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IISER/PUR/PT/06/16

20/09/2016

INDEX FOR INVITATION FOR TENDER

(IFT)

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20th October 2016

INVITATION FOR TENDER (IFT)

Sealed and super scribed **Two-Part** bids are invited for supply, installation and commission of the following equipment's.

I. ULTRA SOUND TRANSDUCER ARRAY

- | | | |
|-------------------------------------|---|--------------------------------------|
| 1. IFT No. | : | IISER/PUR/8351/16 |
| 2. DUE DATE | : | 20 th October 2016 [4 PM] |
| 3. DATE OF OPENING OF TECHNICAL BID | : | 21 st October 2016 [3 PM] |
| 4. DATE OF OPENING OF PRICE BID | : | Will be notified later. |
| 5. COST OF TENDER* | : | Rs. 500 + 5% VAT |
| 6. EMD [BID SECURITY] ** | : | Rs. 80,000/- |
| 7 QTY REQUIRED | : | 1 No. |

Specification of Ultrasound Transducer Array

Mechanical Specification/Characteristics

- | | |
|--|--|
| 1. Shape and geometry of the ultrasound transducer array | Cylindrical unit with one end is flat/planar (at which connecting wires are provided) and other end is spherical (concave in shape at which transducer elements – 512 elements – are situated) |
| 2 Dimension of the cylindrical transducer unit | Diameter – 65mm to 75mm; Length – 70mm |
| 3. Material for casing the cylindrical transducer unit | Stainless steel |
| 4. Immersibility | The cylindrical transducer unit is immersible in water and is water proof |
| 5. Hole and its type | At the center of the cylindrical transducer, a hole of diameter (=10mm) is provided along the axis of the cylinder for introducing optical fiber. |

Cable

- | | |
|--|--|
| 1. Type of cable connecting to the transducer elements | Co-axial cables with shielding. One leading cable for each transducer element with proper assignment with the corresponding transducer elements, i.e., 512 cable for the 512 individual transducer elements. |
| 2. Length of the cable | >=3m |

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Connectors

1. Type of connector pinout
2. Ground connection

Harting 68 pins, Pin and socket male connector series (Reference connector No. 60030685205 and Backshell No. 60030680255) (As shown in Enclosure 1)

The housing and overall shielding of the cable are connected to the electrical ground inside the connector and not connected in housing.

Technical

1. Type of the ultrasound transducer array/transducer element configuration in the cylindrical transducer unit
2. Acoustic impedance matching medium or medium in which ultrasound transducer unit is immersing
3. No. of individual transducer elements distributed in a part of the spherical surface
4. Orientation/alignment of the transducer elements in the spherical surface
5. Diameter of the active spherical surface
6. Diameter of the physical spherical surface
7. Central frequency
8. Bandwidth
9. Hole and its type

2D array of transducer elements (of square or rectangular shape) distributed over a portion of a spherical curve surface with a central hole – of diameter, 5mm. The coverage angle of the curve surface with respect to the center of the sphere is $140^{\circ} \pm 2^{\circ}$ and the radius of curvature the spherical surface is 35-37mm.

Water

≥ 512

The axes of all the (individual) ultrasound transducer elements – imaginary lines passing through the center of the elements perpendicularly – intersect each other at a common point, i.e., the center of the spherical surface over which the transducer elements are distributed.

70mm to 74mm

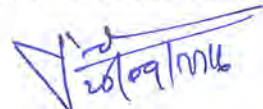
$\leq 82\text{mm}$

$\geq 12\text{MHz}$

$\geq 10\%$

At the center of the transducer, a hole of diameter (=5mm) is provided along the axis of the transducer unit

Warranty: ≥ 1 years

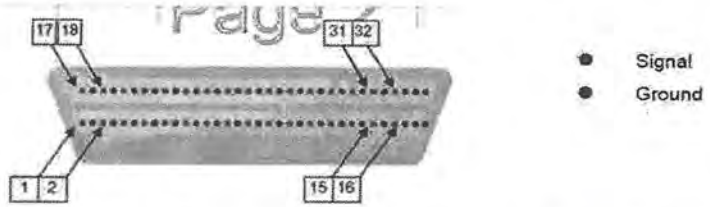
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Enclosure 1:

Connector:

Harting 68 pins, Pin and Socket Male Connectors series.
References connector # 60 03 068 5200 & Backshell # 60 03 068 0255
2 connectors per cable, i.e. a total of 16 connectors per array

Pinout diagram (external view):



Ground connection:

Shielding of the cables, shell of the connectors, transducer's housing are all connected together and not connected to the electrical ground.

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II. SUPPLY, INSTALLATION AND COMMISSIONING OF 100TFLOPS HIGH PERFORMANCE COMPUTING CLUSTER

- | | | |
|-------------------------------------|---|--------------------------------------|
| 1. IFT No. | : | IISER/PUR/5790/15 |
| 2. DUE DATE | : | 20 th October 2016 [4 PM] |
| 3. DATE OF OPENING OF TECHNICAL BID | : | 21 st October 2016 [3 PM] |
| 4. DATE OF OPENING OF PRICE BID | : | Will be notified later. |
| 5. COST OF TENDER# | : | Rs. 500 + 5% VAT |
| 6. EMD [BID SECURITY] ** | : | Rs. 20,00,000/- |

Supply, Installation and Commissioning of a HIGH PERFORMANCE COMPUTING CLUSTER & the supporting DATA CENTER facility

Introduction

Indian Institute of Science Education and Research Thiruvananthapuram (IISER-TVM) is dedicated to scientific research and science education of international standards. The institute aims to provide high quality education in modern science, integrating it with outstanding research at the undergraduate level itself, and develop a spirit of research cutting across disciplines.

Through this tender, IISER-TVM is inviting proposals, in two-cover format, from reputed Original Equipment Manufacturers (OEM) or their dealers/distributors/agents (bidder) for the supply, installation, commissioning and handover as a turnkey work of a **HIGH PERFORMANCE COMPUTING (HPC) cluster** having a peak performance of **120 TERAFLIPS (TFLOPS) and the supporting DATA CENTER facility** for the institute at its permanent campus in Vithura, referred hereafter to as 'the site'.

In the following, **OEM** is defined to be an entity which manufactures compute and master nodes. The term '**HPL performance**' used below is defined to be TFLOPS of 64 bit floating point **High Performance Linpack (HPL) Benchmark** (<http://www.netlib.org/benchmark/hpl/>) performance obtained with **turbo-mode off**.

Part-A

A.1 Specification and Technical Details of the HPC Cluster

The proposed system should be based on x86 based architecture and have a total compute capability of 120 TFLOPS of peak theoretical performance, referred to as **Rpeak** from here onwards (the **Rpeak** should be calculated using the "Marked TDP frequency" in the processor specifications). Out of these 120 TFLOPS, 100 TFLOPS should be derived from CPU-only nodes and the rest 20 TFLOPS should be derived from EITHER 'Intel Xeon Phi Processor' nodes OR 'CPU-GPU Hybrid' nodes. The solution must be well designed so that the ratio **Rmax/Rpeak** (considering only the CPU-only nodes) is greater than **0.75**, where **Rmax** is the sustained HPL performance defined above, obtained using exactly the same ground rules as given in <http://www.top500.org/project/linpack/>. The system should have a storage environment of 500 TB capacity in a parallel file system with a performance of 5 GB/s write throughput performance.

IISER-TVM reserves the right to scale up or scale down the final purchase order in

terms of total TFLOPS requirement (of the CPU-only nodes) by up to 20%. However, all the bids will be evaluated for a system having the stated requirement of 120 TFLOPS of Rpeak. In the event the final size of the order is revised as mentioned above, the revised price will be arrived at by using the unit rates quoted for the necessary items as listed in the BOQ with proportionate changes in the price of lump-sum items.

Further technical details for various components are given below.

A.2 Processor specification

For all the Master Nodes/ Compute Nodes/ Hybrid CPU-GPU Nodes/ Redundant Nodes/OSS/MDS Nodes specified below, the options for the processor are given as **“Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)”**.

However, once a choice of processor number is made, it has to be same across all these nodes.

A.3 Master/Login/Resource Management Node

Quantity: Minimum Three

Components	Specifications
Processor	Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)
Memory	RAM 4 GB per core, DDR4 2133MHz
Chipset	Latest compatible Intel 600 series chipset
Hard Disk	4 × minimum 500 GB Enterprise Hard Disk SAS @ 10000 rpm
Power Supply	Redundant power supply
Form Factor	1U or 2U. One chassis should contain one node only.
Infiniband/ Gigabit/ LAN connectivities	As per requirement in “Section: A.9 Network/Interconnect”

- All nodes must have hot pluggable, redundant power supply and redundant fan units.
- Power cycling (Power on/off) compute nodes should be from master nodes.
- Operating System should be installed in RAID 1 using two Hard Disks.
- Job Scheduler & Resource Manager logs should be in another set of two Hard Disks with RAID 1.
- Two Master nodes should be in High Availability mode and one should be login node. Job scheduler, cluster management and monitoring tools should be available in failover mode.

A.4 CPU-only Compute Node

Quantity: Number of the CPU-only nodes should be such that it provides 100 TFLOPS total peak performance.

Components	Specification
Processor	Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)
Memory	4GB per core ECC RAM, DDR4 2133MHz
Chipset	Latest compatible Intel 600 series chipset
Hard Disk	Enterprise SATA @ 7200 rpm, minimum 500 GB capacity.
Power Supply	Redundant power supply
Form Factor	None specified.

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Infiniband/Gigabit/LAN connectivities	As per requirement in "Section: A.9 Network/Interconnect"
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- All nodes must have hot pluggable, redundant power supply and redundant fan units.
- Redundant power supply solution should be considered at chassis level with N+1 redundancy or higher.
- All services and file system of compute nodes have to come up automatically, upon booting them and after reinstalling from the master node.

A.5 Hybrid Node - Nodes with CPU+GPU

Quantity: The total number of Hybrid nodes should be such that they provides 20 TFLOPS of theoretical peak performance.

Components	Specification
Processor	Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)
GPU/Accelerator	NVIDIA Tesla K80 GPU
Memory	4GB per core ECC RAM, DDR4 2133MHz
Chipset	Latest compatible Intel 600 series chipset
Hard Disk	Enterprise SATA @ 7200 rpm, minimum 500 GB capacity
Power Supply	Redundant power supply
Form Factor	Unspecified.
Infiniband/Gigabit/LAN connectivities	As per requirement in "Section: A.9 Network/Interconnect"

- The interconnect architecture of the GPU cluster should be identical to that of the CPU cluster, since it is an x86 based solution.
- All nodes must have hot pluggable, redundant power supply and redundant fan units.
- The theoretical peak performance calculation should be done with turbo boost OFF.

Alternative:

'Intel Xeon Phi Processor' Nodes

Quantity: Number of the "Intel Xeon Phi Processor" nodes should be such that it provides 20 TFLOPS total peak performance.

Components	Specification
Processor	Intel® Xeon Phi™ Processor 7250 (16GB, 1.40 GHz, 68 core)
Memory	4GB per core ECC RAM, DDR4 2133MHz
Chipset	Latest compatible Intel 600 series chipset
Hard Disk	Enterprise SATA @ 7200 rpm, minimum 500 GB capacity.
Power Supply	Redundant power supply
Form Factor	None specified.
Infiniband/Gigabit/LAN connectivities	As per requirement in "Section: A.9 Network/Interconnect"

- The interconnect architecture for the "Intel Xeon Phi Processor" nodes should be identical to that of the CPU nodes.
- All nodes must have hot pluggable, redundant power supply and redundant fan units.

A.6 Node Redundancy (CPU-Only Compute Spare Nodes)

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Quantity: 2

Components	Specification
Processor	Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)
Memory	4GB per core ECC RAM, DDR4 2133MHz
Chipset	Latest compatible Intel 600 series chipset
Hard Disk	Enterprise SATA @ 7200 rpm, minimum 500 GB capacity.
Power Supply	Redundant power supply
Form Factor	None specified
Infiniband/ Gigabit/ LAN connectivities	As per requirement in "Section: A.9 Network/Interconnect"

a) These nodes must be present as part of the cluster and powered on always. Spare nodes should be installed with operating system and should be integrated with the network.

A.7MDS and OSS Nodes

Components	Specification
Processor	Intel Xeon E5-26xx v4 OR E5-46xx v4 (Minimum Clock Speed 2.5 GHz & Minimum 30M Cache)
Memory	4GB per core ECC RAM, DDR4 2133MHz
Chipset	Compatible Intel 600 series chipset
Hard Disk per node	SAS @ 10000 rpm, minimum 2 x 900 GB capacity, Enterprise Hard Disk with RAID 1
Power Supply	Redundant power supply, With HA (High Availability) and redundant hot pluggable fans.
Form Factor	None specified
Infiniband/Gigabit/LAN connectivities	As per requirement in "Section: A.9 Network/Interconnect"

A.8Storage

Components	Specification
Storage Requirement	500 TB usable capacity storage on SATA/NL-SAS or SAS with Hardware RAID 6 (8 + 2) storage array with a minimum of 5 GB/s write throughput performance. Read performance should not be less than write.
Storage configuration	<ol style="list-style-type: none"> 1. Parallel File system (PFS) – Intel sourced and OEM supported Luster. 2. The solution should be highly available and with no single point of failure, including I/O servers, Metadata servers, Storage array, HCA Cards and power supply. 3. MDT in RAID 10 and OST in RAID 6 (Hardware RAID). (8+2) configuration. 4. MDT in RAID 10 and OST in RAID 6 (Hardware RAID). (8+2) configuration. 5. Global Hot Spare Disks: Disks amounting to 5% of total capacity of Enterprise SATA/NL-SAS or SAS provided as Global Hot spare (i.e. Global Hot Spare for every 2 LUN in RAID 6). 6. Storage Throughput – Minimum 5GB/s write speed from compute nodes. 7. OST should be in separate storage enclosure/s, which is/are

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	<p>connected to the OSS Server.</p> <p>8. MDT Hard Disk should be on SAS 10000 rpm or higher.</p> <p>9. Storage nodes & Management nodes should be connected with KVM switch and display.</p>
Disks Type	2TB or higher capacity 7.2K RPM or higher Enterprise SATA/ NL - SAS or SAS disks.
Benchmarks	<p>1. Open-source IOR/IO Zone benchmarks running on compute nodes with 1MB block size and file size double than total storage cache and I/O node memory.</p> <p>2. Storage performance should be measured from client (compute node) using IOR benchmark for 5 GB/s write throughput.</p>
Connectivity	Infiniband/Fibre connectivity between Storage servers to Storage enclosures with Redundant Connects & Links.
IO Nodes	<p>1. MDT should be mounted only with MDS server.</p> <p>2. OST should be mounted only with OSS servers.</p> <p>3. For MDT Failover, MDS Nodes should be configured with active/passive pair.</p> <p>4. For OST Failover, OSS Nodes should be configured with active/active pair.</p> <p>5. High Availability should be automated.</p> <p>6. Luster Failover and MMP (Multiple Mount Protection) should be configured.</p> <p>File system should not go down, even if one of the MDS or OSS nodes fails. Mounting and unmounting of the file system should happen without error.</p>

A.9 Network / Interconnect

Components	Specification
Infiniband fabric interconnect	<p>1. FDR (56Gb/s) infiniband (IB), Chassis switch with redundant power supply and redundant fan, HCA cards, cables, etc.</p> <p>2. The solution should have fully non-blocking interconnect fabric FDR topology using a single chassis switch.</p> <p>3. Management modules in IB switch should be redundant.</p>
Management switch (Gigabit LAN switch)	<p>a) Master /Head /Login node has to have 10 Gbps NIC for LAN connectivity.</p> <p>b) All nodes to be connected by Gigabit network for administrative works.</p>

a) All Network/Interconnect cablings must be structured and adhere to **ANSI/TIA - 568** standard.

A.10 Software

Components	Specification
Operating System	Linux or Unix based (Can be open source, but Enterprise version)
File System	OEM supported Luster
Job Scheduler	Can be open source
Resource Manager	Can be open source
Compilers	Intel Parallel Studio XE 2016 (Cluster Edition for Fortran and C/C++) - Floating Academic License 5 seats.
Other Open source software	GNU C/C++/Fortran compilers, OpenMP, MPI

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packages to be installed	(OpenMPI, MPICH), Python, Numpy, SciPy, IPython, Perl, Vim, Gvim, Emacs, Gnuplot, Grace
Software repository	A local mirror for software repository appropriate for the OS (for example, 'yum' repository for CentOS) should be setup for easy update of packages later across the nodes.
Firmware	All hardware should be installed with recent stable version of firmware.

- a) All these softwares should be configured with dynamic module environment.
- b) User quota and group quota should be configurable.
- c) All specified and required software products for the solution must be clearly listed with mode of licensing used and number of licenses required including the period of validity and any maintenance or upgrade applicable.
- d) Restrictions on software usage, if any, should also be indicated.
- e) **PERPETUAL LICENSE** is required for all the commercial softwares.

A.11 Software configuration & Documentation

Components	Specification
Cluster Management	<ol style="list-style-type: none"> 1. User account management from master node. 2. Monitoring tool Nagios or better, integrated with Environment values, Load, Resource status, syslog status, system environment status, Hard Disk usage status and hardware configuration. 3. PDSH, Generating Host Keys for users and PDCP should be configured. 4. Users' home directory should be in file system with quota enabled 5. Reimaging new nodes (CPU/GPU) from master nodes. 6. Integration of all software components so as to make the complete HPC cluster system fully functional and usable (e.g., integration of the scheduler with MPI, any license managers, etc.).
Job management	<ol style="list-style-type: none"> 1. Jobs can be submitted from master/slave/login nodes. 2. Jobs have to be scheduled based on Fair share calculation (i.e., Historical usage of CPU and/or GPU). 3. CPU/GPU enabled scheduling with checkpoint and restart. 4. Job scheduler configuration including new/delete/disable queues. 5. Dynamic Resource Management and Resource balancing. 6. Policy based resource allocation. 7. Configure job scheduler so that it is integrated with all installed MPI/Compiler/Application combinations. 8. Configure job scheduler for script less (short command line) submission of jobs. 9. Modules support for maintaining multiple version of software's. 10. Job status monitoring, Job history 11. Usage accounting & reporting with total utilization of resource. 12. Check runaway process before entering new jobs. 13. Restricting user login to compute nodes.
Documentation	<ol style="list-style-type: none"> 1. User Creation/Deletion/Modification. 2. Bringing up and shutting down the cluster. 3. Disk status monitoring of Master/IO nodes and storage enclosure. 4. Basic troubleshooting for storage and job scheduler. 5. Step by step installation guide for node configuration from scratch.

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A.12 Applications that will be run

GAUSSIAN, QUANTUM ESPRESSO, QUANTUM MONTE CARLO, GENOME SEQUENCE ANALYSIS AND ASSEMBLY among others.

A.13 Services

1. A service engineer from the vendor/bidder side is required to be be stationed at the site for a period of one year.
2. Training for general system administration with documentation including tasks such as user/node management, installation/upgrade, queuing system management and file system management.
3. Technical support for administration/maintenance (both software and hardware levels) of HPC. Vendor will be responsible to protect data during any upgrades of firmware/OS.
4. The vendor must submit the name of the service engineers employed by them who are competent to service the HPC installation along with their contact details in India. Working knowledge of basic HPC setup viz. Job firing, Cluster setup etc., need to be provided to IISER TVM's HPC administrator team.

A.14 Power consumption checklist

Sl No	Component	Maximum Power Consumption per unit (in kW)	Total Power Consumption (Quantity x Power per unit) in kW
1	CPU only compute nodes		
2	Master nodes		
3	Hybrid/Phi nodes		
4	Infiniband switch		
5	MDS nodes		
6	OSS nodes		
7	Gigabit Switch		
8	KVM Switch & Display		
9	Any other Active devices		
Grand Total			

A.15 User acceptance checklist

All the below test results should be demonstrated on live & document (screen shot) are to be produced before handover the HPC.

Sl No	Test Item	Complied
1.	Rpeak is not less than 120 TFLOPS	
2.	The Rmax/Rpeak is greater than 0.75	
3.	Storage high availability test on 100% load of compute node	
4.	High Availability test with anyone MDS down and anyone or more OSS down.	
5.	File system quota test (soft limit and hard limit)	
6.	Documentations (installation/configuration/serial numbers)	
7.	While bringing up compute nodes all services and file system should come up automatically.	
8.	Installing Operating system for compute node (CPU/GPU) from master node. (Assigning hostname, IP address and installing monitoring tools should be automated).	
9.	If any (Master or slave) server goes down, job should not	

Vijayakumar

	come out.	
10.	Jobs can be submitted from Master/Slave nodes.	
11.	Suspend and resume a job	
12.	RAID 6 Rebuild time for your solution (in case of failure)	
13.	RAID 1 test for Master /IO nodes	
14.	Configure job scheduler for script less (short command line) submission of jobs.	

NOTE: The above tests should be repeated after 30 days without rebooting the cluster, in presence of the Bidder/OEM and IISER-TVM team. Post-30 days performance must be demonstrated to be the same as at the time of installation. IISER-TVM team can insist to do the tests by themselves in presence of the Bidder/OEM.

A.16 Checklist

If you can provide more information/s or drawings explaining your solutions, please provide it as separate items and label it with index

Sl. No.	Description	Information
1.	Server Rack & Accessories Model and part number	
2.	Number of Master/login/management nodes	
3.	Master/login/management node model	
4.	Master/login/management node HDD model	
5.	Number of Compute nodes	
6.	Compute node model & Chassis model	
7.	Compute node HDD model	
8.	Number of Hybrid nodes	
9.	Hybrid node model & Chassis model	
10.	Hybrid node HDD model	
11.	Spare node model & Chassis model	
12.	Spare node HDD model	
13.	Infiniband chassis switch model	
14.	Maximum number of ports in Infiniband Switch	
15.	How many ports are populated	
16.	RAM Model number	
17.	Number of MDS	
18.	Number of OSS	
19.	MDS and OSS nodes model number	
20.	MDS and OSS nodes HDD model	
21.	Storage Enclosures HDD Make, Model & Capacity	
22.	Number of Hard Disk and Usable capacity of your solution	
23.	Storage throughput achievable from your solution	
24.	Connectivity between storage enclosure and storage servers (Infiniband / Fibre)	
25.	Parallel File system (open source / commercial) (name and version should be mentioned)	
26.	Job Scheduler (open source / commercial) (name and version should be mentioned)	
27.	Resource Manager (open source/commercial) (name and version should be mentioned)	
28.	Linux Operating system (open source / commercial)	

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	(name and version should be mentioned)	
29.	No. of ports in IB switch	
30.	No. of ports populated in IB switch	
31.	Total Rack space used for your solution (including Compute node, Master node, Storage, Interconnect, etc.)	
32.	Rack layout plan attached (Yes/No)	
33.	Power and cooling calculation attached (Yes/No)	
34.	Disk I/O Calculation and Storage sizing attached (Yes/No)	
35.	Layout diagram for I/O server to Storage enclosure connectivity and bandwidth calculation attached (Yes/No)	
36.	Layout diagram for Cluster to I/O server connectivity and bandwidth calculation attached (Yes/No)	
37.	Disk I/O Calculation and Storage sizing attached (Yes/No)	
38.	Layout diagram for I/O server to Storage enclosure connectivity and bandwidth calculations attached. (Yes/No)	
39.	Layout diagram for Cluster to I/O server connectivity and bandwidth calculations attached (Yes/No)	
40.	Mention the Interconnect used between I/O server and Storage controller.	
41.	Mention the Disk Controller and Enclosure information.	
42.	Mention the size of Disk controller's cache memory.	
43.	Nu Number of Storage interfaces used and mention the bandwidth of each interface.	
44.	Technical compliance sheet attached (Yes/No)	

Part-B

B.1 Specification and Technical Details of the DATA CENTER Facility

The HPC solution is to be housed in a custom built, state of the art data center housed in a lab/room of approximately 700 square feet area in the permanent campus of the institute. The room dimensions are 8m by 5m with a clear ceiling height (excluding false ceiling) of 4.2m. A bare room with power and water connections will be provided in a location suitable for housing chillers, external units etc. in close proximity (within 10 meters from the nearest external wall of the room). Design, construction and maintenance (AMC) of the data center for housing the HPC solution along with additional servers of the institute, as described in the following, is to be done by the HPC vendor. Broad requirements of the data center are listed below. Additional requirements specific to the HPC solution proposed are to be taken care of by the vendor.

B.2 Racks & Cooling

1. Sufficient 42U server racks with glass front door, easy rear access and design suitable for high density "in-row" cooling to house the entire HPC solution should be provided for with the number of racks determined by the details of the solution provided and designed keeping in mind the dimensions of the data center room. In addition two extra standard 42U server racks of the same make as that used for the HPC are to be provided for housing additional servers owned by the institute. The HPC racks to have sufficient IP based metered power distribution units as per the HPC

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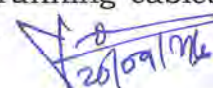
- solution while the additional racks should have two IP based metered 3 phase power distribution units each unit having 24 Nos of C13 and 6 Nos of C19 sockets with 32A Current Rating. The racks may be manufactured by the OEM for the HPC itself or chosen from the following approved makes: Rittal/Eaton/Great Lakes/APC/Emerson/Liebert/Kendall-Howard.
2. High density "in-row" cooling system to be provided to the HPC and the two additional racks/cabinets. The heat load of the additional cabinets is to be taken as 35kW each in addition to the heat load of the entire HPC solution. At least 10% extra cooling capacity to be built into the solution provided. The in-row cooling system has to be modular in nature with adaptable cooling output placed in side cooling units housing the heat exchangers etc integrated with rows of racks as required allowing for future expansion as needed. The in-row cooling system should be supplied from one of the following approved makes: APC-Schneider/Emerson-Liebert/Rittal.
 3. External air or water cooled chillers with N+1 redundancy as required by the in-row cooling system are also to be provided from reputed manufacturers. External power with DG power backup will be provided at the chiller location. Since the power backup for the chillers will be the generator and after shutdown there would be a time lag before the chillers come on, there should be sufficient buffer tanks for the cooling fluid to tide over the brief (around 5 minutes) interruptions that may be there. All other piping, insulation, pumps, exhaust etc. will be in the scope of the vendor. The chillers should be closely integrated with the cooling system allowing for IP based monitoring, automatic shutdown of additional units as per cooling requirements etc.
 4. Comfort A/Cs of sufficient capacity must be provided for the UPS room augmenting A/Cs that may be available at the installation site.

B.3 UPS & Power Supply

1. Sufficient UPS backup for the HPC solution plus essential parts of the cooling system including pumps, fans, circulations etc (except chiller units) plus 40 KVA capacity for the additional racks with battery backup designed for 30 minutes backup time is to be provided. UPS units can be either rack mounted or stand alone with the design and partitioning scheme of the room reflecting the choice of UPS type. The UPS units provided should be modular with high power density and a highly scalable architecture conforming to relevant national and international codes. UPS units are to be chosen from the following approved makes: APC/Emerson-Liebert/Socomec/ABB/Delta
 - a. UPS Power Factor must be at least 0.9.
 - b. UPS Noise must be better than 65 dB.
 - c. Batteries must come with 3 year warranty, SMF (sealed, maintenance free).
2. Electrical panels and associated wiring that are to be erected for supply of power to the UPS, cooling etc are to be done by the vendor.

B.4 Raised Floor

1. The data center area should be provided with a suitable raised floor with all steel framework and suitable fire retardant paneling conforming to standard data center requirements with space for running cables, anchor points of the racks, cooling systems etc. as required.

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2. Final acceptance of the raised floor design is subject to the approval of the office of the project engineer, IISER TVM with respect to its structural stability and safety.

B.5 Safety, Monitoring etc

1. Sufficient sensors for measuring the temperature, humidity etc. in the contained and cooled areas of the server racks should be provided.
2. Emergency automatic rear door opening kit in case of cooling failure/high temperature alarm must be provided.
3. Rack based active fire suppression system including detection system, smoke extraction and extinguisher unit. The extinguisher should be be Novec 1230 based and the extinguishing process should begin automatically when the main fire alarm is triggered.
4. CCTV monitoring and access control to the racks and server room should be provided.
5. All parameters including sensor readings, cooling system status, node status, physical state etc should be monitored and controlled by a management software which allows for comprehensive logging, remote monitoring, dashboard views etc.

Part-C

C.1 Warranties

1. Warranty services for the system supplied by the successful bidder should be valid for a period of 3 years from the date of acceptance of the equipment. Warranty service charges have to be explicitly mentioned as a separate line item in the Commercial Bid.
2. During the warranty period, the bidder shall be fully responsible for the manufacturer's warranty in respect of proper design, quality and workmanship of all the systems supplied.
3. During the warranty period, the bidder shall attend to all the hardware problems on site and shall replace the defective parts at no extra cost to the purchaser.
4. During the warranty period, the bidder shall attend to all failures relating to software installation, configuration, management and performance. Periodic maintenance with respect to software upgrades, updates, and patches, as well as preventive maintenance, are the responsibilities of the bidder.
5. During the warranty period, the preventive maintenance and repairs of the data center components supplied by the bidder are the responsibilities of the bidder.
6. The bidder should also clearly indicate post-warranty comprehensive AMC cost (for both the HPC cluster & the data center infrastructure) including taxes for a period of **another 3 years**, on an annual basis, in the Commercial bid.
7. Faulty parts should be replaced within 48 hours of logging a call.
8. Failure to meet the above requirement will result in extension of the warranty services by 3 days for delay of each day during the warranty period.

C.2 General Terms & Conditions

1. Any item not specifically mentioned in the specification but is required for successful implementation of the HPC Cluster & Data Center solution (in the opinion of the vendor) must be brought to our notice and quoted accordingly.
2. At the time of installation, if it is found that some additional hardware or software items are required to meet the operational requirement of the configuration, but not included in the vendor's original list of deliverables, the

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- vendor shall supply such items to ensure the completeness of the configuration at no extra cost.
3. Delivery period will be **8 weeks** from the date of purchase order. Once delivered to onsite, the installation, commissioning and acceptance testing period will be within **4 weeks** from the date of delivery of equipment.
 4. The vendor immediately after the award of the work shall prepare a detailed plan of installation as proposed to be followed by placement of the equipment, etc.
 5. The installation should be done by certified and trained engineers for HPCC stack (e.g. Parallel file system, Infiniband etc.) followed by comprehensive user training.
 6. IISER TVM team will check all the softwares which we will be used and will do benchmarking and all other tests based on the required input files in Parallel File System.
 7. Installation and integration of all supplied hardware and software shall be done by the vendor. The vendor shall install and configure all required hardware and software suites, including but not limited to racking and stacking, Cluster networking, Configuring all nodes, Execution and submission of jobs, Installation of compilers (with flags for optimization) and applications, Configuration of environment variables and license utility configuration.
 8. Entire installation should be done at the proposed site only. Remote control of network will not be given during installation.
 9. All the required CAT6 Patch cables should be branded (ISO/IEC 11801) and it should be molded cables. It should withstand the heat produced at the back of servers.
 10. Give all model numbers of master nodes, compute nodes, hybrid nodes, storage nodes (MDS and OSS), Infiniband chassis switch model, GPU/Accelerator card details, maximum number of port in IB switch and how many ports populated.
 11. Provide case logging procedure for both hardware and software failure.
 12. OEM is responsible for all performance benchmarks and the quote should contain an undertaking certifying the same from the OEM.

Part-D

D.1 Bidders' Eligibility Criteria

Sl No	Eligibility Criteria	Mandatory documentary evidence to be submitted
1	The OEM should have had a presence in the TOP500 Supercomputer list (http://www.top500.org) continuously in all the lists of the years 2014, 2015 and 2016.	Pages from the Top500 supercomputer lists showing the presence of the OEM.
2	The OEM should have had at least one entry in the Top Supercomputers-India list (http://topsupercomputers-india.iisc.ernet.in) maintained by SERC, IISc, Bangalore between June 2014 (the twelfth list) up to June 2016 (the sixteenth list).	Pages from the Top Supercomputers-India list showing the presence of the OEM.
3	The OEM/bidder should have installed at least one supercomputer of 7 TFLOPS (Rpeak) capability (contribution from CPU-only nodes) in India. The same should have been successfully supported (post-installation) at least for a period of one year. Provide a certificate from the customer to this effect.	Certificates from existing Indian customers mentioning their full address details.

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4	The OEM/bidder should have installed at least one supercomputer in India with Infiniband (or equivalent or better) interconnect, with PFS and end-to-end sustained I/O throughput of at least 2 Gbps.	Certificates from existing Indian customers mentioning their full address details.
5	The proposal can be submitted either by the OEM themselves or through an Authorised Partner. In case of the latter, a certificate of authorisation by the OEM needs to be provided. OEM should not participate in the tendering process with more than one Authorised Partner.	A certificate of authorisation when applicable.
6	The bidder should have proven record of having demonstrated their competence and capability, to deliver all the services expected during the contract period.	Any documentation which demonstrates the bidder's competence and capability. OR An undertaking from the OEM that the installation, testing, commissioning and servicing will be done directly by the OEM.

D.2 Benchmark Performance Criteria

1. The proposed solution has to deliver have a total compute capability of 120 TFLOPS of peak theoretical performance out of these 120 TFLOPS, 100 TFLOPS should be derived from CPU-only nodes and the rest 20 TFLOPS should be derived from EITHER 'Intel Xeon Phi Processor' nodes OR 'CPU-GPU Hybrid' nodes. The solution has to deliver a sustained **R_{max}** of at least '**0.75 x R_{peak}**' (for the CPU-only nodes). Documentary proof to the effect that the proposed solution will meet this criterion has to be submitted along with the bid.
2. In addition, performance for three programs mentioned below in the following Table has to be submitted as best time achieved. The program-1 and program-2 must be run on an HPC (CPU only) cluster having a R_{peak} of 10 TFLOPS. The program-3 must be run on an HPC (CPU-GPU) cluster having a R_{peak} of 10 TFLOPS. These benchmarks should be run on a system similar to the one proposed having same architecture/chip series and similar software stacks. In all cases, the execution times reported should be based on actual runs. No performance prediction of any kind will be allowed. Non-submission of benchmark results with the required details or results on systems that are not the same as the proposed solutions will result in disqualification of the proposal.
3. If the bidder has access only to a system which has higher performance than that mentioned above, then the bidder is expected to run the benchmarks on a subset of the system whose performance does not exceed the limits mentioned (10 TFLOPS for CPU cluster and 10 TFLOPS for GPU+CPU cluster). Also, the benchmark has to use a machine topology that exercises all the cores in each of the nodes in the subset.
4. If a bidder does not have access to the exact system that is proposed, the bidder can run it on a system which has a processor which is one version older and/or with interconnect architecture which has lower performance than the proposed solution. Similarly, if a bidder has access only to a system with a lower performance, the bidder is permitted to run the benchmarks on such a system and report the execution time, provided the system is within 30% of the stipulated performance (10 TFLOPS for CPU cluster and 10 TFLOPS for GPU+CPU cluster). The achieved execution times on these

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- machines (without any performance projection) will be taken and compared with the results submitted by other bidders. In other words no compensation/allowance will be given for running the benchmark on a lower performing system.
5. Successfully completed execution run results along-with detailed job script, output files, job logs, machine topology used for the run and any other relevant files must be included in the submission. All explanations including optimizations, environment variables and machine topology information for the run must necessarily be included with the submission.
 6. The benchmarks must be run on systems hosted in their labs or on systems delivered by the OEM. Complete details of the system, including detailed system specifications along with execution dates, userid details and email-ids of the site/system administrators of the data center are to be provided. IISER-TVM reserves the right to contact the concerned person for seeking additional information on the execution runs submitted as part of the response. Further, the technical committee may request for benchmarks rerun, whenever required (within a period of 7 days from the date of request for rerun), under the supervision of nominated persons.

D.2.1 Table: Benchmark programs

Sl No	Benchmark Description
1	<p>SCALAPACK Matrix Inversion using the routine 'PDGETRI.F' (http://www.netlib.org/scalapack/explore-html/d3/df3/pdgetri_8f_source.html). The matrix should be a randomly generated general double precision square matrix of order n=1,00,000.</p> <p>It should be run on a CPU cluster with 10 TFLOPS of Rpeak.</p>
2	<p>Quantum Espresso. The program "Medium-size benchmark for pw.x" described in http://qeforge.org/gf/project/q-e/frs/?action=FrsReleaseView&release_id=44 should be run on a CPU cluster with 10 TFLOPS of Rpeak. The 'total WALL Time spent' in the output file will be considered for evaluation purpose.</p>
3.	<p>Quantum Espresso. The program "Medium-size benchmark for pw.x" described in http://qeforge.org/gf/project/q-e/frs/?action=FrsReleaseView&release_id=44 should be run on a CPU+GPU cluster with 10 TFLOPS of Rpeak. The binary 'pw.x' should be built with GPU support enabled. Patches for GPU enabled versions are available at https://github.com/fspiga/QE-GPU The 'total WALL Time spent' in the output file will be considered for evaluation purpose.</p>

- a) Satisfactory completion of benchmarks as specified above is a mandatory requirement.

Part-E

E.1 Submission of Proposal

The proposal should be submitted in two separate covers, one containing technical specification and the other one the price details. The vendor name, the nature of the envelope (either technical specifications or price bid) must be clearly mentioned on top of each of the envelope. The sealed proposals must be addressed to The Deputy Registrar (Purchase and Stores), IISER Thiruvananthapuram. The proposals should be submitted at the office of The

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Deputy Registrar (Purchase and Stores), IISER Thiruvananthapuram.

E.2 Evaluation of Technical Bids

1. The bids received from the bidders will be evaluated by a Technical Committee constituted by the Institute.
2. The evaluation process to identify the successful bidder is based on a combined techno-commercial evaluation, details of which are mentioned subsequently in this document.
3. In the first stage only the technical bids are evaluated. The mandatory conditions stipulated elsewhere in the document must be adhered to and failure of the same will result in disqualification of the bid.
4. The technical criteria set out for evaluation of the technical offer is given below.

Description	Max. Score	Min. Qualifying Score
Bidder's Eligibility Criteria (of Bidder or OEM)	18	12
Benchmark Performance Score	30	15
Solution Superiority	10	5
Infrastructure Requirement & Operational Cost	20	12
No. of HPC Systems by the bidder/OEM with 500 TFLOPS or higher	20	12
Overall Score	98	65

The technical scores for the each of the above will be given based on the detailed explanation given below:

1. Bidder's Eligibility Criteria:

Supporting documents: As specified in the "Section D.1: Bidder's Eligibility Criteria"

Scoring Scheme: Meeting criteria (1) to (4) will entail 3 mark each (total 12 marks). If the bid is proposed by the OEM itself, then the certificate of authorisation is not necessary, and criteria (5) will be considered as satisfied. Additionally, a maximum of 6 marks will be given for Item (6).

2. Benchmark Performance Criteria

Supporting Documents: As specified in the Benchmark Performance Criteria section.

Scoring Scheme: Aggregate Normalized benchmark execution time factor (calculated as described below) will be used for awarding scores in this category. Bidder with an aggregate normalized benchmark execution time factor of 2 will get 15 marks. Bidder scoring an aggregate normalized execution time higher than 2 will be disqualified. For a bidder having an aggregate normalized execution time X (between 1 and 2), the allocated marks will be calculated as $(30 - (X-1)*15)$.

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Calculation of Benchmark Performance Score: All benchmarks are given equal weightage. Performance (**WALL TIME**) of a benchmark given by a bidder is normalized with respect to the lowest execution time for that benchmark across all bidders. The aggregate normalized execution time factor of a bidder is the geometric mean of the normalized execution time factors of the three benchmarks (sl no. 1 to 3) performances.

3. Solution Superiority:

Supporting Documents: Bidder has to clearly indicate the superiority of the proposed solution (hardware, software, integration, etc.)

Scoring Scheme: Solutions meeting the technical requirements of the tender will be given 5 marks. Additional marks will be given based on the superiority of the proposed solution as evaluated by the technical committee.

4. Infrastructure Requirement Criteria

Supporting Documents: Necessary documents to support datacenter requirement (UPS Power and Cooling).

Scoring Scheme: For the purpose of awarding score for this category, we define Rationalized Operational Cost (ROC) as $PUE * UPS \text{ power required for the proposed system in KVA}$. A fixed PUE of 1.25 will be used across all bidders as for the evaluation of this item is concerned. The bidder with minimum ROC would be given 20 marks. Solutions having an ROC greater than 1.5x of the minimum ROC will be disqualified. For a bidder having an ROC which is X times the minimum ROC (X is between 1.0 to 1.5), the marks will be awarded as $(20 - (X-1)*16)$.

5. No. of Top500 Systems

Supporting Documents: Top 500 listing and/or supplementary documents (purchase order) for such installation.

Scoring Scheme: If the bidder/OEM has 1 (one) system with HPL performance of 100 TFLOPS or higher in the 44th Top500 system list, 12 marks will be allocated. For each additional system, 0.4 marks will be given, subject to a maximum of 8 additional marks.

6. Only those bidders who score an aggregate of 70 or higher will be considered as technically qualified. Further, a bidder must score the minimum score indicated for each item in order to be qualified. The decision of the technical committee is final and binding on all the bidders.

7. The technical scores of the qualified bidders will NOT be used in the subsequent techno-commercial evaluation.

E.3 Evaluation of Commercial Bids

1. Commercial bids shall be opened for the technically qualified bidders after the technical evaluation. The Institute will communicate the date and time of opening of the commercial bids to the qualified bidders.
2. Commercial bids will be opened on the said date and time, irrespective of

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the presence of the bidder / authorized representative.

3. Commercial bids which are not in compliance with the specifications mentioned in the technical bid and other terms and conditions set out in the tender will be rejected.

E.4 Format for Commercial Bids

Corresponding to each Part in the technical bid there should be a pricing referring to the Part name in the technical bid and mentioning quantity, unit price and total price. If there are any other charges, they should be also added at the end. All pages have to be serially numbered. References if any to technical bid should be provided along with the exact location (page number, etc). For the Bill of Quantities (BOQ) in the commercial bids, you are required to use the format given below. The bidders may add description of the items as appropriate.

The technical specifications listed in the BoQ should be identical to the specifications given in the technical bid. If there are differences, the specifications in the technical bid take precedence. Additionally, if the differences are substantial, the evaluation committee may reject the commercial offer on the basis of it being a conditional tender.

E.5 Bill of Quantities (BOQ)

Part No.	Description	Unit Price	Qty	Total Price
Sec A.3: Master Node				
Sec A.4: CPU only compute nodes				
Sec A.5: CPU-GPU Hybrid nodes				
Sec A.6: CPU-only spare compute nodes				
Sec A.7: MDS and OSS Nodes				
Sec A.8: Storage				

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Sec A.9: Network / Interconnect				
	Infiniband switch			
	Infiniband cables			
	Ethernet swith			
	Ethernet Cables			
Sec A.10: Software				
	Operating system			
	Luster file system			
	Job scheduler			
	Resource manager			
	Intel Parallel Studio XE 2016 (Clutser Edition for Fortran and C++) - Floating Academic License 5 seats.			
Total amount for above parts				
Sec A.13: Services				
Installation Charge				
Data Center Infrastructure Total Cost				
Taxes, Shipping Charge, Handling Charge				
Grand Total				

E.6 Other Terms & Conditions regarding the Commercial Bid

Payment terms: Letter of Credit. 90% against delivery, installation and 'Acceptance Test Check'. 10% after 'Performance Acceptance Test Check', after 30 days - without rebooting the cluster in presence of the bidder/OEM and IISER-TVM team.

The OEM shall give unqualified and unconditional guarantee that when the equipment / material supplied by them is installed and commissioned at site and it shall achieve the desired objective. In the event of performance of the system when installed does not comply with the end objective or with the specifications, OEM shall provide further inputs to enable IISER-TVM to realize the end objectives with full compliance of the specifications contained in these documents. No additional payment will be made to the bidder for supply of any additional goods and service required in this regard.

Security Deposit: The successful bidder should submit a Security Deposit / Performance Security of 7% of the total order value within 2 weeks from the date of purchase order, valid for the period till the 90% payment is released by IISER-TVM.

Performance Bank Guarantee for 10% P.O value should be submitted before encashing the 10% of L/C payment, valid during warranty period, i.e., 3 years from the date of acceptance.

Shipping Terms: Price should be inclusive of 'FREE DELIVERY' at the site of IISER-TVM, Vithura Campus, Thiruvananthapuram for local supplies. For foreign components mention the break-up of the value of Ex works / FCA / CIP clearly.

Excise Duty: IISER-TVM is exempted from paying excise duty, under 10/97 notification.

Custom Duty: Please note that IISER-TVM is eligible for customs duty exemption under 51/96 notification and will issue a certificate to this effect.

The prices can be quoted either in foreign denominations or in INR. Exchange rates as on last date of submission of tender document will be taken into account. Provide itemized pricing for each item. Please specify the statutory taxes and duties, if any.

Part-F

F.1 Important Dates

Date of release of BoQ	N.A
Queries, if any, may be sent to purchase@iisertvm.ac.in	
Pre-bid meeting (if any)	Will be intimated later @ www.iisertvm.ac.in
Last date for submission of bids (Two-bid system)	As per page 4
Opening of technical bids	
EMD	Rs. 20,00,000/- (Twenty Lakhs) drawn in favour of IISER Thiruvananthapuram in form of DD or Bank Guarantee as stipulated in GFR2005.

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TERMS&CONDITIONS

- 1) **Bid with IFT No. & Item Name shall be quoted over cover**
- 2) All the correspondence in this regard should be done in favour of Deputy Registrar (Purchase & Stores), Indian Institute of Science Education & Research Thiruvananthapuram, CET Campus, Engineering College P.O, Trivandrum – 695016.
- 3) Instructions to Bidders [Annexure I] and General Terms and Conditions of the Contract [Annexure II] shall be followed.
- 4) #Tender cost in the form of DD favouring **IISERTVM** shall be sent along with 'Technical bid'. [**REAR SIDE OF DD SHOULD BEAR TENDER NO. AND COMPANY NAME**]
- 5) **Bid Security [refundable without any interest] shall be as per clause 1.15 of Annexure I and shall also be sent along with Technical bid. In case the Bid security is provided by Bank Guarantee, specimen for the same is at Annexure IV.
- 6) **Clause 1.10[Bid Form] of Annexure I is not applicable for this Tender.**
- 7) **Tenders without Tender Cost, and Bid Security shall not be considered and summarily to be disqualified from participating tender.**
- 8) **Integrity Pact should be signed for Tender No.IISER/PUR/5790/15**
- 9) **Tender Opening:**
All tenders will be opened at Pratheeksha Building. Authorized representatives of the bidders may attend the Tender Opening only **with authorization letters and Valid Company ID Card**. Persons who come without Authorization letters will not be permitted to attend Tender Opening process.

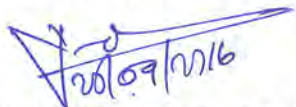
TWO – PART TENDER

PART I – TECHNICAL BID:

Consisting of all Technical details along with commercial terms and conditions. DD towards Tender Cost and Bid Security [EMD] signed shall be sent along with Technical bids, Clientele list and details of TWO major installations in India.

PART II – PRICE BID:

Showing item-wise prices for the items mentioned in the Technical Bid.
The technical bid and the Price bid should be in separate sealed and super scribed covers. Both these covers are to be put in a sealed bigger cover super scribing Tender No and due date. Technical bids will be opened first and after evaluation, price bids of only the shortlisted bidders will be opened.


**DEPUTY REGISTRAR
[IN-CHARGE]
[PURCHASE & STORES]
IISERTVM**

INSTRUCTIONS TO BIDDERS

1.1. ELIGIBLE BIDDERS.

- 1.1.1 This Invitation for Bids is open to all suppliers.
- 1.1.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.

1.2. COST OF BIDDING

- 1.2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

1.3. FRAUD AND CORRUPTION:

- 1.3.1 The purchaser requires that the bidders/suppliers and contractors observe the highest standard of ethics during the procurement and execution of such contracts.
- 1.3.2 The purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;
The Bidding Documents

1.4. COST OF BIDDING DOCUMENTS

- 1.4.1 Interested eligible bidders may download the document from our Website. However the bid document cost to be paid during the submission of the bid.

1.5. CONTENT OF BIDDING DOCUMENTS

- 1.5.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents which should be read in conjunction.
- 1.5.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. **Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.**

1.6. CLARIFICATION OF BIDDING DOCUMENTS

- 1.6.1 A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing via fax/email. The Purchaser will respond in writing to any request for clarification, provided that such request is received not later than ten (10) days prior to the deadline for submission of bids. The Purchaser shall forward copies of its response to all those who have acquired the Bidding Documents directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under clause relating to amendment of Bidding documents and Clause relating to Deadline for Submission of Bids. The clarifications and amendments issued would also be hosted on the website of the purchaser for the benefit of the other prospective bidders.

1.7. AMENDMENT OF BIDDING DOCUMENTS

- 1.7.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.
- 1.7.2 All prospective bidders who have received the bidding documents will be notified of the amendment in writing or by e-mail and will be binding on them. The same would also be hosted on the website of the purchaser and all prospective bidders are expected to surf the website before submitting their bids to take cognizance of the amendments.
- 1.7.3 In order to allow prospective bidders reasonable time to take the amendment into account, while in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids and host the changes on the website of the purchaser.
- 1.7.4 In case of any amendment to the bid, it will be done at least 7 days before due date and will be published in website. Bidders are required to keep this in view before submission. Normally extension of due date will not be entertained. However in special cases if due date is extended, it will be notified under the same tender notice before 3 days of due date.

PREPARATION OF BIDS

1.8. LANGUAGE OF BID

- 1.8.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language only especially when the details are technical.
However of GOI makes it mandatory under Rajbhasha Abhniyam in that case views of Rajbhasha unit of IISER-TVM may be sought.
- 1.8.2 The Supplier shall bear all costs of translation, if any, to the English language and all risks of the accuracy of such translation, for documents provided by the Supplier.

1.9. DOCUMENTS COMPRISING THE BID

- 1.9.1 The bid prepared by the Bidder shall include:
- a) Bidder Information
 - b) Bid security as specified in the Invitation to Bids.
 - c) Service support details
 - d) Deviation Statement if any.

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- e) Performance Statement.
- f) Manufacturer's Authorization.
- g) Documentary evidence establishing that the bidder is eligible to bid and is qualified to perform the contract if its bid is accepted.
- h) Bid form.
- i) Documents establishing goods eligibility and conformity to bidding documents.
- j) Applicable Price Schedule Form.
- k) DGS&D Registration certificate in case the items under procurement falls under the restricted category of the current export-import policy of the Govt. of India.

1.10. BID FORM AND PRICE SCHEDULE

1.10.1 The bidder shall complete the Bid with the appropriate price schedule.

1.11. BID PRICES

1.11.1 The Bidder shall indicate on the appropriate price schedule, the unit prices and total bid prices of the goods it proposes to supply under the contract.

1.11.2 Prices indicated on the price-schedule form shall be entered separately in the following manner:

(A) FOR GOODS MANUFACTURED WITHIN INDIA

(i) The price of the goods quoted Ex-works including taxes already paid.

(ii) VAT and other taxes like excise duty etc [shall be shown extra] which will be payable on the goods if the contract is awarded.

a. The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price schedule.

b. The installation, commissioning and training charges including any incidental services, if any.

(B) FOR GOODS MANUFACTURED ABROAD

Bidders are required to show break-up of Ex-works [which should include packing and handling charges], FOB/FCA and CIF/CIP price in the quotation. IISERTVM has a mechanism for consolidation and customs clearance. The consolidators will be nominated for this purpose at the time of awarding the contract if desires so.

(i) The price of the goods, quoted on FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the price schedule.

(ii) The charges for insurance and transportation of the goods to the port/place of destination.

(iii) The agency commission charges should be shown, if any.

(iv) The installation, commissioning and training charges including any incidental services, if any

1.11.3 **The terms FOB, FCA, CIF, CIP etc shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.**

1.11.4 Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offer shall be rejected as incomplete.

1.11.5 The price quoted shall remain fixed during the contract period and shall not vary on any account

1.11.6 All lots and items must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.

1.11.7 **The purchases made by the purchaser for scientific purpose are exempt from excise duty under 10/97 notification and Custom Duty under notification 51/96.**

1.12. BID CURRENCIES

1.12.1 Prices shall be quoted in Indian Rupees for offers received for supply within India and in freely convertible foreign currency in case of offers received for supply from foreign countries.

1.13. DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATIONS

1.13.1 The bidder shall furnish, as part of its bid, documents establishing the bidders' eligibility to bid and its qualification to perform the contract if its bid is accepted.

1.13.2 The documentary evidence of the bidders qualification to perform the contract if the bid is accepted shall establish to the purchasers satisfaction that;

(a) The bidder meets the qualification criteria listed in bidding documents, if any.

(b) Bidder that doesn't manufacture the goods it offers to supply shall submit to Manufacturers' Authorization Form (MAF) to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and/or supply the goods.

(c) In case a bidder not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period.

1.13.3 Conditional tenders shall not be accepted

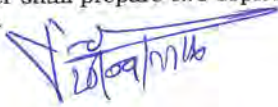
1.14. DOCUMENTS ESTABLISHING GOODS' ELIGIBILITY AND CONFORMITY TO BIDDING DOCUMENTS

1.14.1 To establish the goods' eligibility, the documentary evidence of the goods and services eligibility shall consist of a statement on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.

1.14.2 To establish the conformity of the goods and services to the specifications and schedule of requirements of the bidding document, the documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings and data, and shall consist of:

(a) A detailed description of the essential technical and performance characteristics of the goods;

(b) A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods during the warranty period following commencement of the use of the goods by the Purchaser in the Priced bid; and

- (c) An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 1.14.3 For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standards for workmanship, material and equipment, designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute these in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.
- 1.15. BID SECURITY**
- 1.15.1 The Bidder shall furnish, as part of its bid, a bid security (BS) for an amount as specified in the Invitation for Bids. In the case of foreign bidders, the BS shall be submitted either by the principal or by the Indian agent and in the case of indigenous bidders; the BS shall be submitted by the manufacturer or their specifically authorized dealer/bidder.
- 1.15.2 The bid security shall be in Indian Rupees for offers received for supply within India and denominated in the currency of the bid or in any freely convertible foreign exchange in the case of offers received for supplies from foreign countries in equivalent Indian Rupees. The bid security shall be in one of the following forms at the bidders' option:
(a) A bank guarantee issued by a Nationalized/Scheduled bank/Foreign Bank operating in India in the form provided in the bidding documents and valid for 45 days beyond the validity of the bid. In case a bidder desires to submit a BG issued from a foreign bank, then the same should be confirmed by a Nationalized/Scheduled Indian bank; or
(b) Fixed Deposit receipt pledged in favour of the IISER-TVM.
(c) A Banker's cheque or demand draft in favour of IISERTVM issued by any Nationalised/Scheduled Indian bank.
- 1.15.3 The bid security shall be payable promptly upon written demand by the purchaser in case the conditions listed in the ITB clause 15.11 are invoked.
- 1.15.4 The bid security should be submitted in its original form. Copies shall not be accepted.
- 1.15.5 While Bid security (EMD) is a requirement, the Director IISER-TVM may grant exemption of Bid security to some specific parties having sound credentials and are of national/international repute.
- 1.15.6 The bid security of unsuccessful bidder will be discharged /returned as promptly as possible positively within a period of 15 days after the expiration of the period of bid validity or placement of order whichever is later, without any interest.
- 1.15.7 The successful Bidder's bid security will be discharged upon the Bidder furnishing the performance security, without any interest. Alternatively, the BS could also be adjusted against PS, if it is paid through DD/BC.
- 1.15.8 **The firms registered with DGS&D, NSIC if any, are exempted from payment of bid security (BS) provided such registration includes the item they are offering which are manufactured by them and not for selling products manufactured by other companies.**
- 1.15.9 In case a bidder intimates at the time of tender opening in writing that the bid security is kept inside the financial bid, then in such cases, the technical bid of the party would be accepted provisionally till opening of the financial bids with which the party has attached the bid security.
- 1.15.10 The bid security may be forfeited:
(a) If a Bidder withdraws or amends or impairs or derogates its bid during the period of bid validity specified by the Bidder on the Bid Form; or
(b) **In case of a successful Bidder, if the Bidder fails to furnish order acceptance within 15 days of the order or fails to sign the contract and/or fails to furnish Performance Security within 21 days from the date of contract/ order.**
- 1.16. PERIOD OF VALIDITY OF BIDS**
- 1.16.1 Bids shall remain valid for minimum of 90 days after the date of bid opening prescribed by the Purchaser. **A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.**
- 1.16.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable, telex, fax or e-mail). The bid security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
- 1.16.3 Bid evaluation will be based on the bid prices without taking into consideration the above corrections.
- 1.17. FORMAT AND SIGNING OF BID**
- 1.17.1 The bids may be submitted in single envelop or in two parts as specified in the Invitation for Bids.
- 1.17.2 In case the bids are invited on single envelop basis, then the Bidder shall prepare two copies of the bid, clearly marking each "Original Bid" and "Copy Bid", as appropriate. In the event of any discrepancy between them, the original shall govern.
- 1.17.3 In case the bids are invited on two-bid system, the Bidder shall submit the bids in two separate parts. One part shall contain Technical bid comprising all documents listed under clause relating to Documents Comprising the Bid excepting bid form and price schedules. The other part shall contain the priced-bid comprising bid form and price schedules. The Bidder shall prepare two copies of the bid, clearly marking each "Original Bid" and "Copy Bid", as appropriate.
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- 1.17.4 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.

- 1.17.5 Any interlineations, erasures or overwriting shall be valid only if they are initialed by the persons or persons signing the bid.
- 1.18. **SUBMISSION, SEALING AND MARKING OF BIDS**
- 1.18.1 The bidders may submit their duly sealed bids generally by post or by hand.
- 1.18.2 In the case of bids invited on single envelop basis, the Bidders shall seal the original and each copy of the bid in separate inner envelopes, duly marking the envelopes as "original" and "copy". The envelopes shall then be sealed in an outer envelope.
- 1.18.3 In the case of bids invited on two part basis, the Bidder shall seal the un-priced commercial and technical bid comprising the documents as listed in ITB 1.9.1 excepting for h & j and the priced bid in two separate envelopes duly marked as "Technical bid" and "priced bid". Both the envelopes shall then be sealed in one outer envelope.
- 1.18.4 (a) The inner and outer envelopes shall be addressed to the Purchaser indicated.
(b) Bear the name and address of the bidder, Tender No., due date and a warning "Do not open before _____" to be completed with the time and date as specified in the invitation for bids.
- 1.18.5 **If the outer envelope is not sealed and marked as required above, the Purchaser will assume no responsibility for the bid's misplacement or premature opening. In such cases, bids received in open condition within the due date and time will be accepted at the risk of the bidder if the same is presented to the Stores & Purchase Officer before expiry of the due date and time of opening of the bids.**
- 1.18.6 Firms submitting bids in a single envelope against the requirement of two-bid system would be considered for further evaluation at the risk & responsibility of the bidder. However, the opened priced bid would be sealed immediately by the TOC without disclosing the price.
- 1.19. **DEADLINE FOR SUBMISSION OF BIDS**
- 1.19.1 Bids must be received by the Purchaser at the address specified in Invitation for bids not later than the time and date specified therein. **In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received up to the appointed time on the next working day.**
- 1.19.2 The Purchaser may, at its discretion, extend the deadline for submission of bids by amending the bid documents in accordance with Clause relating to Amendment of Bidding Documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.
- 1.20. **LATE BIDS**
- 1.20.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser will be rejected.
- 1.20.2 Such tenders shall be marked as late and not considered for further evaluation. They shall **not** be opened at all and be returned to the bidders in their original envelope without opening.
- 1.21. **WITHDRAWAL, SUBSTITUTION AND MODIFICATION OF BIDS**
- 1.21.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice in accordance with ITB Clause 18 duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB Sub- Clause 17.4 (except that no copies of the withdrawal notice are required). The corresponding substitution or modification of the bid must accompany the respective written notice.
All notices must be:
(a) submitted in accordance with ITB Clauses 17 and 18 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION;" and (b) Received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB Clause 19.
- 1.21.2 Bids requested to be withdrawn in accordance with ITB Sub-Clause 21.1 shall be returned unopened to the Bidders. No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form or any extension thereof.
Opening and Evaluation of Bids
- 1.22. **OPENING OF BIDS BY THE PURCHASER**
- 1.22.1 The Purchaser will open all bids one at a time in the presence of Bidders' authorized representatives who choose to attend, as per the schedule given in invitation for bids. The Bidders' representatives who are present shall sign the quotation opening sheet evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day. In two-part bidding, the financial bid shall be opened only after technical evaluation. 1.22.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked

- "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only envelopes that are opened and read out at Bid opening shall be considered further.
- 1.22.2 The bidders' names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bid(s). The contents of the bid forms and price schedules would however be announced only at the time of opening of Price-bids in the case of two-bid system.
- 1.22.2.1 Bids that are received late shall not be considered further for evaluation, irrespective of the circumstances.
- 1.22.2.2 ***Bidders interested in participating in the bid opening process, should depute their representatives along with an authority letter to be submitted to the purchaser at the time of bid opening.***
- 1.23. CONFIDENTIALITY**
- 1.23.1 Information relating to the examination, evaluation, comparison, and post qualification of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until publication of the Contract Award.
- 1.23.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the bids or contract award decisions may result in the rejection of its Bid.
- 1.24. CLARIFICATION OF BIDS**
- 1.24.1 To assist in the examination, evaluation, comparison and post qualification of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However, no negotiation shall be held except with the lowest bidder, at the discretion of the purchaser. Any clarification submitted by a bidder in respect to its bid which is not in response to a request by the purchaser shall not be considered.
- 1.25. CONVERSION TO SINGLE CURRENCY**
- 1.25.1 To facilitate evaluation and comparison, the Purchaser will convert all bid prices expressed in the amounts in various currencies in which the bid prices are payable to Indian Rupees at the selling exchange rate established by any bank in India on the date of bid opening in the case of single part bidding and the rates prevalent on the date of opening of the Priced bids in the case of two-part bidding. For this purpose, exchange rate notified in www.xe.com or www.rbi.org or any other website could also be used by the purchaser.
- 1.26. CONTACTING THE PURCHASER**
- 1.26.1 Subject to ITB Clause 1.24, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.
- 1.26.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.
- 1.27. POST QUALIFICATION**
- 1.27.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 13.
- 1.27.2 The determination will take into account the eligibility criteria listed in the bidding documents and will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.
- 1.27.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid.
- 1.28. PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS**
- The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders.
- 1.29. WARRANTY**
- 1.29.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 1.29.2 The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.
- 1.29.3 Unless otherwise specified, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 1.29.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 1.29.5 Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 1.29.6 If having been notified, the Supplier fails to remedy the defect within the reasonable period of time; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.
- 1.29.7 Goods requiring warranty replacements must be replaced on free of cost basis to the purchaser.

- 1.29.8 **Performance Guarantee:**
The successful bidder is required to submit a performance Guarantee of 10% of Purchase Order value valid during warranty period.

1.30 PENALTY CLAUSE

- 1.30.1 Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in contract of the delivered price of the delayed Goods or unperformed Services or contract value for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in contract. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC. Clause on Termination for Default. The SCC shall also indicate the basis for ascertaining the value on which the penalty shall be applicable

1.31 INSURANCE

- 1.31.1 Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in contract.
- 1.31.2 Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.
- 1.31.3 Where delivery is on FOB or FCA basis, insurance would be the responsibility of the purchaser.
- 1.31.4 With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

1.32 TRANSPORTATION

- 1.32.1 Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price.
- 1.32.2 Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.
- 1.32.3 In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

1.33 PACKING

- Should be as per standards prescribed for international trade and movement of the goods.

1.34 STANDARDS

The Goods supplied and services rendered under this Contract shall conform to the standards mentioned in the Technical Specifications and Schedule of Requirements, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

1.35 PERFORMANCE SECURITY


- 1.35.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security of 7% of Contract/ Purchase Order value in the amount specified in the Contract, valid till 60 days beyond the completion of contractual obligations.
- 1.35.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 1.35.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries.
- 1.35.4 In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer/bidder.
- 1.35.5 The Performance security shall be in one of the following forms:
- (a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/Scheduled bank located in India or a bank located abroad in the form provided in the bidding documents. Or,
 - (b) A Banker's cheque or Account Payee demand draft in favour of the purchaser. Or,
 - (c) A Fixed Deposit Receipt pledged in favour of the Purchaser.

1.36 DELIVERY SCHEDULE

Delivery schedule should be specified clearly.

1.37 PAYMENT TERMS

For Indigenous supplies payment will be made within 30 days from the date of supply, installation and commissioning. For Imported goods, the preferred payment mode of the Institute is Sight Draft /Net 30 days. If Letter of Credit is insisted by the vendors, the LC will be established for 100% of Purchase Order value out of which 90% will be paid against shipping evidence and 10% after installation and commissioning and on submission of Performance Bank Guarantee for 10% of Purchase Order value which should be valid during warranty period. However the advance payment to the vendors is not encouraged.


Deputy Registrar
[In-charge]
[Purchase & Stores]

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2.1 DEFINITIONS

2.1.1 The following words and expressions shall have the meanings hereby assigned to them:

- a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
- c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- d) "Day" means calendar day.
- e) "Completion" means the fulfilment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- f) "GCC" means the General Conditions of Contract.
- g) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- h) "Related Services" means the services incidental to the supply of the goods, such as transportation,

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 26/09/16

insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.

- i) "SCC" means the Special Conditions of Contract.
- j) "Subcontractor" means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- k) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- l) Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM) means a society registered under the Travancore Cochin Literary Scientific and Charitable Societies' Registration Act, 1995 (12 of 1955) on 20.02.2008 at Kerala at no. T.342/08.
- m) "The final destination," where applicable, means the place named in the SCC.

2.2 CONTRACT DOCUMENTS

2.2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

2.3 FRAUD AND CORRUPTION

2.3.1 The purchaser requires that bidders, suppliers, contractors and consultants, if any, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy,

- a) The terms set forth below are defined as follows:
 - i) "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;
 - ii) "Fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
 - iii) "Collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to establish bid prices at artificial, noncompetitive levels; and
 - iv) "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- b) the purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;

2.4 JOINT VENTURE, CONSORTIUM OR ASSOCIATION

2.4.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfilment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

2.5 SCOPE OF SUPPLY

2.5.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

2.6 SUPPLIERS' RESPONSIBILITIES

2.6.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with Scope of Supply Clause of the GCC, and the Delivery and Completion Schedule, as per GCC Clause relating to delivery and document.

2.7 CONTRACT PRICE

2.7.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.

2.8 COPYRIGHT

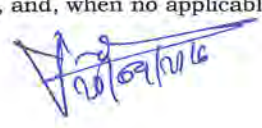
2.8.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

2.9 APPLICATION

2.9.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

2.10 STANDARDS

2.10.1 The Goods supplied and services rendered under this Contract shall conform to the standards mentioned in the Technical Specifications and Schedule of Requirements, and, when no applicable standard is mentioned, to the



authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

2.11 USE OF CONTRACT DOCUMENTS AND INFORMATION

2.11.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information, furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract.

Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

2.11.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated above except for purposes of performing the Contract.

2.11.3 Any document, other than the Contract itself, enumerated above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

2.12 PATENT INDEMNITY

2.12.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 12.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in India; and
- (b) the sale in any country of the products produced by the Goods.

2.12.2 If any proceedings are brought or any claim is made against the Purchaser, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claims.

2.13 PERFORMANCE SECURITY

2.13.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security in the amount specified in SCC, valid till 60 days after the warranty period. Alternatively, the PS may also be submitted at the time of release of final payment in cases where part payment is made against delivery & part on installation. The PS, where applicable, shall be submitted in advance for orders where full payment is to be made on Letter of Credit (LC) or on delivery. In this case, submission of PS at the time of negotiation of documents through Bank would be stipulated as a condition in the LC and the BS should be kept valid till such time the PS is submitted.

2.13.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

2.13.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries.

2.13.4 In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer/bidder.

2.13.5 The Performance security shall be in one of the following forms:

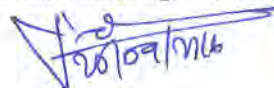
- (a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/Scheduled bank located in India or a bank located abroad in the form provided in the bidding documents. Or,
- (b) A Banker's cheque or Account Payee demand draft in favour of the purchaser. Or,
- (c) A Fixed Deposit Receipt pledged in favour of the Purchaser.

2.13.6 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

2.13.7 In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

2.13.8 The order confirmation should be received within 15 days from the date of notification of award. However, the Purchaser has the powers to extend the time frame for submission of order confirmation and submission of Performance Security (PS). Even after extension of time, if the order confirmation /PS are not received, the contract shall be cancelled and limited tenders irrespective of the value would be invited from the responding firms after forfeiting the bid security of the defaulting firm, where applicable provided there is no change in specifications. In such cases the defaulting firm would not be considered again for re-tendering in the particular case.

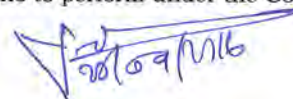
2.14. INSPECTIONS AND TESTS



- 2.14.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the SCC or as discussed and agreed to during the course of finalization of contract.
- 2.14.2 The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser. The Technical Specifications and SCC shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes
- 2.14.3 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.
- 2.14.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection
- 2.14.5 Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 2.14.6 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 2.14.7 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 2.14.8 With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- 2.15 PACKING**
- 2.15.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
- 2.15.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser
- 2.16 DELIVERY AND DOCUMENTS**
- 2.16.1 Delivery of the Goods and completion and related services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.
- 2.16.2 The terms FOB, FCA, CIF, CIP etc shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.
- 2.16.3 The mode of transportation shall be as specified in SCC
- 2.17 INSURANCE**
- 2.17.1 Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.
- 2.17.2 Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.
- 2.17.3 Where delivery is on FOB or FCA basis, insurance would be the responsibility of the purchaser.
- 2.17.4 With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- 2.18 TRANSPORTATION**
- 2.18.1 Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is



- required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price.
- 2.18.2 Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.
- 2.18.3 In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.
- 2.19 INCIDENTAL SERVICES**
- 2.19.1 The supplier may be required to provide any or all of the services, if any, specified in SCC
- 2.20 SPARE PARTS**
- 2.20.1 The Supplier shall be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:
- (a) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
 - (b) In the event of termination of production of the spare parts:
 - (i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
 - (ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.
- 2.21 WARRANTY**
- 2.21.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 2.21.2 The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.
- 2.21.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 2.21.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof.
- 2.21.5 The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 2.21.6 Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 2.21.7 If having been notified, the Supplier fails to remedy the defect within the reasonable period of time; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.
- 2.21.7 Goods requiring warranty replacements must be replaced on free of cost basis to the purchaser.
- 2.22 TERMS OF PAYMENT**
- 2.22.1 The method and conditions of payment to be made to the Supplier under this Contract shall be as specified in the SCC.
- 2.22.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to Delivery and document Clause of the GCC and upon fulfillment of other obligations stipulated in the contract.
- 2.22.3 Payments shall be made promptly by the Purchaser but in no case later than thirty (30) days after submission of the invoice or claim by the Supplier.
- 2.22.4 Payment shall be made in currency as indicated in the contract.
- 2.23. CHANGE ORDERS AND CONTRACT AMENDMENTS.**
- 2.23.1 The Purchaser may at any time, by written order given to the Supplier pursuant to Clause on Notices of the GCC make changes within the general scope of the Contract in any one or more of the following:
- (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) The method of shipping or packing;
 - (c) The place of delivery; and/or
 - (d) The Services to be provided by the Supplier.
 - (e) The delivery schedule.
- 2.23.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within fifteen (15) days from the date of the Supplier's receipt of the Purchaser's change order.
- 2.23.3 No variation or modification in the terms of the contract shall be made except by written amendment signed by the parties.
- 2.24. ASSIGNMENT**
- 2.24.1 The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.
- 2.25. SUBCONTRACTS**



- 2.25.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or duties or obligation under the Contract.
- 2.26 EXTENSION OF TIME.**
- 2.26.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser.
- 2.26.2 If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without penalty, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 2.26.3 Except as provided under the Force Majeure clause of the GCC, a delay by the Supplier in performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to Penalty Clause of the GCC unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.
- 2.27 PENALTY CLAUSE**
- 2.27.1 Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services or contract value for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC. Clause on Termination for Default. The SCC shall also indicate the basis for ascertaining the value on which the penalty shall be applicable
- 2.28. TERMINATION FOR DEFAULT**
- 2.28.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part
- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause on Extension of Time; or
 - (b) If the Supplier fails to perform any other obligation(s) under the Contract.
 - (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices as defined in GCC Clause on Fraud or Corruption in competing for or in executing the Contract.
- 2.28.2 In the event the purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:
- (a) The Performance Security is to be forfeited;
 - (b) The purchaser may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the supplier shall be liable for all available actions against it in terms of the contract.
 - (c) However, the supplier shall continue to perform the contract to the extent not terminated.
- 2.29 FORCE MAJEURE**
- 2.29.1 Notwithstanding the provisions of GCC Clauses relating to extension of time, penalty and Termination for Default the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 2.29.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 2.29.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
- 2.29.4 If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of force majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.
- 2.30 TERMINATION FOR INSOLVENCY**
- 2.30.1 The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.
- 2.31 TERMINATION FOR CONVENIENCE**
- 2.31.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- 2.31.2 The Goods those are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
- (a) To have any portion completed and delivered at the Contract terms and prices; and/or
 - (b) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for

A handwritten signature in blue ink, followed by the date "26/09/14".

materials and parts previously procured by the Supplier.

2.32 SETTLEMENT OF DISPUTES

2.32.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

2.32.2 If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

2.32.3 The dispute settlement mechanism/arbitration proceedings shall be concluded as under:

(a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Chairman, Board of Governors of IISER TVM and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

(b) In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration In accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

2.32.4 The venue of the arbitration shall be the place from where the purchase order or contract is issued.

2.32.5 Notwithstanding any reference to arbitration herein,

- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- (b) the Purchaser shall pay the Supplier any monies due the Supplier.

2.33 GOVERNING LANGUAGE

2.33.1 The contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

2.34 APPLICABLE LAW

2.34.1 The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

2.35 NOTICES

2.35.1 Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX, e-mail or and confirmed in writing to the other party's address specified in the SCC.

2.35.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

2.36 TAXES AND DUTIES

2.36.1 For goods manufactured outside India, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside India.

2.36.2 For goods Manufactured within India, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred till its final manufacture/ production.

2.36.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in India, the Purchaser shall make its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

2.37 RIGHT TO USE DEFECTIVE GOODS

2.37.1 If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

2.38 PROTECTION AGAINST DAMAGE

2.38.1 The system shall not be prone to damage during power failures and trip outs.

The normal voltage and frequency conditions available at site as under:

- (a) Voltage 230 volts – Single phase/ 415 V 3 phase (+_ 10%)
- (b) Frequency 50 Hz.

2.39. SITE PREPARATION AND INSTALLATION

The Purchaser is solely responsible for the construction of the equipment sites in compliance with the technical and environmental specifications defined by the Supplier. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchasers' site immediately after notification of award/contract.



DEPUTY REGISTRAR
[IN-CHARGE]
[PURCHASE & STORES]
IISERTVM

MODEL BANK GUARANTEE FORMAT FOR FURNISHING BID SECURITY (BS)

Whereas (hereinafter called the "tenderer")
has submitted their offer dated.....for the supply of.....
..... (hereinafter called the
"tender") against the Purchaser's tender enquiry No.....
.....KNOW ALL MEN by these presents that WE.....
.....of having our registered office at.....
.....are bound unto(hereinafter called the "Purchaser) in
the sum offor which
payment will and truly to be made to the said Purchaser, the Bank binds itself, its
successors and assigns by these presents. Sealed with the Common Seal of the
said Bank this..... day of20.....

THE CONDITIONS OF THIS OBLIGATION ARE:

- 1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- 2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-
 - a) If the tenderer fails to furnish the performance security for the due performance of the contract.
 - b) Fails or refuses to accept/execute the contract.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the purchaser (IISER-TVM) having to substantiate its demand, provided that in its demand the purchaser will note that the amount claimed by it is due to it owing the occurrence of one or both the two conditions, specifying the occurred condition or conditions. This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the bank not later than the above date.

Signature of the authorized officer of the bank

Name and designation of the officer

Seal, name and address of the Bank and address of the Branch.

INTEGRITY PACT

Between

Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM) hereinafter referred to as "The Principal".

And

 herein referred to as "The Bidder/ Contractor."

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for -----, The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and/or Contractor(s).

The Principal will nominate an Independent External Monitor (IEM) by name at the tender stage/will appoint in case of receipt of any reference, from the panel of IEMs, for monitoring the tender process and/or the execution of the contract in order to ensure compliance with the Integrity Pact by all the parties concerned.

Section 1 – Commitments of the Principal / Purchaser / Employer:

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, takes a promise for or accepts, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - b) The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - c) The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer of IISER-TVM and in addition can initiate disciplinary action.

Section 2 – Commitments of the Bidder(s)/Contractor(s)

- (1) The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution:
 - a. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the

contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract or to vitiate the Principal's tender process or contract execution.

- b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process or to vitiate the Principal's tender process or execution of the contract.
- c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign supplier / contract agency, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" / Contract Agencies", shall be disclosed by the Bidder(s)/Contractor(s) wherever applicable. Further, as mentioned in the Guidelines all the payments made to the Indian agent (s)/representative (s) have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers/ Contract Agencies" is annexed and marked as Annexure - A.
- e. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made or committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

- (2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future contracts.

- (1) A transgression is considered to have occurred, if the Principal after due consideration of the available evidence, concludes that reasonable doubt is possible.
- (2) If the Bidder(s)/Contractor(s), before award of contract or after award of Contract or during execution has committed a transgression through a

violation of Section 2 above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or to terminate the Contract, if already awarded or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is annexed and marked as Annexure - B

- (3) If the Bidder (s) / Contractor (s) has committed transgression through a violation of any of the terms under Section 2 above or in any other form such as to put his reliability or credibility into question, the Principal is entitled also to exclude the bidder/contractor from future tenders/contract award processes. The imposition and duration of the exclusion will be determined by the Principal keeping in view the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgression, the position of the transgressors within the company hierarchy of the bidder/contractor and the amount of the damage.
- (4) If it is observed after payment of final bill but before the expiry of validity of Integrity Pact that the contractor has committed a transgression through a violation of any of the terms under Section 2 above during the execution of contract, the Principal is entitled to exclude the contractor from future tenders / contract award processes.
- (5) The exclusion will be imposed for a minimum period of six (6) months and a maximum period of 3 (three) years.
- (6) If the Bidder/Contractor can prove that he has restored/recouped the damage to the Principal caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion before the expiry of the period of such exclusion.

Section 4 - Compensation for Damages

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award in accordance with Section 3 above, the Earnest Money Deposit (EMD)/Bid Security furnished, if any, along with the offer as per the terms of the Invitation to Tender (ITT) shall be forfeited. This is apart from the disqualification of the Bidder as may be imposed by the Principal as brought out at Section 3 above.
- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to forfeit the Security Deposit/Performance Bank Guarantee furnished by the Bidder/Contractor or to demand and recover from the Contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee. This is apart from the disqualification of the Bidder as may be imposed by the Principal as brought out at Section 3 above.

Section 5 - Previous transgression

- (1) The Bidder/Contractor declares that no previous transgressions occurred in the last 3 years with any other Company in any country conforming to the anti-corruption approach or with Government/any other Public Sector Enterprise in India that could justify his exclusion from the tender process /contract.
- (2) If the Bidder/Contractor makes incorrect statement on this subject, he can be disqualified from the tender process /contract either it can be terminated for such reason or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings."

Section 6 - Equal treatment of all Bidders / Contractors/ Subcontractors.

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all his Sub-contractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before seeking permission for such sub-contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidders / Contractors/ Subcontractors.

If the Principal obtains knowledge of conduct of a Bidder, Contractor, Sub-contractor or of any employee or a representative or an associate of a Bidder/Contractor/Sub-contractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to Chief Vigilance Officer.

Section 8 - Independent External Monitor (s) (IEMs)

- (1) The Principal appoints competent and credible Independent External Monitor (s) (IEMs) with clearance from Central Vigilance Commission. IEMs reviews independently, the cases referred to him/them to assess whether and to what extent the parties concerned comply with the obligations under this Integrity Pact.
- (2) In case of non-compliance of the provisions of the Integrity Pact, the complaint/non-compliance is to be lodged by the aggrieved party with the Nodal Officer only appointed by Director, IISER-TVM. The Nodal Officer shall refer the complaint/non-compliance so received by him to the IEM, already appointed or to be appointed for that case.
- (3) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports

to the Director, IISER-TVM.

- (4) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction, to all tender/contract documentation of the Principal including that provided by the Bidder/Contractor. The Bidder/Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his tender/contract documentation. The same is applicable to Sub-contractors also. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Sub-contractor(s) with confidentiality.
- (5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the tender/contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- (6) As soon as the Monitor notice, or believes to notice, a violation of this Integrity Pact, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- (7) The Monitor will submit a written report to the Director, IISER-TVM within 8 to 10 weeks from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problematic situations for the violations or the breaches of the provisions of the agreement noticed by the Monitor.
- (8) Monitor shall be entitled to compensation on the same terms as being extended to/provided to Director IISER-TVM.
- (9) If the Monitor has reported to the Director, IISER-TVM, a substantiated suspicion of an offence under relevant IPC/PC Act, and the Director, IISER-TVM has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
- (10) The word 'Monitor' means Independent External Monitor and would include both singular and plural.

Section 9 – Pact Duration

- (1) This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other unsuccessful Bidders 6 months after the contract has been awarded.
- (2) If any claim is made/lodged during the valid period of the Integrity Pact,

the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Director, IISER-TVM.

Section 10 – Other provisions

- (1) This agreement is subject to Indian Law. Place of performance and Jurisdiction is Thiruvananthapuram, Kerala.
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements to this Integrity Pact have not been made.
- (3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members or their Authorised Representative (s) by duly furnishing Authorisation to sign Integrity Pact.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remaining part of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- (5) Wherever he or his is indicated in the above sections, the same may be read as he/she or his/her, as the case may be.

(For & On behalf of the Principal)

(For & On behalf of Bidder/Contractor)

(Office Seal)

(Office Seal)

Place.....

Place.....

Date.....

Date.....

Witness 1:

Witness 1:

(Name & Address):

(Name & Address):

Witness 2:

Witness 2:

(Name & Address):

(Name & Address):
