-Phase then why 3-Phase power cabling asked for all the 18 racks.	Tender conditions shall prevail
8	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring 5. The UPS DB panels should have a documented programmable network API/Protocol over TCP/IP network port for power monitoring from our custom open-source based datacenter infrastructure management(DCIM) system.	We will provide Energy Meter with Modbus / SNMP Protocol. Also mention existing DCIM system details.	Modbus/TCP communication protocol shall be accepted for monitoring. The modbus to ethernet controller card need to be supplied by the bidder. Existing solution is NetBox DCIM + Grafana dashboard + home-grown Python scripts.

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9	Chapter 5 / 36 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring 6. All the wiring should be under false flooring only. Tray shall be laid under the false flooring and conduit are laid in the tray.	For DB to Rack cabling, the cables should be directly laid over the cable tray and not through conduits. Not a standard practice. Also whose scope will be Rack PDU and cable termination. As per tender scope only cabling to be done till the racks. Industrial sockets are not considered in bidder's scope.	1) Multi core copper flexible cable shall be laid direclty in the tray. Single core multi stranded wires shall be laid in conduits over the cable tray (for exisitng wires) 2) Supply of 3P, 1N, 1G Industrial sockets (both female and male) is in the scope of successful bidder. Cable termination with the female socket is in the scope of successful bidder. Connecting the supplied male plug with existing Rack PDUs is not in the scope of the bidder.
10	Chapter 5 / 44 of 68	5.2.4. Technical Specifications for Fire Alarm System Analogue Fire Alarm & Detection System complete with 14 multi-criteria detectors, fault isolator module, monitor & control modules, manual call point & sounders to support integration into the BMS system	We will provide Panel with Modbus Point. Integration with existing BMS not in our scope.	Analogue / Conventional Fire Alarm panel System shall be acceptable. Normal NO/NC contact shall be provided.
11	Chapter 5 / 45 of 68	5.2.5. Technical Specifications for Fire Suppression Systems Supply, Installation, Testing and Commissioning Fire Suppression System (Novec 1230 Based) - For the server room i.e. room 006 (proposed DC facility), room 007(existing DC facility) & Electrical Room i.e. room 007 (electrical room) at Academic Block-A	Require Room Void height dimensions Room Void Ceiling Void Floor Void Also it is recommened to keep nozzles inside the cold aisle containment Location to install the cylinders?	1. Drawing will be provided. 2. As per acceptable manufacturere practice 3. Bidder requested to provide design layout of FSS.
12	Chapter 5 / 47 of 68	5.2.7. Technical Specifications for Water Leak Detection system 3. The system should alarm and locate the point of liquid contact on the digital display.	Zone wise detection can be given. Kindly confirm.	2-zone or 4-zone WLD shall be acceptable
13	Chapter 5 / 48 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works Sub structure installed to support the panel shall be suitable to achieve a minimum finished floor height of 150 mm to a maximum of 600 mm from the existing floor level.	Initial floor height to be considered at how much mm?	Dimensions given from the existing Floor Level.
14	Chapter 5 / 51 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works 5.3 Closing/ blocking of 6no. of Glass window openings in the server room	Size of Windows?	Window size 1.76 mtrs (Length) X 1.79 mtrs (Height)
15	Chapter 5 / 53 of 68	5.3 List of Approved Makes 3. Fire Alarm system	Request to consider "Ravel" in approved make for Panels, Detectors and accessories	Tender conditions shall prevail
16	Chapter 5 / 53 of 68	5.3 List of Approved Makes 4. Fire Suppression System	Request to consider "Minimax" in approved make	Tender conditions shall prevail
17	Chapter 5 / 53 of 68	5.3 List of Approved Makes 5. Water Leak Detection System	Request to consider "Star Electronic" in approved make	Tender conditions shall prevail
18	Chapter 5 / 36 of 68	HVAC 5.2.3 Electronically communicated Motors and Backward curved Plug fans, fan motorassembly to deliver desired air quantity, Scroll Compressor, and compressors should be Inverter Scroll / Digital Scroll based variable capacity compressor, DirectExpansion Cooling Coil,	Kindly allow fixed scroll multiple compressor technology as well	Tender conditions shall prevail
19	Chapter 5 / 37 of 68	HVAC 5.2.4 Compressor type : Multiple Scroll Compressors, compressor should be Inverter /Digital Scroll based variable capacity compressor.	Kindly allow multiple fixed scroll compressor system	

20	Chapter 5 / 41 of 68	HVAC 5.2.5 De-Humidification:- De-humidification cycle shall operate by reducing the speed of EC fan to reduce ADP of coil. Hence, by reduction of fan speed there shall be additional power saving.	Kindly allow one more option as below -- 2) by keeping the fixed airflow and using EEV to reduce the coil ADP	Tender conditions shall prevail
21	Chapter 5 / 38 of 68	HVAC 5.2.6 Compressor Systems:- There shall be a minimum two independent refrigerant circuitswith independent condensing units. Scroll Compressor The compressor shall be of thehigh efficiency scroll design operating with R-410A or R-407C refrigerant and 415V/3ph/50 Hz supply. The compressors should be “scroll type” operating withR410A or R-407C and power supply of400-460V/3ph/50-60Hz. There should bemultiple compressors and compressors should be an Inverter Compressor / DigitalScroll Compressor.	Kindly allow multiple fixed scroll compressor system	Tender conditions shall prevail
22	Chapter 5 / 33 of 68	UPS 5.2.1 Supply, installation, testing and commissioning 1x160kVA UPS along for both Input &Output) system shall be 415 V,3 phase 4 wire plus ground with internal isolation transformer and all necessary paraphernalia required for comissioning.	Kindly allow External Isolation Transformer	Tender conditions shall prevail
23	Chapter 5 / 33 of 68	UPS 5.2.1-1 Supply, installation, testing and commissioning 1x160kVA	Kindly Allow with 150kVA ups with unity Power Factor	Tender conditions shall prevail
24		General	Kindly confirm if China origin products will be allowed ?	Tender conditions shall prevail
25	Chapter 5 / 33 of 68	TOTAL IT LOAD : 110KW*	As per load details given in the enquiry, high density Racks 20Kw Each*6= 120KW and Low density Racks 4KW Each* 12= 48KW, Total Comulative Load will be Appox 168KW	High density racks and low density racks load will be balanced and total IT load is 110KW. Tender conditions prevail
26	Chapter 5 / 33 of 68	5.2.1 Technical Specifications for UPS System	Choosen Capacity of UPS is 160KVA. At average efficiency factor 94% output deliverable by UPS is 150KVA only.As per load power factor the present UPS systems designed From 0.8 lagging to 0.9 leading without de-rating factor. Hence the considerable power factor is 0.9. Please confirm?	Tender conditons shall prevail
27	Chapter 5 / 33 of 68	5.2.1 Technical Specifications for UPS System	Deliverable Output will be 135.36KW. As per demand the difference is 33KW (i.e. lesser side), Please confirm?	it is consider that total it load is 110KW.
28	Chapter 4 / 31 of 68	S.No 1 Point No.iii On Load testing of UPS	Load Test Means, Your Existing IT Load or Vendor needs to be get Resistive load to test the UPS ? If resistive load required the same budget needs to be considered by Engineer-In-Charge, please confirm the same?	Bidder shall bring resistive load for load test of UPS system
29	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring Supply, installation, testing and commissioning of suitable size DB panels for installation of 2x160 kVA UPS and must also include overload capability mentioned in table.1,complete, as required.	Vendor SoW for Raw Power Distribution: 1) Considering the Main Raw Power Panel with 2 No's of 250A MCCB with energy meters (i.e. for 2 independent power sources for 2nos of 160KVA UPS input supply) 2) Considering the Main Raw Power with 2 No's of 160A MCCB with energy meters (i.e. for 2 NO's of 18TR PAC Machines input power supply). 3) Considering the main raw power with 4 No's of 32A MCB's for 2TR Split Air Conditioners in electrical panels. 4) Corresponding current carrying prime input power cable - To Client Scope. Please confirm?	1) Is in the scope of IITH 2) Is in the scope of IITH 3) Is in the scope of IITH 4) Is in the scope of IITH
30	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring Diesel Generator	Have you considered Diesel Generator Connectivity with AMF Panel for this requirement?	Considered
31	Chapter 5 / 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring 4. Dual-source 3-phase power cabling for 20KW load from the two UPS DBs to all the 18 racks.	Dual Source operation for 20KW server rack considered from UPS Output of 160KVA as source 1 and the toher Source (i.e. Source 2) is getting derived from any other existing UPS. Please confirm ?	Server rack source 1 and source 2 both are connected to 160 KVA UPS 1.

32	Chapter 5 / 35 of 68	CHAPTER 5 5.2.1 Technical Specifications of UPS Point No.15 Each battery string shall have an individual DC battery breaker.	As a standard practice entire battery bank will have a DC battery breaker, not for individual strings. Please confirm?	Tender conditons shall prevail
33	Chapter 5 / 35 of 68	CHAPTER 5 5.2.1 Technical Specifications of UPS Point No.17The UPS should have a documented programmable network API/Protocol over TCP/IP network port for monitoring and controlling from our custom open-source based datacenter infrastructure management (DCIM) system. Valid readings of Energy (KWH),Power (KW), remote power on/off/status must be retrievable/controllable programmatically for load and PUE calculation.	SNMP/MODBUS Communication platform can be provided. Remote Power ON/OFF and Retrivable is not possible (i.e. only monitoring). PUE calculation is variable against performance efficiency of Power,cooling and other elecrical equipments efficiency. It is interrelated with the performance of your previous equipments (Old UPS and PAC Machines). Please confirm?	Modbus / SNMP shall be acceptable for monitoring. Tender conditons prevail
34	Chapter 5 / 37 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Point No 4.1 Cold Aisle Temperature to be maintained: 22 Deg C +/- 2 Deg & 50% +/- 5% RH at 37 Deg C return air Temperature	To Maintain cold aisle 22±2 Degree C, please allow for reurn air temperature up to 35 degree C considering cold aisle containment. In Inverter compressor Max return air temp possibe up to 35 deg C and it will mee the cold aisle temp requirement.	Tender conditons shall prevail
35	Chapter 5 / 38 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Point No 4.14 The motor shall have minimum IP54 Protection. Between the fans shall be installed an “S” shape separator design to eliminate turbulence effects of one fan to the others; it shall be also designed to increase efficiency compared to simple plate separator.	S-Shape seperator is provided by one specific OEM. Our OEM Design is different and our fan section is isolated from compressor section to avoid turbulence. Hence same should be as per particular OEM design.	As per approved manufacturers standard specification which should meet the requirements mentioned
36	Chapter 5 / 38 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Point No 4.11 & 4.15 Filters :- Filter to be provided on the Package unit, having 95% efficiency down to 5Microns and Filtration shall be provided by deep V form G4 performance dry disposable media to AS1324	G4 filter efficiency shall be 90% down to 10 micron. However S.No 4.11 above indicated 95% efficiency down to 5 Micron. Both the points contradicting each other and any one requirment can be fullfilled.	Filter having 95% efficiency down to 5Microns shall be acceptable.
37	Chapter 5 / 41 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Point No 4.23 Humidifier:- The unit is fitted with an infrared humidifier suitable for use with water of varying degrees of hardness. The humidifier is complete with a water inlet valve, and a maximum water level sensor; the humidifier includes 3 high-intensity quartz lamps shine on water creating instantaneous moisture using almost any water quality. The cleanable stainless steel humidifier pan is removable from front of the unit.	We request you to consider Electrode Humidifier also. As both the sensing (IR and Electrode) methods are applicable for our requirement. Please confirm?	Infrared humidifier / Electrode humidifier shall be acceptable
38	Chapter 5 / 36 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Regarding PAC Machines Low side work	Installation of copper piping with necessary lengths, MS Indoor and Outdoor Stands,Refrigerant Gas, Drain Piping, Soft Water Line Piping, Soft water tank and other low side works as mentioned above considered in the budget estimation by Enginner-In-Charge. Please confirm?	Bidder is expected to quote the total scope of work which are essential healthier and efficient operation of equipment
39	Chapter 5 / 55 of 68	CHAPTER 5 5.2.3.1 Precision Air Conditioners (PAC) Figure-2. Proposed Layout	In proposed layout two PAC machines are relocated to another side. Relocation and Re-Installation of 8.5TR PAC Machines scope of work has not been considered in the budget estimation. Pleas clarify and confirm ?	Shifting, repositioning & reinstallation of existing 8.5TR pac shall be executed by another vendor in a separate contract. Successful bidder may co-ordinate during the work execution.
40	Chapter 5 / 43 of 68	5.2.3.2 Other HVAC work Split AC unit of 2 no.s of 2TR capacity (N+N redundancy).	It will be 1+1 Operation with sequential timer mechanisam. Please confirm	Tender conditons shall prevail
41	Chapter 5 / 55 of 68	Chapter 5 / 55 of 68 Proposed Data Center Layout in Figure-2. Proposed Layout	Proposed design layoout: Is it suggested by any consultant? Or Data Center Solution Architect by any of the OEM ? Or Engineer-In-Charge of IITH ? The following Observations need to be addressed: 1) R10 to R18 Rear Side and R19 to R27 Rear Side distance as per the drawing is 4ft.Heat management is a challange in this design. 2) Air Balancing and Equal CFM is a challange. 3) Hot Spots will be generated in this design configuration which needs to be addressed.	Tender conditons shall prevail

42	Chapter 5 / 43 of 68	5.2.3.3 Cold-Aisle Containment Complete Rack Enclosures for extended Datacenter Room along with standard Accessories. The Aisle will be supplied with Cold Aisle Containment for 18 Racks (42U size) with Manual Operated Dual Leaf Doors (2 Sets of Door per aisle - 1 set in the front & Other set rear side), Fixed Roof System. Doors are Aluminium & Tempered Glass based. Roof will be MS & Fire rated Polycarbonate sheet. Any gaps in the Aisle between rack top and roof system must be covered to stop cold air leakage from it.	We can do Cold Aisle Containment with1.5mm thickness 2 1/2 Inch Thickness Powder coated Aluminium sections and 5mm/6mm thickness Acrylic Sheet material. Please allow us to participate?	Aluminium frame (1.2mm thickness) with powder coated black matt finish shall be acceptable.
43	Chapter 5 / 44 of 68	5.2.4. Technical Specifications for Fire Alarm System Point No.1.0 "Analogue Fire Alarm" & Detection System complete with 14 multi-criteria detectors, fault isolator module, monitor & control modules, manual call point & sounders "to support integration into the BMS system" - For the server room i.e. room 006 (proposed DC facility), room 007(existing DC facility) & Electrical Room i.e. room 007 (electrical room) at Academic Block-A.	Analogue fire alarm panel don't have option to connect with BMS system. It needs IP Based Fire Alarm System to connect with BMS system for monitoring purpose.Please confirm?	Analogue / Conventional Fire Alarm panel System shall be acceptable. Normal NO/NC contact shall be provided.
44	Chapter 5 / 44 of 68	5.2.4. Technical Specifications for Fire Alarm System Point No.1.1 Supply, installation, testing and commissioning of " Conventional fire alarm panel " with 2 loops and 2 hours battery backup on alarm condition with required accessories	Conventional Fire Alarm Panel or IP Based Fire Alarm panel ? Price variation is huge between the above two solutions. Hence please confirm your requirement?	Analogue / Conventional Fire Alarm panel System shall be acceptable
45	Chapter 5 / 45 of 68	5.2.5. Technical Specifications for Fire Suppression Systems As per tender enquiry 3*140Ltrs Novec Cylinders is considered and Novec 1230 agent at least 420 kgs.	As per site requirement Quantity of Gas will be vary ,because as per OEM standards filling density will be as per design. Design ,Piping and other detailed engineering drawings will be provided against order only. We can quote our price for the solution as per enquiry. Please confirm?	Since it is LUMPSUM CONTRACT, Bidder shall consider the quantity as per standard of OEM design. Bidder shall visit the site before submission of quotation.
46	Chapter 5 / 46 of 68	5.2.6. Technical Specifications for Rodent Repellent System The devices can be tested periodically by means of a test switch provided on the main console.	As per standard test procedure transducer signal conversion in form of " Audible Beed Sounds/Alarm". Please confirm?	As per approved manufacturers standard specification
47	Chapter 5 / 46 of 68	5.2.7. Technical Specifications for Water Leak Detection system Supply, installation, testing and commissioning of Water Leak Detection system with required accessories, Complete as per the specifications given under.	2-Zone or 4-Zone WLD System will be given with Sensing Cables of Each 10/15Mtrs lengths. Against Sensing of any water leakage, alarm will be triggered showing fault in that particular zone. Please confirm?	2-zone or 4-zone WLD shall be acceptable
48	Chapter 5 / 49 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works 1.5 Other Non structural Parameters: Electrical Resistivity & Tolerances	Conductive/Static Dissipative Range/Anti Static Range : 1) To intiate the above test previous data center area should have the anti static flooring with necessary earth matt need to be confirmed by Engineer-In-Charge. 2) It is (Resistive Values) not under scope of Data Center Built Vendor.	Tender conditions shall prevail
49	Chapter 5 / 50 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works 1.7 Conditioning: Before fixing store all moisture sensitive materials on site for at least 48 hours in condition similar to those which will prevail after the building is occupied. Ensure free circulation of air to all surfaces.	Not Possible to do the same exercise for UPS and PAC Machines. Please confirm?	Tender conditions shall prevail
50	Chapter 5 / 51 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works 5. Miscellaneous Civil Works	Thermal Insulation for entire Data Center is Area approx 1200 Sft (i.e. below Raised flooring) is not considered in the scope of work.It needs to be considered in the budget estimation by Enginner-In-Charge. Please consider the same and confirm ?	Thermal insulation below false flooring not considered. Bidder may quote for the scope defined
51	Chapter 5 / 51 of 68	5.2.8. Technical Specifications for Raised Flooring System and other Civil Works Anti-Static Vinyl Flooring for the electrical room (room 007, Academic Block-A)	Approx 330Sft Area, Considered 2mm ESD PVC 3 layer Mat , Earth Strip Need to be run around the data Center with dedicated earth pits. Please consider and confirm?	Tender conditions shall prevail

52	Chapter 2 / 14 of 68	CHAPTER 2 S.No 4. Project Timeline The time allowed for completion of the work shall be 05 (Five) Months	Restructuring of Existing Partition, raised floor, PAC Machines and other Civil jobs will generate fiine dust which will be accumulated on your server PCB components, which will lead to damage/short circuit of PCB or other components of servers. Shall we keep the existing data center in OFF condition during the work execution. Please confirm?	Tender conditons shall prevail. Switching off equipment also does not guarantee dust spreading all around. Necessary precautionary measures (like curtains) must be taken to prevent dust entering the IT equipment. Necessary-and-sufficient downtime of IT equpment will be allowed during change-over of power cables.
53	Chapter 5 / 34 of 68	UPS - 5.2.1 - 2 Each UPS should have a phase sequence correction kit without switching in battery mode as a default feature.	Each UPS should have a phase sequence correction/Protection kit without switching in battery mode as a default feature.	Tender conditions shall prevail
54	Chapter 5 / 39 of 68	PAC - 5.2.3 Sec - 4.19.1 Liquid receiver inbuilt in the indoor unit	Liquid receiver is optional item and required when Indoor to outdoor distance exceeds 60rmt.Please consider this as optional item as it will have impact on commercials	Tender conditions shall prevail
55	Chapter 5 / 39 of 68	PAC - 5.2.3 Sec - 4.18 Refrigeration Circuit:- The refrigeration system shall be of the Multiple circuit	Please confirm if single circuit(One outdoor) model can be considered?	Tender conditons shall prevail
56	Chapter 5 / 43 of 68	Cold-Aisle Containment - 5.2.3.3 Sec - 1 Complete Rack Enclosures for extended Datacenter Room along with standard Accessories.	Complete containment will be with aluminium with black matt powder coat	Aluminium frame (1.2mm thickness) with powder coated black matt finish shall be acceptable.
57	Chapter 5 / 43 of 68	Cold-Aisle Containment - 5.2.3.3 Sec - 2 Ceiling Panel:	Need to know the thickness of polycarbonate use for ceiling panel	4 mm thick polycarbonate sheet
58	Chapter 5 / 43 of 68	Cold-Aisle Containment - 5.2.3.3 Sec -3 toughened glass (4mm thickness)	For doors we will recommend to use 4mm thick polycarbonate sheet as toughened glass will be heavy.	Tender conditons shall prevail
59	Chapter 5 / 36 of 68	Existing PAC	Shifting of existing PAC is bidder's Sow? Or IIT will take care of that.	Shifting, repositioning & reinstallation of existing 8.5TR pac shall be executed by another vendor in a separate contract. Successful bidder may co-ordinate during the work execution.
60	Chapter 5 / 36 of 68	Existing Racks	Shifting of existing PAC is bidder's Sow? Or IIT will take care of that	Shifting, repositioning & reinstallation of existing Racks is in IITH scope. Successful bidder may co-ordinate during the work execution.
61	Chapter 2 / 14 of 68	Chapter 2- Instruction to bidders. 3.6 Desirable to have the bidder to be ISO 9001	We have ISO 27001 certification which is also a very important security and quality standard. Is it still mandate to have ISO 9001	Tender conditons shall prevail
62	Chapter 5 / 36 of 68	5.2.3.1 Supply, installation, testing and commissioning of self-contained direct expansion type Precision air conditioning units suitable for operation on R-410A or R-407C refrigerant & should have advanced microprocessor and electronically communicated with minimum capacity of 2nos of 18TR. The job shall be completed in all respects with all required men and materials, all necessary electrical wiring, piping, required civil works for installing the indoor and outdoor units etc., for successful commissioning of the PAC units.	SBBPL Pre-Bid queries:- Please approve only R 410A Refrigerant compatible unit for like to like comparison. This is latest offering by all the PAC Manufacturer and inbuilt with latest features and more efficient than R 407C.	Tender conditons shall prevail
63	Chapter 5 / 36 of 68	5.2.3.1 Precision air conditioning unit suitable for operation on R-410A or R-407C refrigerant with bottom discharge arrangement consisting of inlet filter, blow through direct drive Electronically communicated Motors and Backward curved Plug fans, fan motor assembly to deliver desired air quantity, Scroll Compressor, and compressors should be Inverter Scroll / Digital Scroll based variable capacity compressor, Direct Expansion Cooling Coil, Electronic Expansion Valve Heater banks to maintain humidity inside the space, condensate drain pan of stainless steel construction, Microprocessor panel, programmable control complete with LCD display.	SBBPL Pre-bid queries:- Since requirement is Bottom Discharged type PAC Unit, Hence Evaporator Fan shall be in bottom of unit after Filter and Coil section. Hence it should be Draw through type.	As per approved manufacturers standard specification

64	Chapter 5 / 36 of 68	5.2.3.1 Cold Aisle Temperature to be maintained: 22 Deg C +/- 2 Deg & 50% +/- 5% RH at 37 Deg C return air Temperature	SBBPL Pre-bid queries:- To maintain Cold aisle temp. 22+/-2 Deg C. Please allow for Return air temp. upto 35 Deg. C considering cold aisle containment. In Inverter Compressor Max. Return air temp. possible upto 35 Deg.C and it will meet the cold aisle temp. requirement.	Tender conditions shall prevail
65	Chapter 5 / 38 of 68	5.2.3.1 Fan:- The units should be equipped with direct driven backward curved EC radial fans with electronically commutated brushless motors; the technology employed by these motors allows straightforward control of fan speed by means of the electronic controller in order to obtain adjustment of air flow rate and static pressure to ensure correct distribution of the treated air. The unit should have capability to determine Airflow Rate or Static Pressure and should be able to use the feedback to control the Fan Speed as per actual site requirement. The controller should have in built logic for this. The motor's high efficiency should make for less energy absorption, especially at partial loads and during starting (lowering of peak current), which means a reduction in power consumption of approximately 30% compared to AC motor. The motor shall have minimum IP54 Protection. Between the fans shall be installed an "S" shape separator design to eliminate turbulence effects of one fan to the others; it shall be also designed to increase efficiency compared to simple plate separator.	SBBPL Pre-bid queries:- S-Shape seperator is provided by one specific OEM. Our design is different and our fan section is isolated from Compressor section to avoid turbulence. Hence same should be as per Particular OEM design.	As per approved manufacturers standard specification which should meet the requirements mentioned
66	Chapter 5 / 38 of 68	5.2.3.1 Filters:- The filter chamber shall be an integral part of the system and withdraw able from the front of the unit. Filtration shall be provided by deep V form G4 performance dry disposable media to AS1324.	SBBPL Pre-bid queries- G4 filter efficiency shall be 90% down to 10 Micron. However Sl. No. 4.11 above indicated 95% efficiency down to 5 Mircon. Both the points contradicting each other and any one requirement can be full filled.	Filter having 95% efficiency down to 5Microns shall be acceptable.
67	Chapter 5 / 40 of 68	5.2.3.1 Air Cooled Condenser:- Condenser shall be air-cooled type, suitable for outdoor installation and shall be suitable for operating at high ambient of 45 deg C db and at low ambient of up to 0 deg C db temperatures. Condenser shall be in copper tube & aluminium fins construction. Condenser coil shall be of maximum 4 rows deep and the fin spacing shall not exceed 2mm. The condenser fan/s shall be of axial type with max 1000 RPM variable voltage electric motor complete with IP-54 protection. Motor shall be speed controlled to ensure a stable operation for varying ambient; by a factory fitted direct acting head pressure activated stepless variable speed drive. The condenser shall be complete with provisions for refrigerant piping connections including thermal Insulation for Refrigerant Piping, shut off valves and any other standard accessories necessary with the equipment supplied. Each Circuit to have its independent set of condenser coil and Fans is separate casing. The condenser should be equipped with fan speed controller for the speed variation based on the condensing temperature & the speed variation should be steeples. Location of the condenser unit will be at ground outside shown by IITH and must stack above the existing condenser on a steel framework. Data Center location will be at Ground floor, Bidder to calculate the length of piping.	SBBPL Pre-Bid Queries:- Max. Condenser Fan RPM to be allowed upto 1400 RPM.	Tender conditions shall prevail

68	Chapter 5 / 41 of 68	5.2.3.1 Humidifier:- The unit is fitted with an infrared humidifier suitable for use with water of varying degrees of hardness. The humidifier is complete with a water inlet valve, and a maximum water level sensor; the humidifier includes 3 high-intensity quartz lamps shine on water creating instantaneous moisture using almost any water quality. The cleanable stainless steel humidifier pan is removable from front of the unit	SBBPL Pre-Bid Queries:- Infrared humidifier is offering of one specific OEM and consume more power Compared to Electrode Humidifier. Hence, Please approve Modulating Electrode Humidifier as well, So that we will be able to comply to the specs. and will be able to participate without deviations.	Infrared humidifier / Electrode humidifier shall be acceptable
69	Chapter 5 / 41 of 68	5.2.3.1 Microprocessor Control System:- A 32 bit RISC microprocessor shall continuously monitor operation of each Server room air-conditioning unit continuously digitally display room temperature and room relative humidity, alarm on system malfunction and simultaneously display problem. The controller should have operation logic should be capable of working both on Supply Air Temperature feedback Logic and Return Air Temperature feedback logic. When more than one malfunction occurs, flash fault in sequence with room temperature, remember alarm even when malfunction cleared, and continue to flash fault until reset. The controller should be able to display real time, Evaporating & Condensing Pressure & Temp of Refrigerant, Suction Superheat of Refrigerant, Airflow Rate Of the Air, Supply Air Temperature.	1. SBBPL Pre-Bid Queries:- What is meaning of RISK. PLease clarify. Microprocessor shall be as per OEM design accepted globally. 2. SBBPL Pre- Bid Queries:- Unit will work on Return air temp. logic only. Please confirm and approve the same.	1. Microprocessor as per OEM design shall be acceptable. 2. Tender conditions shall prevail.
70	Chapter 5 / 44 of 68	5.2.4 Analogue Addressable Fire Alarm & Detection System complete with 14 multi-criteria detectors, fault isolator module, monitor & control modules, manual call point & sounders integrated into the BMS system - For the entire Data Center Hall, IT Room, Panel Rooms & Electrical Room (False floor, Room void)	Kindly confirm whether it is multicriteria detector or only smoke detector	smoke detector shall be acceptable
71	Chapter 5 / 53 of 68	5.3 Approved make list - Tracetek, lievert, Sontay	kindly consider C-System, Star elctronics as approved make list	Tender conditions shall prevail
72	Chapter 3 / 19 of 68	8. Annual Maintenance Contract	Kindly mention the AMC period required to present the charges after standard warranty period	AMC start after expiry of DLP of 12 months from the date of Handing over of the Data Centre.
73	Chapter 5 / Page 33 of 68	5.1 General requirement	Request IT team to clarify on the IT load of 110 kW as final load for design purpose	Total IT load is 110KW. Tender conditons shall prevail
74	Chapter 5 / Page 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring 1. Supply, installation, testing and commissioning of suitable size DB panels for installation of 2x160 kVA UPS and must also include overload capability mentioned in table.1, complete, as required.	Kindly confirm whether we would get the input feeders for UPS - 160 kVA from IITH side. Also clarify the scope of laying input cable from Main panel to UPS - Whether IITH would take care of the same or do we need to consider	IITH scope
75	Chapter 5 / Page 35 of 68	5.2.2 Technical Specifications for Raw Power and UPS Power wiring	Kindly detail the point 5 - Whether IITH is expecting IP based Electrical PDU for better understanding to quote the right product?	Tender conditons shall prevail
76	Chapter 5 / Page 43 of 68	5.2.3.2 Other HVAC work	5.2.3.2 - In 2TR split AC, the star rating determines the energy savings, 0.9 SHR is a request towards a precision AC. Kindly clarify on this point & specify 3 list of makes matching the specification or star rating of either 4 or 5 as BEE standards	Tender conditons shall prevail.
77	Chapter 5 - Page 53 of 68	5. Water Leak Detection System	Maser & C systems are reputed brands under water leak detection system. The same is included for Rodent system, hence we request to include the same for Water leask detection system also	Tender conditions shall prevail

78	Chapter 5 - Page 44 of 68	5.2.4. Technical Specifications for Fire Alarm System	The detailed specification mentioned for Fire Alarm is for Addressable Panel system, however the tender asks for a Conventional based Panel system which would NOT be useful & possible for a 3rd integration like VESDA, WLD, RRS & Suppression system - consolidated view of monitoring	Analogue / Conventional Fire Alarm panel System shall be acceptable. Normal NO/NC contact shall be acceptable.
79	Chapter 5 - Page 45 of 68	5.2.5. Technical Specifications for Fire Suppression Systems	We request to approve for other series of Honey Fire Alarm Panel like Morlay or XLS as this would NOT allow to quote for the best of the system from the Main stream Honeywell entity of Fire & Safety systems.	Tender conditions shall prevail
80	Chapter 5 - Page 33 of 68	5.2.1 Technical Specifications for UPS System	There is NO mention of Earthing system requirement for the equipments. Request to give your expectation on the same.	Earting to the equipment is in scope of bidder
81	Chapter 2- Page 14 of 68	Chapter -2 , Clause 3.3 The Bidder should have an in-house service / support team in Hyderabad	Request you to please accept the Support services offered by the respective OEM, since all of our OEMS are having their service/support team in hyderabad	Sl no.1 above may be referred to.
82	Chapter 3- Page 17 of 68	Chapter -3 , Clause 1.1 The bidder should exercise utmost care to quote the correct percentage of applicable GST on each item.	Request you to please confirm on the Applicability of Concessional GST % and the on which items the Concessioned GST is applicable	The sentence stands deleted and price quoted shall be inclusive of all taxes.
83	Chapter 5 - Page 54 of 68	Chapter-5 , Layout Drawings	Request you to please share the visible drawings for our better understanding	Drawing will be provided
84	Chapter 5 - Page 54 of 68	Chapter-5 , Layout Drawings	Request you to please share the drawing showing the height of the Room, PAC out door unit location, Distance between PAC Indoor to outdoor and cross section layout of the data center for our better understanding	Drawing will be provided
85		Tender fee	Please confirm if tender fee is applicable.	Tender Fee is not applicable
86	Chapter 1 - Page 8 of 68	Chapter 1 / Clause 5.2 EMD	Please confirm EMD exemption for MSME Bidders.	EMD Exemption as per GoI norms is applicable
87	Chapter 3 - Page 22 of 68	Chapter 3 / Clause 13 Force Majeure : IIT Hyd may consider grant of extension of time , as specified in this document, if and to the extent that the delay, in performance or other failure to perform its obligations under the Contract, is the result of a Force Majeure.	There is no certainty in this clause that extension will be granted in case of Force Majeure. Please change this clause to "Force Majeure : IIT Hyd shall grant the bidder reasonable extension of time, to the extent of the delay, in performance or other failure to perform its obligations under the Contract, as a result of a Force Majeure.'	Tender Conditions shall prevail.
88	Chapter 3 - Page 29 of 68	Chapter 3 / Clause 25 Public Procurement (Preference to Make in India)	Is it a mandatory requirement to bid that Local content should be minimum 20%? Please clarify.	Please refer to the circular referred in chapter 3 clause 25 of the Tender document. Tender condition shall prevail.
89	Chapter 4 - Page 31 of 68	Chapter 4 / Clause 1 Payment terms for UPS: 50% on delivery at site, 25% on installation, 10% on load testing, 10% on commissioning, 10% on final handing over of work	Payment terms specifically for UPS are very stringent. Please change them to "75% on delivery at site, 10% on installation, 5% on load testing, 5% on commissioning, 5% on final handing over of work" as are the payment terms for other major components in this tender.	Tender Conditions shall prevail.
90	Chapter 1 - Page 10 of 68	Envelop 2 6.ii IITH is an educational institution of national importance and is entitled for the concessional price.	pl confirm if same is applicable for gst (tax as well) in this tender.	No. GST is applicable at normal rates only. Lower rate of GST is applicable only for procurement of Goods. This involves supply, testing, commissioning AMC etc.
91	Chapter 5 - Page 33 of 68	total IT load mentioned as 20kw x 6 and 4kw x 12racks	total IT load comes to 148kw where as tender reflects 110KW, pl clarify	Using per server power-capping software system, IITH will ensure effective aggregate IT load across high density racks and low density racks will never exceed 110KW. Tender conditions prevail.

92	Chapter 5 - Page 33 of 68	5.2.1 Supply, installation, testing and commissioning 1x160kVA UPS along for both Input & Output) system shall be 415V,3 phase 4 wire plus ground with internal isolation transformer and all necessary paraphernalia required for commissioning.	Inbuilt Isolation Transformer with covering static bypass line is suggested	Acceptable
93	Chapter 5 - page 52 of 68	List of approved makes	request to please add flakt PAC & legrand UPS and AET flexi for raised floor as all are renowned brand and comply to the requirement.	Legrand (Numeric) UPS make included.
94	Chapter 5 - page 36 of 68	5.3.2.1.2 unit shall be with inverter/ scroll compressor	Kindly confirm the Indoor –Outdoor piping distance	10-15 mtrs. Bidder requested to visit the site for more details.
95	Chapter 5 - page 41 of 68	5.2.3.1.4.23 Humidifier	Unit shall be with Steam Electrode type Humdifier which is more efficient and modern. Kindly approve.	Infrared humidifier / Electrode humidifier shall be acceptable
96	Chapter 5 - page 38 of 68	5.2.3.1.4.14 Between the fans shall be installed an “S” shape separator design to eliminate turbulence effects of one fan to the others; it shall be also designed to increase efficiency compared to simple plate separator.	Fan Orientation shall be as per OEM standard	As per approved manufacturers standard specification
97	Chapter 5 - page 38 of 68	5.2.3.1.4.15 Filters	Filters shall be HDPE washable type	As per approved manufacturers standard specification
98	Chapter 5 - page 44 of 68	Chapter 5 Safety & Security devices	Are Access Control system, Vesda & CCTV required?	Tender conditions shall prevail
99	Chapter 5 - page 33 of 68	Electrical	Existing electrical Single Line Diagram required	Existing single line diagram is not available. vendor allowed for inspection
100	Chapter-5/ Page 35 of 68	Chapter-5/5.2.2 Techical specification of RAW & UPS power wiring	Power Cabling for 160 KVA UPS required or Not?	Input power cabling for 160 KVA UPS is not in the scope of contractor
101	Chapter-5/ Page no. 35 of 68	Chapter-5/5.2.2 Techical specification of RAW & UPS power wiring	Distance between existing electrical room to new proposed electrical room	The panel Room is located with in Datacenter
102	Chapter-5/ Page no. 36 of 68	Techical specification of RAW & UPS power wiring	Earthing system required or not for UPS's or other assets?	Existing earthing system is available
103	Chapter-5/ Page no. 36 of 68	Techical specification of RAW & UPS power wiring	What about the lighting fixtures or we using the existing?	Existing lighting system shall be used
104		General	Please share the CAD drawings	Layout already provided. Bidder requested to visit site for more details.
105	Chapter-5/ Page no. 47 of 68	Chapter-5/5.2.8/5.1 Technical Specifications for Raised Flooring System and other Civil Works	Please provide the thickness of Vinyl flooring	Tender conditions shall prevail
106	Chapter-5/ Page no. 53 of 68	Chapter-5/5.3/5 List of Approved make/ WLD	Please add C- system make for WLD.	Tender conditions shall prevail
107	Chapter-5/ Page no. 47 of 68	Chater-5/ 1.8 Technical Specifications for Raised Flooring System and other Civil Works/ Ramp & Step	Is Step or Ramp required at Main enrty Room-006? Pls Clarify	Tender conditions shall prevail

108	Chapter-5/ Page 33 of 68	5.2.1 - Technical Specification of for UPS System Supply, installation, testing and commissioning 1x160kVA UPS along for both Input & Output) system shall be 415 V,3 phase 4 wire plus ground with internal isolation transformer and all necessary paraphernalia required for commissioning.	Generally as per Industry Standard Input side Isolation Transformer will come in Separate Cabinet Externally not with in UPS Cabinet itself. Such inbuilt model is Particular OEM specific.Kindly Evaluate	Tender conditions shall prevail
109	Chapter-5/ Page 33 of 68	5.2.1 - Technical Specification of for UPS System Supply, installation, testing and commissioning 1x160kVA UPS along for both Input & Output) system shall be 415 V,3 phase 4 wire plus ground with internal isolation transformer and all necessary paraphernalia required for commissioning.	Not mentioned about redundancy, Being Critical Load there must be Redundancy in UPS ; Recommend to consider 2 ups in parallel or MODULAR N+1 Configuration. Various advanced feature of Modular UPS Systems are missing like Hot Swappable Power Module of min 50kva/50kW(fully rated 3P), Green/Sleep Mode, Energy recycle mode, Hot Swap Dual Redundant Main Controllers in addition to controller in PM, Hot swap main static Bypass Swtich and touch screen dispaly of min 8.5" and 8500 event log can be evaluated for addition. Scalability upto 300kva/300kW for future expansion can also be looked into	Tender conditions shall prevail
110	Chapter-5/ Page 34 of 68	5.2.1 - Technical Specification of for UPS System Each UPS should have a phase sequence correction kit without switching in battery mode as a default feature.	Phase Sequence Protection will be available in UPS by Default , if the Distribution setup is complete -Correction is not required everytime & However it can be provided as optional externally	UPS shall equipped with inbuilt Phase sequence detection
111	Chapter-5/ Page 34 of 68	5.2.1 - Technical Specification of for UPS System The UPS communication capability should be able to integrate into any industry standard Building Management System (BMS).	Protocol was not mentioned , it should be mentioned as Modbus protocol Since as per Industry standard , Modbus Protocol was used on most of the BMS. Kindly evaluate	UPS shall equipped with Modbus/Bacnet protocols/ethernet protocal
112	Chapter-5/ Page 34 of 68	5.2.1 - Technical Specification of for UPS System A Battery system shall be furnished for the UPS with sufficient backup capacity to maintain UPS output at the Full load for a duration of minimum 15 minutes. Battery Backup Calculation to be provided.	Kindly Specify the Output power factor to be considered for Battery Sizing either Unity or 0.9 PF & any Design Margin If any	0.9 pf
113	Chapter-5/ Page 34 of 68	5.2.1 - Technical Specification of for UPS System The type of battery shall be 12V Sealed Maintenance-free (SMF) type	Lithium Ion batteries are the latest technology can be evaluated for 15-30 min back-up time & shall be asked in RFP with a request to add some eligibility like min. 4 nos installations of Modular & Hot Swappable UPS(100kva or higher) with Lithium Ion batteries with any Govt/PSU customer in last 2 years. Also request to please evalaue for Lithium Ion batteries & specifiy the Chemsitry like LMO or NMC so that lower standard technoglogy can't be offered. "Here in the Lithium Ion batteries, the warranty itself comes with 5 years. Battery i.e cell parameters like Cell level Voltage, SOC, SOH, Temperature can also be made available on UPS Touch Screen Display for Modular UPS Systems without needing any BHMS on seperate cost as in case of 12V SMF batteries	Tender conditions shall prevail