INDIAN ASSOCITION FOR THE CULTIVATION OF SCIENCE

2A & B, RAJA S.C.MULLICK ROAD
JADAVPUR, KOLKATA -700032

TENDER NOTICE NO.:**TP/UC-PM-AS/SERVER/2014/57**   Date:24.11.2014

Indian Association for the Cultivation of Science invites **Tenders** for **one GPU Server**and **oneXEON-PHI Server and the corresponding compilers**. The bids are to be submitted in Two-Bid pattern i.e. Technical Bid and Price Bid in two separate sealed covers distinctly marked accordingly and both to be put inside another envelope, which should be sealed and superscribed with tender reference no., due date and time of opening. Two bids, i.e. Technical Bid and Price Bid, should be identical in all respects except that the Technical Bid should have blank space at the places where prices have been stated in the Price Bid.

The technical bids will be opened first to evaluate the benchmark results**[1]** and technical specifications of the equipment and thereafter the price bids of only the technically qualified companies will be opened. The bidders may submit bids duly signed in their own letterheads.

Complete tender should reach the **Office of the Department ofTheoretical Physics, Indian Association for the Cultivation of Science, 2A &2BRaja S. C. Mullick Road, Jadavpur, Kolkata-700032, India** on or beforescheduled date & time specified below.

Tender Notice No.	TP/UC-PM-AS/SERVER/2014/57 Dated 24.11.2014
Pre-bid meeting to discuss technical specifications	December 08, 2014 at 3:00 p.m.
Last date and time of submitting tender	December19, 2014 at 12:00 noon
Date and time of opening tender	December19, 2014 at 3:00 p.m.
Place of opening tender	A.K. Raychaudhuri Hall, 1st Floor, Centenary Building, I.A.C.S., Kolkata
Technical Bid Evaluation Committee Meeting	December29, 2014 at 3:00 p.m. at A.K. Raychaudhuri Hall, 1st Floor, Centenary Building, I.A.C.S., Kolkata
Contact	Email: tppm@iacs.res.in and tpars@iacs.res.in, Tel: +91-33- 2473 4971 (extns: 2296 and2283 respectively)

Technical Bid Evaluation: The Technical Bids will be evaluated on December 29, 2014 at 3:00 pm at A.K. Raychaudhuri Hall, 1st Floor, Centenary Building, I.A.C.S., Kolkata in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

1- See the section Benchmark submission & evaluation.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only beopened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or expenses to any of the bidders for attending opening of technical bid.

1. TECHNICAL SPECIFICATIONS:

Detailed Technical Specifications acceptable for the **'GPU Server'**and**'XEON-PHIServer'** are as follows:

A1. Hardware specification of the GPU Server:

Processor	2 x Intel Xeon processor Haswell 10C E5-2650V3 2.3GHz 25M cache
Chipset	Intel chipset
Memory	8 x 8 GB DDR4 2133 MHz RECC
HDD	1 x 1TB SATA Enterprise Class 7.2K RPM.
GPU	1 x NVIDIA Tesla K40M GPU 12GB GDDR5
Ports	At least 4x PCI-E 3.0 x16 slots
LAN	At least GbpsLan port
Chassis	1 or 2 U Tower with Redundant Power Supply

A2. Compiler for GPU Server:
PGI Accelerator complier for Fortran/C/C++ (Academic license for Linux workstation).

B1. Hardware specification of the XEON-PHI Server:

Processor	2 x Intel Xeon processor Haswell 10C E5-2650V3 2.3GHz 25M cache
Chipset	Intel chipset
Memory	8 x 8 GB DDR4 2133 MHz RECC
HDD	1 x 1TB SATA Enterprise Class 7.2K RPM.
Phi	Phi Co-Processor 7120P 1.23 GHz - 16GB - 61 cores
Ports	At least 4x PCI-E 3.0 x16 slots
LAN	At least Gbps
Chassis	1 or 2 U Tower with Redundant Power Supply

B2.Compiler for XEON-PHI Server:
Intel complier with mic support (Academic license for Linux server).

Service facility: Trained technicians should install the instrument and ensure it is operating correctly and within specifications. Supplier should mention their details of service setup that are responsible for after sales support.

Benchmark Submission & Evaluation:

Along with the NIT, two tarballs are provided viz. benchmark.tgz and k40m.tgz.

The benchmark.tgz is an OpenMP program for QCD simulation with Wilson quarks. The directory contains a README, the program files, a sample input and the corresponding output file and a Makefile for the Intel fortran compiler. The bidders are free to modify the Makefile and the OpenMP directives for increasing performance. Bidders are not allowed to make any other changes in the program (which affects the order of instructions or the accuracy). For a benchmark result to be valid, the quantity delta_s in the output of the program must match with the delta_s of the supplied sample output hmc_main.out upto the first 4 significant digits at least. The program is to be run with 1,2,4,8,10,16 and 20 threads with hyperthreading disabled. At least one timing must be significantly better than the timing reported at the bottom of the sample output file (477 secs). The sample output was obtained on an AMD Opteron with 16 cores (6376) at 2.3 GHz.

The benchmark will serve as a minimum cut-off. The program must be run using the compiler which would be supplied with the system. The bidders must better the timing of the sample output file for the pure CPU run. The output files and the timings along with the compiler options must be submitted as pure text files on a CD / DVD along with the bid.

The cut-off time for the CPU + XEON PHI run is half the time of the sample output file i.e. 239 secs. The bidders are free to use any programming model (pure XEON PHI or offloading from the CPU) to run the codes. In this case the modified source code (again limited to adding directives or MPI commands) along with the output files, timings and compiler options must be submitted as pure text files on a CD / DVD along with the bid.

Once more the quantity delta_s in the output of the program must match with the delta_s of the supplied sample output upto the first 4 significant digits at least for the benchmark result to be valid. The program can be run with any number of threads (whichever gives the best performance).

The k40m.tgz is an OpenACC program for QCD simulation with Wilson quarks. The directory contains a README, the program files, a sample input and the corresponding output file and a Makefile. The OpenACC directives and the Makefile currently work for the Cray accelerator compiler. This program may not compile directly on the PGI compiler as the syntaxes for the two are different but serve as a guide for generating the directives for the PGI compiler. The cut-off runtime for this program is the one reported at the bottom of the output file (450 secs).

For the bid to be valid the program on the K40M must run with the supplied input file under 450 secs and the output of the program must match with the delta_s of the supplied sample output upto the first 4 significant digits at least.

For a bid to be considered the bidder must qualify in all the three runsPure CPU,CPU + XEON PHI and CPU + GPU. Partial qualification will not be considered.

The benchmarks will have to be run on the hardware which is being quotedand theprograms must be compiled using the compilers which are being quoted.

The winning bidder will have to demonstrate the performance of the suppliedmachineby reproducing or bettering the benchmark performance which is submittedalong withthe bid. Without this, the machine will not be accepted by IACS.

A tolerance of 15% will be allowed on all timings.

2. **PRICE BID:**
The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly superscribed as "PRICE BID" on the outer cover of the envelope as already detailed above. The price bids of only technically qualified bidders will be opened and they will be intimated the date and time of opening of price bids at their email id-(s). Rest of the bids will stand rejected.

PRICE: Price to be quoted on CIF/EX WORKS/FOB. **Price of the equipment to be quoted in US$.**

BID SECURITY:

1. The financial bid should be superscribed as "PRICE BID" on the outer cover of the envelope.

2. **EMD to be paid by the Indian Agent in INR.**An Account Payee Demand Draft of Rs.50,000/-(approximated in INR) (Rupees forty one thousand six hundred and fortyonly) drawn in favour of "Indian Association for the Cultivation of Science" is to be furnished along with Technical Bid as Bid Security money (or EMD). Bidders registered with the Central Purchase Organizations, National Small Industries Corporation etc. may be exempted from paying EMD subject to their submission of a copy of valid registration certificate with their Technical Bids, failing which their bids will be rejected.

3. The Demand Draft/ Pay Order for the Bid-Security money should haveat least 45 (forty five) days validity period after the opening of the Bids.

4. In case of non-award of the contract, the Bid Security money would bereturned to the bidders.

PERFORMANCE SECURITY:

1. An Account Payee Demand of an amount of 10% of the order value in the name of **"Indian Association for the Cultivation of Science**" is to be furnished by the successful bidder to be awarded the contract, as "Performance Security" money.

2. Performance Security should remain valid for a period of 60 (sixty) days beyondthe date of completion of all contractual obligations of the supplier including warrantyobligations.

3. Bid Security would be refunded to the successful bidder on receipt of PerformanceSecurity.

GENERAL INSTRUCTIONS:

1. **Vendor Eligibility:** The bids must be submitted by OEMs or OEM supported single vendors only with original authorization certificates from the OEMs. Vendors should have proven experience in setting up a High Performance Computing Centre (HPCC) of minimum 50 TFLOPS in the last three years in India and a minimum of 3 installation of at least 1 TFLOPS in Kolkata Region. A brief proof for such experience (copies of orders/installation certificate) should be included in the technical bid. Both the GPU and Xeon-Phi server have to be quoted by a single vendor. Part Quotation by a vendor is not admissible as future warranty and maintenance are difficult in the cases of fragment purchases. The OEM/OEM supported vendor should have their own service centre in Kolkata with technical knowhow to troubleshoot HPCC requirements. Subleasing of service/technical support by OEMs or OEM supported vendors is not admissible. The response time should not be more that 24 hours/next working day.

2. **Submitting Tender:** The Tender must contain materials related tothis specifications and should not contain materials that can overtly orcovertly try to canvass for the vendor. The vendors are allowed todeviate from the specifications given below only when such deviations aredemonstrated to be technically superior. Additional features in thequoted items which are better than those in the indent – may behighlighted. The technical bid should not have any mention of pricing. Thecommercial bid should have the pricing for each option separately. Pricesshould be inclusive all charges (taxes/duties as applicable, shippingcharges, delivery at site, installation etc.) with clearly indicated breakups.Fax, e-mail Tender will not be accepted. Duplicate Bid document mustbe submitted in Separate closed cover.

3. **Installation and Commissioning:** Free of cost at IACS, Kolkata. Thevendors are required to give an estimate of the time required forinstallation, fine-tuning of the cluster and hand-holding/training of theprincipal users in the technical bid. The vendor shall be responsible forsetting up of High Performance Linux Cluster using Enterprise Linux OSor equivalent (to be provided by vendor).

4. **Compliance List:** The vendor must submit a table indicating thecompliance of the features of the model of the components being quotedwith those given in the indent. In case of non- compliance against aparticular item, the vendor should justify that.

5. **Post-sales service:** The vendor must submit the names of the serviceengineers employed by them who are competent to serve the HPCCinstallation along with their contact details in India.

6. **Tender updates:** Prospective bidders may please refer to our websitehttp://www.iacs.res.in, occasionally for any update on the tender whichmay appear from time to time either in respect of pre-bid meeting orotherwise.

7. Incomplete & conditional tenders and tenders received after the duedate will be summarily rejected without assigning any reasons thereof."**GPU and XEON PHI Server"** should clearly bewritten on the envelope.

8. At any time prior to the bid due date, IACS may, for any reason,whether at its own initiative or in response to a clarification requested bya prospective bidder during pre-bid meeting, modify the biddingdocuments. The amendment(s) will be notified on the Institute website.Prospective bidders are advised to occasionally visit the website(www.iacs.res.in/tender) for any amendment.

9. **Payment:** 100% against delivery and successful installation subject tosubmission of performance guarantee.

10. **Warranty:** Minimum 3 years.

11. **Installation/Demonstration/Application Training at site:** Free of costby the supplier.

12. **Service facility:** Supplier should mention their details of servicesetup and personnel in Kolkata who would be responsible for after salessupport. Response time should be within 24 hours.

13. **Validity of tender:** Tender submitted shall remain valid at least forthree months from the date of opening of the tender. Validity beyondfour months from the date of opening of the tender shall be possible by mutualconsent.

14. The tender should accompany a compliance chart.

15. The rate should be inclusive of all taxes, transportation etc. Nothingextra will be paid in addition to the quoted rate.

16. The model number, make, and a printed literature of the product shallbe submitted positively.

17. Proposed delivery schedule should be mentioned clearly.

18. Manufacturers/exclusive distributors/vendors should have history ofsupplying similar type of instruments to this or other Scientific Organization(s).

19. Authorized Dealership Certificate is a must in case of principalmanufacturing company is not quoting directly.

20. Guarantee certificate, users manuals etc. are to be handed over tothe user after successful commissioning of the system.

21. In the event of date being declared a closed holiday for purchaser'soffice, the due date for submission of bids and opening of technical bidswill be the following working day at the appointed time.

22. In case of any dispute, the decision of the Institute authority shallbe final and binding on the bidders.

23. For any clarification regarding technical specifications etc. pleasesend your queries to both "Dr. PushanMajumdar" at tppm@iacs.res.in and "Dr. ArnabSen" at tpars@iacs.res.in.

24. The Institute reserves the right to reject any or all of the tendersreceived without assigning any reason thereof.

Registrar