iHub Anubhuti-
IIITD Foundation

TENDER FOR SUPPLY & INSTALLATION OF H100 & H200 FOR IHUB ANUBHUTI

FOR RESEARCH OF THE IHUB ANUBHUTI-IIITD FOUNDATION
AT OKHLA PHASE-III, NEW DELHI-110020

(Tender no.: iHub-Anubhuti/2024-25/Tender/03)

INVITATION FOR BIDS

1. iHub Anubhuti-IIITD Foundation (hereafter referred to as iHub-Anubhuti), is a Section-8, Not-for-profit Company under a National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) of the Government of India established by the Department of Science and Technology (DST) at Indraprastha Institute of Information Technology Delhi (IIIT-Delhi). It is a Technology Innovation Hub in the technology vertical "Cognitive Computing & Social Sensing" with a focus area on "Healthcare", "Education", and "Legal Information Systems".

2. iHub Anubhuti-IIITD Foundation ("Company"), a State University created by an Act of Govt. of NCT of Delhi, invites sealed bids for the **Supply and installation of H100 & H200 Tensor Core GPU** (as per specifications mentioned under the Scope of Work mentioned in the Anneure I and II respectiviely) for its campus at Okhla Phase-III New Delhi-110020.

3. Earnest Money Deposit: Rs. 10,00,000/- (Rupees Ten Lakhs only) is to be submitted with the tender document as earnest money. The above payment shall be made in the shape of a deposit or pay order/ demand draft of a scheduled bank /BG issued in favour of iHub Anubhuti-IIITD Foundation, payable at New Delhi. Exempted for the MSMEs/NSIC registered suppliers.

4. The tender document can be downloaded from the iHub's website. Those wishing to get a copy of the document from the Institute may please deposit a non-refundable Tender Document Fee of Rs.1, 180/- (Rupees One Thousand One Hundred Eighty only) in the form of Demand draft drawn in favour of IIIT-Delhi Collections", payable at New Delhi or may deposit Rs.1, 180/-with the F &A division of the Institute and enclose the receipt with the filled up tender document. The tender fee is exempted for MSMEs/NSIC registered suppliers.

5. The last date for submission of Bid is 24th January 2025 up to 3:00 PM. The Technical Bids shall be opened on the same day, i.e., on 24th February 2022 at 3.30 PM. The Tender Document should be addressed to:

CEO,
IHub Anubhuti-IIITD Foundation,
Okhla Phase-III, New Delhi-110020

The document should be deposited in the Physical at MCC, 4th Floor, IIIT Delhi, Okhla Industrial Area Phase III, Delhi 110020. Bids received after 3:00 PM will not be accepted or considered under any circumstances.

Description of Goods

Technical Specifications of H100 cards (Supply, Installation & Configuration)

S.no	Specifications	Parameter
1	Processor	Dual AMD EPYC™ 4th Gen Processor having 32C/64T with at least 3.0GHz base clock, OR Dual Intel® Xeon® 4th Generation processor having 32C/64T with at least 3.0GHz base clock
2	Motherboard	Appropriate Motherboard and chipset.
3	Memory	512 GB DDR5 ECC RAM
4	SSDs/NVMEs	Total 20TB usable storage space required after RAID 5 configuration. Supplied SSDs/NVMEs must be Enterprise grade.
5	Hardware RAID Controller	RAID levels: - 0,1,5,6,10 with at least 1 GB Cache support.
6	GPUs	2x Nvidia H100 80GB GPU PCIE on PCI5.0
7	I/O ports	At least: 2x/4x USB 2.0/3.0, and,1xVGA/HDMI,2x RJ45 10Gbps LAN,2x SFP+ Ports
8	Cooling	Appropriate cooling must be provided with in the chassis to cool all the parts of the system. There must not be any failures and performance issues due to heating.
9	Remote Management	Server should have dedicated 1Gbps remote management port. It should support remote power on/off, virtual media, virtual console, virtual KVM, hardware monitoring.
10	Power Supply	Appropriate energy efficient redundant (N+N) hot swappable power supply to support the configuration and the GPUs.
11	Form Factor	2U
12	OS Support	RHEL 8/RHEL9, Ubuntu 20.04 LTS Server,Ubuntu server 22.04 LTS
13	Warranty	3 Years Onsite Comprehensive warranty, NBD support (Parts+ Labor)
14	Note	a). All Cables such as power cables for C-19 socket,GPU power cables, rack mounting kits or any other accessories should be provided. b) Supplied server must show quoted OEM make, model and Serial number of the server in system bios. c) Offered System must not be End of Life, End of support, End of Sale.

Performance Benchmarks
The following benchmarks have to be conducted and submitted along with the technical bids. The benchmarking must be done on the proposed hardware, software and network architecture only.
The following Benchmarks need to be demonstrated on a single node during installation and acceptance. May access benchmarking details from

ML-Commons 0.7 Training Benchmark (training time for given validation accuracy)	https://mlcommons.org/en/
	1. Benchmark: Object detection (lightweight) Data set: COCO, Reference implementation: SSD Time (in Min) : 17
	2. Benchmark: Object detection (Heavyweight) Data set: COCO, Reference implementation: Mask RCNN Time (in Min) : 98
	3. Benchmark : Reinforcement Learning Dataset: GO Reference implementation: Minigo Time (in Min) : 310
Training Throughput Benchmark	4. Text Data: BERT-Large model (pretraining): 3200 seqs/sec on Wikipedia
	5. Image Data: ResNet-50 v1.5 model: 17000 images/sec on ImageNet
	6. Audio Data: Jasper model: 550 seqs/sec on Librispeech

Description of Goods

Technical Specifications of H200 cards (Supply, Installation & Configuration

S.No	Parameter	Technical Specification
1	Processor	Two processors per system with each socket having the following: Processor has to be at least PCIe gen 5.0 compliant. Processor Physical Cores should be minimum 32 with 64 Threads with minimum 192MB Cache At least 3.0 GHz base frequency per core TDP per socket must be within 300 W. Should support AVX256 and AVX2 instruction sets Must support virtualization / hypervisor
2	Memory	16 Memory DIMM Slots Supporting DDR5 Server Memory Total minimum 512 GB ECC Registered DDR5 memory with system running frequency of 4800 MHz Every memory channel from the processor(s) should be populated in a balanced configuration.
3	Storage	Each server should have 8 Hot-swap 3.5"/2.5" SAS/SATA drive bays. At least 8 of these hot-plug drive bays should be capable of housing 3.5"/2.5" SAS/SATA 4 Hotswap bays to be populated with 7.68 TB(Total 20TB usable storage space required after RAID 5 configuration) capacity interface in each bay. The drives should be Enterprise SATA SSDs with MTBF of 2 million hours. Integrated Four Nos. of M.2 NVMe (2 Nos. 3.0 & 2 Nos. 4.0) slots should be populated with 500GB NVMe PCIe 4.0 rest should be available for Future Expansion of internal storage*. * For M.2 Slots no add-in-cards will be allowed which will utilize any PCIe Native Slot.
4	RAID	System should be equipped with the hardware Raid Controller to support Raid level 0,1,5,6,10,50 & 60 with dedicated 1GB Cache. The populated drives should be interfaced with this controller with the further expansion capability for 4 more drives.
5	Network	Six PXE and iSCSI boot compliant on-board 10-Gigabit or higher Ethernet RJ45 ports 4 Nos. & 2 Nos. on 10G SFP+ DA
6	External Ports	Following minimum number of external ports should be available in the system 1 x VGA ports 4 x USB 3.0 ports (2 Rear , 2 Front) 1 x dedicated 1GbE RJ45 port for IPMI 4 x 10G BaseT RJ45 Ethernet Port 2 x 10G SFP+ Direct Attached Port
7	Co- Processor/ Accelerator	Each server has to be populated with 2 numbers of accelerators. Each accelerator should have: 1. 141GB or more GDDR6 with ECC 2. 4.8TB/second or higher memory bandwidth 3. 16xPCIe Gen5 interface interconnect each capable of 128GB/s or higher bidirectional throughput 4. 16896 accelerator cores or more 5. 60 TFLOPS FP32 (peak) performance 7. Max power consumption of 600 W 8. Passive cooling support 9. Virtual accelerator support 10. Support for 900GB/s additional Communication Link other than PCIe Gen5 : 128GB/s between two accelerators.

8	Chassis	Appropriate Chassis Not exceeding 4U Rackspace with rail-kit. The USB ports have to be on the front and rear side. Supplied chassis has to be approved by the system board OEM. Chassis should be populated with a maximum number of redundant cooling fans that can be accommodated in the chassis and the cumulative air flow should be sufficient to take away the heat generated at peak load with fully populated hardware.
9	Server Management	Dedicated IPMI 2.0 compliant management 1 Gbps ethernet port having support for 1. System health monitoring 2. PMBus and SMBus monitoring for redundant power supply and storage backplane 3. Event log accounting and monitoring changes in the server hardware and system configuration 4. Virtual media over network and Virtual KVM (KVM over IP). 5. Agentless management using the out - of - band remote management port 6. At least 128 bit SSL encryption and secure shell Version 2 support. 7. Should provide support for AES and 3DES on browsers. 8. Should provide remote firmware update functionality. 9. Should provide support for Java free graphical remote console. 10. IPMI must have graphical interfaces accessible to qualified users only and through browsers and give access to all of the above. 11. All required licenses (if any) to use IPMI features
10	Power Supplies	80+ Platinum Certified Redundant Power Supply. Power supplies should be only of the make/model approved for the motherboard. Power supply has to be configured in 1+1 redundancy The system should sustain in the occasion of failure of one power supply. Power Management Bus (PMBus) support should be provided and status information must be available via IPMI
11	Certification	The server and all its components should be verified and recommended by the system board manufacturer by means of compatibility list. The specifications of critical components such as CPU, accelerator, memory and disks should be verifiable from the websites of respective manufacturers.
12	Power Cord and other cables	Power cable should have IEC 320 (male-female) connectors matching the peak-load rating of the power supplies. All the network cables required are to be supplied in appropriate numbers and of appropriate specification.
13	OS Support	The system should support the following minimum operating systems without any deviations: Windows Server 2019 Windows Server 2022 Red Hat Enterprise Linux server 8.6, 8.7, 8.8, 9.0, 9.1 & 9.2 x64 SUSE Linux Enterprise server 15 SP4 & 15 SP5 Ubuntu 20.04.5 LTS x64, 20.04.6 LTS x64, 22.04 LTS x64, 22.04.1 LTS x64, 22.04.2 LTS x64 & 22.04.3 LTS x64 VMware ESXi 7.0 Update 3i, ESXi 8.0, ESXi 8.0 Update 1, Citrix Hypervisor 8.2 LTSR CU1
14	Additional Requirements	The main board of the system should be from the same brand of the supplied entire system. The main-board PCB should be " permanently printed" with the system brand markings but not through pasted stickers or removable markings. Evidence towards the same needs to be submitted along with the bid.
15	Warranty	3 years comprehensive on-site advance replacement warranty. The warranty should be trackable online on the OEM website through system serial number providing detailed system hardware configuration report.
16	Environment compliance	RoHS compliance
17	Reports	During the supply of the product following documents needs to be submitted duly attested on OEM Letterhead -: 1. Factory Acceptance Test Report 2. Country of origin declaration 3. Warranty Certificate

18	Datasheet	It is mandatory to submit the technical datasheet of the offered system along with the bid. The datasheet should match the technical compliance documents of bid, failing which the bid shall be disqualified without any query.

Performance Benchmarks

The following benchmarks have to be conducted and submitted along with the technical bids. The benchmarking must be done on the proposed hardware, software and network architecture only.

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	2. Benchmark: Object detection (lightweight)
	        Data set: COCO,
	        Reference implementation: SSD Time (in Min) : 12

	2. Benchmark: Object detection (Heavyweight) Data set: COCO, Reference implementation: Mask RCNN Time (in Min) : 70
	3. Benchmark : Reinforcement Learning Dataset: GO Reference implementation: Minigo Time (in Min) : 220
Training Throughput Benchmark	4. Text Data: BERT-Large model (pretraining): 4500 seqs/sec on Wikipedia
	5. Image Data: ResNet-50 v1.5 model: 24000 images/sec on ImageNet
	6. Audio Data: Jasper model: 780 seqs/sec on Librispeech

Minimum Eligibility Requirement:

1. The bidder should be the OEM/Authorized Partner/service provider of the OEM. In case the Bidder is an Authorized Partner or Service Provider, a valid Agency-ship/Dealership Certificate (**MAF specific to this Tender**) to quote on behalf of OEM should also be enclosed along with the technical Bid. **A document in support of this must be enclosed.**

2. OEM & Authorized Partner should have a Sales and support office in the Country. **A self-certified document in support of this must be enclosed.**

3. OEM or Authorized Partner should have a service and support office in Delhi NCR. **A self-certified document in support of this must be enclosed.**

4. The warranty provided by the Bidder should have a back-to-back arrangement with the OEM. **The declaration should be part of a Letter of Authorization and signed by a competent authority at the OEM.**

5. The Bidder should be ISO 9001 certified. **A copy of the ISO Certificate should be enclosed.**

6. The Bidder shall provide the Registration number of the firm along with the valid GST number with the PAN Number allotted by the competent authorities. **A self-certified document in support of this must be enclosed.**

7. The Central Government, State Government, or Government of Corporations in India must not blacklist the Bidder. **A certificate or undertaking to this effect must be submitted.**

8. If the Bidder is an authorized partner or service provider of an OEM, **an undertaking from the OEM is required** (please enclose) stating that they would facilitate the Bidder regularly with technology/product updates and extends support for the warranty as well.

9. The Bidder must be responsible for supplying, deploying and supporting the infrastructure.
Bidders can seek clarifications, raise technical queries, etc., related to tender by _____ via e-mail to Rajeev Goel rajeev.goel@ihub-anubhuti-iiitd.org. The reply to clarifications sought or queries raised will be replied to within five days by email and uploaded on the Company"s website under https://ihub-anubhuti-iiitd.org/.Based on this, the bidders may submit bids as prescribed by the due date and time.

The following information must accompany the financial Bid:

1	Name, address, and telephone number of the Bidder	
2	Name of the contact person and contact details (mobile/telephone number etc.)	
3	Name of the Bank and full address	
4	Bank Account Number	
5	PAN & GSTIN (Attach self-certified copy)	
6	Valid self-certified copy of authorization from Bidder	
7	Copy of Partnership Deed/ Certificate of registration of the bidders or any other document evidencing the registration of the Bidder	
8	Number of Years of Experience	
9	Details of DD towards Tender Fee: EMD:	
10	Provide the previous PO's of the same items work executed during the last three years (attested copies of the Orders to be enclosed)	
11	List of service centers, nearest location of the support centre.	
12	Turnover of the Bidder in the financial years: 2021-22 2022-23 2023-24 Please attach CA certified copy of the turnover.	
13	ISO 9000 Certification (please attach a certified copy)	

I /We hereby certify that the information furnished above is full and correct to the best of my/our knowledge.

(Signature of the Authorized Signatory)
Name:
Office Seal.

Date:

Place:

TERMS AND CONDITIONS

1. The Financial Bid should be valid for a period of not less than 60 days from the date of opening of Bid.

2. Upon placing of the Purchase Order (PO), the successful Bidder is required to submit a performance bank guarantee (PBG) equivalent to 5% of the PO value within 15 days from the date of the PO, failing which the EMD amount will be forfeited, and the Bidder shall be notified as blacklisted. The PBG will be valid for a period of 60 days beyond the stipulated date for cessation of the contract, which is a co-terminus with the warranty period. No interest is payable on the PBG.

3. iHub Anubhuti will realize PBG in case of termination of the contract for unsatisfactory performance and/or non-performance of the contract.

4. The Product to be supplied within a period of 6 weeks from the date of the Purchase Order by the Institute. If the vendor fails to supply the item as quoted in the Technical & Financial bid, the PBG amount will be forfeited, and the Bidder shall be notified as blacklisted or as deemed appropriate by the Institute.

5. The Bidder should have their own test and repair facility with certified engineers.

6. Sealed Bids can be sent either by post or by messenger. The responsibility for delivery of the Bid lies entirely with the Bidder.

7. In the event of a dispute, the CEO, of iHub Anubhuti shall be the sole arbitrator, and his decision shall be final and binding on both parties.

8. iHub Anubhuti reserves the right to accept or reject any or all the offers, either in full or in part without assigning any reason.

9. In case the Bidder is not able to execute the work as per terms, EMD/PBG shall be forfeited.

10. The selected bidder has to sign an agreement with iHub Anubhuti on a stamp paper after issue of the Purchase/Work order.

PROFORMA FOR FINANCIAL BID for H100 Cards

SKU	Description	Qty	Unit Price with GST
Barebone	4U Rackmount with 3+1, 80-PLUS Platinum, 2000W CRPS Dual Socket SP5 (LGA 6096), supports AMD EPYC™ 9005*/9004 (with AMD 3D V-Cache™ Technology) and 97x4 series processors 12+12 DIMM slots (1DPC), supports DDR5 RDIMM, RDIMM-3DS 16 hot-swap 2.5" NVMe (PCIe5.0 x4) drive bays or 24 Hot-swap 2.5" SATA/SAS* drive bays *Additional RAID/HBA card required 10 FHFL dual-slot PCIe5.0 x16 + 2 FHFL single-slot PCIe5.0 x8 shared space with adjacent dual-slot (with PEX89104 PCIe Switch) 1 FHFL single-slot PCIe5.0 x16 (CPU direct link), 2 FHHL PCIe5.0 x16 Supports 2 M.2 (PCIe3.0 x4 or SATA 6Gb/s) 1 OCP NIC 3.0 (PCIe5.0 x16), 2 RJ45 (1GbE) by Intel® i350 Remote Management (IPMI)	1	
Processor	EPYC 9354 32C/64T	2	
GPU	NVIDIA H100NVL, 94GB, support for total of 8GPUs	2	
Memory	64GB DDR5 ECC RDIMM	8	
Boot disk	500GB M.2 NVMe	1	
Capacity disk – SSD	7.68TB, SATA SSD	4	
HBA	LSI 9361-8i	1	
Sas Cable Kit	SAS Cable Kit	1	
NIC 1	Intel Ethernet Converged Network Adapter X710-DA2	1	
NIC 2	Dual 10G RJ45 Ports	1	

The Company reserves the right to purchase as advertised or part of the advertised specification/quantity.

Please note the price should be quoted for each of the items and should be inclusive of all taxes/charges and installation at IHub Anubhuti (IIIT-Delhi).

Total Cost (all-inclusive) of quantity mentioned above (in words) at IIIT-Delhi campus:

We accept that the rate quoted above shall remain valid for a period of 60 days from the last date of the tender document, i.e., 60 days from _____.

(Signature and Seal of the Bidder)

PROFORMA FOR FINANCIAL BID for H200 Cards

SKU	Description	Qty	Unit Price with GST	Total Qty	Total Price with GST
Cooling	CPU Air Cooler	2		2	
Motherboard	Supports Dual Socket AMD EPYC™ 9005*/9004 (with AMD 3D V-Cache™ Technology) and 97x4 series processors 8+8 DIMM slots (1DPC), supports DDR5 RDIMM, RDIMM-3DS 2 PCIe5.0 / CXL2.0 x16 3 PCIe4.0 x16 2 MCIO (PCIe5.0 / CXL2.0 x8 or 8 SATA 6Gb/s), 1 MCIO (PCIe5.0 / CXL2.0 x8) Supports 1 M.2 (PCIe4.0 x4) Up to 16 SATA 6Gb/s 2 RJ45 (10GbE) by Intel® X710-AT2 Remote Management (IPMI)	1			

Chassis with PSU	4U Rackable Tower Server for Multi GPGPU Applications, Supports a maximum of Hotswappable 8-bay 3.5"/2.5" SAS/SATA, Cooling Fans - Total of 6 x 80mm (11K rpm) (4 hot plug Fans + 2easy removable Fans), 2400Watt (1+1) 80+ Platinum CRPS (Redundant Power Supply) + Sliding Rail Kit	1			
Processor	EPYC 9354 32C/64T	2			
GPU	NVIDIA H200NVL, 141GB	2			
Memory	64GB DDR5 ECC RDIMM	8			
Boot disk	500GB M.2 NVMe	1			
Capacity disk – SSD	7.68TB, SATA SSD	4			
HBA	LSI 9361-8i	1			
Sas Cable Kit	SAS Cable Kit	1			
NIC 1	Intel Ethernet Converged Network Adapter X710-DA2	1			
NIC 2	Dual 10G RJ45 Ports	1			

Declaration of Local Content

(To be issued by the bidder on the bidder's letterhead)

To
The CEO,
iHub Anubhuti IIITD Foundation
Okhla Industrial Area Phase III,
New Delhi - 110020

Tender Ref. No:

We, M/s.

(Name of the bidder), hereby undertake that:

1. Country of Origin of Goods being offered:

2. We hereby declare that items 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.

"*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)

Name:

Date:

Office Seal:

"Exempted Bid Security Declaration Form"

Date:_____Tender No. _____

To (insert complete name and address of the purchaser) I/We. The undersigned declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any of the obligations under the bid conditions because I/We

a)   have withdrawn/modified/amended, impairs, or derogates from the Tender, my/our Bid during the period of bid validity specified in the form of Bid;

Or

b)   having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or refuse to execute the contract if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Security Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (signature of the person whose name and capacity are shown) In the
capacity of   (legal capacity of the person signing the Bid Securing Declaration)

Name: (complete name of the person signing the Bid Security Declaration)

Duly authorized to sign the Bid for an on behalf of (insert complete name of Bidder) Dated on__day of__

(insert date of signing)

Corporate Seal (where appropriate)