

Centre for Development of Advanced Computing

A Scientific Society of Ministry of Electronics & Information
Technology, Government of India

Innovation Park, Panchavati, Pashan Road, Pune - 411008

Tel: +91-20-25868086 / 020-25503671-75

www.cdac.in / mmg@cdac.in

**C-DAC INVITES BIDS FOR
“SUPPLY, INSTALLATION, INTEGRATION, TESTING &
COMMISSIONING (SIITC) OF Storage Solution for PARAM
Rudra HPC Systems” THROUGH THE GEM PORTAL.**

Section I - Invitation of Bids

1. Introduction:

Centre for Development of Advanced Computing (C-DAC) - is a scientific society under the administrative control of the Ministry of Electronics & Information Technology, Government of India. As a part of the project awarded under the National Supercomputing Mission (NSM), C-DAC invites bids from eligible bidders for supply, installation, integration, testing and commissioning of storage solution at various HPC system sites mentioned under the Schedule of Requirements (**Section- III**) and other terms and conditions stipulated in this document through GEM Portal.

2. Technical e-Bid

The bidder must upload the copies of pdf documents as listed below:

- a. Covering letter, as per **Annexure - A**.
- b. Authority letter, as per **Annexure - B**.
- c. The undertakings from the Principal Manufacturers (OEMs) of equipment/ items offered as per **Annexure - C**.
- d. Details of EMD amount OR in case of exempted bidders, the Undertaking on bidder's letterhead, towards EMD exemption as per format given in **Annexure - E**
- e. Undertaking to be submitted as per **Annexure - F** in compliance to the Make In India order/OM.
- f. Undertaking to be submitted as per **Annexure - G** in compliance to the Land Border Sharing order/OM
- g. Scanned copy of the duly signed Integrity pact to be submitted as per **Annexure - H**.
- h. Copy of GST registration certificates, as applicable.
- i. Compliance statement indicating the compliance of the items, equipment, and solution offered with the tender specifications.
- j. A copy of a certificate from a Chartered Accountant certifying the annual sales turnover of the bidder for the last 3 financial years.
- k. Other documents necessary in support of eligibility criteria, product catalogues, brochures etc.

Note: C-DAC reserves the right to reject the bid if any of the above-listed document/s is not submitted.

3. Location for the Supply, Installation & Warranty Services:

Storage solution needs to be supplied, installed, integrated, tested and commissioned at the respective HPC Systems' sites as mentioned under the Scope of Work of this RFP.

4. Delivery Period:

The items along with all necessary components, accessories, hardware etc. must be supplied with the Storage solution that is required for execution of installation, testing and commissioning; within 12 weeks, at the respective locations from the date of placement of order.

5. Eligibility Criteria:

5.17. The bidder/OEM to provide a successful installation report from the end user

5.18. The bidder must submit the technical compliance sheet/report as per the technical requirements/features, the mandatory conditions, scope of work, benchmarks, stating deviations if any.

Note: The bidder should provide sufficient documentary evidence to support the eligibility criteria and exemptions mentioned. C-DAC reserves the right to reject any bid not fulfilling the eligibility criteria

6. Clarifications / Queries

In case of any doubts and/ or queries pertaining to technical solution, specifications terms and conditions of the bidding document, prospective bidder may send their queries in writing through e-mail (mmg@cdac.in). The queries, requests for clarifications etc. must be sent within 7 days from the date of publication of the GeM bid. The bidders are requested to go through the entire bid document thoroughly, before raising any query. C-DAC, Pune shall address the queries raised by the bidders. The replies to queries would be made available on email/C-DAC's web site in due course of time. All the queries, doubts, clarifications etc. must be submitted in xls format only as below.

Name of the bidder:				
Sl. No.	Section / Page No	Clause Reference	Query from bidder	C-DAC Response

7. Exemptions:

If in the view of bidder, any exemption / relaxation is applicable to them from any of the eligibility requirements under any Rules, process, Guidelines, Directives of Government of India, bidder may submit their claim for the applicable exemption /relaxation, quoting the valid Rule, process, Guidelines or Directives. In this case the bidder must submit necessary and sufficient valid documents along with the technical bid, in support of their claim. The decision about granting the exemption/ relaxation will be taken by the bid evaluation committee which is empowered to grant exemption/relaxation.

8. Amendment to Bidding Documents

At any time prior to the deadline for submission of bids, C-DAC may, for any reason, whether on its own initiative or in response to the clarification request by a prospective bidder, modify the bid document.

8.1.The amendments to the documents, if any, will be notified by release of Corrigendum Notice on, GeM portal / www.cdac.in/ tender against this bid. The amendments/ modifications will be binding on the bidders.

8.2.C-DAC at its discretion may extend the deadline for the submission of bids if it thinks necessary to do so or if the bid document undergoes changes during

the bidding period, in order to give prospective bidders time to take into consideration the amendments while preparing their bids.

9. Bid Security / Earnest Money Deposit (EMD)

- (i) The bidder should submit an the EMD amount as per the GeM bid document.
- (ii) MSE and Start-ups bidders may be exempted from submitting the EMD. The exempted bidders as per EXEMPTION clause above should submit the relevant document for the exemption sought. Also bidder claiming exemption should submit EMD undertaking as per Annexure D instead of EMD amount.

The legal actions may be taken as per the Declaration in following cases:

- 9.1.If the bidder withdraws the bid during the period of bid validity specified in the tender.
- 9.2.In case a successful bidder, fails to furnish the Performance Security (Refer Clause 3 of Section II).
- 9.3.If the bidder fails to furnish the acceptance in writing, within 7 days of award of contract/ order.

10. Period of validity of bids

- 10.1. Bids shall be valid for minimum 120 days from the date of submission. A bid valid for a shorter period shall stand rejected.
- 10.2. C-DAC may ask for the bidder's consent to extend the period of validity. Such request and the response shall be made through GeM portal only. The bidder is free not to accept such request without forfeiting the EMD/BG/ Annexure E.

11. Purchaser's Right to amend / cancel

- 11.1. C-DAC reserves the right to amend the eligibility criteria, commercial terms & conditions, Scope of Supply, quantities, technical specifications etc. The same shall be published on the Portals.
- 11.2. C-DAC reserves the right to cancel the entire or partially tender without assigning any reasons thereof.
- 11.3. C-DAC reserves the right to reject the bid submitted by the lowest evaluated bidder.

12. Corrupt or Fraudulent Practices

It is expected that the bidders who wish to bid for this project have highest standards of ethics.

- 12.1. C-DAC will reject bid if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract;
- 12.2. C-DAC may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it at any time determines that the vendor has engaged in corrupt and fraudulent practices during the award / execution of contract.

Details of IEM is provided below:

- 1) Shri. M P Johnson - Email ID- johnsonmp1961@gmail.com
- 2) Shri. Vijay Kumar Singh Email ID - vijaysinghsls10@gmail.com

(END OF SECTION I)

SECTION II: SPECIAL CONDITIONS OF CONTRACT (SCC)

1. Prices

- 1.1. The price shall be considered firm. No price escalation will be permitted (except Govt. Statutory Levies if changed by Govt after submission of the bid).
- 1.2. The prices will be compared on GST-inclusive rates quoted/calculated by the bidder and as per the GeM GTC. In case of errors, the bidders will not be permitted to change the GST percentage.
- 1.3. The prices quoted must be “All inclusive- till destination”, (including local freight, insurance, forwarding, loading/unloading, installation, testing, commissioning and all incidental charges till destination).
- 1.4. The statutory taxes and duties applicable at the time of supply of material shall be applicable if offered.
- 1.5. The responsibility, cost and risk of the consignment shall rest with the bidder till receipt of goods is acknowledged by the end user at site(s). However, such receipt/ acknowledgement shall not be treated as acceptance of goods.

2. Software Licenses: (if applicable)

Software licenses, if any, shall be required in the name host institutes. The licenses shall contain paper/electronic licenses (wherever applicable).

3. Performance Security / Bank Guarantee (PBG):

The successful bidder will be required to furnish the Performance Guarantee towards the items supplied, in the form of a Bank Guarantee in INR equivalent to 5% amount of the total order value, as per the format attached to this document (Annexure - D).

This bank guarantee should be submitted after receipt of the order / GeM contract within 15 days. The Bank Guarantee shall remain valid for **65 months** from the date of the GeM contract covering the delivery, installation, testing, commissioning and warranty duration. The PBG must be negotiable at a branch of issuing bank in India. In case of no warranty/services claims towards the items under warranty and services during the validity period of the bank guarantee, the PBG will be returned on completion of the warranty period.

C-DAC reserves the right to invoke the Performance Bank Guarantee(s) submitted by bidder, in case of the following:

- a. The vendor fails to supply/install / test/commission / execute any other associated activity; or
- b. The Item/Components fail to achieve the performance as stipulated in this document or
- c. The bidder fails to provide the warranty and other services in scheduled time frame, as stipulated in this document or
- d. The bidder delays to provide the warranty services as stipulated in this document.

4. Completeness Responsibility:

Notwithstanding the scope of work, engineering, supply and services stated in bid document, any equipment or material, engineering or technical services which might not be even specifically mentioned under the scope of supply of the bidder and which are not expressly excluded therefrom but which - in view of the bidder - are necessary for the performance of the equipment in accordance with the specifications are treated to be included in the bid and has to be performed by bidder.

The items which are over & above the scope of supply specified in the Schedule of Requirements may be marked as “Optional Items”.

5. Warranty:

The Supplier warrants that all the Goods are new, unused and that they incorporate all recent improvements in design and materials unless provided otherwise in the order. The supplier further warrants that all Goods supplied shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser’s specifications) or from any act or omission of the supplier. The warranty should be comprehensive on site, repair/replacement basis free of cost covering 5 year period after successful supply, installation, testing, commissioning and acceptance by C-DAC. Storage OEM must send the engineers onsite for any hardware replacement and software upgrade.

The supplier also warrants that the said goods would continue to conform to the description and quality aforesaid for a period of **min. 5 years** from the date of acceptance by the end user and that notwithstanding the facts that the Purchaser/ end user (Inspector) may have inspected and/or approved the said Goods. If during the aforesaid period of 5years the Goods be discovered not to conform to the description and quality aforesaid or have deteriorated Purchaser will be entitled to reject the Goods or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the Goods will be at the supplier’s risk and all the provisions herein contained relating to rejection of Goods, shall apply. The supplier if called upon to do so, shall replace within one month or such further period as may be extended by the Purchaser on his discretion on an application made thereof by the supplier the goods or such portion thereof as is rejected by Purchaser and in such an event the above mentioned warranty period shall apply to the Goods replaced from the date of acceptance of the replacement otherwise , the supplier shall pay to the Purchaser such damages as may arise by reason of breach of the conditions therein contained.

All the Goods supplied must have 5 (Five) years onsite comprehensive warranty with 24x7 support along with 8 hours response time and 48 hours resolution time, covering all parts & labor starting from the date after the successful installation and acceptance by C-DAC, Pune. During the warranty period, supplier will have to undertake comprehensive maintenance of all the items/components, support and accessories supplied at the place of installation of the equipment.

SECTION III: SCHEDULE OF REQUIREMENTS

C-DAC is deploying a Parallel File System based Storage sub-systems at the following locations under NSM.

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|---|--|
| <ol style="list-style-type: none"> 1. IISC Bangalore 2. IIT Kanpur 3. IIT Kharagpur 4. CSIR 4PI Bangalore | <ol style="list-style-type: none"> 5. CR Rao AIMSCS Hyderabad 6. IUCAA Pune and 7. NCL Pune |
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These storage systems will be integrated with the Param RUDRA HPC systems. The detailed storage specification along with capacity is provided below:

BOQ ITEM 1: SPECIFICATION FOR 8.8 PiB STORAGE FOR IISC BANGALORE - 1 No.

Storage (8.8 PiB with total 200 GB/s write throughput)

Storage performance can be demonstrated on the entire **8.8PiB Flash-based storage with 200GB/s Write Throughput** on a single namespace

Or

Minimum **800TiB Flash-based storage with write throughput of 200 GB/s and 8PiB based on NL-SAS with write throughput of 60 GB/s**. It should be configurable in single namespace or two separate namespaces for both tiers.

Primary Storage (Scratch/Home Space):	PFS based 8.8 PiB usable capacity with RAID 6 (8+2) or equivalent with dual parity. Both read & write performance should be greater than 200GB/s. The parallel filesystem should be OEM-supported Luster 2.x, latest/ GPFS (latest) /Weka/VAST DATA Platform
Fast scratch and Home	Out of 8.8PiB, 800TiB capacity should be atleast on 1DWPD NVMe flash drives with 200GB/s write throughput and 8PiB on NL-SAS or better disks with 60GB/s write throughput or The entire 8.8 PiB may be configured over NVMe disks with 200GB/s Write Throughput on a single namespace
Parallel File System	The parallel file System should be the same for both tiers of storage.
PFS Metadata:	Metadata capacity should be configured to accommodate 8 billion files. File creation capacity of minimum 1,50,000 files per second and 3,00,000 file stat/sec
Global Spare	Disks amounting to a minimum of 5% total capacity need to be additionally provided as a Global Hot spare.
Rebuild Time	RAID rebuild time should be less than 12 hrs while the system is live
Management and Monitoring	Storage solution must have a management and monitoring console for RAID system and parallel file system. It must have

	web-based interface for analyzing and visualizing the user, application and system and client wise storage performance.
PFS Features	<p>PFS should support:</p> <ul style="list-style-type: none"> ○ User & Group Quota ○ POSIX compliant ○ Fine grained locking so that multiple clients can read/write from the same file simultaneously ○ Ability to read and write in parallel to the same file or different files. ○ Data striping across multiple I/O nodes and RAID LUNS
Connectivity	<p>Connectivity from I/O servers to service/compute nodes must be on InfiniBand interconnect. Connectivity between Storage servers to Storage enclosures with Redundant Connects & Links. Standard software features that creating/ managing volumes, storage & file system monitoring. If separate licensing is required for these features, it must be included in the proposed system. <u>Licenses should be perpetual.</u></p> <p>Compute nodes have a 200Gbps NDR 200 port connected over NDR switches. C-DAC will provide NDR switches for connectivity to the proposed storage. Bidders need to provide the required transceivers and cables to connect the storage solution to the compute network over InfiniBand.</p> <p>Bidders also need to provide ethernet cables to manage the storage sub-system.</p>
Data Integrity	Storage solutions must support data checksums to ensure the integrity of data in transit as well as support for data checksums on disks
Solution Ownership	Storage OEM should take complete responsibility for the entire solution, including the parallel file system.
Resource Utilization	Storage solution should not utilize more than 2% of the compute core resources(reserved or shared) to deliver the required throughput.
Balanced Architecture	The entire Solution must be balanced with respect to no. of I/O servers, network ports, LUNS, disks etc.
High Availability	The solution should be highly available. Storage subsystem should be configured with no Single Point of Failure (SPOF) including I/O servers (if required), Metadata servers, Storage array, HBA Cards, switches (if required) between I/O servers & storage controllers and power supply. Fan modules, Power supply should be redundant and hot pluggable/replaceable, etc.
Scalability	File systems should be able to scale up to double the usable capacity under single file system name space, respectively.
Benchmark	<ul style="list-style-type: none"> ○ Open-source IOR benchmarks (IOR Version 3.3.X) ○ Running on compute nodes with 1 MB transfer size and file size double than total storage cache and I/O node memory with DIRECT IO (Essentially bypassing POSIX I/O buffers)

	<ul style="list-style-type: none"> ○ Benchmarks must be run on a minimum of 64 compute nodes writing to both single shared file and file per process. ○ 10GB/s of write throughput per client with a single shared file. ○ Storage solution must deliver the performance of: ○ 200 GB/s write throughput performance on 800TiB flash storage ○ 60 GB/s write throughput performance on 8 PiB storage <p>or</p> <ul style="list-style-type: none"> ○ The entire 8.8PiB with 200GB/s Write Throughput on a single namespace ○ Bidders must submit output of below mentioned MDTEST(http://sourceforge.net/projects/mdtest/) benchmarks running on minimum 64 PFS clients. Benchmark output must show minimum 1,50,000 files create/sec and 3,00,000 stat/sec. ○ Flash storage must support 4 million Random Read IOPS with 4K block size using FIO. ○ Bidder may use smaller storage subsystem and project the required benchmark figure for the quoted solution with justification. ○ Performance measurements must be submitted on OEM letterhead signed by an authorized signatory showing results meeting the requirement <p>Note: Bidders need to provide benchmark results on the InfiniBand interconnect.</p>
Client licenses	Must support unlimited clients(compute/management servers) for accessing the file system natively using PFS
Deployment/ Integration	OEM needs to integrate, configure, and install the complete storage solution at the site in discussion with C-DAC and demonstrate the above benchmarks.

BOQ ITEM 2 - SPECIFICATION FOR 5.5 PIB STORAGE FOR IIT KANPUR - 1 No.

Storage (5.5 PiB with total 120 GB/s write throughput)

Storage performance can be demonstrated on the entire 5.5PiB Flash-based storage with 120GB/s Write Throughput on a single namespace

Or

Minimum 500TiB Flash-based storage with write throughput of 120 GB/s and 5PiB based on NL-SAS with write throughput of 50 GB/s. It should be configurable in single namespace or two separate namespaces for both tiers.

Primary Storage (Scratch/Home Space):	PFS based 5.5 PiB usable capacity with RAID 6 (8+2) or equivalent with dual parity.
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	<p>Both read & write performance should be greater than 120 GB/s.</p> <p>The parallel filesystem should be OEM-supported Luster 2.x, latest/ GPFS (latest) /Weka/VAST DATA Platform</p>
Fast scratch and Home	<p>Out of 5.5PiB, 500TiB capacity should be atleast on 1DWPD NVMe flash drives with 120GB/s write throughput</p> <p>5PiB on 7.2K RPM NL-SAS or better disks with 50GB/s write throughput or</p> <p>The entire 5.5 PiB may be configured over NVMe disks with 120GB/s Write Throughput on a single namespace</p>
Parallel File System	<p>The parallel file System should be the same for both tiers of storage</p>
PFS Metadata:	<p>Metadata capacity should be configured to accommodate 6 billion files. File creation capacity of minimum 1,00,000 files per second and 2,00,000 file stat/sec</p>
Global Spare	<p>Disks amounting to a minimum of 5% total capacity need to be additionally provided as a Global Hot spare.</p>
Rebuild Time	<p>RAID rebuild time should be less than 12 hrs while the system is live</p>
Management and Monitoring	<p>Storage solution must have a management and monitoring console for RAID system and parallel file system. It must have web-based interface for analyzing and visualizing the user, application and system wise storage performance.</p>
PFS Features	<p>PFS should support:</p> <ul style="list-style-type: none"> ○ User & Group Quota ○ POSIX compliant ○ Fine grained locking so that multiple clients can read/write from the same file simultaneously ○ Ability to read and write in parallel to the same file or different files. ○ Data striping across multiple I/O nodes and RAID LUNS
Connectivity	<p>Connectivity from I/O servers to service/compute nodes must be on InfiniBand interconnect. Connectivity between Storage servers to Storage enclosures with Redundant Connects & Links. Standard software features that creating/ managing volumes, storage & file system monitoring. If separate licensing is required for these features, it must be included in the proposed system. <u>Licenses should be perpetual.</u></p> <p>Compute nodes have a 200Gbps NDR 200 port connected over NDR switches. C-DAC will provide NDR switches for connectivity to the proposed storage. Bidders need to provide the required transceivers and cables to connect the storage solution to the compute network over InfiniBand.</p> <p>Bidders also need to provide ethernet cables to manage the storage sub-system</p>
Data Integrity	<p>Storage solutions must support data checksums to ensure the integrity of data in transit as well as support for data checksums on disks</p>

Solution Ownership	Storage OEM should take complete responsibility for the entire solution, including the parallel file system.
Resource Utilization	Storage solution should not utilize more than 2% of the compute core resources(reserved or shared) to deliver the required throughput.
Balanced Architecture	The entire Solution must be balanced with respect to no. of I/O servers, network ports, LUNS, disks etc.
High Availability	The solution should be highly available. Storage subsystem should be configured with no Single Point of Failure (SPOF) including I/O servers (if required), Metadata servers, Storage array, HBA Cards, switches (if required) between I/O servers & storage controllers and power supply. Fan modules, Power supply should be redundant and hot pluggable/replaceable, etc.
Scalability	File systems should be able to scale up to double the usable capacity under single file system name space, respectively.
Benchmark	<ul style="list-style-type: none"> ○ Open-source IOR benchmarks (IOR Version 3.3.X) ○ Running on compute nodes with 1 MB transfer size and file size double than total storage cache and I/O node memory with DIRECT IO (Essentially bypassing POSIX I/O buffers) ○ Benchmarks must be run on a minimum of 64 compute nodes writing to a single shared file. ○ 10GB/s of write throughput per client with a single shared file. ○ Storage solution must deliver the performance of: ○ 120 GB/s write throughput performance 500TiB flash storage ○ 50 GB/s write throughput performance on 5PiB storage or ○ The entire 5.5PiB with 120GB/s Write Throughput on a single namespace ○ Bidders must submit output of below mentioned MDTEST(http://sourceforge.net/projects/mdtest/) benchmarks running on minimum 64 PFS clients. Benchmark output must show minimum 1,00,000 files create/sec and 2,00,000 stat/sec. ○ Flash storage must support 2 million Random Read IOPS with 4K block size using FIO. ○ Bidder may use smaller storage subsystem and project the required benchmark figure for the quoted solution with justification. ○ Performance measurements must be submitted on OEM letterhead signed by an authorized signatory showing results meeting the requirement <p>Note: Bidders need to provide benchmark results on the InfiniBand interconnect.</p>
Client licenses	Must support unlimited clients(compute/management servers) for accessing the file system natively using PFS

Deployment/ Integration	OEM needs to integrate, configure, and install the complete storage solution at the site in discussion with C-DAC and demonstrate the above benchmarks.
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BOQ ITEM NO. 3 & 4 - Specification for 4.4 PiB Storage for (3) IIT Kharagpur and (4) CSIR 4PI Bangalore - 1 No. each.

Storage (4.4 PiB with total 100 GB/s write throughput)

Storage performance can be demonstrated on the entire 4.4PiB Flash-based storage with 100GB/s Write Throughput on a single namespace

Or

Minimum 400TiB Flash-based storage with write throughput of 100 GB/s and 4PiB based on NL-SAS with write throughput of 40 GB/s. It should be configurable in single namespace or two separate namespaces for both tiers.

Primary Storage (Scratch/Home Space):	PFS based 4.4 PiB usable capacity with RAID 6 (8+2) or equivalent with dual parity. Both read & write performance should be greater than 100 GB/s. The parallel filesystem should be OEM-supported Luster 2.x, latest/ GPFS (latest) /Weka/VAST DATA Platform
Fast scratch and Home	Out of 4.4PiB,400TiB capacity should be atleast on 1DWPD NVMe flash drives with 100GB/s write throughput 4PiB on 7.2K RPM NL-SAS or better disks with 40GB/s write throughput or The entire 4.4 PiB may be configured over NVMe disks with 100GB/s Write Throughput on a single namespace
Parallel File System	The parallel file System should be the same for both tiers of storage
PFS Metadata:	Metadata capacity should be configured to accommodate 6 billion files. File creation capacity of minimum 1,00,000 files per second and 2,00,000 file stat/sec
Global Spare	Disks amounting to a minimum of 5% total capacity need to be additionally provided as a Global Hot spare.
Rebuild Time	RAID rebuild time should be less than 12 hrs while the system is live
Management and Monitoring	Storage solution must have a management and monitoring console for RAID system and parallel file system. It must have web-based interface for analyzing and visualizing the user, application and system wise storage performance.
PFS Features	PFS should support: <ul style="list-style-type: none"> ○ User & Group Quota ○ POSIX compliant ○ Fine grained locking so that multiple clients can read/write from the same file simultaneously ○ Ability to read and write in parallel to the same file or different files.

	<ul style="list-style-type: none"> ○ Data striping across multiple I/O nodes and RAID LUNS
Connectivity	<p>Connectivity from I/O servers to service/compute nodes must be on InfiniBand interconnect. Connectivity between Storage servers to Storage enclosures with Redundant Connects & Links. Standard software features that creating/ managing volumes, storage & file system monitoring. If separate licensing is required for these features, it must be included in the proposed system. <u>Licenses should be perpetual.</u></p> <p>Compute nodes have a 200Gbps NDR 200 port connected over NDR switches. C-DAC will provide NDR switches for connectivity to the proposed storage. Bidders need to provide the required transceivers and cables to connect the storage solution to the compute network over InfiniBand.</p> <p>Bidders also need to provide ethernet cables to manage the storage sub-system</p>
Data Integrity	Storage solutions must support data checksums to ensure the integrity of data in transit as well as support for data checksums on disks
Solution Ownership	Storage OEM should take complete responsibility for the entire solution, including the parallel file system.
Resource Utilization	Storage solution should not utilize more than 2% of the compute core resources(reserved or shared) to deliver the required throughput.
Balanced Architecture	The entire Solution must be balanced with respect to no. of I/O servers, network ports, LUNS, disks etc.
High Availability	The solution should be highly available. Storage subsystem should be configured with no Single Point of Failure (SPOF) including I/O servers (if required), Metadata servers, Storage array, HBA Cards, switches (if required) between I/O servers & storage controllers and power supply. Fan modules, Power supply should be redundant and hot pluggable/replaceable, etc.
Scalability	File systems should be able to scale up to double the usable capacity under single file system name space, respectively.
Benchmark	<ul style="list-style-type: none"> ○ Open-source IOR benchmarks (IOR Version 3.3.X) ○ Running on compute nodes with 1 MB transfer size and file size double than total storage cache and I/O node memory with DIRECT IO (Essentially bypassing POSIX I/O buffers) ○ Benchmarks must be run on a minimum of 64 compute nodes writing to a single shared file. ○ 10GB/s of write throughput per client with a single shared file. ○ Storage solution must deliver the performance of: ○ 100 GB/s write throughput performance 400TiB flash storage ○ 40 GB/s write throughput performance on 4PiB storage or

	<ul style="list-style-type: none"> ○ The entire 4.4PiB with 100GB/s Write Throughput on a single namespace ○ Bidders must submit output of below mentioned MDTEST(http://sourceforge.net/projects/mdtest/) benchmarks running on minimum 64 PFS clients. Benchmark output must show minimum 1,00,000 files create/sec and 2,00,000 stat/sec. ○ Flash storage must support 2 million Random Read IOPS with 4K block size using FIO. ○ Bidder may use smaller storage subsystem and project the required benchmark figure for the quoted solution with justification. ○ Performance measurements must be submitted on OEM letterhead signed by an authorized signatory showing results meeting the requirement <p>Note: Bidders need to provide benchmark results on the InfiniBand interconnect.</p>
Client licenses	Must support unlimited clients(compute/management servers) for accessing the file system natively using PFS
Deployment/ Integration	OEM needs to integrate, configure, and install the complete storage solution at the site in discussion with C-DAC and demonstrate the above benchmarks.

ITEM NO. 5, 6 & 7 - SPECIFICATION FOR 1.1 PIB STORAGE FOR (5) CR RAO AIMSCS HYDERABAD, (6) IUCAA PUNE AND (7) NCL PUNE

Storage (1.1 PiB with total 30 GB/s write throughput)

Storage performance can be demonstrated on the entire 1.1 PiB Flash-based storage with 30GB/s Write Throughput on a single namespace

Or

Minimum 100TiB Flash-based storage with write throughput of 30 GB/s and 1PiB based on NL-SAS with write throughput of 20 GB/s. It should be configurable in single namespace or two separate namespaces for both tiers.

Primary Storage (Scratch/Home Space):	<p>PFS based 1 PiB usable capacity with RAID 6 (8+2) or equivalent with dual parity.</p> <p>Both read & write performance should be greater than 30 GB/s.</p> <p>The parallel filesystem should be OEM-supported Luster 2.x, latest/ GPFS (latest) /Weka/VAST DATA Platform</p>
Fast scratch and Home	<p>Out of 1.1PiB,100TiB capacity should be atleast on 1DWPD NVMe flash drives with 30GB/s write throughput</p> <p>1PiB on 7.2K RPM NL-SAS or better disks with 20GB/s write throughput or</p> <p>The entire 1.1PiB may be configured over NVMe disks with 30 GB/s Write Throughput on a single namespace</p>

Parallel System	File	The parallel file System should be the same for both tiers of storage
PFS Metadata:		Metadata capacity should be configured to accommodate 3 billion files. File creation capacity of minimum 100,000 files per second and 2,00,000 file stat/sec
Global Spare		Disks amounting to a minimum of 5% total capacity need to be additionally provided as a Global Hot spare.
Rebuild Time		RAID rebuild time should be less than 12 hrs while the system is live
Management and Monitoring		Storage solution must have a management and monitoring console for RAID system and parallel file system. It must have web-based interface for analyzing and visualizing the user, application and system wise storage performance.
PFS Features		<p>PFS should support:</p> <ul style="list-style-type: none"> ○ User & Group Quota ○ POSIX compliant ○ Fine grained locking so that multiple clients can read/write from the same file simultaneously ○ Ability to read and write in parallel to the same file or different files. ○ Data striping across multiple I/O nodes and RAID LUNS
Connectivity		<p>Connectivity from I/O servers to service/compute nodes must be on InfiniBand interconnect. Connectivity between Storage servers to Storage enclosures with Redundant Connects & Links. Standard software features that creating/ managing volumes, storage & file system monitoring. If separate licensing is required for these features, it must be included in the proposed system. <u>Licenses should be perpetual.</u></p> <p>Compute nodes have a 200Gbps NDR 200 port connected over NDR switches. C-DAC will provide NDR switches for connectivity to the proposed storage. Bidders need to provide the required transceivers and cables to connect the storage solution to the compute network over InfiniBand.</p> <p>Bidders also need to provide ethernet cables to manage the storage sub-system</p>
Data Integrity		Storage solutions must support data checksums to ensure the integrity of data in transit as well as support for data checksums on disks
Solution Ownership		Storage OEM should take complete responsibility for the entire solution, including the parallel file system.
Resource Utilization		Storage solution should not utilize more than 2% of the compute core resources(reserved or shared) to deliver the required throughput.
Balanced Architecture		The entire Solution must be balanced with respect to no. of I/O servers, network ports, LUNS, disks etc.
High Availability		The solution should be highly available. Storage subsystem should be configured with no Single Point of Failure (SPOF) including I/O servers (if required), Metadata servers, Storage array, HBA Cards, switches (if required) between I/O servers

	& storage controllers and power supply. Fan modules, Power supply should be redundant and hot pluggable/replaceable, etc.
Scalability	File systems should be able to scale up to double the usable capacity under single file system name space, respectively.
Benchmark	<ul style="list-style-type: none"> ○ Open-source IOR benchmarks (IOR Version 3.3.X) ○ Running on compute nodes with 1 MB transfer size and file size double than total storage cache and I/O node memory with DIRECT IO (Essentially bypassing POSIX I/O buffers) ○ Benchmarks must be run on a minimum of 32 compute nodes writing to a single shared file. ○ 5 GB/s of write throughput per client with a single shared file. ○ Storage solution must deliver the performance of: <ul style="list-style-type: none"> ○ 30 GB/s write throughput performance 100TiB flash storage ○ 20 GB/s write throughput performance on 1PiB storage or ○ The entire 1.1PiB with 30GB/s Write Throughput on a single namespace ○ Bidders must submit output of below mentioned MDTEST(http://sourceforge.net/projects/mdtest/) benchmarks running on minimum 32 PFS clients. Benchmark output must show minimum 1,00,000 files create/sec and 2,00,000 stat/sec. ○ Flash storage must support 1 million Random Read IOPS with 4K block size using FIO. ○ Bidder may use smaller storage subsystem and project the required benchmark figure for the quoted solution with justification. ○ Performance measurements must be submitted on OEM letterhead signed by an authorized signatory showing results meeting the requirement <p>Note: Bidders need to provide benchmark results on the InfiniBand interconnect.</p>
Client licenses	Must support unlimited clients(compute/management servers) for accessing the file system natively using PFS
Deployment/ Integration	OEM needs to integrate, configure, and install the complete storage solution at the site in discussion with C-DAC and demonstrate the above benchmarks.

(These points are in addition to standard GeM Bid conditions for this solution)

1. SYSTEM ACCEPTANCE CRITERIA

- 1.1. System Acceptance shall be given only after successful installation integration of Storage sub-systems with HPC Cluster.
- 1.2. Demonstration of the performance benchmark as per the Benchmark section.

2. WARRANTY

2.1. The warranty should be comprehensive on site, repair/replacement basis free of cost covering 5 years period after successful supply, installation, testing, commissioning and acceptance by C-DAC. Storage OEM must send the engineers onsite for any hardware replacement and software upgrade.

(END OF SECTION III)

SECTION IV: Financial Breakup - BOQ

Item No.	Item Title	Item Description	Item Qty	Unit of Measure	Consignee ID	Delivery Period (In number of days)
1	Storage Solution 01	8.8 PIB STORAGE FOR IISC BANGALORE	1	pieces	vinayaks	84
2	Any other component item for 01	Any other components, consumables, items, services etc. for completion of the Storage Solution 01 above	1	pieces	vinayaks	84
3	Storage Solution 02	5.5 PIB STORAGE FOR IIT KANPUR	1	pieces	vinayaks	84
4	Any other component item for 02	Any other components, consumables, items, services etc. for completion of the Storage Solution 02 above	1	pieces	vinayaks	84
5	Storage Solution 03	4.4 PiB Storage for IIT Kharagpur	1	pieces	vinayaks	84
6	Any other component item for 03	Any other components, consumables, items, services etc. for completion of the Storage Solution 03 above	1	pieces	vinayaks	84
7	Storage Solution 04	4.4 PiB Storage for CSIR 4PI Bangalore	1	pieces	vinayaks	84
8	Any other component item for 04	Any other components, consumables, items, services etc. for completion of the Storage Solution 04 above	1	pieces	vinayaks	84
9	Storage Solution 05	1.1 PIB STORAGE FOR CR RAO AIMSCS HYDERABAD	1	pieces	vinayaks	84
10	Any other component item for 05	Any other components, consumables, items, services etc. for completion of the Storage Solution 05 above	1	pieces	vinayaks	84
11	Storage Solution 06	1.1 PIB STORAGE FOR IUCAA PUNE	1	pieces	vinayaks	84
12	Any other component item for 06	Any other components, consumables, items, services etc. for completion of the Storage Solution 06 above	1	pieces	vinayaks	84
13	Storage Solution 07	1.1 PIB STORAGE FOR NCL PUNE	1	pieces	vinayaks	84
14	Any other component item for 07	Any other components, consumables, items, services etc. for completion of the Storage Solution 07 above	1	pieces	vinayaks	84

(END OF SECTION IV)



ANNEXURE A - COVERING LETTER

Date:

To:

The Director General

Centre for Development of Advanced Computing (C-DAC)

Innovation Park, Panchavati, Pashan Road,

Pune - 411008 Maharashtra, INDIA

Subject:

Reference:

Dear Sir,

We, the undersigned, offer to, in response to your GEM Bid & We are hereby submitting our proposal for same, which includes Technical bid and the Financial Bid through GEM (gem.gov.in) portal.

We hereby declare that all the information and statements made in this bid are true and we accept that any misinterpretation contained in it, may lead to our disqualification.

We undertake, if our proposal is accepted, to submit a Performance Security of 5% of the contract / order value, as per terms stipulated in the tender.

We confirm that the deliveries, installation will be done within 12 weeks if the order is placed. The Post Warranty CAMC charges are not beyond 10% of the hardware and software items, as per requirements.

We hereby certify that my/ our firm has not been disqualified and / or blacklisted by any Office/ Department/ Undertaking of the State Government / Central Govt. of India, PSU/ Autonomous Body of Government of India, as on the date/time of submission of this bid.

We agree to abide by all the terms and conditions of the tender document, including corrigenda. We would hold the terms of our bid valid for 120 days as stipulated in the tender document.

We understand you are not bound to accept any Proposal you receive.

The undersigned is authorized to sign this bid document. The authority letter to this effect is enclosed.

Yours sincerely,

Authorized Signatory:

Name and Title of Signatory:

e-mail:

Mobile No:



ANNEXURE B - AUTHORITY LETTER

Date:

To:

The Director General,
Centre for Development of Advanced Computing (C-DAC)
Innovation Park, Panchavati, Pashan Road,
Pune - 411008 Maharashtra, INDIA

Subject: Authority Letter

Reference: GEM Bid Ref No.

Dear Sir,

We, M/s _____ (Name of the bidder) having registered office at _____ (address of the bidder) herewith submit our bid against the said tender document.

Mr./Ms. _____ (Name and designation of the signatory), whose signature is appended below, is authorized to sign and submit the bid documents on our behalf against said RFP

Specimen Signature:

The undersigned is authorised to issue such authorisation on behalf of us.
For M/s _____ (Name of the bidder)

Signature and company seal
Name
Designation
Email
Mobile No.



ANNEXURE C - UNDERTAKING(S) BY PRINCIPAL MANUFACTURER/OEM

(To be submitted in Original on Letterhead)

Date:

The Director General,
Centre for Development of Advanced Computing (C-DAC)
Innovation Park, Panchavati, Pashan Road,
Pune - 411008 Maharashtra, INDIA

Subject: Undertaking by Principal Manufacturer against GEM Bid &for Supply, Installation, Testing and Commissioning of storage solution at various HPC system sites mentioned under the Schedule of Requirements (Section- III) Dear Sir,

We, M/s _____ (Name of the manufacturer) having registered office at _____ (address of the manufacturer) by virtue of being manufacturer for _____ (Name of the product/s), hereby certify that M/s _____ (Name of the bidder) having their office at _____ (Address of bidder) are our Authorised System Integrator/dealer for our range of products quoted by them, including post warranty support (CAMC) for, 6th & 7th year, if opted.

Within the scope of requirement as per the tender mentioned above, we undertake to provide technical & other support towards fulfilling the requirements of installation, acceptance criteria and product warranty services of the components, including post warranty support (CAMC) for 6th & 7th year, if opted; to be supplied and installed at C-DAC, Pune by M/s.....(Name of bidder)against said tender.

We also certify that the products offered are not nearing end-of-life / end-of-support five years down the line from the date of bidding.

The undersigned is authorised to issue this certificate on behalf of M/s _____ (Name of the manufacturer).

For M/s _____ (Name of the manufacturer)

Signature & company seal
Name
Designation
Email
Mobile No.

This undertaking guarantee shall be a continuing undertaking guarantee and shall remain valid and irrevocable for all claims of C-DAC and liabilities of the supplier arising up to and until _____ (date)

This undertaking guarantee shall be in addition to any other undertaking or guarantee or security whatsoever that C-DAC may now or at any time have in relation to its claims or the supplier's obligations/liabilities under and / or in connection with the said contract and C-DAC shall have the full authority to take recourse to or enforce this undertaking guarantee in preference to the other undertaking or security (ies) at its sole discretion and no failure on the part of C-DAC in enforcing or requiring enforcement of any other undertaking or security shall have the effect of releasing the bank from its full liability hereunder.

We _____ (Name of Bank) hereby agree and irrevocably undertake and promise that if in your (C-DAC's) opinion any default is made by M/s _____ (Name of Vendor) in performing any of the terms and /or conditions of the agreement or if in your opinion they commit any breach of the contract or there is any demand by you against M/s _____ (Name of Vendor), then on notice to us by you, we shall on demand and without demur and without reference to M/s _____ (Name of Vendor), pay you, in any manner in which you may direct, the amount of Rs. _____/- (Rupees _____ Only) or such portion thereof as may be demanded by you not exceeding the said sum and as you may from time to time require. Our liability to pay is not dependent or conditional on your proceeding against M/s _____ (Name of Vendor) and we shall be liable & obligated to pay the aforesaid amount as and when demanded by you merely on an intimation being given by you and even before any legal proceedings, if any, are taken against M/s _____ (Name of Vendor)

The Bank hereby waives all rights at any time inconsistent with the terms of this undertaking guarantee and the obligations of the bank in terms hereof shall not be anyway affected or suspended by reason of any dispute or disputes having been raised by the supplier (whether or not pending before any arbitrator, Tribunal or Court) or any denial of liability by the supplier or any order or any order or communication whatsoever by the supplier stopping or preventing or purporting to stop or prevent payment by the Bank to C-DAC hereunder.

The amount stated in any notice of demand addressed by C-DAC to the Bank as claimed by C-DAC from the supplier or as suffered or incurred by C-DAC on the account of any losses or damages or costs, charges and/or expenses shall as between the Bank and C-DAC be conclusive of the amount so claimed or liable to be paid to C-DAC or suffered or incurred by C-DAC, as the case may be and payable by the Bank to C-DAC in terms hereof.

You (C-DAC's) shall full liberty without reference to us and without affecting this guarantee, postpone for any time or from time to time the exercise of any of the powers and rights conferred on you under the contact with the said M/s _____ (Name of Vendor) and to enforce or to forbear from endorsing any power or rights or by reason of time being given to the said M/s _____



D. The Bank guarantee will expire on (Min months from the date of successful installations of the items in the order) _____

Granted by the

Bank

SEAL OF THE BANK

Yours faithfully,
For (Name of Bank)

Authorised Signatory



ANNEXURE E - UNDERTAKING - EMD

(ON COMPANY'S LETTERHEAD)

Date:

To:

The Director General,
Centre for Development of Advanced Computing (C-DAC)
Innovation Park, Panchavati, Pashan Road,
Pune - 411008 Maharashtra, INDIA

Subject: Undertaking as per GFR - 2017, Rule 170(iii)

Dear Sir,

We, the undersigned, offer to Supply the -----
-----as per tender at C-DAC Pune, in response to your Tender No-----
-----.

We are hereby submitting our proposal for same, which includes Technical bid and the Financial Bid. As a part of eligibility requirement stipulated in said tender document, we hereby submit a declaration in lieu of Earnest Money Deposit (EMD), as given below:

1. Our bid (including commercial bid) shall remain valid for 120-days from the date of submission and that we will not withdraw or modify our bid during the validity period,
2. In case, we are declared as successful bidder and an order is placed on us, we will submit the acceptance in writing within 7 days of placement of order on us.
3. In case, we are declared as successful bidder and an order is placed on us, we undertake, to submit a Security Deposit / Performance Bank Guarantee of 5% of the order value, as per terms stipulated in the tender.
4. In case of failure on our part to comply with any of the above said requirements, we are aware that we shall be declared as un-eligible for said tender and /or debarred from any future bidding process of C-DAC for a period of minimum one year.
5. We hereby certify that my/ our firm has not been disqualified and / or blacklisted by any Office/ Department/ Undertaking of the State Government / Central Govt. of India, PSU/ Autonomous Body of Government of India, at the time of submission of this bid.
6. The undersigned is authorized to sign this undertaking.

Yours sincerely,

Authorized Signatory:

Name and Title of Signatory:

e-mail:

Mobile No:



Annexure F - Certificate from bidder/OEM

(ON COMPANY'S LETTERHEAD)

Please submit the certificate as per format given below:

To:
Director General,
Centre for Development of Advance
Computing, Pune - 411008

We hereby certify that the goods & software being offered by us vide our proposal, comply with the Make In India Order No. P-45021/2/2017-PP(BE-II)-Part(4)Vol.II dated 19.07.2024 issued by Public Procurement Section, Department of Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, Gol.

We hereby certify the details pertaining to goods offered by us, as given below:

Sr. No	Item Description, Make, Model	Country of origin of OEM	Country of Manufacture of item	Percentage of local content for the solution **	Location of Value Addition
1	Details/breakup of major components to be provided				

** Note 1: The local content percentage (%) is s consolidated figure for the complete solution i.e. including all items mentioned above.

We abide by the following terms and conditions of this GeM bid / enquiry

1. CDAC reserves the right to Accept / Reject / Cancel the bid / GeM inquiry, at its sole discretion, based on the responses received against the MII declaration submitted by the bidders / vendors.
2. We also certify that, we are not from a country sharing land border with India as defined in Order No.F.7/10/2021-PPD (1) (Public Procurement No. 4) dated 23.02.2023 issued by Procurement Policy Division, Department of Expenditure, Ministry of Finance, GOI and the goods offered by us comply with the provisions of said order.

For (Name of bidder)

Authorized Signatory Name
& Designation: Mobile No:



Annexure G - CERTIFICATE/UNDERTAKING FROM BIDDER/ OEM

To: Director General,
C-DAC, Pune - 411008

Ref: Tender / Enquiry No. XXX dt. XXXX

We have read the clause mentioned in the Order No.F.7/10/2021-PPD (1) (Public Procurement No. 4) dated 23.02.2023 issued by Procurement Policy Division, Department of Expenditure, Ministry of Finance, GOI. and further Order/OMs regarding restrictions on procurement from a bidder of a country which shares a land border with India (if any).

In view of this, we certify that,

a. We are not from a country sharing land border with India and any registration as mentioned in said OM is not applicable to us.

OR

b. We are registered with the competent authority as mentioned in said OM. The copy of registration No.xxx dt.xxx is enclosed.

(Delete whatever is not applicable)

For (Name of Bidder)

Authorised Signatory
(Name & Signature)
(Company's Seal)



(To be executed on stamp paper of appropriate denomination duly notarised
and applicable for all tenders of value above Rs.1 Crore)

INTEGRITY PACT

This Integrity Pact (“the Pact”) is made and executed on this ____ Day of _____
Two Thousand Twenty _____ at _____.

By and Between

Centre for Development of Advanced Computing (C-DAC), an autonomous scientific Society under the Ministry of Electronics and Information Technology, Government of India, registered under the Societies Registration Act 1860 and the Bombay Public Trusts Act 1950, having its registered Office at Savitribai Phule Pune University Campus, Pune 411 007, hereinafter referred to as "C-DAC/Principal", which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its administrators, successors or assignees, as the case may be.

and

..... hereinafter referred to as “The Bidder(s)/Contractor(s)”, which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its administrators, successors or assignees, as the case may be.

(The Principal and the Bidder (s)/Contractor(s) are collectively referred to as “the Parties”.

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for ----- (“the Contract”). The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s. The Principal intends to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into. The Principal also intends that Bidder/s and Contractor/s should abstain from bribing or indulging in any corrupt practices in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the Bidder/s and Contractor/s shall commit to prevent corruption, in any form, by its officials by following transparent procedures.

In order to achieve these goals, the Principal, by way of this Integrity Pact (“the Pact”) will appoint Independent External Monitor (“IEM”) who will monitor the tender process and the execution of the Contract for compliance with the principles mentioned above.

The parties hereto hereby agree to enter into this Pact and agree as mentioned below.

Section 1

Commitments of the Principal

- 1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following:-
 - a) No employee of the Principal, personally or through relatives or any other person, will in connection with the tender, or for the execution of the Contract, demand, promise or accept for himself/herself or any third person, any material or immaterial benefit or any other advantage from the bidder/s or contractor/s which he/she is not legally entitled to.
 - b) The Principal will, during the tender process treat all Bidder/s and Contractor/s with equity and reason. The Principal will in particular, before and during the tender process, provide to all bidder/s and contractor/s the same information and will not provide to any bidder/s or contractor/s additional/confidential information through which the bidder/s and contractor/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 relevant Anti-Corruption Laws of India, or if there be a substantive suspicion and the same is prima facie found to be correct in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions. In such a case while such enquiry is being conducted by the Principal, the proceedings under the contract shall not be stalled.

Section 2

Commitments of the Bidder/ contractor

- 1) The Bidder / Contractor commits to take all measures necessary to prevent corrupt practices, unfair means and illegal activities. He commits himself to observe the following during his participation in the tender process and during the contract execution:
 - a) The Bidder / Contractor undertakes that he/she has not given, offered or promised to give directly or indirectly any bribe, gift, consideration, reward, favour any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Principal, for which benefit etc. 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.

-
- b) The Bidder / Contractor 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 bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Principal, for which benefit etc. 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
- c) The Bidder / Contractor will not enter into any agreement or understanding with other Bidders in connection with the bid, including but not limited to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.
- d) The Bidder / Contractor will not commit any offence under the relevant provisions of Anti-Corruption Laws of India/Indian Penal Code, 1860, Information and Technology Act, 2000, Competition law or any other relevant laws, enactments, rules and regulations. Further the Bidder / Contractor 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. The Bidder / Contractor also undertakes to exercise due and adequate care of any such information so divulged.
- e) The Bidder / Contractor further confirms and declares to the Principal that the Bidder / Contractor is the original manufacturer / integrator / authorised government sponsored export entity and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the Principal or any of its functionaries, whether officially or unofficially to the award of the contract to the Bidder / Contractor, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- f) The Bidder / Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to make or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and the details of the services agreed upon for such payments.
- g) The bidder(s)/ contractor (s) of foreign origin shall disclose the name and address of agents and representatives in India related to this tender. Similarly, the bidder(s)/ contractor(s) of Indian nationality shall furnish the name and address of their foreign principals or associates, if any, related to this tender.
- h) The Bidder / Contractor shall not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

- i) If the Bidder / Contractor or any employee of the Bidder / Contractor or any person acting on behalf of the Bidder / Contractor, either directly or indirectly, is a relative of any of the officers of the Principal, or alternatively, if any relative of an officer of the Principal has financial interest / stake in the Bidder's / Contractor's firm, proprietorship, company, etc. the same shall be disclosed by the Bidder / Contractor at the time of filing of tender/EoI. The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act, 2013.
 - j) The Bidder / Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the Principal.
 - k) The bidder / contractor shall disclose the circumstances, arrangements, undertakings or relationships that constitute, or may reasonably be considered to constitute, an actual or potential conflict of interest with its obligations specified in the tender process or under any Agreement which may be negotiated or executed with Principal. Bidder / Contractor and its employees, agents, advisors and any other person associated with the bidder / contractor must not place themselves in a position which may, or does, give rise to conflict of interest (or a potential conflict of interest between the interests of Principal or any other interests during this tender process or through operation of the Agreement.
 - l) The bidder(s)/ contractor (s) who have signed the Pact shall not approach the Courts while the matters/disputes/issues, related to tender process or the Contract are presented before the IEM and awaiting the final decision.
- 2) The Bidder / Contractor will not instigate third persons to commit above mentioned acts / omissions / offences outlined above or be an accessory to such offences.

Section 3

Disqualification from tender process and exclusion from future contracts

- 1) If the Bidder, before the Contract is awarded, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question:
 - a) the Principal is entitled to disqualify the Bidder from the tender process or to terminate the Contract, if already signed, for such reason.
 - b) the Principal is entitled to exclude the Bidder / Contractor from participating in future contracts/tenders. The imposition and duration of the exclusion will be determined by the Principal based on the severity of the transgression. The severity will be determined by the circumstances of the case, in

particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder / Contractor and the amount of the damage. The exclusion will be imposed for a minimum of six (6) months and maximum of three (3) years.

- 2) An act/omission would be treated as a transgression after due consideration of the available evidence by the Principal.
- 3) The Bidder / Contractor accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such disqualification/exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision of disqualification/exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- 4) If the Bidder / Contractor can prove that he has restored the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the aforesaid disqualification/exclusion prematurely.

Section 4 Compensation for Damages

- 1) Without prejudice to any rights that may be available to the Principal under any law or the contract or its laid down policies and procedures, the Principal shall have the following rights in case of breach of this Pact by the Bidder/Contractor:
 - a) To forfeit the Earnest Money/Bid Security if the Bidder is disqualified from the tender process prior to the award in terms of Section 3;
 - b) To forfeit/invoke the Security Deposit/ Performance Bank Guarantee if the Principal has either terminated or is entitled to terminate the Contract of the Bidder in terms of Section 3.
 - c) To immediately call of the pre contract negotiations without assigning any reason or giving any compensation to the Bidder / Contractor.
 - d) To immediately cancel the contract, if already signed, without giving any compensation to the bidder / contractor. The Bidder / Contractor shall be liable to pay the compensation for any loss or damage to the Principal resulting from such cancellation / rescission and the Principal shall be entitled to deduct the amount so payable from the amount due to the Bidder / Contractor.
 - e) To recover all sums already paid by the Principal, with interest at ___% @ p.a. if any outstanding payment is due to the Bidder / Contractor from the Principal in connection with any other contract, such outstanding payment could also be set off to recover the aforesaid sum and interest.

- f) To recover all sums paid in violation of this Pact by the Bidder / Contractor to any middleman or agent or broker with a view to securing the contract.

Section 5

Previous transgression

- 1) The Bidder declares that he has not committed any transgressions in the last three (3) years against any Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could invite/justify his exclusion from this tender process.
- 2) Any concealment of information or misrepresentation of facts, in regard to the aforesaid, can lead to his disqualification from the tender process or termination of the Contract, if already awarded, or invite any other appropriate action(s) as deemed fit.

Section 6

Equal treatment of all Bidders / Contractors / Subcontractors

- 1) The Principal will enter into Pacts on identical terms with all bidders and contractors.
- 2) The Bidder(s) / Contractor(s) assures to procure from all their subcontractors an undertaking for the adoption of this Pact. The Bidder (s) / Contractor(s) shall alone be responsible for any violation (s) of the provisions laid down in the Pact by any/all of their sub-contractor (s) or sub-vendor (s).
- 3) The Principal will be entitled to disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7

Independent External Monitor / Monitors

- 1) The Principal appoints competent and credible Independent External Monitor as nominated and approved by the Central Vigilance Commission. The task of the IEM is to review independently and objectively, whether and to what extent the Parties comply with the obligations under this Pact. The IEM would be required to sign 'Non- Disclosure Agreements' alongwith a declaration of 'Absence of Conflict of Interest'. In case of any conflict of interest arises at a later date, the IEM shall inform Chairperson of the Board of the Principal and recuse himself/herself from that case.
- 2) The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal. The IEM would be provided access to

all documents/records pertaining to the contract for which a complaint or issue is raised before them, as and when warranted. However, the documents/records/ information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.

- 3) The Bidder / Contractor accepts that the IEM has the right to access, without restriction, all Project documentation available with the Principal including the documents/ records/ information provided by the Bidder/Contractor. The Bidder/Contractor will also grant the IEM, upon their request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The IEM is under contractual obligation to treat the documents/ records/ information of the Bidder/Contractor/ Subcontractor with confidentiality.
- 4) The Principal will provide to the IEM sufficient information about all meetings among the parties related to the Project provided that such meetings could have an impact on the contractual relations between the Principal and the Bidder/Contractor. The Parties will offer to the IEM the option to participate in such meetings.
- 5) As soon as the IEM notices, or suspects, a violation of this Pact, he will inform the Management of the Principal and request the Management to discontinue or rectify the violation, or take any other relevant action. The IEM can in this regard submit nonbinding recommendations. Beyond this, the IEM has no right to demand from the Parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to the Bidder / Contractor to present his case before making its recommendations to the Principal.
- 6) The IEM is expected to tender their recommendation on all the complaints within 30 days of their receipt, to the Chairperson of the Board of the Principal. Further, should the occasion arise, the IEM may submit proposals for correcting problematic situations.
- 7) If the IEM has reported to the Chairperson of the Board of the Principal a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India/Indian Penal Code, 1860, or any other relevant laws and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEM may transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8) The word 'IEM' would include both singular and plural.

Section 8

Pact Duration



- 1) This Pact comes into force when both parties have signed it. It expires for the Bidder / Contractor 12 months after the last payment under the respective contract, and for all other Bidders / Contractors 6 months after the contract has been awarded.
- 2) If any claim is made / lodged during the aforesaid duration, the same shall continue to be valid despite the lapse of this pact as specified above, till it is discharged / determined by Chairperson of the Board of the Principal.

Section 09
Other provisions

- 1) This Pact is subject to Indian Laws. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Pune. The Arbitration clause provided in the main tender document / contract shall be applicable to any issue / dispute arising under this Pact.
- 2) If the Contractor is a partnership or a consortium, this Pact must be signed by all partners or consortium members.
- 3) In case of any allegation of violation of any provisions of this Pact or payment of commission etc. the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder / Contractor and Bidder / Contractor shall provide necessary information and documents and shall extend all possible help for the purpose of such examination.
- 4) If one or several provisions of this Pact are held to be invalid/unenforceable, the remainder of this Pact shall remain valid as though the invalid or unenforceable parts had not been included herein. In this case, the parties will strive to come to an agreement to their original intentions.
- 5) Issues like warranty/ guarantee etc. shall be outside the purview of IEM.

For the Principal

For the Bidder / Contractor

Place -----

Witness 1 : -----

Date -----

Witness 2: -----

ANNEXURE I - DOCUMENTS LIST / INDEX

Sr	Description	Page No (s)
1	Covering letter, as per Annexure - A .	
2	Authority letter, as per Annexure - B .	
3	The undertakings from the Principal Manufacturers (OEMs) of products/ items offered as per Annexure - C .	
4	Annexure-E - Declaration in lieu of EMD	
5	Annexure - F - Mandatory Declaration (M.I.I - O.M.s)	
6	Annexure - G - Mandatory Declaration (Land Border Sharing - O.M.s)	
7.	Annexure - H - Integrity Pact	
7	A copy of Certificate of Incorporation, Partnership Deed / Memorandum and Articles of Association / any other equivalent document showing date and place of incorporation, as applicable, in support of eligibility criteria.	
8	Copy of GST registration certificates.	
9	The detailed technical catalogues, specifications for the offered Items as per format given in Section - III	
10	Compliance statement indicating the compliance of the items, equipment, solution offered with the tender specifications	
11	POST AMC charges declaration	
12	The bidder must submit all the documents as per Document Checklist - Annexure I , with appropriate page nos for the same. <u>The flow of the submitted documents must be in the same order.</u>	
13	The certificate from a Chartered Accountant certifying the average annual sales turnover of the bidder for the last 3 financial years.	
14	Other documents necessary in support of eligibility criteria, product catalogues, brochures etc.	
15	The bidder must not be blacklisted by any Govt. Organizations as on date of submission of the bids. A certificate or undertaking to this effect must be submitted (Annexure - A).	
16	The bidder should provide sufficient documentary evidence to support the eligibility criteria and exemptions mentioned in the Document.	

(END OF DOCUMENT)