OPEN TENDER
Request for Quotation

Computational Aerodynamics Lab
Department of Aerospace Engineering
Indian Institute of Science
Bangalore 560012

01 Auguts 2022

Last date for submitting the quotes: 1600 hrs 12 August 2022

1. Lowest quotations for compute servers to be installed in the above lab, at least subscribing to the following baseline specifications are sought from Registered Indian OEMs or their authorized Indian distributors:

(a) **CPU cluster:**

2U blade servers housing a minimum of (a) 144 Xeon cores (or equivalent processor cores based on X86 architecture), (b) 512 GB RAM and (c) 12 TB SSD (including 1 TB SSD per motherboard for OS installation and remaining capacity equally split for RAID), supporting 2 x 10 GBPS Ethernet ports per motherboard with a sustained performance of 10 TFLOPS or higher.

(b) **GPU Cluster:**

GPU based server with a Dual socket motherboard supporting 2 * 10 GBPs Ethernet ports and 4th generation PCI express bus with a minimum of (a) 16 Xeon cores (or equivalent processor cores based on X86 architecture), (b) 256 GB RAM, (c) 5 TB SSD (including 1 TB SSD for OS installation) and Latest 2 * NVIDIA GPU supporting at least 48 GB RAM per GPU

2. The CFD solver HiFUN (www.sandi.co.in) forms the major intended application to be ported on the compute servers to be procured. The above minimum baseline specifications have been worked out based on the

performance of HiFUN solver on similar X86 architecture based platforms wherein performance optimization of the solver has been carried out.
3. The quotations should be submitted in two bid format, namely technical bid and price bid in separate envelops. The price bid of only those vendors with a qualified technical bid will be considered for further processing.

4. A vendor is allowed to make only one technical bid (and the corresponding price bid). It is expected that the vendor offers the configuration that best meets the above technical specification which is also costwise most competitive.

5. Price bid should be in sufficient details, with an appropriate cost breakup. At the time of price negotiation the vendor should be in a position to give the price of 2U rack enclosure alone (not populated with compute nodes) and the cost of a compute node alone, allowing the technical committee to workout the cost of the 2U rack compute server partially populated with compute nodes, in case needed. However, it is desirable to present this detail in the price bid itself. Taxes as applicable and the warranty clause should be included in the price bid.

6. Based on the unit price of the CPU cluster and GPU cluster, number of units of each of these clusters for placement of the final purchase order will be decided taking into account the budgeted cost for this procurement. The technical committee evaluating the technical bid reserves the right to place order on an exclusive CPU cluster or an exclusive GPU cluster or a combination of both.

7. The price bid should be on FOR-SID, IISc Bangalore basis in INR only. The vendors should agree for 100% payment against delivery, installation and certification of the servers. The certification process involves installation of an appropriate linux OS and executing HiFUN solver using an appropriate workload for performance evaluation. Details of parallel performance of the HiFUN solver on CPU and GPU based clusters may be had from:
(1)CPU server: http://dx.doi.org/10.13140/RG.2.2.15096.78082

(2)GPU server:
https://www.nvidia.com/en-us/on-demand/session/gtcspring21s31758/

8. Considering the urgency associated with the project, the vendor is expected to deliver the clusters within 3 weeks after the placement of purchase order. Ability of the vendor to supply the clusters in a period less than 3 weeks will be considered as an added qualification. The delivery period should be clearly indicated in the technical bid itself. In addition, the vendors also should indicate in the technical bid, the maximum number of CPU and GPU server units they can supply, particularly taking into account the 3 weeks delivery period.

9. All requirements indicated above should be clearly mentioned in the technical and price bids. Failing to do so will disqualify the bid.

10. The bidders must enclose a client list, contact details and compliance certificate (as in Appendix 1) with the tender.

11. The vendors may inspect the site of installation (the lab mentioned above) on or before **11 August 2022 during 1100-1300 hrs** on any working day.

12. Technical bid and price bid in two separate sealed envelops should be submitted to the office of the undersigned in the address mentioned above on or before 4pm of 12 August 2022.

13. **Indemnity:** The vendor selected is responsible for his/her own acts and/or omissions and those of his/her officers/employees/agents during the execution of this tendering process. The selected vendor shall fully indemnify and hold IISc-SID harmless against all claims arising out of the tasks executed by the vendor under this tendering process.

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Bangalore

Annexure 1

Compliance sheet for Technical Bid:

Compliance clause	Yes/No	Comments
Proposed CPU cluster subscribes to the baseline specification		
Proposed GPU cluster subscribes to the baseline specifications		
Delivery period is included in the Technical bid		
Client list and their contact details are included		
Date and time of site inspection is included		
Maximum number of CPU and GPU server units the vendor can supply in the delivery period is included		

Compliance sheet for Price bid:

Compliance clause	Yes/No	Comments
Price of CPU cluster is included		
Price of GPU cluster is included		
Price breakup for partially populated 2U blade server is included		
Prices are quoted in INR		

Agree to payment terms		