जीव विज्ञान संस्थान

INSTITUTE OF LIFE SCIENCES

(An Autonomous Institute of Department of Biotechnology, Govt. of India)

NALCO SQUARE, BHUBANESWAR-751 023

Corrigendum 2   Dated 04.02.2019

Global Online Tender Notice No. IV-302-S & P/GT/Online/SE/70/2018-19/ILS dated 11.01.2019

Supply, Installation & Demonstration/Commissioning of Scientific Equipment, HPCC, Desktop Computer, AIO Desktop, Servers/Goods/Item(s)

Specifications and quantity of the following item(s) of the above online Tender are modified as follows:

Item Name: - High Performance Computing System (HPC) - 01 No
Modified Specifications

Master Node: Quantity 1

S.No.	Parameters	Value
1	Processor	Dual Intel® Xeon® Gold 6130 (16 Core, 2.1 GHz, 22 MB)
2	Memory	192 GB DDR4-2666 R ECC memory, with necessary free slots and provision to add at least 192 GB in future.
3	Internal Storage	HD NL-SAS 12G single 1.2TB 10K RPM hot-plug HDD Storage
4	Storage (To be attached/connected to Master Node)	500TB Usable capacity on RAID-6 using 7.2K drives, two controllers, redundant power supplies and fans. 5 Years Support
5	RAID Controller	12 Gbps PCIe 3.0 supporting with 1x8 port RAID 1,5 & others
6	OS Disks	2 × 1.2 TB 10K rpm 12 Gbps SAS disks in RAID1
7	Data disks	6 × 8 TB 7.2K rpm 12 Gbps SAS disks
8	Ethernet ports -1G	2 x 1G Base-T with CAT6 cables
9	Ethernet ports -10G	2 x 10Gbps ports (SFP or BaseT as per NAS port type) with cables
10	FC port	2 x 16Gbps FC ports with cables to connect to storage system / SAN switch
11	Infiniband adapter	1 no. single port 100Gbps InfiniBand adapter with cable
12	Certification	Red Hat Enterprise Linux
13	OS to be installed	CentOS
14	DVD writer	Internal DVD Writer
15	Power Supply	Redundant Platinum Level (94%) Power Supplies
16	Mount type	Rack mount rail kit
17	Warranty	5 years on-site comprehensive warranty with 24x7x365 Hardware and Software support with next business day onsite response from OEM. Post supply, 5-year warranty of the product should reflect in the support web site of the OEM.

Compute Nodes: Quantity 8

18	Processor	Dual Intel® Xeon® Gold 6130 (16 Core, 2.1 GHz, 22 MB)
19	Memory	384 GB DDR4-2666 R ECC memory
20	Internal Storage	HD NL-SAS 12G single 1.2TB 10K RPM hot-plug HDD
21	I/O Ports	1x Single-Port QDR 100 GB/s InfiniBand Adapter, 1x 2M QDR QSFP InfiniBand Cable, 2x Gigabit Ethernet Port, 1x Dedicated LAN for system management
22	Power Supply	Redundant Platinum Level (94%) Power Supplies
23	Mount type	Rack mount rail kit
24	Warranty	5 years on-site comprehensive warranty with 24x7x365 Hardware and Software support with next business day onsite response from OEM. Post supply, 5-year warranty of the product should reflect in the support web site of the OEM.

GPU Node: 2

25	Processor	2 Intel® Xeon® Gold 6130 (16 Core, 2.1 GHz, 22 MB)
26	Memory	384 GB DDR4-2666 R ECC memory
27	Internal Storage	HD NL-SAS 12G single 2TB 10K RPM
28	Cards	2 x NVIDIA Tesla V100 GPU
28a	Power Supply	Redundant Platinum Level (94%) Power Supplies
28b	I/O Ports	1x Single-Port QDR 100 GB/s InfiniBand Adapter, 1x 2M QDR QSFP InfiniBand Cable, 2x Gigabit Ethernet Port, 1x Dedicated LAN for system management

Primary Interconnect: InfiniBand switch

29	InfiniBand Switch	1x18 port 100GB/s QDR InfiniBand Switch unmanaged with 5 years onsite comprehensive warranty

Secondary Interconnect: Gigabit Ethernet switch

30	Gigabit Ethernet Switch	1x24 port L2 web managed gigabit Ethernet switch with required number of Ethernet cables to connect all nodes with 5 years onsite comprehensive warranty

Rack

31	Rack Unit	42U Standard OEM racks to be supplied OR branded racks like APW/APC/Rittal/Netrack should be supplied with Perforated front and back doors. The rack unit should be of size 800 WX1200D There should be proper design, with the self-cooling(fans) Mechanism for the Master/Compute/ Computational nodes in the racks. Suitable capacity of redundant PDUs, circuit breakers for single phase OR 3 phase UPS power inlets should be provided. 5 years onsite comprehensive warranty.

Other specifications

32	Supplier capability	A. OEM (Manufactures) should have at least 5 HPC capability installations in latest listing of Top 500 supercomputer list. B. The bidder (system integrator) should have installed and implemented at least one HPC cluster, preferably within the last 5 years with a minimum size of 5 nodes along with InfiniBand. The PO's and installation reports of the installation(s) should be furnished. C. The bidder (System Integrator) should submit the authorization letter from the OEM's. D. The bidder (System Integrator) should have technical expertise in implementing cluster, which includes installation configuration, maintenance and customization as per requirement.
33	Other conditions	A. The server and all its components should be verified and recommended by the motherboard manufacturer by means of compatibility list. B. The part number/model numbers of the memory and HDD should be provided. C. The compute nodes should be dense rack form factor designed for cluster solution and should be in the lowest footprint and the lowest power consumption. D. The OEM should have local service and spares hub.

34	Installation	A. The bidder should build the cluster based on open source HPC management software with 64-bit open source Linux operating system (preferably CentOS LTS). Open source CMS like ROCKS may be considered for the HPC system. Open source solutions like Torque and Maui or equivalent for the scheduler with full customization may be considered for the HPC system.
		B. The bidder shall install and configure all the required hardware and software as required including but not limited to racking and stacking, cluster networking, configuring all nodes, installation of open source compilers and applications, configuration of environment variables and license utility configuration.
		C. The bidder to ensure that the hardware and software components are compatible with each other, and provide necessary cables/wires and any other accessories necessary for connecting the supplied components. Bidder must install the complete system interconnecting all the components.
		D. The bidder should integrate the following list of applications (but not limited to) with the system
		    a. Open source compilers (gcc, g++, gfortran, python)
		    b. Intel Compilers for C++ and Fortran
		    c. Software (open source or provided by ILS): EMacs, Octave, Scilab, MPI, OpenMP, Gnuplot, NAMD, VMD, GROMACS, Autodock, Autodock-vina, Bioconda, Burrows-Wheeler Aligner (BWA), Bowtie2, CIRCexplorer2, STAR aligner, Deeptools2, Picard Tools, Samtools, BEDTools, BCFtools, Sambamba, GATK , Varscan , MuTect, snpEff, snpSift, Ensemble VEP with Human & Bacterial annotations, VCF-kit, Meerkat, CNVnator , SOAPdenovo2, SGA assembler, Allpaths-LG, BayesTyper, ADMIXTURE by UCLA, AMBER etc.
		E. One-week admin and user training on the cluster usage and administration must be provided.
		F. The bidder should provide a rough estimate of the project plan in the form of a GANTT chart.
		G. The OEM should provide 5 years onsite support for hardware and proposed open source cluster software.

35	Compliance statement	Compliance statement needs to be provided by bidders clearly specifying COMPLY/NON COMPLY with remarks of all of the points mentioned above

Clarification : For Item No. 9 HPC System,

In the Specification for Master Node

At S.no 4 : Storage (to be attached/connected to Master Node) with specifications of 500TB Usable capacity on RAID-6 using 7.2K drives, two controllers, redundant power supplies and fans. 5 Years Support

At S.No 9: Ethernet ports – 10G with specification of 2 x 10Gbps ports (SFP or BaseT as per NAS port type) with cables

In view of the above the bidders are expected to provide the storage at S.no 4 with at-least 2 x 10G ports, this storage (NAS) as specified in S.No 9 will be connected with the Master Node over the 2 x 10G ports of the master node. The ports should be either BaseT or SFP supporting 10G speeds for integrating with the corresponding ports/modules of the storage(NAS). In case it is not possible to connect the storage and the master node directly over the corresponding 10G ports then the bidder is also required to include any required accessories/switch for implementing the same. All necessary cables as may be required is to be included.

Item Name:- Desktop Computer, AIO Desktop, Servers
Modified Specifications

10	A) All-in-One Desktop – Qty. 5 pcs	S/N	Parameter	Specifications & Quantity: Quantity is reduced to 5 pcs.
		1		All-in-One desktop
		2	Form Factor	All-in-One with TPM 2.0 security chip
		3	Operating System	Microsoft Windows 10 Professional 64 bit along with Media, License and recovery CD.
		4	Processor	Intel core i5 8500 T or higher
		5	Chipset	Intel Q370 Chipset
		6	Motherboard	Motherboard make from the same OEM (OEM Logo sticker in the motherboard will not be accepted)
		7	Memory	8 GB DDR IV 2666 MHz or higher (upgradeable up to minimum 32 GB DDRIV 2666 MHz) with minimum 2 DIMM slots.
		8	Hard Drive	Min. 1 TB GB SATA 7200 RPM SMART IV or equivalent.
		9	Optical Drive	Min. 8X DVD +/- RW with dual layer write capabilities.
		10	Wireless Communication	integrated wireless with BT
		11	Monitor	23.5 inch or higher with minimum resolution of 1920x1080 or better with 2 MP webcam or better
		12	Keyboard	104 Keys or higher keyboard
		13	Mouse	OEM Optical Scroll Mouse
		14	Ports	Min. 4 USB 3.1, at least 1 USB Type C, 1 Display port, 1 HDMI/DP/VGA port
		15	Power cable	Required power cable for connecting PC to the existing UPS.
		16	LAN	Integrated Gigabit Ethernet LAN 10/100/1000 (RJ45)
		17	Power Supply	maximum of 150 W and minimum 80-90% energy efficiency
		18	Certification	1)FCC/UL OR EQUIVALENT Certification for AIO
				2) Energy Star compliant, EPEAT INDIA REGISTERED, ROHS.
				3) Windows 10 Certifications
				4 TCO Certified
				5 ISO 9001,14001,20001,27001 FOR OEM
		19	OEM Recovery Tool	Must be supplied with OEM pre-loaded tool for desktop manageability
		20	Product details	Quoted product should be available in public domain
		21	Driver support	Drivers for the quoted product should be freely available in OEM website
		22	MS Office	Microsoft Office (Home & Student)

Bidders are requested to submit quote for 3 units of the above AIO desktop with dedicated 2 GB graphics or higher as optional quote. No price comparison will be made with graphics card quoted in optional section.

B) Desktop Computer- Qty. 10 pcs.	S/N	Feature	Specifications
	1	Processor	Intel® 8th Generation Core i7 with minimum clock speed of 3.2 GHz, 12MB Cache , 6 Core or better
	2	Chipset	Intel Q370 chipset
	3	Motherboard	OEM Motherboard with OEM logo embossed on the motherboard (No Sticker)
	4	Memory	16 GB DDR4 RAM expandable to 64GB;
			Four DIMM slots; Non-ECC dual-channel up to 2666 MT/s DDR4 SDRAM
	5	Hard Disk Drive	2TB HDD, 7200 RPM, SATA III 6 Gbps, with pre-failure alert indication
	6	Optical Drive	8x DVD Writer
	7	Graphics	4 GB GDDR5 dedicated Graphics
	8	Audio	High Definition Integrated Audio with Internal Speaker
	9	Ethernet	Integrated Gigabit (10/100/1000 NIC) LAN
	10	Slots	Minimum 4 PCI/PCIe Slots (2 x PCIex16, 1 x PCIex4,1 x PCIex1) & 2x (M.2 PCIe)
	11	Bays	Minimum 4 bays with at least (1) 3.5” Drive bays & (2) 2.5" drive bay (1) ODD bay
	12	Ports	Minimum 10 USB Ports (5USB 3.1 gen 1, 4 USB 2.0, 1 USB Type C 3.1 Gen 1)
			out of which 5 USB Ports should be in front for easy access
			1 Universal audio jack for headphone / Mic
			(1) HDMI video port; (2) Display Port/DVI-D Port
			(1) RJ-45 network connector
			1 Audio-out
			1 Audio in
	13	Form Factor	Tower
	14	Power Supply	250 W or Higher internal power supply, up to 92% efficiency
	15	Wireless Keyboard/Mouse	USB 104 keys keyboard (Same make as PC)
			USB 2 Button Scroll Mouse (Same make as PC)
	16	Operating System	Genuine Microsoft Windows 10 Pro 64-bit
	17	Diagnostic Tool	Inbuilt Pre-Boot BIOS Diagnostics
	18	Security	TPM 2.0 Security Chip
			SATA 0,1 port disablement (via BIOS)
			Serial, USB enable/disable (via BIOS)
			Solenoid Lock / Hood Sensor
			Support for chassis padlocks and cable lock devices
			Drive Lock
			Boot Sectors Protection
			Drive Protection System
			Power On Authentication
	19	Compliance And Certification	Energy Star for the quotes desktop & Monitor
			EPEAT India registered for the quoted desktop & Monitor

				FCC. CE, RoHS, UL Certificate	
				ISO 9001,14001,20001,27001	
		20	System Weight / Volume	Weight should within 8 KG and volume no more than 16 L	
		21	Information Accessibility	Product details, specifications and brochure to be available in public domain	
		22	Support	Drivers should be available for download from OEM site for at least 3 years from the date of purchase order	
		23	Market Credibility	The OEM vendor should be of positive net worth for the last three years	
		24	Monitor	21.5" or higher IPS Energy Star monitor	
		25	MS Office	Microsoft Office (Home & Student)	

C) Server- Qty. 2 pcs.	**Form Factor**	**1U Rack Server**
	Processor	E 2174 G or higher
	Memory	1x16GB 2Rx8 UDIMM 2400MHz
	Raid Controller	B140i (embedded)
	NIC Ports	2x1Gb NIC (embedded)
	PCIe	PCIe LP riser
	Rail Kit	1U short friction rail kit
	Power Supply	Energy Efficient as per Indian standard
	Drive Cage	4 HP (Hot Plug) HDD cage
	Warranty	Server Warranty: 3 years Onsite support with next business day response
	HDD	2 x 1TB SATA 7.2K (OEM Make)
	Keyboard	Wired Keyboard (OEM Make)
	Mouse	Wired Mouse (OEM Make)
	Monitor	18.5" TFT (OEM Make)
	Optical	INT/ Ext. DVD Writer (OEM Make)
	Operating system	Cent OS configured for Web application server and Mail server

For 10 A,B,C above: We will accept any equivalent or higher specification quoted by the bidders. However the systems should be energy efficient as per the Bureau of Energy Efficiency (BEE), Ministry of Power, Govt of India guideline.

Due to above corrigendum, the dates of opening and closing of bids are modified as follows

Global Online Tender Notice	**No.** IV-302-S&P/GT/Online/SE/70/ 2018-19/ILS, dated 11.01.2019
Bid submission end date and time/ Bid Closing date & time	12th February, 2019 at 04.30 p.m. (IST)
Date and time of opening of Technical Bid	13th February, 2019 at 11.00 a.m. (IST)
Date and time of opening of Price bid (Only of the successful technical unpriced bids)	20th February, 2019 at 11.30 a.m. (IST) if possible. Otherwise, the same is to be intimated later stage to technically qualified Bidder's only

The name of the technically qualified Vendor(s)/ Bidder(s) will be available in our e-tender portal as well as in our website on 18.02.2019. The reason of rejection of the technical unpriced bid of a firm will also be available along with the names of the firm(s) qualifying the technical unpriced bid.

If the above stated opening or closing date(s) happens to be Govt. holiday(s)/BANDH for the purchaser (ILS), the submission/opening of the tender will be on the next working day as per the time scheduled.

Specifications and quantity of all other items except the above modifications, other terms & conditions of the above Global Online Tender remain unchanged.

Sd/-
Stores & Purchase Officer